

# **DEERFIELD TOWNSHIP MASTER PLAN**

**May 30, 2017**

Prepared By The

**DEERFIELD TOWNSHIP  
PLANNING COMMISSION**

Under The Direction Of The

**DEERFIELD TOWNSHIP  
BOARD of TRUSTEES**

With The Assistance Of

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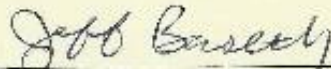
**DEERFIELD TOWNSHIP  
LIVINGSTON COUNTY, MICHIGAN**

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## **Statements of Approval**

### **Planning Commission Approval**

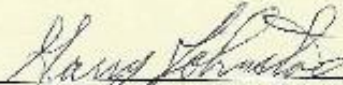
This is to certify that this Master Plan comprises the Deerfield Township Master Plan approved by the Deerfield Township Planning Commission on August 23, 2017.



Jeffrey Borseth, Chairperson  
Deerfield Township Planning Commission

### **Township Board of Trustees Approval**

This is to certify that this Master Plan comprises the Deerfield Township Master Plan approved by the Deerfield Township Board of Trustees on September 14, 2017.



Garry Johnston, Clerk  
Deerfield Township Board of Trustees

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# TABLE OF CONTENTS

<b>Chapter One</b>		
<b>OVERVIEW .....</b>		<b>1-1</b>
Introduction	1-1	
What is the Master Plan?	1-1	
Elements of the Master Plan	1-2	
Importance and Application of the Master Plan	1-2	
How the Plan was Prepared	1-3	
Overview of Planning Policies	1-4	
Deerfield Township Overview	1-4	
<b>Chapter Two</b>		
<b>PLANNING ISSUES, GOALS and OBJECTIVES .....</b>		<b>2-1</b>
Introduction	2-1	
Planning Issues, Goals, and Objectives	2-1	
<b>Chapter Three</b>		
<b>FUTURE LAND USE STRATEGY .....</b>		<b>3-1</b>
Introduction	3-1	
Planning Areas	3-1	
Preservation of Natural Resources	3-5	
Keyholing	3-6	
Phased Zoning	3-6	
<b>Chapter Four</b>		
<b>COORDINATED PUBLIC SERVICES .....</b>		<b>4-1</b>
Introduction	4-1	
Circulation / Complete Streets	4-1	
Sewage Disposal and Potable Water	4-2	
Storm Water Management	4-3	
Emergency Services	4-3	
Recreation	4-4	
Information and Technology Access	4-5	
<b>Chapter Five</b>		
<b>IMPLEMENTATION STRATEGIES .....</b>		<b>5-1</b>
Introduction	5-1	
Public Support, Communication and Community Involvement	5-1	
Capital Improvements Programming	5-2	
Objectives Action Plan	5-2	
Development Codes and Programs	5-3	
Maintaining a Current Master Plan	5-9	
<b>Appendix A</b>		
<b>CULTURAL FEATURES .....</b>		<b>A-1</b>
Regional Context	A-1	
Access and Circulation	A-1	
Land Use and Development	A-4	
Community Facilities and Services	A-7	

**DEERFIELD TOWNSHIP MASTER PLAN**

**Appendix B**  
**ENVIRONMENTAL FEATURES ..... B-1**

Geology and Topography	B-1
Drainage and Water Resources	B-2
Groundwater	B-3
Woodlands and Wetlands	B-4
Soils	B-4

**Appendix C**  
**DEMOGRAPHIC FEATURES ..... C-1**

Population Growth Trends	C-1
Population Projections	C-2
Social and Economic Characteristics	C-3

**Appendix D**  
**INVENTORY MAPS..... D-1**

Public Roads	Drainage Features
Land Use	Wetlands
School Districts	Septic Limitations
Steep Slopes	Prime Farmland
Woodlands	

**FIGURES**

		<u>page</u>
FIGURE C-1:	Deerfield Township Growth	C-1
FIGURE C-2:	Deerfield Township Age Profile, 2010	C-4
FIGURE C-3:	Deerfield Township Household Type, 2010	C-5
FIGURE C-4:	Income Characteristics Comparison, 2013	C-7
FIGURE C-5:	Highest Level of Education Attainment, 2013, Deerfield Township	C-8
FIGURE C-6:	Highest Level of Education Attainment Comparison, 2013	C-9

The following figures/inventory maps are contained in Appendix D:

Public Roads	Drainage Features
Land Use	Wetlands
School Districts	Septic Limitations
Steep Slopes	Prime Farmland
Woodlands	

**TABLES**

	<u>page</u>
TABLE A-1: Approximate General Land Use/Land Cover Allocation, 2015	A-4
TABLE A-2: Selected Housing Characteristics Comparison, 2013	A-5
TABLE C-1: Population Trends & Growth Rates Comparison	C-2
TABLE C-2: Deerfield Township Population Projections	C-3
TABLE C-3: Race Profile Comparison, 2010	C-3
TABLE C-4: Age Profile Comparison, 2010	C-4
TABLE C-5: Household Type and Size Comparison, 2010	C-5
TABLE C-6: Employment by Industry Comparison, 2013	C-6
TABLE C-7: Income Characteristics Comparison, 2013	C-7
TABLE C-8: Highest Level of Education Attainment Comparison, 2013	C-8

# Chapter One OVERVIEW

## Introduction

This Chapter provides an overview of the Deerfield Township Master Plan and the Master Plan's role, importance, preparation process, and principal policies. Understanding the fundamentals of the Master Plan will enable township residents and officials to appreciate the role it plays in ensuring the future welfare of the community, its residents and its resources. Embracing this Plan as a vital tool in preserving and enhancing the public health, safety and welfare of the township is essential if this Plan is to be effective.

## What is the Master Plan?

### Purpose / Enabling Authority

Just as individuals and families plan for their future well being, so must municipalities. This Master Plan is a "plan" – it is a specific tangible document consisting of text, maps, and figures that establishes a plan for how growth and associated land development should be guided to enhance the future welfare of Deerfield Township.

The following key words and phrases can generally describe the Master Plan:

**FUTURE ORIENTED:** The plan concerns itself with long-range planning to guide and manage future growth and development, and the manner in which the township should evolve over the next ten to twenty years in response to growth, development and preservation interests.

**GENERAL:** The plan establishes broad principles and policies to address future land use and public services.

**COMPREHENSIVE:** The Plan is comprehensive in that it addresses all principal types of land use and the practical geographic boundaries of each.

**DYNAMIC:** The Plan is intended to be continually evolving in light of the aspirations of local residents, changing conditions in the township, and new strategies to manage growth.

This Master Plan was prepared by the Deerfield Township Planning Commission under the authority of the Michigan Planning Enabling Act (Public Act 33 of 2008, as amended).

### Purpose of the Master Plan

#### Section 7(2) of the Michigan Planning Enabling Act (MCL 125.3807) provides:

*The general purpose of a master plan is to guide and accomplish, in the planning jurisdiction and its environs, development that satisfies all of the following criteria:*

- (a) Is coordinated, adjusted, harmonious, efficient, and economical.*
- (b) Considers the character of the planning jurisdiction and its suitability for particular uses, judged in terms of such factors as trends in land and population development.*
- (c) Will, in accordance with present and future needs, best promote public health, safety, morals, order, convenience, prosperity, and general welfare.*
- (d) Includes, among other things, promotion of or adequate provision for 1 or more of the following:*
  - (i) A system of transportation to lessen congestion on streets.*
  - (ii) Safety from fire and other dangers.*
  - (iii) Light and air.*
  - (iv) Healthful and convenient distribution of population.*
  - (v) Good civic design and arrangement and wise and efficient expenditure of public funds.*
  - (vi) Public utilities such as sewage disposal and water supply and other public improvements.*
  - (vii) Recreation.*
  - (viii) The use of resources in accordance with their character and adaptability.*

This Master Plan is not a law or regulatory document, but a "policy plan" to be implemented through, in part, zoning and other regulatory and non-regulatory tools. For example, though the Master Plan is not a zoning ordinance, the Master Plan's recommendations and policies serve as a basis for updating the current Deerfield Township Zoning Ordinance.

demographic features such as population growth, employment, and education (Appendix C).

**Importance and Application of the Master Plan**

The importance and application of the Deerfield Township Master Plan are demonstrated in:

- the long-term interests of the township
- the day-to-day administration of the township's planning and zoning program

**Long Term Interests**

There are a number of interests shared by residents and officials today that can be expected to continue for years to come and be similarly shared by future residents and new officials. Some of these important interests include:

- Protecting the township's rural character.
- Protecting the quality of life.
- Protecting the township's natural resources including its surface and ground water, productive farmland, forest lands, wetlands, and wildlife.
- Minimizing tax burdens.
- Ensuring appropriate land use and adequate services to protect the public health, safety, and welfare of residents and visitors.
- Ensuring compatibility with the use and development of neighboring properties.

This Plan supports these long-term interests through a future-oriented strategy that seeks to further these interests. Chapter Two establishes goals and objectives, and Chapters Three and Four establishes future land use and public services strategies, to secure these and other long-term interests.

**Zoning Ordinance  
Must be Based on a Master Plan**

The Michigan Zoning Enabling Act, which provides Michigan municipalities with the statutory authority to adopt zoning regulations, requires that a municipality's land development regulations *"...shall be based upon a plan designed to promote the public health, safety, and general welfare, to encourage the use of lands in accordance with their character and adaptability, to limit the improper use of land, to conserve natural resources and energy..."*

**The Deerfield Township Master Plan addresses this statutory requirement and ensures a strong legal foundation for the township's zoning regulations.**

**Elements of the Master Plan**

This Master Plan consists of the following key components:

**Chapter One (Introduction)** presents an overview of the purpose and role of the Plan, the process followed in its preparation, key planning policies, and a summary of township conditions.

**Chapter Two (Planning Issues, Goals and Objectives)** presents important planning issues facing the township today, and associated goals and objectives that address these issues.

**Chapter Three (Future Land Use Strategy)** presents future land use policies.

**Chapter Four (Coordinated Public Services)** presents policies addressing the coordination of public services with the planned future land use pattern and the township's overall welfare.

**Chapter Five (Implementation)** presents key measures to effectuate the policies of the Plan.

**The Appendices** present an overview of existing conditions and trends in the township, addressing cultural features such as roads, land use, and public services (Appendix A); natural features such as soils, topography, and water resources (Appendix B); and

**Balancing Development with Services and Natural Resources**

Development without adequate public services to meet the demands of the development, as well as development which places excessive demands on the township's natural resources (on-site sewage disposal, potable water quality, etc.) can lead the township into a future of social and environmental risks that may seriously threaten the public's health, safety, and welfare.



## Day-To-Day Administration

In addition to furthering the long-term interests of the township, the Master Plan also plays an important role in the day-to-day planning and zoning efforts of the township:

- **Advisory Policies:** The Plan is an official advisory policy statement that should be readily shared with existing and prospective landowners and developers. The Plan informs all of the long term intentions of the township regarding land use and encourages development proposals more closely integrated with the official policies of the Plan.
- **Regulatory Programs:** The Plan establishes a practical basis for the township to revise, update, or otherwise prepare regulatory programs intended to ensure that the policies of the Plan are implemented including zoning and land division regulations.
- **Review of Land Development Proposals:** Chapter Two includes a list of township goals and objectives that should be reviewed when consideration is given to future proposed rezoning requests, site plans, and related land use proposals, to further establish a record upon which the proposal can be evaluated. Chapter Three provides policies regarding the planned future land use pattern in the township – valuable reference points upon which land use proposals should be evaluated.
- **Public Services Improvements:** The identification of a planned future land use pattern enables the township to prioritize areas in need of current or future public services improvements and plan accordingly. Chapters Four and Five provide important guidance in this area.
- **Intergovernmental Coordination:** This Plan provides the basis for township officials to communicate effectively with neighboring communities regarding both the impact of their planning and zoning actions and opportunities for mutual gain through coordinated land use and public services efforts.
- **Factual Reference:** This Plan includes a factual overview of trends and conditions in the township. This factual profile can educate local officials and residents and aid in the review of development proposals, encourage constructive discussion of planning issues and policies, and serve as a base line for future studies.

## How the Plan Was Prepared

The township adopted a master plan in 1994 under the Township Planning Act. With the increasing age of the 1994 Plan and concerns about aspects of the 1994 Plan, and the repeal of the Township Planning Act in 2008, replaced by the Planning Enabling Act (Public Act 33 of 2008), Deerfield Township embarked on the development of a wholly new plan in the summer of 2015.

One of the first tasks undertaken by the township was the administration of a community-wide mail survey in September of 2015 to gain insight into local perceptions about the township and aspirations for the future including land use and public services.

### Some Themes from the Community-Wide Master Plan Survey

- Preserve natural features
- Preserve rural character
- Preserve farmland
- Limit commercial and industrial expansion
- Manage the rate and character of growth and development
- 75% or more of respondents found these to be important in making Deerfield Township a desirable place to live:
  - Farmland
  - Quality of schools
  - Reasonable taxes
  - Natural resources
  - Police and fire protection
  - Rural character/country living
- 70% or more of respondents found these services to be “okay” or “good.”
  - Recreation opportunities
  - Fire protection
  - Roads
- 82% or more of respondents support limitations on the amount of residential development in agricultural areas.

## DEERFIELD TOWNSHIP MASTER PLAN

The Planning Commission's initial efforts were also directed at establishing an updated database about the Township for use during the planning process. This involved a review of physical and cultural conditions in the township including road conditions, existing land use patterns, public services, and demographic characteristics.

The Planning Commission held a series of meetings to review and discuss the findings of the survey and the adequacy of the 1994 Plan's goals and objectives. The Planning Commission considered a number of alternative future land use scenarios in an effort to identify the most preferred and advantageous future land use pattern.

The Planning Commission assembled a complete initial draft of the new Plan and refined the draft to arrive at a document suitable for presentation to the community. The Planning Commission held a public hearing on the draft Plan and subsequently finalized the Plan for approval.

Throughout the development of the Plan, the township followed the procedural requirements of the Planning Enabling Act including notification of neighboring communities of its intent to prepare the Plan, and the township's subsequent solicitation for input on the draft plan.

### Overview of Planning Policies

This Plan presents a coordinated strategy that addresses growth, development and preservation.

The Plan supports the continuation of Deerfield Township as a predominantly agricultural and rural residential community, with more than three-quarters of the township set aside for these principal uses. The Plan directs more suburban and urban development to the township's northeast quarter where suburban and urban development patterns already dominate. This growth area is to provide opportunities for comparably higher density living arrangements than provided elsewhere in the township provided adequate measures are available for potable water and sewage disposal.

The Plan provides opportunities for limited commercial and industrial expansion. Commercial expansion is to be directed to the Faussett/Argentine Roads intersection area, the Argentine/Center Roads intersection area, and limited segments of Bennett Lake Road near existing commercial uses. Industrial expansion is to be limited to the area around Deerfield Industrial Drive off of Argentine Road in the township's northeast region.

The Plan supports the presence of other existing commercial, industrial and residential development nodes in the community but does not generally recommend expansion of these areas.

Public services improvements are to be focused in those areas of the community where heightened growth and development are anticipated, as described above.

### Maintaining the 1994 Master Plan Theme

*While township officials decided to prepare a new Master Plan to replace the 1994 Plan, there was strong support to maintain the basic direction of the 1994 Plan – preserving the predominantly agricultural and rural residential character of the Deerfield community.*

### Deerfield Township Overview

The following is a brief overview of Deerfield Township. A more detailed review of township trends and conditions can be found in Appendix A, B, C, and D.

Deerfield Township is a rural community of approximately 4,200 persons, located along the northeast periphery of Livingston County in the lower central region of Michigan's Lower Peninsula. Principal surrounding townships are Argentine to the north (Genesee County), Tyrone to the east, Oceola to the south, and Cohoctah to the west. The landscape of the surrounding region is dominated by agriculture and scattered residential development.

Regional access to Deerfield Township is provided by Interstate 96 (I-96) and U.S.-23. I-96 travels within seven miles of the south edge of the township. U.S.-23 travels within two miles of the township's eastern edge. M-59 connects these two highways and passes within five miles of the township's southern edge. The busiest corridors include Argentine, Bennett Lake and Faussett Roads.

The township's topography is largely level to gently rolling in character (see Steep Slopes map). The Yellow River Drain collects runoff from more than half of the township including the vast majority of the township's central and southern portions. Other important watercourses include Cranberry Creek, Yellow Drain, and North Ore Creek.

## DEERFIELD TOWNSHIP MASTER PLAN

1.3 sq. miles of Deerfield Township is comprised of surface water and is contained within its numerous lakes and ponds. The largest of these include Bennett Lake in the township's northeast corner (181 acres), Indian Lake in the township's central region (155 acres), and Lake Shannon in its southeast quarter (117 acres).

Deerfield Township includes approximately 7,000 acres of woodlands and wetlands (see Woodlands and Wetlands maps) and are evident in all areas of the township, with the largest contiguous expanses being most concentrated in the western third of the township including the Oak Grove State Game Area.

According to the Natural Resources Conservation Service, loam, sandy loam and loamy sand soils are predominate in Deerfield Township. Due to principally soil and topographic conditions, almost one-half of the township presents moderate or severe limitations for septic systems (see Septic Limitations map), more than three-quarters of the township presents moderate and/or severe limitations for the construction of basements (see Basement Limitations map) and approximately half of the township land area is classified as "prime farmland."

The landscape of Deerfield Township is predominantly rural in character and comprised nearly entirely of woodlands, wetlands, farm operations, and scattered residences (see Land Use, Woodlands and Wetlands maps). The more suburban and urbanized residential areas are located along or in the immediate proximity of the township's principal lakes, with the majority being in the Lobdell Lake and Bennett Lake area but also present in the Hidden Lake, Ryan Lake, and Lake Shannon areas.

The 2010 Census recorded 1,645 dwelling units in Deerfield Township, with residential development comprising approximately 11% of the acreage in the township. 95% of all dwellings in the township in 2010 were single family dwellings

Deerfield Township includes only limited instances of commercial development. Two taverns are located along the north side of Bennet Lake along Bennett Lake Road. Several vehicle and/or equipment repair businesses are located along or near Deerfield Industrial Drive off of Argentine Road in Section 10, and a convenience store is located at the Argentine/Faussett Roads intersection. There is no industrial activity in the township except a machine shop on Deerfield Industrial Drive off of Argentine Road in Section 10.

A five member Township Board governs Deerfield Township. Township offices are located in the township hall on the south side of Center Road, approximately one-half mile east of Latson Road. Government administration and services are funded by a millage and, in some cases, special assessments.

There is no public water service in Deerfield Township and public sewer is limited to approximately 300 residences within six subdivisions in the Bennet Lake area.

Deerfield Township operates a single park – the Deerfield Hills Nature Area in the northeast corner of the township in Sections 1 and 12. The park covers approximately 375 acres and is of a resource conservation character. Also present in the township is state-owned and managed Oak Grove State Game Area. The facility is located along the western edge of Deerfield Township and extends into eastern Cohoctah Township. The vast majority of the facility is located in Deerfield Township and occupies approximately 1,500 township acres. A third public recreation facility in the township is the Lutz County Park, covering approximately 300 acres and located in the township's northwest corner.

Deerfield Township provides fire protection to area residents through the Hartland Deerfield Fire Authority – a joint fire authority between Hartland and Deerfield Townships. The Authority maintains three fire stations, the closest being located at the Deerfield Township Hall on Center Road. Ambulatory service is provided principally by Livingston County EMS, a county-operated service. Livingston County EMS maintains five ambulance deployment stations, the closest being in Howell and Hartland Townships. Police protection services are provided principally by the Livingston County Sheriff's Department.

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# Chapter Two PLANNING ISSUES, GOALS & OBJECTIVES

## Introduction

The primary goal of this Plan is to establish a basis for future land use and public services. To effectively plan for the township's well being with regard to future land use and public services, it is beneficial to identify important planning issues facing the community and clarify its long term goals and objectives. This chapter discusses important planning issues facing the Deerfield Township community and presents associated goals and objectives.

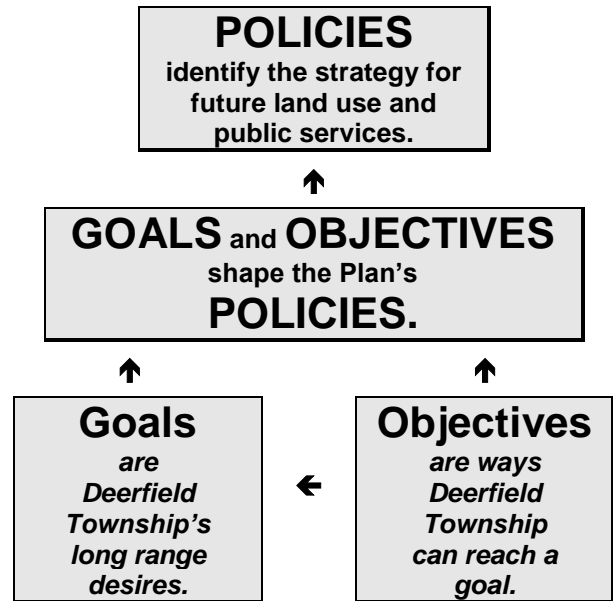
## Planning Issues, Goals & Objectives

A number of key planning issues are apparent today. These issues vary in scope and are clearly inter-related. The future quality of life and character of the township will be largely shaped by the township's strategy to address these issues.

Each issue presented in this Chapter is followed by a set of goal and objective statements. Planning goals are statements that express the township's long range desires. Each goal has accompanying objectives that are general strategies that the township will pursue to attain the specified goal.

### The Importance of Goals and Objectives

- **Deerfield Township Vision:** The goals and objectives provide current and future residents with an overview of the intended future character of the community.
- **Shape Policies:** The goals and objectives identify and outline the basic parameters that should be used in guiding land use and public services policies and decisions.
- **Evaluate Development Proposals:** The goals and objectives serve as references upon which future rezoning and land development decisions can be evaluated.



### Goals, Objectives, and Policies of the Plan

The planning issues and goals and objectives are divided into the following major categories:

- Growth Management and Public Services
- Community Character
- Natural Resources and the Environment
- Farming
- Housing
- Commercial Services, Industry and Economic Development
- Circulation
- Regional Coordination

*The planning issues presented in the following pages are not intended to be all inclusive. Rather, they are presented as the primary issues that Deerfield Township must address as it establishes a future for itself. These issues will evolve over time and should be reexamined periodically and the appropriate modifications made.*

The objectives listed on the following pages should not be interpreted as limitations on the township's efforts to reach its goals. The township's commitment to the following objectives does not preclude it pursuing other objectives that it determines are beneficial. In addition, the objectives listed are not time specific. The township may choose to act on some objectives in a shorter time frame than others.

**GROWTH MANAGEMENT and PUBLIC SERVICES**

Deerfield Township is a very desirable place to live for many, with abundant natural resources and open spaces, access to highways and more distant employment centers, and of an overall rural character. It is reasonable to expect the township's strong growth prior to the 2007 economic/housing downturn will continue as state-wide economic conditions continue to improve.

The township's character and quality of life will be impacted by the way the township chooses to manage growth and development. Successful growth management includes:

- minimizing unnecessary loss or degradation of natural resources
- coordinating the amount and rate of new development with adequate public services
- accommodating growth and development in a manner that preserves the desired character of the community
- encouraging economic development compatible with the character of the township
- encouraging a harmonious pattern of land uses

***Contrary to traditional planning wisdom and thought, research has shown that development does not necessarily "pay its way," particularly as it applies to traditional single family residential development. Maintaining the current quality of public services, let alone the pursuit of improvements, can be very difficult in the face of unmanaged growth and development.***

Tax revenues dictate, in part, the extent and quality of public services. Public services in the community are comparatively limited. The limited public services has not been identified as a problem but a way of life. Although development will increase the township's tax base, the same development will place additional demands upon public services. Research by the planning industry has shown that farming and

commercial and industrial development have been shown to typically have a more positive impact on the economic stability of a community than more traditional single-family residential development.

***GOAL:*** *Guide future development in a manner that assures land use patterns compatible with public facilities and services and the cost-effective use of tax dollars, preserves the township's natural resources and rural character and minimizes conflicts between differing land uses.*

**Objectives**

- 1) Continually monitor local attitudes about public facilities and services and provide regular opportunities for substantive public input on growth and public services issues.
- 2) Develop a rational land use strategy that provides an appropriately balanced scope of uses.
- 3) Discourage the unnecessary fragmentation, destruction or undermining of natural resources.
- 4) Encourage forms of growth and development that minimize public service costs including higher intensity and compact forms of development in areas with heightened public services and infrastructure s.
- 5) Guide development into areas where public facilities and services have adequate capacity to accommodate the anticipated growth and increased development intensities, and/or where the provision or expansion of public facilities is cost effective.
- 6) Discourage public services improvements that will encourage development at a rate beyond the township's ability to ensure adequate public health, safety, and welfare, or development in areas of the township not designated as growth areas.
- 7) Wherever legally permissible, require new developments to pay the township for the direct and indirect public services costs associated with that development, except where public interests and benefits may be at stake.
- 8) Separate incompatible land uses by distance, natural features, or man-made landscape buffers that adequately screen or mitigate adverse impacts.
- 9) Update zoning and other tools to implement the Plan's policies, goals and objectives, and evaluate rezoning petitions, site plans, and other development decisions according to the Plan's policies, goals and objectives.

## COMMUNITY CHARACTER

Deerfield Township is a community of varied character. Its predominant character can be described as quiet and rural. “*Rural character*” is a subjective quality, but is typically associated with an overall perception of limited development, and extensive open spaces. This rural character is largely shaped by abundant farmland and expanses of woodlands, wetlands and other open spaces.

The township also includes small suburban and urban areas, particularly the neighborhoods in the area of Bennett and Lobdell Lakes and Lake Shannon. Though these areas occupy a small portion of the community, they contribute to the overall fabric of the township and its character.

The diversity of the area’s character contributes to the area’s desirability as a place of residence. The preservation of the township’s unique character and identity is an important part of its long term welfare. Preservation efforts can protect property values, minimize negative impacts between adjacent land uses, and enhance the overall quality of life.

**GOAL:** *Protect and enhance the character of the township in a manner that encourages a sense of identity, an overall rural character along with more urbanized elements, and an atmosphere that defines the community as a desirable place to live.*

### Objectives

- 1) Encourage development designed in scale with the immediate surroundings and the dominant rural character of the community, through standards addressing density, building size and height, and other development features.
- 2) Introduce appropriately designed and landscaped signage along key entrances into the township, which highlight the township’s identity and place within the region.
- 3) Encourage signs or markers at designated historic sites, buildings and areas, to highlight the historic resources and identity of the township.
- 4) Encourage development which actively strives to preserve open spaces and natural resources as part of a development project.
- 5) Consider rural character preservation interests as one of the relevant factors in determining appropriate development densities throughout the township.
- 6) Encourage the maintenance of historically significant structures.
- 7) Encourage a structurally sound housing stock and the rehabilitation or removal of blighted structures and yard areas.

- 8) Encourage the preservation of the township’s natural resources including their visual character, environmental integrity, and recreational value.

See also “Natural Resources and the Environment” below for additional objectives addressing community character.

## NATURAL RESOURCES and the ENVIRONMENT

One cannot speak of community character in Deerfield Township without acknowledging the tremendous impact its natural resources play in defining the community’s character. These resources are comprised principally of its abundant farmland acreage in addition to its many streams and drainage ways, lakes, forested lands of both an upland and lowland character, and wetlands. These elements are important in shaping the character of the township and also provide vital environmental roles including wildlife habitats, flood control, water purification, groundwater recharge, and air quality enhancement. These same resources play a role in recreation in the community including hunting. Input received during this Plan’s preparation suggests that residents strongly support the preservation of the township’s natural resources.

**GOAL:** *Preserve the integrity of the township’s natural resources including its surface waters and groundwater, wetlands, woodlands, and farmland resources.*

### Objectives

- 1) Document and periodically update resource inventory data for use in land planning studies and land use and development decisions.
- 2) Encourage development that preserves natural resources as part of the development plan and encourages the preservation of environmental corridors across multiple parcels and the community as a whole.
- 3) Ensure that the quantity and quality of new development does not unreasonably create increases in air, noise, land, and water pollution, or the degradation of natural resources.
- 4) Discourage the expansion of public utilities into areas dedicated to resource protection.
- 5) Guide more intensive land uses away from environmentally sensitive areas and special natural features.
- 6) Ensure that all development is in compliance with applicable local, county, state, and federal environmental regulations.

- 7) Review proposed development in light of its potential impact upon on-site and regional natural resource areas and systems.
- 8) Explore the acquisition of important open space resources for recreation and environmental preservation purposes.
- 9) Educate the public about measures available to protect the township's natural resources including waste management, groundwater protection, soil erosion and sedimentation, and recycling and local recycling opportunities.
- 10) Explore opportunities for enhancing local recycling opportunities.

### FARMING and FARMLAND RESOURCES

Farming has always been a fundamental part of the Deerfield Township landscape since its settlement. Today, it occupies approximately 37% of the township's land area. There exists a demonstrated need in the state for land devoted to agricultural use. Farm operations produce the food and fiber that our society relies on as well as the society of other countries. Agriculture has long been recognized for contributing to the economic stability of local communities and is a leading industry in Michigan. Farmland has been found to be one of the few land uses in rural areas that typically produce more revenue than the cost to provide such land with public services.

However, competing land uses, particularly residential uses, frequently result in escalating land prices that undermine the economic viability of local farm operations. This is especially critical for the next generation of farmers who may not be able to afford to buy farmland or otherwise maintain an existing family farm. In addition, land use conflicts between farm and non-farm residents frequently heighten as

Input received during this Plan's preparation suggests that residents strongly support the preservation of the township's farmland resources.

***Effective farmland preservation is dependent upon the management of the number and size of new non-farm lots, to avoid both the excessive encroachment of residential uses and the wasteful conversion of excess tillable land for each home site.***

While the farming industry faces economic and other challenges that may change in degree from time to time, the benefits of local farming are not only found in the farm products that are produced and its contribution to the local economy, but also for its limited demand on public services, infrastructure, and township revenues. The challenge is to encourage farmland preservation while, at the same time, accommodate limited opportunities for reasonable alternatives that do not undermine the long-term viability of on-going farm operations.

**FARMLAND/FARMLAND RESOURCES GOAL:**  
*Actively encourage the continuation of local farming operations and the long-term protection of farmland resources.*

**Objectives:**

- 1) Identify areas that are supportive of long-term farming and designate such areas for agriculture as a primary use.
- 2) Minimize potential land use conflicts in designated agricultural areas by limiting the encroachment of non-farm land uses while similarly providing flexibility for the conversion of limited farmland to reasonable alternative uses.
- 3) Discourage the wasteful consumption of farmland resources due to unnecessarily large residential lot size requirements, while still exploring other options for managing the extent of new residences in agricultural areas.
- 4) Discourage the extension of municipal utilities (such as sewer and water) into designated agricultural areas.
- 5) Minimize obstacles to the farming community that unnecessarily hinder local farm operations and "value-added" income sources, such as agritourism, farm markets, corn mazes, and other revenue generating activities that do not cause unreasonable impacts on surrounding properties.
- 6) Establish limits on the amount of non-farm residential development permitted in designated agricultural areas while, at the same time, discourage the wasteful consumption of farmland resources due to unnecessarily large residential lot size requirements.
- 7) To the extent that residential development occurs in farm areas, encourage such development to be placed on less productive farmland.
- 8) To the extent that residential development occurs in agricultural areas, encourage developments that incorporate the continuance of farming through the clustering of the residential lots on only a portion of the farm parcel.



- 9) Encourage awareness among prospective home builders and purchasers that farming is a primary planned use in designated agricultural areas and that they should expect the normal smells, odors, noises, dust, and use of pesticides, herbicides, fertilizers and fungicides as a part of daily farm life in the area.
- 10) Support and maintain P.A. 116 farmland preservation agreements and other preservation programs.

**HOUSING**

Residential development will likely be the major land use change in the coming ten to twenty years and it will have the greatest long-term impact on the township’s natural resources, demand for public services, and overall community character.

Deerfield Township is interested in providing reasonable options for additional and varied housing opportunities. Opportunities for rural and suburban residential lifestyles are plentiful as soil conditions generally support home sites of approximately one to two acres or more in size. The presence of municipal sewer service in the township’s northeast corner opens opportunities for more varied and affordable housing. The potential for private community sewer systems serving individual neighborhoods further expands opportunities for small-lot lifestyles.

***Not only does the establishment of suburban and urban development areas facilitate varied housing opportunities to meet the varying housing and lifestyle needs of current and future residents, it also limits the extent of residential encroachment into less prudent areas such as farm areas.***

Research has documented that higher density housing, including multiple family development, typically has lower public services costs than less dense single family suburban housing.

If Deerfield Township’s population grows by 500 persons during the next 20 years, approximately 275 acres of farmland and other undeveloped land would require conversion to residential use to accommodate the additional 200 dwellings (based on an average lot size of 1.0 acre and a household size of 2.5 persons). However, the same 200 dwellings can consume as much as 2,000 acres (almost 10% of the township) or more if located on large lots of ten acres or more. This less efficient development pattern can

dramatically accelerate the rate at which the township’s farmland and other natural resources are converted to residential use including accessory yard/lawn areas.

Small acreage zoning across the entire township without any density limitations, such as one acre zoning, provides for a build-out population of approximately 10,000 dwellings and more than 30,000 persons. Such a growth pattern over an extended period of time will have dramatic effects on community character, natural resources, taxes, and public services demands. This is not the future vision residents have for their community.

***Public sentiment, and the township’s minimal growth during the past 20 years and limited projected growth in the near future, suggest that a comparatively limited area be set aside for more suburban and urban development patterns.***

Much of the residential development in the township today is of a strip pattern – residences are “stripped” along the existing county road frontages. This pattern of lot splits has become an increasing source of concern in the planning/transportation fields. This condition leads to an excessive number of driveways directly accessing the county roads and thereby increasing the level of congestion, traffic hazards, and travel times, and incrementally replacing rural road corridor view sheds with images of driveways, cars, and garages.

**HOUSING GOAL:** *Accommodate and maintain housing in a manner that provides a healthy residential environment in which persons and families can grow and flourish; recognizes the opportunities and constraints of the township’s public services, infrastructure, and natural features; preserves the overall rural character of the township and its farmland resources; and accommodates an appropriate balance and range of densities and lifestyles.*

**Objectives:**

- 1) Encourage the continued dominance of single family housing of an overall low density.
- 2) While maintaining single family housing of an overall low density as the primary housing option, identify limited areas for alternative housing options including small-lot neighborhoods, senior citizen living arrangements, and small-scale multiple family housing.

- 3) Coordinate higher density housing with locations that have greater access to potable water, sewage disposal, and other public services; improved thoroughfares; and increased proximity to consumer services.
- 4) Encourage alternatives to strip residential development along the frontage of existing state and county roads.
- 5) Encourage residential development that incorporates in the site planning process the preservation of on-site natural resource systems and open spaces, and the preservation of the township's rural character.
- 6) Encourage a housing stock that ensures affordable housing to all, including starter homes, while also ensuring all dwellings are of appropriate design to complement nearby conditions and the community as a whole.
- 7) Discourage uses and structures in residential areas that undermine the intended character and peacefulness of such areas, such as commercial encroachments and accessory buildings of excessive size or inappropriate location.
- 8) Encourage the rehabilitation of blighted homes and properties.
- 9) Assure adequate barriers and/or buffering where residential neighborhoods interface with commercial/industrial development.
- 10) Protect residential neighborhoods from encroachment by commercial and other incompatible land uses.

### COMMERCIAL SERVICES, INDUSTRY and ECONOMIC DEVELOPMENT

Deerfield Township includes a limited number of businesses of a traditional commercial or industrial character. These include two taverns along Bennett Lake Road, a convenience store at the Argentine/Faussett Roads intersection, and several vehicle and equipment repair businesses near and along Deerfield Industrial Drive.

The limited extent of commercial and industrial uses is not surprising. The township exhibits conditions that are not particularly supportive of commercial and industrial activity including limited public sewer, the lack of public water, a limited local and regional population base, and the presence of more appealing opportunities in nearby urban centers. In addition, many types of industry rely on immediate proximity to highway corridors.

Input received during this Plan's preparation suggests that residents do not support significant expansion of commercial or industrial activity. Nearly all present and future township residents will be within eight to 10 miles of the day-to-day commercial services available in Fenton and Howell, and many pass through regional urban centers during their daily commutes. Further, the township's current five acres of commercial land approaches the acreage commonly referenced for a neighborhood center (five to ten acres) serving 3,000 to 4,000 persons – a population similar to that of Deerfield Township today (4,170 persons, 2010 U.S. Census). However, the range of commercial services is limited.

***Commercial and industrial development that complements the township's rural character should be encouraged, including development characterized by appropriate limitations on signage, building heights and sizes, architecture, lighting, and landscaping, and the avoidance of expansive parking areas abutting thoroughfares, excessive curb cuts and conflicting turning patterns that undermine public safety.***

Commercial and industrial development can improve the community's overall economic stability and provide additional local employment opportunities.

Commercial uses can vary significantly in character. The character of Deerfield Township does not support commercial uses of a "big box" nature or similar uses that draw from a more regional market and which contribute to excessive traffic levels and public services demands. Similarly, intensive industrial uses that result in excessive public services demands, or produce external impacts such as noise, odors and similar features, are not compatible with the current and desired future character of the community.

The viability of future commercial and industrial activity is commonly linked to access, visibility, proximity to activity areas, and improved levels of public services including road infrastructure.

**COMMERCIAL SERVICES, INDUSTRY AND ECONOMIC DEVELOPMENT GOAL:** *Encourage economic stability through opportunities for commercial and industrial development of a comparatively limited scale and intensity, and which minimizes negative impacts on nearby uses, caters to the needs of the local population and supports the desired character of the community.*

**Objectives**

- 1) Evaluate opportunities and constraints for new commercial and industrial development to identify the most appropriate locations for such uses.
- 2) Ensure future commercial and industrial uses provide adequate measures for sewage disposal, potable water, storm water management and other public safety and welfare measures.
- 3) Encourage commercial and industrial development that is in character and scale with the township's rural character and surrounding land uses, considering such features as building size and height, architectural design, setbacks, signage, lighting, landscaping and screening, and open spaces.
- 4) Coordinate commercial and industrial development with areas of enhanced public services including road infrastructure.
- 5) Encourage economic development through the marketing of the special assets of the greater Deerfield Township area including the township's rural character and opportunities for agri-tourism.
- 6) Discourage commercial and industrial encroachment into residential areas while providing opportunities for home-based occupations under conditions that will support the desired character, appearance, and quality of life for the surrounding area.
- 7) Maintain reasonable controls on commercial and industrial uses such as noise, odors, glare, vibration, and similar operational features.
- 8) Limit commercial uses to those that cater to local consumer needs, or are otherwise of a character that do not generate excessive traffic levels and demands for public services.
- 9) Encourage the development of unified commercial facilities on a single site while discouraging strip development patterns
- 10) Limit industrial uses to those that are predominately characterized by assembly activities and similar "light" operations that do not require the processing of raw materials, nor negatively impact surrounding land uses and the community as a whole.

- 11) Encourage industrial uses within industrial park settings, characterized by ample open spaces and landscaping.

**CIRCULATION and MOBILITY**

As new residential and non-residential land uses are introduced into the township, demands on the roadway network will increase. Even low density residential development can significantly increase local traffic levels, and unpaved roads can accommodate only limited levels before they necessitate constant and costly maintenance. Increased traffic demands can be minimized through the coordination of road improvements with the planned future land use pattern and designated growth and development areas. The extent to which higher intensity land uses, including commercial and industrial uses, are in comparatively close proximity to improved thoroughfares will minimize future maintenance costs and traffic levels along other roads of lesser infrastructure.

Maintaining adequate vehicular circulation is not solely dependent on the road system itself. The future pattern of residential lot splits and subdivisions will have a significant impact upon the functioning of the township's roads. Residences "stripped" along the existing county road frontages can be debilitating:

- the increased number of driveways directly accessing the county roads increases the level of congestion and safety hazards
- travel times are increased
- the township's rich rural panoramic views of woodlands, fields, and other open spaces, as experienced from the roads, may be reduced to images of driveways, cars, and garages

***Community circulation extends far beyond just accommodating vehicular traffic. More and more attention is being focused on ensuring road systems take into consideration all potential user needs including pedestrians, bicyclists, and persons of all ages and physical conditions. The value of circulation systems designed for all potential users to facilitate non-motorized travel is recognized as an important part of long range environmentally friendly and healthy planning. Well planned and designed community and inter-community circulation systems can limit the reliance on fossil fuels and resulting environmental impacts, improve the health of local residents, and improve the quality of leisure time.***

**CIRCULATION and MOBILITY GOAL:** *Maintain a transportation network throughout the township that encourages efficient and safe travel, by vehicular, pedestrian, and other non-motorized modes, consistent with the rural character of the community and coordinated with the planned future land use pattern.*

**Objectives:**

- 1) Encourage the continuance of the township's gravel-dominated road network.
- 2) Identify priority road segments for systematic maintenance and improvement, based on the planned future land use pattern and existing and projected traffic patterns.
- 3) Discourage high-traffic generating land uses and development patterns along the township's secondary roads.
3. Work with the Livingston County Road Commission to discourage road improvements that will increase growth and development pressures in areas of the township not specified for such growth.
- 4) Encourage access management measures to minimize the potential for traffic congestion and safety hazards, including limitations on the number, size, and shape of new land divisions and limitations on curb cuts.
- 5) Encourage the inclusion of pedestrian/bicycle paths in association with new residential subdivisions and non-residential development to facilitate safe and convenient non-motorized movement for all potential users.
- 6) Encourage the linking of residential and commercial centers through non-motorized access ways.
- 7) Maintain communication and cooperative efforts with the Livingston County Road Commission to improve opportunities for safe non-motorized travel along all road segments.

**REGIONAL COORDINATION**

Deerfield Township exists within a regional network of communities, none of which are islands unto themselves. Deerfield Township abuts the townships of Argentine, Tyrone, Oceola and Cohoctah and four other townships at its corners, and its edges are within six miles of Linden, Fenton, Hartland and Howell. The township and nearby municipalities can greatly benefit by cooperatively pursuing common goals in the areas of land use and public services. Cooperative efforts are already in place, such as in the case of the Hartland Deerfield Fire Authority.

Planned land use and public services should take into consideration conditions in all abutting communities. Land use planning efforts should seek to establish a land use pattern compatible with surrounding conditions provided the goals of Deerfield Township are not undermined.

**REGIONAL COORDINATION GOAL:** *Guide development and public services in a manner that recognizes the position of Deerfield Township within the larger region, and the mutual impacts of Deerfield Township's planning efforts and those of its neighbor communities.*

**Objectives:**

- 1) Where practical, identify a planned future land use pattern that seeks to ensure compatibility
- 2) Work with surrounding township officials to coordinate land use planning efforts that will minimize the potential for land use conflicts.
- 3) Maintain a meaningful communication program with area municipalities and county agencies to discuss local and area-wide public facilities and services needs, land use conditions and trends, contemporary planning issues, and mutually beneficial strategies to address short and long-term needs and issues.

# Chapter Three FUTURE LAND USE STRATEGY

## Introduction

Deerfield Township’s principal planning components are contained in the Future Land Use Strategy, as discussed in this Chapter Three, and the Coordinated Public Services presented in Chapter Four. The Future Land Use Strategy identifies the desired pattern of land use, development and preservation throughout the township. Chapter Four presents guidelines regarding public services to help ensure that public services are coordinated with the planned land use pattern and the achievement of the Plan’s goals and objectives.

Implementation of the policies of this Chapter and Plan rests with regulatory and non-regulatory tools – most importantly the Deerfield Township Zoning Ordinance. The Zoning Ordinance generally regulates the type, location, bulk, and intensity of land development. The township may also utilize other supporting regulatory and non-regulatory tools to further the implementation of the policies of this Plan. Chapter Five discusses implementation strategies in more detail.

***The foundation on which the Future Land Use Strategy is rooted is the goals and objectives in Chapter Two including:***

- ***guide future development in a manner that ensures land use patterns compatible with public facilities and services***
- ***encourage compact growth and development areas***
- ***encourage the cost-effective use of tax dollars***
- ***encourage the preservation of farmland, natural resources and rural character***

The Future Land Use Strategy is based on an analysis of the township’s natural and cultural features such as community attitudes, existing land use, road network, existing and nearby public infrastructure, and environmental features including wetlands. Also considered were conditions in neighboring municipalities. The opportunities and constraints presented by these conditions were evaluated in the context of the goals and objectives in Chapter Two to arrive at a planned future land use pattern.

## Planning Areas

The Future Land Use Strategy divides the township into planning areas and identifies the predominant land use pattern planned for each. These areas collectively formulate the planned land use pattern. These areas are as follows:

- Resource Conservation Area
- Agricultural / Rural Residential Area
- Suburban Residential Area
- Commercial Areas
  - Argentine/Faussett Roads Commercial Area
  - Argentine / Center Roads Commercial Area
  - Bennett Lake Commercial Area
- Argentine Industrial Area

It is not the intent of this Plan to identify the specific land uses that should be permitted in each of these planning areas. This Plan presents broad-based policies regarding the dominant land use(s) to be in each. Specific permitted land uses will be determined by the zoning provisions of the township based on considerations of compatibility.

There may be certain existing uses that do not “fit” with the planned future land use pattern. This should not be necessarily interpreted as a lack of township support for the continuation of such uses. Zoning regulations will clarify this matter.

**Boundaries:** The approximate boundaries of the planning areas are illustrated on the Future Land Use Map at the end of this chapter. The boundaries are described as approximate. There is frequently room for discretion at the exact interface between the boundaries of two planning areas and appropriate uses at these points of interface. However, the approximate boundaries presented in this Plan have been considered carefully. The specified boundaries of the planning areas are purposeful. These areas are not intended to incrementally evolve into extended strip corridors or other expanded development zones contrary to this theme. Significant departures are strongly discouraged except for unique circumstances and only when the public health, safety and welfare will not be undermined.

***It is important to recognize that neither the Future Land Use Map nor the explanatory text of this chapter is intended to stand on its own. Both the policy discussions and map are inseparable and must be viewed together.***

**Appropriate Site Development:** Irrespective of the particular planning area, all nonresidential development should be of such character and design so as to encourage compatibility with adjacent and nearby land uses and the desired rural character of the township including site layout, principal buildings and accessory facilities. Such compatibility should be based on, in part, appropriate signage; building height, size, and bulk; setbacks; and landscaping and screening. Special care must be exercised during all phases of the review and approval of specific development proposals to ensure that proposed uses, buildings and other site modifications, and their interface with surrounding properties, enhances their compatibility.

***The establishment of private “community sewer systems” serving new neighborhoods is not a valid basis for development densities contrary to the policies presented in this chapter.***

Site development should incorporate the inclusion of nonmotorized travel and measures to enhance the safety and comfort of nonmotorized travel along road corridors and elsewhere.

## Resource Conservation Area

The Resource Conservation Area includes those portions of the township comprised of wetlands, river and stream corridors, and important public resource facilities such as Oak Grove State Game Area, Lutz Park and Deerfield Hills Nature Area. These resources provide important environmental benefits including habitats for wildlife, flood control, groundwater recharge and discharge, and surface water purification. In addition, they provide special opportunities for recreation and contribute to the township’s overall rural character and desirability as a place of residence. The Resource Conservation Area is intended to encourage the preservation of important natural resource areas.

In light of the critical role these natural resources play and the environmental and economic importance of the state game area, uses within the Resource Conservation Area should be predominantly limited to open-space and natural resource based conservation uses. Residential development is strongly discouraged except in association with land areas not characterized by wetlands, and development densities should be very limited.

Maximum development densities should generally not exceed one dwelling per 20 acres. Somewhat higher development densities may be reasonable in association with “open space preservation communities” as described in Chapter Five.

## Agricultural/Rural Residential Area

Farming plays an important role in the history and character of Deerfield Township, contributes important food and fiber to local and regional populations, encourages economic stability, and is an important source of income.

The Agricultural/Rural Residential Area includes approximately three-quarters of the township. The Agricultural Area is comprised nearly entirely of farmland and farming operations, along with scattered large-lot residential properties typically ranging from two to ten acres in area, along with open space areas including wetlands and woodlands. The intent of the Agricultural/Rural Residential Area is to provide opportunities for farming and encourage the preservation of farmland resources and the long-term viability of local farming, while also providing opportunities for rural residential home sites. Agriculture and single-family residences are intended to be the primary use of the acreage in this Area.

Lands in the Agricultural/Rural Residential Area are largely characterized by conditions that enhance their long term agricultural economic viability including:

- the presence of active farm operations
- acreage contained within parcels commonly approaching 20 acres or more
- limited encroachment by residential subdivisions and similar neighborhood developments, and other non-agricultural land uses
- enrollment of parcels in the P.A. 116 Farmland and Open Space Protection Program
- farm parcels adjacent to other farm parcels considered to offer similar opportunities for enhanced economically viable farming operations

It is intended that development densities in the Agricultural/Rural Residential Area be low. Limited densities are supported by a number of factors including, in part:

- the township’s commitment to protecting its farming industry and minimizing land use conflicts between farm operations and neighboring land uses
- the township’s commitment to managing growth, providing cost effective public services, and limiting suburban and urban development densities to specific and compact portions of the community
- the township’s commitment to protecting its natural resources and rural character
- the presence of a market for low-density rural lifestyles

**Key policies of the Agricultural Area are:**

1. The primary use of land should be agriculture, resource conservation and other open space areas, and home sites.
2. Secondary uses should typically be limited to those that are uniquely compatible with the environmental and/or rural character of the Area such as kennels, stables, golf courses, and bed and breakfasts.
3. Maximum development densities should be limited, ranging from one dwelling per two acres to one dwelling per 20 acres or more. Development densities for any specific property or area are to be based on the current zoning district structure in place, which establishes four agricultural – residential based districts that provide for minimum lot sizes of 2, 5, 10 and 20 acres, or some similar version of the current zoning structure concept. The appropriate development densities and location of the

respective districts should be generally based on existing development patterns and the comparative extent of long-term economically viable farming in the immediate area. More specifically, factors to be considered in locating the varying agricultural – residential based districts should include:

- prevailing lot sizes and densities in the immediate area
  - prevailing land use patterns including the presence of agricultural operations and the relative size (acres) of such operations
  - the extent areas of the township exhibit conditions that are supportive of economically viable agriculture such as soils, drainage and available tillable acreage
4. Rezoning petitions from one agricultural – residential zoning district to another should similarly take into consideration the factors noted above in (3), within the context of the property subject to the rezoning petition and the immediately surrounding area. When considering rezoning petitions, special consideration should be given to the extent that the subject property is surrounded by other parcels of similar zoning to that which is being proposed. The greater that the subject property is surrounded by parcels of similar zoning to that which is being proposed, or are of a higher density district than that which is being proposed, the appropriateness of approving the petition increases.
  5. Exceptions to the density limitations in (3) above may be appropriate in the case of “open space preservation communities” as described in Chapter Five.
  6. See “Keyholing” policies later in this Chapter.

***Prospective new residents in the Agricultural/Rural Residential Area should recognize that the traditional noises and agricultural operations associated with responsible farm operations are a significant component of the Agricultural Area and will continue on a long term basis. Deerfield Township does not consider such activities and operations as nuisances. The township supports the long term continuation and protection of responsible farm operations and the local farming industry. Local developers and real estate agents should disclose this information to prospective buyers of land.***

The Agricultural / Rural Residential Area encourages the continuation of all current farming activities as well as the introduction of new agricultural operations. All farming activities are encouraged including the raising of crops and livestock and the erection of associated structures, provided that they meet Department of Agriculture and Rural Development requirements for "generally accepted agricultural management practices" and any requirements of applicable township ordinances.

In light of the township's interest in maintaining the quality of life for existing households, reasonable care should be exercised in accommodating specialized agricultural operations that may have heightened impacts on surrounding land uses such as large concentrated livestock operations.

### Suburban Residential Area

The Suburban Residential Area occupies portions of the northeast quarter of the township and includes the lake-area neighborhoods along Lobdell Lake and Bennett Lake as well as vacant land where new residential development of similar character is considered appropriate. The Suburban Residential Area also includes several existing lakefront areas outside of the northeast quarter such as Lake Shannon and Hidden Lake, in recognition of their existing status and character.

The Suburban Residential Area provides for residential development of a more suburban and urban character than planned elsewhere in the township. However, the Lake Shannon area and other Suburban Residential Areas outside of the northeast quarter are not planned for further suburban/urban expansion, in recognition of more appropriate growth locations elsewhere.

The northeast region of the township is characterized by numerous conditions that support its appropriateness for future higher-density residential growth including the presence of existing urban and suburban development patterns, the presence of increased opportunities for sanitary sewer service, and area access to Bennett Lake Road, which in turn provides access to the White Lake Road/U.S.-23 interchange, three miles to the east.

**Key policies of the Suburban Residential Area are:**

1. The primary use of land should be single-family and two-family residences, including opportunities for comparatively higher density small-lot subdivisions where adequate provisions are made for potable water and sewage disposal.
2. Secondary uses should be principally limited to alternative living arrangements such as townhouses, apartments, retirement centers, and similar housing options, along with uses that directly support and enhance desirable residential areas such as schools, religious institutions, and recreation facilities.
3. All living arrangements should ensure healthy environments including sufficient open space and safe motorized and non-motorized circulation.
4. Maximum development densities should typically not exceed one dwelling per approximately one-half acre, provided adequate measures are in place for sewage disposal and potable water.
5. Development densities approaching three or more dwellings per acre may be reasonable but only after special review proceedings to determine if the proposed development densities are appropriate on the proposed property. Minimum guidelines that should be considered are:
  - adequate infrastructure and public services including sewage disposal and potable water
  - environmental limitations presented by site conditions
  - anticipated impacts on existing neighborhoods and opportunities for minimizing negative impacts through appropriate design measures
  - developments involving densities of four or more dwellings per acre should be of limited size, or be subject to phasing, to ensure that the desired character of the community is preserved and public health, safety and welfare will be maintained.
6. See "Keyholing" policies later in this Chapter.

### Commercial Areas

The Future Land Use Strategy establishes several planned "Commercial Areas."

- The Argentine/Faussett Roads Commercial Area is located at the intersection of Argentine and Faussett Roads and extends approximately 1,000' from the intersection in a radial manner.
- The Argentine/Center Roads Commercial Area is located at the intersection of Argentine and Center Roads and extends approximately 1,000' from the intersection in a radial manner.
- The Bennett Lake Commercial Area is composed of three different segments of Bennett Road. These three areas include the existing Snapper's site on the south side of Bennett Lake Road, the Oak Hickory Bar site along the north side of Bennett Lake Road, and



the vacant frontage along the north side of Bennett Lake Road generally between Close Dr. and the Clairmont Farms neighborhood.

These areas are considered appropriate for commercial growth and are characterized by one or more conditions that support commercial activity including the excellent access and visibility afforded by Argentine, Faussett and/or Bennett Lake Roads, comparatively high traffic volumes that facilitate convenient shopping opportunities and economic viability for entrepreneurs, and the presence of existing commercial activity. In addition, the Argentine/Center Roads Commercial Area benefits from its central location in the township and the local traffic to and from the Township Hall to the west.

The Commercial Areas are intended to provide opportunities for locally-oriented commercial services including convenience and other retail sales, restaurants, offices and service providers. Commercial uses should be limited to those that address the day-to-day needs of the local population and those traveling through the township along these key thoroughfares. Commercial uses should be of a comparatively small scale and be of a character and design and is sensitive to the desired rural character of the township.

Dwellings above commercial storefronts is recommended as a means to provide varied housing opportunities, evening security, and nearby consumers.

***There are existing residences in these Commercial Areas. The Plan supports the continued presence of these residences while, at the same time, supports the incremental conversion of such residences and/or residential lots to commercial use should there be interest by the respective land owner.***

To the extent that these residential properties remain in residential use, special provisions are to be employed where nonresidential uses are introduced, to ensure that adequate site layout, including buffer yards and screening, minimize negative impacts on existing home sites. Prospective residents to this general area should recognize that nearby properties may transition into commercial uses, subject to township review and approval.

## Argentine Road Industrial Area

The Argentine Road Industrial Area includes the existing parcels along Deerfield Industrial Drive on the west side of Argentine Road in the northeast quarter of Section 10 and extends approximately 300' to the north and south of Deerfield Industrial Drive along the Argentine Road frontage. This area includes the existing industrial and commercial establishments along Deerfield Industrial Drive and is afforded excellent access from Argentine Road. Comparatively few residences are located in the immediate area. Uses within the Argentine Industrial Area are intended to be of a low intensive industrial character such as assembly of pre-manufactured products, sheet metal fabrication, auto body and engine repair, and communication and information technologies.

## Preservation of Natural Resources

Deerfield Township includes abundant areas of woodlands, wetlands and water courses. In light of the importance of these resources, the Plan supports their protection. Preservation should take precedence over the unnecessary disturbance and/or destruction of these resources. These resources are vital parts of the township's environment, provide important environmental benefits including habitats for wildlife, flood control, groundwater recharge and discharge, and surface water purification. In addition, they provide special opportunities for recreation and contribute to the township's overall rural character and desirability as a place of residence and business.

Not all important natural resource areas may fall within the Resource Conservation Area described earlier in this Chapter or are otherwise delineated on the Future Land Use Map. The presence of such resources in areas designated for development should be recognized in the deliberation of rezoning, site plan, and similar proposals. Land uses requiring state and/or federal permits (especially for wetland or floodplain alterations) should not receive final township approval until satisfactory evidence has been submitted verifying the acquisition of all necessary permits. Where a portion of a parcel contains environmentally sensitive areas, development should be directed elsewhere on the site where practical alternatives exist.

### Keyholing

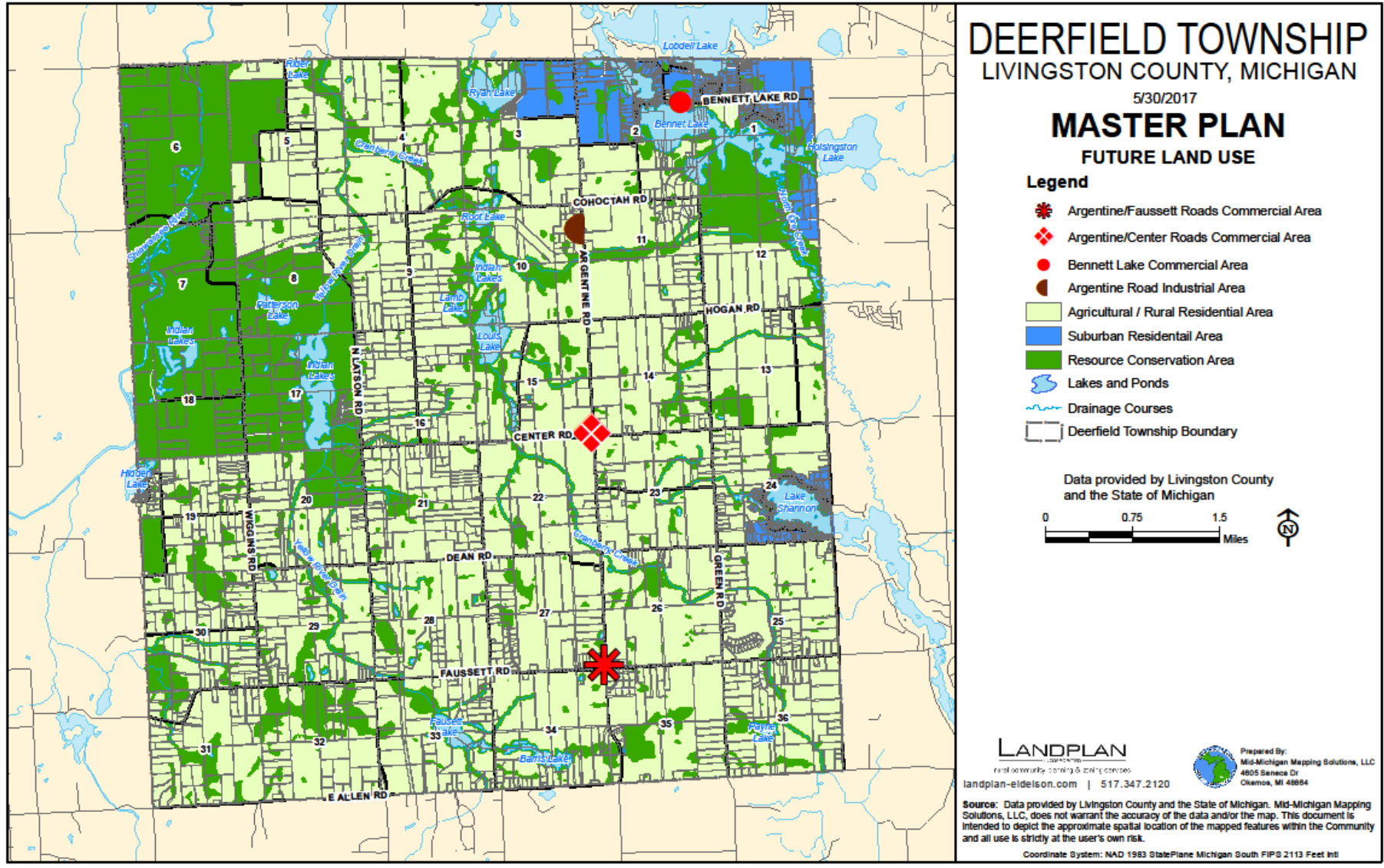
Keyholing, or funnel development, is the use of a waterfront lot as common open space for waterfront access for dwelling units located away from the waterfront. This results in potentially greater lake use than would normally occur if the lot were used for its intended use, such as a single family residence. As surface water use increases, so does the potential for shore erosion from speedboats, loss in property values, oil and gas spillage from powerboats, increased noise, conflicts between lake users (sailboats, fisherman, swimmers, etc.), and increased lake maintenance costs. Such threats become that greater when keyholing occurs with the digging of canals to increase lake frontage access to back lot residences. This form of development should be effectively regulated in the interest of preserving the water quality of the township's lakes, protecting the public health, safety, and welfare, and preserving local property values and the lake and shoreline character of the township's water resources.

***Keyholing regulations should address, at a minimum, minimum lot area and width of common use lots, minimum water frontage per dwelling having access to a common use lot, water quality protection, common use lot parking facilities and setbacks, litter control, dock spacing, and related use and development features.***

### Phased Zoning

This Plan recommends that the rezoning of land to a more intensive zoning district be done in a phased or incremental manner. For example, while the Plan may identify township locations that are appropriate to accommodate suburban residential development, the Plan does not recommend “across the board” or immediate rezonings of such land. The Plan recommends that rezonings to more intensive districts occur incrementally over time to ensure:

- adequate public services
- managed growth and development
- proper review of rezoning requests as they pertain to specific sites
- rezonings are in response to a demonstrated need
- no unnecessary hardships upon a landowner as a result of property assessments and/or the unintended creation of nonconforming uses and structures



# DEERFIELD TOWNSHIP LIVINGSTON COUNTY, MICHIGAN

5/30/2017

## MASTER PLAN

### FUTURE LAND USE

#### Legend

- Argentine/Faussett Roads Commercial Area
- Argentine/Center Roads Commercial Area
- Bennett Lake Commercial Area
- Argentine Road Industrial Area
- Agricultural / Rural Residential Area
- Suburban Residential Area
- Resource Conservation Area
- Lakes and Ponds
- Drainage Courses
- Deerfield Township Boundary

Data provided by Livingston County and the State of Michigan



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Source: Data provided by Livingston County and the State of Michigan. Mid-Michigan Mapping Solutions, LLC, does not warrant the accuracy of the data and/or the map. This document is intended to depict the approximate spatial location of the mapped features within the Community and all use is strictly at the user's own risk.

Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl

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## Chapter Four

# COORDINATED PUBLIC SERVICES

### Introduction

Chapter Three describes the planned pattern of land use throughout the township. Chapter Four discusses the public services strategy to be coordinated with the planned pattern of land use. The character and feasibility of land use and development is influenced by the extent to which public services are available. In addition, the character of public services can directly impact the perceived quality of life among residents in the community.

***An important principle of the Future Land Use Strategy is that no new development should occur in the township unless public services are adequate to meet the needs of that new development.***

On the other hand, public service improvements and the increased development that may result from such improvements should not jeopardize the township's preservation interests and commitment to managed growth and development. Thus, it is important that future public service improvements be coordinated with the planned pattern of future land use as described in Chapter Three.

### Circulation and "Complete Streets"

As growth and development occurs, demands on the road network will increase. The additional residential development anticipated in this Plan will result in higher traffic levels. This increased traffic may lessen the level of service along some of the township's road segments. Conversely, it must be recognized that road improvements may well attract new development which, in turn, will place additional demands on the road network.

The township's road infrastructure currently fulfills its function reasonably well for vehicular traffic. This is due, in large part, to the existing low development density throughout most of the township and the paved status of important thoroughfares such as Argentine, Faussett and Bennett Lake Roads.

However, opportunities for safe pedestrian and non-motorized travel are comparatively limited. Safe pedestrian and non-motorized travel has received greater and greater focus within the planning arena, on local, regional, state and federal levels. The provision of opportunities for safe and comprehensive pedestrian and non-motorized travel has been found to encourage health in individuals, provide alternative means of recreation, and lessen congestion, air pollution, and the consumption of fossil fuels. The importance of safe and comprehensive pedestrian and non-motorized travel led to the Michigan Legislature to amend the Planning Enabling Act in 2010 to require a "complete streets" element in a master plan. Placing the automobile as the sole design factor for roads is no longer the "norm."

***"Complete streets" generally refers to the design of roads that take into account the circulation needs of all potential users including pedestrians, bicyclists, motorists, and public transportation users. The "complete streets" program emphasizes safety along roads for all users and users of all age groups. While recognizing that there is no single "complete streets" design solution that applies to all roads in all communities, the program emphasizes the need for new roads to be designed, and existing roads be improved, to facilitate their safe and efficient use by all prospective users within the context of the particular community's needs and character.***

As a rural community, implementation of a "complete streets" program is different than that of an urban center such as in the case of Howell and Brighton. While an urban community may pursue sidewalks, bike lanes or paved shoulders, bus lanes, convenient public transportation stops, median islands, frequent and well marked cross-walks, and other measures, rural communities such as Deerfield Township typically have fewer options and frequently focus on paved shoulders. However, even in rural communities, the feasibility of implementing a wider scope of "complete streets" measures increases in the community's planned residential and non-residential development areas.

The Livingston County Road Commission has jurisdiction over local public roads. Still, the township has the opportunity to provide input regarding road maintenance, design and improvements.

**Circulation/Complete Streets Policies:**

1. Greatest priority for road improvements will be assigned to those road segments whose current conditions present imminent danger to the public health, safety and welfare, such as in the case of road impasses and flooding.
2. Functional classification of roads will dictate the priority of improvements when all other conditions are generally equal. The functional importance of the roads in the township, from highest to lowest, is: a) county primary roads, particularly those segments servicing the Future Land Use Strategy’s Suburban Residential, Commercial and Industrial Areas; b) county local roads, particularly those segments servicing the Future Land Use Strategy’s Suburban Residential, Commercial and Industrial Areas, but excluding roads in a platted subdivisions and similar neighborhood developments; and 3) minor roads, such as local subdivision roads and similar neighborhood development roads.
3. No new roads or road extensions should be undertaken except upon a clear finding of need to ensure public safety and welfare or to provide access to new development projects, such as the provision of access to lots in new subdivisions.
4. All roads will be designed and constructed to County Road Commission standards except upon a finding that, in specific instances, such standards do not justify the impact on the natural environment and rural character of the community or are otherwise unnecessary, and lesser standards will not undermine public safety and welfare including the long term stability of the road infrastructure.
5. All proposed future road construction will be evaluated carefully for local and regional impacts on traffic flow, congestion, public safety and land use. New road construction will be coordinated with other local and regional road improvements to address traffic movement in a unified, regional and comprehensive manner.
6. The township will explore the development of a non-motorized circulation plan to encourage the provision of trails and linkages between neighborhoods, schools, and other activity centers in the community including in association with new residential developments. (See also “Recreation” section in this Chapter.)
7. The township will work with the County Road Commission to incorporate “complete streets”

measures in road construction, maintenance and improvements.

8. The township will evaluate proposed developments within the context of “complete streets” to ensure all users of a development are afforded opportunities for safe and efficient travel within and between development sites including neighborhoods and commercial/industrial areas.

**Sewage Disposal and Potable Water**

There is no public water service in Deerfield Township. Public sewer service is limited to portions of the township's northeast corner in the area of Bennett and Lobdell Lakes. The vast majority of residents rely on private wells and septic systems for potable water and sewage disposal.

As development densities increase, so does the need for public sewer and water. Industrial, commercial, and higher density residential land uses generally have greater sewage disposal and potable water needs than can often be met by traditional on-site facilities. Failure to provide adequate sewer and water facilities to these land uses can lead to severe health and environmental problems, while the premature provision of these services can lead to accelerated and unmanaged growth and development.

***Many of the township soils present severe limitations to on-site sewage disposal. Improperly operating septic systems can contaminate potable groundwater resources, lakes and streams and this poses a public health threat. This condition highlights the critical relationship between land use, development intensities, and adequate measures for sewage disposal and potable water.***

**Sewage Disposal and Potable Water Policies:**

1. All on-site sewage disposal and potable water facilities will be constructed and maintained in accordance with the requirements and standards of the Livingston County Public Health Department, Michigan Department of Health and Human Services, and other applicable public agencies.
2. The township will support the extension of public sewer and water in the planned Suburban Residential Area, where initiated by private sector interests and in coordination with the policies of the Suburban Residential Area.
3. Public sewer and water services will not be introduced into planned agricultural areas except in response to a significant public health threat and

where no other practical means of addressing the threat is available.

4. Any introduction or expansion of public sewer and/or water service, and associated infrastructure, will occur in a phased and incremental manner to ensure effective growth management.
5. The introduction or expansion of public sewer and/or water should be based upon sound engineering principles and infrastructure design that will facilitate incremental increases in demand on the system while, at the same time, will not create excessive capacity that will encourage expansion into planned agricultural and rural residential areas.

### Storm Water Management

As buildings, parking lots and other impermeable surfaces associated with new development cover more of the township’s land surface, the quantity of storm water runoff increases. The vegetated landscape that previously absorbed and slowed much of the water associated with storms is replaced by impervious surfaces. Unless specific preventive measures are taken, this condition encourages flooding, soil erosion, sedimentation and pollution of water resources. The township’s water resources, including its numerous lakes, the Yellow River Drain, Cranberry Creek and the south branch of the Shiawassee River, and their associated wetlands, are vulnerable to degradation.

Attention should also be directed to ensuring adequate drainage of farmlands. Storm water management is not a development issue only. While development can pose increased flood potential, improper maintenance of county drains and roadside ditches, and filling of wetlands, can increase flood conditions in agricultural and rural areas.

***Though flooding, soil erosion, sedimentation and pollution may originate from site-specific circumstances, their impact can extend to adjacent properties and more regional areas including other downstream communities. Storm water management aims to minimize flood conditions and control the quality and quantity of runoff that is discharged into the watershed system (streams, rivers, wetlands, lakes, etc.) from a development site.***

### Storm Water Management Policies:

1. Increased runoff that may occur as a result of property development will be appropriately managed to ensure that the quality of the water runoff discharged is of such quality that it does not undermine the integrity of the township’s surface and ground water resources.
2. Proposed land uses will not be permitted if the level of service currently provided by existing storm water management infrastructure and/or existing drainage patterns will be decreased, unless necessary improvements to such infrastructure or natural drainage courses are first made.
3. New and existing land uses shall comply with all local, county, state, and federal regulations regarding storm water management and soil erosion, including the regulations of the Livingston County Drain Commissioner, except where local officials determine less stringent standards in site-specific instances are appropriate and will not undermine the public health, safety and welfare.
4. Storm water management measures will emphasize “green infrastructure” – planned networks of natural lands, functioning landscapes and other open spaces that minimize alterations to the natural landscape and lessen the reliance on storm sewer and similar “grey” infrastructure.
5. All development will be reviewed within the context of its impact on drainage corridors and surface and groundwater resources, including wetlands, to ensure discharge practices do not undermine the environmental integrity of these resources.
6. The Township will maintain regular communication with the Livingston County Drain Commissioner and Road Commission regarding drains and roadside ditches in disrepair.

### Emergency Services

Deerfield Township provides fire protection to area residents through the Hartland Deerfield Fire Authority – a joint fire authority between Hartland and Deerfield Townships. The Authority maintains a station at the Deerfield Township Hall on Center Road. Ambulatory service is provided principally by Livingston County EMS, a county-operated service. Police protection services are provided principally by the Livingston County Sheriff’s Department, with the State Police providing emergency services on a limited basis during times of special need.

As community growth and land development increases, so does the demand for emergency services. It is important that the township ensure that adequate fire and police protection services are available to existing and future residents and property.

The community survey undertaken as part of the development of this Master Plan suggests that police and fire protection is currently viewed as adequate. Commonly referenced industry standards regarding fire protection suggest a maximum service radius from a fire station in low density residential areas of approximately 3 miles, and an approximately 3/4 to 2 mile service radius in commercial, industrial, and high density residential areas. There are portions of the township that are not within these recommended ranges – particularly the corner portions of the township. Mutual aid agreements with surrounding municipalities may address these deficiencies. There are no widely accepted standards for police protection levels and is frequently measured as a function of public satisfaction.

**Police and Fire Protection Policies:**

1. The township will require the provision of fire protection infrastructure (wells, water lines, etc.) for all new developments which are of such size and density that on-site infrastructure is considered critical. On-site fire protection infrastructure will generally be considered necessary for residential developments that concentrate building sites on lots of approximately one-half acre or smaller.
2. The township will continually monitor police and fire protection needs and services to minimize and/or prevent emergency services deficiencies, and explore improving service levels. Considerations for expansion of services will include both the expansion of joint services with neighboring municipalities and the establishment of independent operations.

**Recreation**

Deerfield Township operates a single park – the Deerfield Hills Nature Area in the northeast corner of the township in Sections 1 and 12. The park covers approximately 375 acres and is of a resource conservation character, comprised principally of woodland and wetland environments through which trails are present.

Deerfield Township also includes the state-owned and managed Oak Grove State Game Area. The principal goals of Michigan state game areas are to preserve wildlife habitats and provide opportunities for hunting and passive recreation. The third public recreation facility in the township is the Lutz County Park in the township’s northwest corner, which is also programmed principally as a resource conservation and interpretive facility.

Deerfield Township residents also have access to regional recreation opportunities, most of which are of a resource conservation/recreation character, most particularly state recreation areas.

*The well being of the township’s residents is affected by the availability of recreation opportunities, and the type and availability of nearby recreation facilities are important.*

Demands for recreation opportunities increase with population growth. Available land for recreational purposes decreases as housing and other land uses consume more of what was open space and potential outdoor recreation land. Recreation lands must be appropriately located within the community. The township’s commitment to ensuring adequate recreation opportunities for its residents is reflected in the Township Board’s adoption of the 2009 Deerfield Township Recreation Plan. The Plan addresses existing conditions in the township including recreation opportunities and deficiencies, and presents a strategy for improving recreation conditions.

The Master Plan supports the recommendations of the Deerfield Township Recreation Plan.

*The Deerfield Township Community Recreation Plan is available for review at the Township Hall for those desiring a more detailed understanding of the Plan.*

**Recreation Policies:**

1. The township will periodically monitor the extent to which area residents are satisfied with recreation opportunities in the general area.
2. The township will periodically evaluate its Parks and Recreation Plan and update the Plan as deemed appropriate, and submit all updates to the MDEQ for approval to ensure continued eligibility to compete for state and federal recreation grants.
3. Where there is a demonstrated demand for recreation improvements, and as financial resources may become available, the township will strive to provide recreation facilities in a manner that recognizes the particular recreation needs of its residents.
4. The township will encourage the provision of open space and recreation areas within future residential development projects such as platted and condominium subdivisions, to facilitate close-to-home recreation opportunities.
5. The township will make the short and long-term maintenance of existing recreation facilities a



priority including adequate funding to support such efforts.

6. The township will ensure that all recreation facilities are accessible by all persons, including encouraging recreation sites in planned residential growth areas and facilitating access within each park site for all persons, irrespective of physical limitations of prospective users.

### Information and Technology Access

Our society has been dramatically molded by advanced technology including wireless communications, the internet and computer programs and applications. Availability of reliable cellular phone service and high-speed internet access (broadband) is now commonly linked to quality of life measures. Local, regional and global economies rely heavily on these tools including persons and entrepreneurs who work from their home. Emergency services are greatly enhanced when access to such technology is readily available including the generation of and analysis of data to improve efficiency and levels of service. Personal communications and leisure time are significantly linked to cellular phones and internet surfing. Personal and business research and consumer purchasing through the internet is a regular practice in many households. Entrepreneurs, businesses and job-seekers consider access to information and technology services in selecting places to locate.

Rural areas frequently experience a reduced level of access to reliable cellular service and high-speed internet access. Deerfield Township is no different in this regard, as nearly half of the respondents to a survey conducted as part of the development of this Master Plan identified cellular, cable, internet and/or broadband service as being unsatisfactory.

### Technology and Information Access Policies:

1. The township will communicate with local broadband providers to explore impediments to enhanced services and options to improve services.
2. The township will communicate with local municipalities to explore joint efforts to attract broadband providers and improve services on a regional level and in a coordinated manner.
3. The township will periodically evaluate zoning provisions to minimize impediments to cellular service while, as the same time, ensuring potential negative impacts of cellular towers for area residents are minimized.

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# Chapter Five IMPLEMENTATION

## Introduction

This Master Plan establishes a strategy for growth, development and preservation in Deerfield Township. The Plan is comprised of graphic and narrative policies intended to provide basic guidelines for making reasonable, realistic community decisions. It establishes policies and recommendations for the proper use of land and the provision of public services and facilities. The Plan is intended to be used by local officials, by those considering private sector developments, and by all residents interested in the future of the township.

***This Plan is a policy document. As a policy document, the Plan's effectiveness is directly tied to the implementation of its policies through specific tools and actions.***

The completion of the Plan is one part of the planning process. Realization or implementation of the goals, objectives and policies of the Plan can only be achieved by specific actions, over an extended period of time, and through the cooperative efforts of both the public and private sectors.

**Implementation of the Plan may be realized by:**

- encouraging knowledge, understanding, and support of the Plan by residents and the business community, and the continued communication with and involvement of the citizenry
- providing a program of capital improvements and adequate, economical public services to accommodate desirable development.
- pursuing an action plan to address the objectives presented in Chapter Two
- regulating the use and manner of development through up-to-date reasonable zoning controls, subdivision regulations, and other regulatory and non-regulatory tools
- maintaining a current master plan

The purpose of this Chapter is to identify important implementation tools available to the township.

## Public Support, Communication and Community Involvement

Citizen participation and understanding of the general planning process and the specific goals, objectives and policies of the Plan are critical to the success of the township's planning program. Understanding and support of the Plan by local citizens can greatly enhance its implementation. This enhancement may be found in citizen support for bond proposals, special assessments, zoning decisions, and development proposals.

In order to organize public support most effectively, the township must emphasize the necessity of, and reasons for long-range planning and the development of the Master Plan.

Specific actions to be undertaken to encourage public understanding and support of the township's planning program, and the continued communication with and involvement of the citizenry, are as follows.

1. Ensure that copies of the Master Plan are available at the township hall and on the township's web site.
2. Post the Future Land Use Map in the township hall where it is clearly visible.
3. Post a regularly updated listing of current events pertaining to planning and zoning matters at the township hall and on its web site.
4. Through public notices, newsletters, township hall postings, web site postings, and other means, apprise residents of:
  - the planning efforts of the township
  - meetings that will address development and public service improvement proposals as the projects move through review
  - proposed developments and land use decisions under consideration, and where individuals may acquire additional information on such matters
5. Periodically hold special meetings for the specific purpose of discussing the township's planning efforts and providing residents with the opportunity to share concerns and suggestions.

- 6. Encourage “neighborhood watch” programs in each neighborhood to promote safety, cooperation and communication.
- 7. Maintain regular and continued communication with neighboring communities and encourage coordination of planning efforts.

As the township grows and increased demands for public services and infrastructure improvements surface, the benefit of a comprehensive capital improvement program will grow.

### Capital Improvements Programming

The use of capital improvements programming can be an effective tool for implementing the Master Plan and ensuring the orderly programming of public improvements. In its basic form, a Capital Improvements Program (CIP) is a complete list of all proposed public improvements planned for a six year period (the time span may vary) including costs, sources of funding, location, and priority. It is a schedule for implementing capital improvements that acknowledges current and anticipated demands, and recognizes present and potential financial resources available to the community. The CIP is not intended to encourage the spending of additional public monies, but is simply a means by which an impartial evaluation of needs may be made.

***The importance of CIPs is highlighted by the fact that Sec. 65 of the Planning Enabling Act strongly endorses capital improving planning for all communities, and mandates that a township prepare an annual six-year CIP if the township owns or operates a water supply or sewage disposal system.***

The CIP outlines the projects that will replace or improve existing facilities, or that will be necessary to serve current and projected land use development within a community. Advanced planning for public works through the use of a CIP ensures more effective and economical capital expenditures, as well as the provision of public works in a timely manner. Few communities are fortunate enough to have available at any given time sufficient revenues to satisfy all demands for new or improved public facilities and services. Most communities are faced with the necessity of determining the relative priority of specific projects and establishing a program schedule for their initiation and completion.

This Master Plan does not recommend specific increases in public services or infrastructure, and includes no recommendations for the expansion of public sewer or water, the acquisition of additional park sites, or the construction of an additional fire station. Still, regularly prioritizing even “minor” community improvements is an important part of the planning process.

### Objectives Action Plan

The objectives presented in Chapter Two serve as strategies to reach the goals of this Master Plan, also presented in Chapter Two, and to put in place the policies of Chapter Three (Future Land Use Strategy) and Chapter Four (Public Services Strategy). Some of the objectives require comparatively short periods of focus for successful implementation (one or several years) while others may require a longer implementation period and continued maintenance as a regular annual effort each and every year.

***The Chapter Two objectives are of limited value unless they are routinely and regularly reviewed and an annual action plan is developed to identify those objectives to pursue in the coming year and each subsequent year, and the recommended township entity that is best suited to take the lead in furthering the selected objective(s).***

Undertaking the implementation of an excessive number of objectives during a single year is likely not realistic and may lead to very little being accomplished. Identifying a realistic set of annual objectives to direct efforts toward may ultimately lead to a more successful long-term implementation program.

The Planning Commission and Township Board should meet annually:

- to prioritize objectives to be pursued in the coming several years and those that should take priority in the immediate year ahead
- to identify the entity to take charge in the respective objective’s implementation
- to identify the steps to be taken for the objective’s implementation
- to identify from where funding is to be provided (if funding is necessary)
- to report on the status of implementation efforts during the previous year

Prioritization of the objectives should be based on such factors as public safety, economic stability and growth, comparative need, comparative impact community wide, and the number of residents and/or businesses that benefit.

**Development Codes and Programs**

**Zoning Ordinance**

A zoning ordinance is the primary tool for implementing a Master Plan. A zoning ordinance regulates the use of land. The ordinance generally divides a community into districts and identifies the land uses permitted in each district. Each district prescribes minimum standards that must be met such as minimum lot area, lot width, and building setbacks. Since 2006, zoning regulations for Michigan communities are adopted under the authority of the Michigan Zoning Enabling Act, P.A. 110 of 2006.

*The purpose of zoning, according to the Michigan Zoning Enabling Act, is to (in part): “regulate the use of land and structures; to meet the needs of the state’s citizens for food, fiber, energy, and other natural resources, places of residence, recreation, industry, trade, service, and other uses of land; to insure that use of the land shall be situated in appropriate locations and relationships; to limit the overcrowding of land and congestion of population, transportation systems, and other public facilities.”*

Deerfield Township has had local zoning in place for more than 50 years. Its current ordinance was adopted in 2002 and it has been periodically amended. With the adoption of this Master Plan, the township’s zoning ordinance should again be carefully reviewed to identify amendments that may be beneficial to implement the policies of the Plan and facilitate efficient day-to-day zoning administration.

Adoption of zoning regulations by the Township Board provides the legal basis for enforcement of zoning provisions. The ultimate effectiveness of the various ordinance requirements is dependent on the overall quality of ordinance administration and enforcement. If administrative procedures are lax, or if enforcement is handled in an inconsistent, sporadic manner, the result will be unsatisfactory. The Planning Commission, Township Board, and staff are responsible for carrying out zoning/development related functions including the review of development plans and site inspections. These functions can require special expertise and a substantial investment of time to ensure that these essential day-to-day functions are met and appropriate development is facilitated.

**Deerfield Township Zone Plan**

The following pages present a Zone Plan. The Zone Plan establishes a foundation for the township’s zoning regulations. The Zone Plan is comprised of three elements. The Michigan Planning Enabling Act requires that a Master Plan include a Zone Plan.

**Zone Plan – Part One**

Part One of the Zone Plan presents **guidelines for the presentation of zoning districts** in the Deerfield Township Zoning Ordinance to implement the Future Land Use Strategy presented in Chapter Three of the Master Plan including the Future Land Use Map.

**Zone Plan – Part Two**

Part Two of the Zone Plan presents **guidelines for basic site development standards** for the zoning districts to implement the Future Land Use Strategy presented in Chapter Three of the Master Plan including the Future Land Use Map.

**Zone Plan – Part Three**

***Critical Components of the Deerfield Township Zoning Ordinance.***

Part Three of the Zone Plan identifies **important ordinance elements** that the Deerfield Township Zoning Ordinance should include to ensure its ease of use and effectiveness in advancing the goals, objectives and policies of the Master Plan. The ordinance should be reviewed within the context of these elements.

Zone Plan – Part One

Table of Recommended Zoning Districts and Relation to Future Land Use Map

The following table presents general guidelines for the presentation of zoning districts in the Deerfield Township Zoning Ordinance, to implement the Master Plan’s Future Land Use Strategy (including Future Land Use map) including the principal types of uses envisioned for each district. Secondary uses identified in the table, or others specified in the Zoning Ordinance, should typically be subject to comprehensive review to determine if the proposed use is appropriate on the subject site based on, in part, compatibility with surrounding land uses, environmental conditions, road infrastructure, and public services. The Zoning Ordinance may incorporate other more specialized overlay or other districts to address such matters as uses and development in floodplains, along surface waters, and/or “planned unit development” provisions as authorized by the Zoning Enabling Act.

Zoning District (example names)	Primary Relationship to Future Land Use Map	Primary Intended District Uses	Examples of Potential Secondary District Uses
<b>RP-1</b> <b>Resource Protection</b>	Resource Conservation Area	Wildlife management areas, public hunting preserves and agriculture	Bed and breakfasts, campgrounds and kennels
<b>A-1</b> <b>Agricultural</b>	Agricultural/Rural Residential Area	Agriculture and single-family residences	Outdoor recreation centers, golf courses, veterinarian clinics, kennels, bed and breakfasts, shooting ranges, and campgrounds
<b>A-2</b> <b>Small Farms</b> <b>A-3</b> <b>Small Farms</b> <b>A-4</b> <b>Small Farms</b>	Agricultural/Rural Residential Area	Agriculture, and single-family residences of incrementally greater density, ranging from 1 dwelling per 10 acres (A-2), one dwelling per 5 acres (A-3), and one dwelling per 2 acres (A-4)	Kennels, bed and breakfasts, shooting ranges, and campgrounds
<b>R-1</b> <b>Low Density Residential</b> <b>R-2</b> <b>Medium Density Residential</b> <b>R-3</b> <b>High Density Residential</b>	Suburban Residential Area	Single-family residences of incrementally greater density, ranging from 1 dwelling per 30,000 sq. ft. (R-1), 1 dwelling per 15,000 sq. ft. (R-2), and 1 dwelling per 7,000 sq. ft. (R-3)	Religious institutions, bed and breakfasts, cemeteries, schools, libraries, and utility substations
<b>R-MHC</b> <b>Manufactured Housing Community</b>	Suburban Residential Area	Manufactured housing communities	Religious institutions, nursing and convalescent facilities, and utility substations
<b>R-MF</b> <b>Multiple Family</b>	Suburban Residential Area	Multiple family developments	Religious institutions, nursing and convalescent facilities, assisted living facilities, and utility substations
<b>B-1</b> <b>Local Business</b>	Commercial Areas	Retail, office and personal service uses, catering to local needs	Banquet halls, clubs, indoor recreational facilities, day care centers, and funeral homes
<b>I-1</b> <b>Light Industrial</b>	Argentine Industrial Area	“Light” industrial uses such as assembly of pre-made parts, tool and die, saw mills and laboratories	Concrete/asphalt plants, junk yards, truck terminals, and fuel storage

**DEERFIELD TOWNSHIP MASTER PLAN**

**Zone Plan – Part Two  
Table of Zoning District Site Development Standards**

The following table establishes general guidelines for the basic site development standards of the zoning districts intended to implement the Future Land Use Strategy in Chapter Three (including the Future Land Use Map). The table’s standards establish a realistic concept for each district. All guidelines below are approximate and serve as a framework for detailed Zoning Ordinance standards.

Conditions may suggest divergences from the guidelines to resolve conflicts or otherwise ensure the public health, safety and welfare, such as exceptions to the height guidelines for special buildings and structures, exceptions to the setback guidelines where neighboring uses may suggest more stringent standards such as a commercial use adjacent to a residential lot, or more stringent lot width standards as part of an access management program.

Zoning District (example name)	Minimum Lot Area	Minimum Lot Width and Frontage	Maximum Building Heights	Maximum Lot Coverage	Minimum Yard Setback		
					Front	Side	Rear
	(each)						
<b>RP-1 Resource Protection</b>	20 acres	600 ft.	35 ft.	5% – 10%	50 ft.	20 ft.	20 ft.
<b>A-1 Agricultural</b>	20 acres <sup>1</sup>	600 ft.	35 ft.	5% – 10%	50 ft.	20 ft.	20 ft.
<b>A-2 Small Farms</b>	10 acres	330 ft.	35 ft.	10% – 15%	50 ft.	20 ft.	20 ft.
<b>A-3 Small Farms</b>	5 acres	330 ft.	35 ft.	10% – 15%	50 ft.	20 ft.	20 ft.
<b>A-4 Small Farms</b>	2 acres	200 ft.	35 ft.	10% – 15%	50 ft.	20 ft.	20 ft.
<b>R-1 Low Density Residential</b>	30,000 sq. ft.	100 ft.	35 ft.	20% – 25%	40 ft.	20 ft.	20 ft.
<b>R-2 Medium Density Residential</b>	15,000 sq. ft.	80 ft.	35 ft.	20% – 25%	35 ft.	15 ft.	20 ft.
<b>R-3 High Density Residential</b>	7,000 sq. ft.	60 ft.	35 ft.	30%	25 ft.	10 ft.	20 ft.
<b>R-MHC Manufactured Housing Community</b>	Conformance with Rules and Regulations of the Michigan Manufactured Housing Commission						
<b>R-MF Multiple Family</b>	1 acre	200 ft.	35 ft.	30%	50 ft.	30 ft.	50 ft.
<b>B-1 Local Business</b>	1 acre	200 ft.	30 ft.	50%	50 ft.	20 ft.	20 ft.
<b>I-1 Light Industrial</b>	1 acre	200 ft.	30 ft.	50%	50 ft.	20 ft.	20 ft.

Footnotes

- Limited number of minimum two-acre splits are considered reasonable according to appropriate standards. See also Chapter Five for smaller lots in association with “Clustering/Open Space Developments.”

**Zone Plan, Part Three – Important Components of the Deerfield Township Zoning Ordinance.** The following identifies important general elements that the Deerfield Township Zoning Ordinance should include to ensure its ease of use and effectiveness in advancing the goals, objectives and policies of the Master Plan. The ordinance should be reviewed within the context of these elements:

1) Procedural Matters/Plan Review

The Zoning Ordinance should be reviewed to ensure it includes clear and comprehensive step-by-step provisions addressing procedural matters such as the application process and approval standards for zoning permits, amendments, matters that come before the Zoning Board of Appeals, and enforcement efforts.

***The zoning permit application procedures should include clear requirements for the submittal of necessary plans illustrating proposed modifications to a site, to enable officials to determine compliance with all standards of the Ordinance.***

The provisions should ensure such plans include comprehensive information pertinent to the development such as the delineation of existing natural features, the extent of alterations to such features, and the salient features of the development including buildings, parking, screening, lighting, grading and storm water management.

The Zoning Ordinance should include a comprehensive set of approval standards addressing such matters as access management and vehicular/pedestrian circulation, emergency vehicle access, natural resource protection, utilities, storm water management and compatibility with surrounding conditions.

2) District Provisions/Special Land Uses

The ordinance should include a clear and comprehensive presentation of zoning districts including the purpose, authorized uses, and development standards for each. To this end, the districts should differentiate between uses authorized “by right” versus as “special land uses.”

**Uses permitted by right** are the primary uses and structures specified for which a particular district has been established. An example may be a dwelling in a residential district.

**Special land uses** are uses that are generally accepted as reasonably compatible with the primary uses and structures within a district but,

because of their particular character, may present potential injurious effects upon the primary uses in the district or are otherwise unique in character, and it may not be appropriate in certain situations or on certain parcels. An example may be a kennel in a residential district.

***Special land uses require special consideration in relation to the welfare of adjacent properties and to the township as a whole, and may not be appropriate in all locations.***

3) Site Development Standards

In addition to the standards presented in the Zoning Ordinance for each district, such as minimum lot area, width, and setbacks, the Ordinance should be reviewed to ensure it presents clear and comprehensive standards addressing more general fundamental site development issues such as:

- a. Proper access to ensure public safety and welfare including access management along thoroughfares, emergency vehicle access, and non-motorized circulation.
- b. Off-street parking and loading to ensure adequate facilities are provided on a development site and design features encourage safe and efficient circulation for all.
- c. Landscaping and screening provisions that ensure new development (commercial, industrial, institutional, etc.) is compatible with surrounding conditions and supportive of the desired character of the community.
- d. Sign regulations to ensure local signage does not contribute to traffic safety hazards, visual clutter, confusion for vehicle drivers, visual blight, and decreased property values.
- e. Environmental safeguard provisions to ensure new development minimizes disturbances to the township’s natural resources including keyholing and storm water management.

4) Nonconformities

The Zoning Ordinance should address lots, uses and structures that are nonconforming due to changes to the zoning ordinance, and the extent to which such lots, uses and structures can be replaced, expanded, enlarged, or otherwise altered.



5) Site Condominium Regulations

The Zoning Ordinance should address site condominiums. Site condominiums come in many forms, but they typically involve residential developments that look identical or nearly identical to platted subdivisions. The principal differences between the two is that while privately owned lots comprise the entirety (or near entirety) of a platted subdivision, site condominiums are comprised of privately owned (or rented) building envelopes where there are no “lot lines” and greater portions of the development are commonly owned. Site condominiums are not comprised of “lots” in the traditional sense. Zoning regulations must clearly address this form of development and correlate site condominium development with “lot” regulations to ensure such development is subject to the same review procedures and standards as otherwise applicable to other residential development of similar physical character (platted subdivisions).

6) Clustering / Open Space Developments

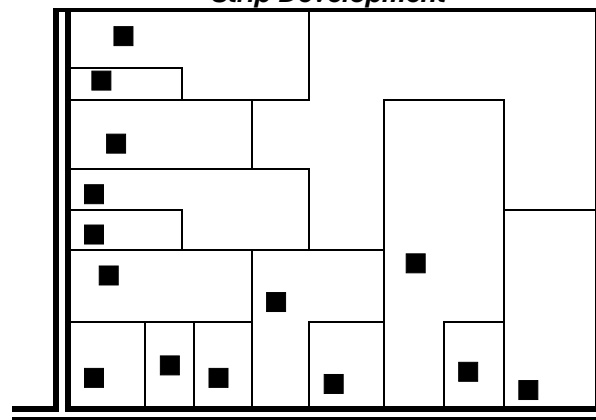
As a tool to facilitate the conservation of important natural resources and ecosystems, this Plan supports what are commonly referred to as “cluster developments” and “open space developments” in association with platted subdivisions, condominium subdivisions, and similar neighborhood developments. This development option is a beneficial alternative to large lot “rural sprawl,” which consumes open space and creates lots that are too small for farming or meaningful habitat protection.

**“Clustering” provides for the grouping of smaller lots than what is normally permitted, on only a portion of the development parcel, so that the balance of the parcel can be retained as open space and for the preservation of important environmental resources. Clustering provisions must recognize the specific requirements of Sec. 506 of the Michigan Zoning Enabling Act.**

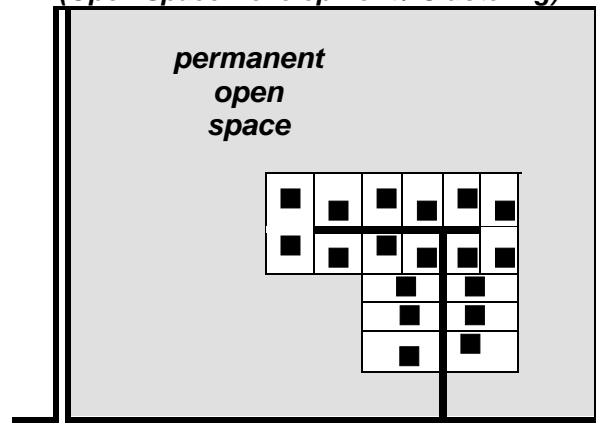
As much as 50% or more of a site, and preferably the most environmentally significant, may be preserved in its existing natural state, with individual house lots occupying the remaining acreage. These “open space” areas can be reserved by the use of conservation easements, deed restrictions, or similar tools. A critical component of clustering should be the inclusion of new interior roads to serve the new lots, rather than stripping new dwellings along existing road frontages.

More traditional strip residential development along the township’s major roads is illustrated in Example A below. This is the easiest form of development but it impacts public safety due to the many driveways directly accessing the road and it can significantly undermine the rural character of the township. Example B, illustrating an open space development, improves public safety along the road, and more effectively preserves the existing character of the community including its open spaces and environmental resources and habitats. Clustering can also save infrastructure costs by reducing the length of roads and utility lines.

**Example A  
Strip Development**



**Example B  
(Open Space Development / Clustering)**



One of the most effective means to encourage the open space development option is through more flexible development standards than otherwise available, such as standards pertaining to permissible densities, lot sizes, and setbacks. This Plan supports appropriate incentives to facilitate this preferred form of development provided such incentives are not contrary to the principal policies of the Plan including the intended character of

each Area comprising the Future Land Use Strategy. Accordingly, moderate increases in recommended maximum development densities presented in Chapter Three may be reasonable.

7) Planned Unit Developments (PUDs):

“Planned unit development” provisions in a Zoning Ordinance typically permit a more flexible form of development that normally permitted by the district in which the site is located or the other districts established in the Ordinance. PUDs are expressly authorized by the Zoning Enabling Act with the intent to facilitate development that, in part, encourages innovation in land use and variety in design, layout, and type of structures constructed; achieves economy and efficiency in the use of land, natural resources, energy, and the provision of public services and utilities; encourages useful open space; and provides better housing, employment, and shopping opportunities. PUDs are sometimes used as a means to facilitate residential cluster development discussed in (6) above, but are frequently used to facilitate development that provides a mix of housing units and nonresidential uses in one unified site design. The specific PUD provisions of an ordinance dictate the character and scope of development that may occur under such a development option.

8) Special Issues:

A very beneficial part of a zoning ordinance, commonly referred to as “Special Provisions”, can be used to address a host of land use issues that have relevance to the particular community. The particular scope of issues addressed under “Special Provisions” should be tailored to the particular community. However, common issues addressed under “Special Provisions” include, but are not limited to, some of the following:

- conditional approvals
- moving buildings
- essential services
- one dwelling per lot
- single family dwelling standards
- temporary dwellings
- accessory uses, buildings, and structures
- outdoor furnaces
- home occupations
- keeping of livestock (dwelling related)
- roadside stands
- swimming pools
- outdoor display, sales, and storage
- outdoor recreational vehicle storage
- temporary non-residential buildings/uses
- building height exceptions
- setback exceptions

9) Clarity

The clarity of a zoning ordinance’s wording and organization will greatly impact the ability of officials to administer the ordinance in a consistent manner, validly enforce the ordinance’s provisions, and facilitate a user-friendly document for officials, applicants and the general public. This clarity must be reflected in the wording of individual provisions as well as linkages between chapters including the avoidance of conflicting provisions.

10) Compliance with Current Law

The Zoning Ordinance’s provisions must comply with current law to ensure its validity and the ability of officials to enforce the Ordinance. The Township Zoning Act, under which Deerfield Township first adopted its first zoning regulations, was repealed in 2006 and replaced by the Zoning Enabling Act (Public Act 110). The township’s zoning regulations should be coordinated with the Zoning Enabling Act and periodically updated to address any subsequent changes to the law.

**Transfer of Development Rights (TDR)**

A transfer of development rights (TDR) program is another option the township may explore in an effort to preserve farmland resources and open space. A TDR program would enable a farmer in the planned agricultural area to voluntarily sell the farm parcel’s development rights to another parcel owner in the planned Suburban Residential Area, under the management and authority of the township. TDR provides landowners the opportunity to realize the development value of their land without having to actually develop it. The result is the long-term preservation of farmland resources, open space, and rural character, and the cost-effective delivery of public services.

A TDR program would focus on transferring development rights from the planned Agricultural Area to the Suburban Residential Area. Key objectives of such a program should include:

- Limit residential encroachment in important Agricultural/Rural Residential Areas, identified as “preservation” areas.
- Enable farmers to realize a portion or all of the development value of their land by establishing a mechanism to transfer/sell their development rights to interested landowners of parcels in the designated “development zone,” being the Suburban Residential Area.
- Allow the owners of land in the Suburban Residential Area the opportunity to develop such land with heightened densities to capture the investment of their purchase of the

transferred development rights from the farmer in the Agricultural/Rural Residential Area.

### **Subdivision and Land Divisions Ordinances**

When a developer proposes to subdivide land, the developer is, in effect, planning a portion of the township. To ensure that such a development is in harmony with the Master Plan, the subdivision or resubdivision of residential and nonresidential land must be adequately reviewed. A subdivision ordinance establishes requirements and design standards for the development of plats including streets, blocks, lots, curbs, sidewalks, open spaces, easements, public utilities, and other associated subdivision improvements. The Land Division Act, P.A. 571 of 1996, as amended, provides the authority for municipalities to adopt local ordinances to administer the provisions of the Land Division Act including the platting of subdivisions.

With the implementation of a subdivision ordinance, there is added insurance that development will occur in an orderly manner and the public health, safety and welfare will be maintained. For example, subdivision regulations can help ensure developments are provided with adequate utilities and streets, and appropriately sized and shaped lots. Adopting a local ordinance addressing the creation of subdivisions can encourage a more orderly and comprehensive manner for the review and approval of subdivision plats.

Of equal importance is a "land division ordinance." While a subdivision ordinance addresses unified residential developments of multiple units (plats), much of the development in Deerfield Township is in association with incremental land divisions for the purpose of establishing individual home sites. A land division ordinance assures that these incremental divisions meet certain minimum zoning ordinance standards such as lot area and width. The Land Division Act referenced above also provides municipalities with the authority to adopt a land division ordinance. Land division ordinances can ensure consistency in review and approval practices.

### **Other Special Purpose Ordinances**

While zoning and subdivision regulations are the most frequently used tools for the regulation of land use and development, the control of land use activities can extend beyond their respective scopes. Special purpose rules and regulations can complement zoning and subdivision regulations and further the implementation of the Master Plan. Such ordinances may address matters pertaining to noise, public nuisances, outdoor assemblies, junk, weeds, and other activities. Township officials should evaluate the scope of the township's current special purpose ordinances and determine what new ordinances, and/or amendments made to current ordinances, may be beneficial to further implement the Master Plan.

### **Maintaining a Current Master Plan**

Successful planning requires the maintenance of a current Master Plan. The Master Plan should be updated periodically. The Plan must be responsive to community changes if it is to be an effective community tool and relied upon for guidance. Periodic review of the Plan should be undertaken by the Planning Commission, Township Board, and other officials to determine whether the Plan continues to be sensitive to the needs of the community and continues to chart a realistic and desirable future.

Community changes that may suggest updates to the Plan include, but need not be limited to, changing conditions involving available infrastructure and public services, growth trends, unanticipated and large-scale development, and changing community aspirations. The following page outlines important considerations for the periodic evaluation of the Master Plan.

***The importance of maintaining a current Plan is reflected in the Planning Enabling Act's requirement that a Planning Commission review its Master Plan at intervals not greater than five years and to document the Commission's findings.***

Amendments to the Plan, or the preparation of a wholly new Plan, should follow the minimum procedures delineated in the Planning Enabling Act in addition to measures the township believes will enhance the planning process.

**Important questions to be asked during a review of this Master Plan should include, at a minimum:**

- Does the Plan present valid and current inventory data (Appendices and elsewhere)?
- Does the discussion of planning issues and specific goals/objectives continue to be appropriate today?
- Do the future land use and public services policies of the Plan continue to reflect preferred strategies to address development, preservation and public services?
- Have there been any new and/or significant development projects that have raised concerns about the township's future, or the future of a particular area of the township, that may suggest changes to the Master Plan's goals, objectives and/or policies regarding development, preservation and public services?
- Have there been any other major changes in the township that were not anticipated under the current Master Plan?
- Have any specific development decisions been made (such as rezonings and site plan approvals) that may have appeared contrary to the Master Plan and, if so, do such decisions suggest the need to revise the Plan to be more responsive to local conditions?
- Have any text amendments been made to the Zoning Ordinance that suggest Master Plan revisions in association with the Plan's goals, objectives and/or policies?
- Is the character of local growth and development (residentially, commercially and other) since the Plan was adopted (or last updated) in keeping with Plan's vision (goals, objectives, and policies)?
- Are there significant discrepancies between the Future Land Use Map and Zoning Map, recognizing that the Zoning Map is current law and the Future Land Use Map portrays the future vision?
- Are there conditions and/or trends in surrounding areas, particularly along the township's borders, which may suggest modifications to the township's policies addressing future land use and public services?
- Does the Master Plan comply with current law?

# Appendix A CULTURAL FEATURES

## Regional Context

Deerfield Township is a rural community of approximately 4,200 persons, located along the northeast periphery of Livingston County in the lower central region of Michigan’s Lower Peninsula. The township is generally square in shape and covers 37.6 square miles, being approximately six miles by six miles and having a congressional township boundary (based on the U.S. Public Land Survey System) characteristic of the majority of townships in lower Michigan. The southwest corner of Deerfield Township is five miles north of Howell, the county seat of Livingston County and a community of approximately 10,000 persons. The northeast corner of the township is ten miles southwest of Fenton, a community of approximately 11,000 persons. Principal surrounding townships are Argentine to the north (Genesee County), Tyrone to the east, Oceola to the south, and Cohoctah to the west.

Approximate driving distances to more regional urban centers of a population of 30,000 persons or more, within approximately 75 miles, are:

City	Population	Distance in Road Miles
Flint:	99,000	25 mile northwest
Ann Arbor:	114,000	35 miles south
Lansing:	115,000	45 miles southwest
Saginaw:	50,000	55 miles north
Detroit:	680,000	60 miles southeast
Jackson:	33,000	70 miles southwest

The regional landscape within fifty miles of Deerfield Township is dominated by agriculture, woodlands, wetlands and other open spaces, and scattered residential development, in addition to periodic small villages and cities and other similar more urbanized pockets. As one travels southeast of the township toward the Detroit Metropolitan Area, the landscape is noticeably marbled by more suburban and urban development patterns. This increased suburbanization and urbanization has been incrementally spreading and approaching Deerfield Township.

Deerfield Township’s location relative to transportation routes and employment centers has made it an increasingly popular place to live. A pastoral setting, highlighted by expansive farm fields and interspersed with woodlots, wetlands, lakes, and rolling topography, heightens the draw of this community.

## Access and Circulation

### Regional Access

Regional access to Deerfield Township is provided by Interstate 96 (I-96) and U.S.-23. I-96 travels east and west across Michigan and passes within seven miles of the south edge of the township. The Latson Road interchange (Exit 140) provides direct access to the western region of the township. U.S.-23 travels from Toledo to the south to Interstate 75 near Flint to the north, and passes within two

miles of the township's eastern edge. The Center Road interchange (Exit 75) provides direct access to the central regions of the township. M-59 connects these two highways and passes within five miles of the township's southern edge. Regional access is also available from several public airports including Bishop International Airport near Flint and the Capital Regional International Airport in Lansing.

### Local Roadway Network

Deerfield Township's local public road network generally exhibits the near square mile grid that dominates much of the Lower Michigan rural landscape, except where interrupted by expanses of wetlands and public recreation and conservation areas (see Public Roads map). These exceptions are most prominent in the northwest quarter of the township. All public roads are under the jurisdiction of the Livingston County Road Commission (LCRC). There are a number of "private" roads that are not part of the LCRC's public road network and are owned and maintained by private neighborhood associations.

In compliance with the requirements of Michigan Public Act 51 of 1951, the LCRC classifies all roads under its jurisdiction as either "*primary*" or "*local*" roads. Primary roads are considered the most critical in providing regional circulation throughout the county and between counties. The classification of roads by the LCRC has important financial implications with regard to maintenance and improvements. Under Michigan law, townships have no responsibility for funding road improvements and maintenance. The LCRC is responsible for local road maintenance and must maintain and improve primary roads at its own expense. However, state law limits the participation of Road Commissions to no more than 50% of the cost for improvements (versus maintenance) to local roads. Requests by local townships for local road maintenance levels beyond those considered adequate or financially feasible by the LCRC, and requests for improvements to local roads, frequently require local funding. In reality, there are very few counties in Michigan where local townships are not actively involved in funding road maintenance and improvements.

The road segments in Deerfield Township that the LCRC classifies as "*primary*" are limited to:

- Argentine Road, paved for its entire length
- Bennett Lake Road, paved for its entire length
- Cohoctah Road, unpaved
- Faussett Road, paved west of Argentine Road

All other road segments in the township are classified by the LCRC as "*local*" roads. No local roads are paved except:

- Latson Road, south of Faussett Road
- Center Road between Latson and Argentine Roads
- Several subdivision roads

Also of importance is the functional classification of township roads by the Federal Highway Administration (FHA). The FHA classifies road segments according to the extent to which the road is intended to facilitate traffic movement over long and short distances versus access to abutting property. This classification is referred to as the National Functional Classification (NFC). The relative hierarchy of the classification as applied to Deerfield Township follows.

Interstates and Other Freeways are at the top of the NFC hierarchical system and frequently include freeways and state highways between major cities. Interstates and freeways function to primarily facilitate long distance travel including access to important traffic generators such as major airports and regional shopping centers.

- There are no roads in Deerfield Township classified as interstates or freeways.

Principal arterials function similarly to interstates and freeways except that they facilitate shorter travel distances and access to lesser traffic generators. Principal arterials frequently include state highways between large cities.

- There are no roads in Deerfield Township classified as a principal arterial.

Minor arterials are similar in function to principal arterials except they carry trips of shorter distance and to lesser traffic generators. Minor arterials frequently include state highways between smaller cities.

- Argentine Road is the only road classified as a minor arterial in Deerfield Township.

Major collectors function with a much greater focus on providing access to property rather than long distance travel, and frequently funnel traffic from residential or rural areas to arterials. Major collector road segments in Deerfield Township are limited to:

- Bennett Lake Road, east of Argentine Road
- Cohoctah Road, west of Argentine Road
- Faussett Road

Minor collectors are similar to major collectors except for the still greater focus on providing access to property rather than long distance travel.

- There are no roads in Deerfield Township classified as minor collectors.

Local Roads serve primarily to provide access to adjacent properties and minor collectors.

- Local roads in Deerfield Township include all public roads not noted above – the vast majority of all township road miles.

Federal aid for road projects is limited to roads classified as major collectors or higher. Roads classified as minor collectors have only limited eligibility and roads classified as local roads are not eligible for federal funding.

The LCRC periodically records 24-hour traffic counts throughout the county. Traffic counts recorded in Deerfield Township during 2014 and 2015 show that:

- The most traveled thoroughfares are Argentine and Bennett Lake Roads. Traffic counts along the entire length of Argentine Road range between 3,040 and 3,230. Traffic counts along the entire length of Bennett Lake Road ranged between 1,760 and 3,141 – increasing as one travels from Argentine Road east to the Tyrone Township line.
- The third most traveled thoroughfare, Faussett Road, recorded traffic counts ranging from 700 to 1,930.
- All other recorded traffic counts were less than 1,000 and the vast majority were less than 500.

There are many factors that impact the capacity of roads and their ability to assure efficient and safe travel. These factors include, but are not limited to, road alignment, frequency of driveways, road side development, driveway turning patterns, and traffic controls (lights, signs, etc.). It is not uncommon for a two-lane paved rural road to be capable of accommodating between 9,000 – 15,000 trips per day without the need for additional lanes. A major factor contributing to the need for additional lanes is the extent to which road side development encourages driveway ingress and egress, particularly left-turn vehicle movements. Recorded traffic counts suggest that there is ample capacity along the township's paved road segments.

On the other hand, it takes comparatively very limited traffic levels along gravel roads to demand regular maintenance activities, as evidenced by segments of Green, Dean, Mack and Latson Roads where average daily traffic counts are as low as 200 to 400.

## Land Use and Development

Except for the neighborhoods along and in the immediate proximity of many of the township’s lakes, the landscape of Deerfield Township is predominantly rural in character and comprised nearly entirely of woodlands, wetlands, farm operations, and scattered residences (see Land Use, Woodlands and Wetlands maps). Table A-1 provides the overall area breakdown of general land use/cover.

**Table A-1  
Approximate General Land Use/Land Cover Allocation, 2015**

Land Use / Land Cover	Approximate Acreage	Approximate Portion of Township
<b>Agriculture</b>	8,700	36.3%
<b>Open Spaces (woodlands, wetlands and meadows not part of outdoor recreation facilities)</b>	8,550	35.7%
<b>Residential (assuming an average of 2.0 acres of yard area per home site not part of a subdivision)</b>	2,700	11.3%
<b>Outdoor recreation</b>	2,600	10.6%
<b>Public roads</b>	600	2.5%
<b>Water (lakes, ponds, and water courses)</b>	830	3.5%
<b>Commercial</b>	14	0.1%
<b>Industrial (mineral extraction only)</b>	40	0.3%
<b>Public other than roads and recreation (churches, cemeteries, and township hall)</b>	10	---

Table is based on aerial imagery and “windshield” survey.  
 (“---“ = less than 0.1%)

A review of some of the more significant characteristics of land use and development in Deerfield Township follows.

### **Agriculture**

Farming operations occupy approximately 36% of the township’s area. The approximately 8,700 farm acres are scattered throughout nearly all areas of the township, with the predominant portion of the farmland located in the eastern half of the community, particularly along the Argentine Road corridor. Farmland is noticeably less present in the township’s western third including the area occupied by the Oak Grove State Game Area and in the northeast corner where lakefront neighborhoods prevail.

Farming activities include principally crop operations, with corn and soybeans occupying the vast majority of crop acreage, followed by wheat and hay. While there are only a several dairy operations in the township, the dairy farms occupy considerable acreage including along the Argentine Road corridor.

In an effort to better protect Michigan’s farming interests, Public Act 116 of 1974 was adopted by the state and has since been amended. The Act establishes a program whereby farmers can enroll their properties to gain property tax relief, provided the land is maintained in an agricultural/open space status. The minimum enrollment period in the program is seven years and many landowners opt to



enroll for a much longer period. Deerfield Township acreage enrolled in the PA 116 program in 2015 comprised approximately 2,300 acres – about 9.6% of the township. Nearly half of the enrolled acreage is located along or near Argentine Road in Sections 23, 26, and 35. The balance is scattered among ten other Sections and not particularly consolidated. Nearly all enrollments expire between the years of 2020 and 2034, with several enrollments not expiring until 2099 (116 total acres). The Act requires enrollees to repay tax savings upon leaving the program.

**Residential Development and Land Division**

The 2010 Census recorded 1,645 dwelling units, 10.0% more (150) than as recorded by the 2000 Census. The 2013 American Community Survey (Census Bureau) revealed that 95.2% of all dwellings in the township were single family dwellings and of those single family dwellings, approximately 3.4% were mobile homes (53). The balance of dwelling units were part of a two-family structure with fully separate entrances into each dwelling unit. 91.9% of the dwelling units were occupied and of the occupied units, approximately 94.2% were owner-occupied. The balance was occupied by renters. Of the 164 vacant housing units recorded in the 2010 Census, approximately one-half were for seasonal, recreational or occasional use only.

The 2013 American Community Survey (Census Bureau) reported that approximately 33.8% of the dwelling units were constructed since 1989. This proportion is in between that of the state (23.0%) and the county (45.1%). This is a reflection of the township’s stronger growth rate since 1990 than the state as a whole but its lesser growth as compared to the county during the same period. The median value of the owner-occupied housing stock in the township was \$205,400, 10.7% greater than the county and 28.2% greater than the state. See Table A-2.

According to the 2013 American Community Survey, the township’s housing stock had an average of 6.6 rooms per dwelling and 55.6% of the dwellings, the largest portion, had three bedrooms. Utility gas accounted for approximately 59.0% of the occupied dwellings’ heat source and bottled, tank or LP gas accounted for an additional 20.8% of the dwellings’ heat source. The vast majority of the balance (14.8%) relied on wood as the heating source.

**TABLE A-2  
Selected Housing Characteristics**

Source: 2010 Census and 2013 American Community Survey, U.S. Census Bureau

DWELLINGS	DEERFIELD TOWNSHIP	LIVINGSTON COUNTY	STATE of MICHIGAN
<b>Year Built (%)</b>			
<b>1990 or later</b>	33.8%	45.1%	23.0%
<b>1950 to 1989</b>	53.0%	43.7%	53.1%
<b>Before 1950</b>	13.2%	11.4%	23.9%
<b>Median Value/Owner Occupied</b>	\$205,400	\$183,100	\$147,500
<b>Median Monthly Owner Costs Among Mortgaged Dwellings</b>	\$1,711	\$1,663	\$1,349
<b>Median Monthly Rent Payment</b>	\$928	\$917	\$709

Residential development in Deerfield Township exhibits three principal forms. The first and original form is the farm homestead and other large land tracts. During the early half of the 1900s, large parcels of 80 acres and more characterized the predominant land division pattern in the community and within which the majority of the township’s acreage was contained. The original homes were occupied, in part, by farming families including those in the timber industry. Many of these original homesteads are still evident today.

However, as the 1950s arrived, the presence of smaller parcels, typically between ten to 20 acres in size and stripped along the township's principal road network (section-line roads), began to become more apparent. This second form of housing evolved as some of the original large tracts were incrementally split up. This land division pattern became very apparent during the 1970s and 1980s and today, parcels of five to fifteen acres in area account for approximately 17% of the township's total acreage. Conversely, while parcels of 80 acres and more dominated the township landscape in the early 1900s, only approximately 10,000 acres (42%) of the township is included in parcels of 80 acres or more in area. The greatest concentration of large privately-owned parcels is in the east half of the community.

This trend of parcel splitting along a township's section-line roads is commonly referred to as *strip development*. This development pattern has been of increasing concern in the transportation and land use planning arena due to its negative impacts on traffic safety, congestion, farmland preservation, and rural character preservation.

The third principal form of residential development in Deerfield Township is platted subdivisions. Platted subdivisions are multiple divisions of land created as a unified development/neighborhood project, pursuant to the platting requirements of the Land Division Act (or former subdivision laws). There are approximately 27 plats in Deerfield Township. Two of the earliest plats were Reid's Plat and Abby's Plat, located along Bennett Lake and recorded in 1917 and 1918 respectively. Nearly all of the plats are located along or in the immediate proximity of the township's principal lakes, with the majority being in the Lobdell Lake and Bennett Lake area but also present in the Hidden Lake, Ryan Lake, and Lake Shannon areas. Very few plats have been recorded since 1965, with incremental land divisions being the principal form of residential development since then (see paragraph above).

Lots within plats are typically smaller than found elsewhere and this is generally the case in Deerfield Township. Most of the Deerfield Township plats are comprised of home sites less than one-acre in size, and many are comprised of individual lots of approximately 3,000 to 8,000 sq. ft. in area such as the plats of Hidden Lake Heights, Hill Crest, and Oakwood Beach.

A manufactured housing community (mobile home park) is also located in the Bennett Lake area, on the south side of Bennett Lake Road, and includes approximately 100 home sites.

Approximately one-third of all dwellings in the township are located in the proximity of Lobdell Lake, Bennett Lake and Lake Shannon.

### **Commercial and Industrial Development**

Deerfield Township includes only limited instances of commercial development. Two taverns are located along the north side of Bennet Lake along Bennett Lake Road. Several vehicle and/or equipment repair businesses are located along or near Deerfield Industrial Drive off of Argentine Road in Section 10, and a convenience store is located at the Argentine/Faussett Roads intersection. In addition to these more traditional commercial facilities, there are a number of businesses carried on as "home occupations" in association with places of residence including kennels, vehicle repair shops and landscape services. Two comparatively small private recreational vehicle campgrounds are present in the central region of the township, one on Indian Lake and one on Louis Lake. There is no industrial activity in the township except a machine shop on Deerfield Industrial Drive off of Argentine Road in Section 10.

### **Public Recreation**

See "Public Recreation" under "Community Facilities and Services" in the following section.

## Community Facilities and Services

### Township Administration

A five member Township Board governs Deerfield Township. Township offices are located in the Township Hall on Center Road in the center of the township. The hall includes approximately 8,500 sq. ft. of floor area. The hall houses a large and small meeting room, administrative areas, kitchen facilities and restrooms. Government administration and services are funded by a millage and, in some cases, special assessments.

### Sewage Disposal and Potable Water

There is no public water service in Deerfield Township, with nearly all households relying on on-site wells for potable water. Nearly all dwellings rely on on-site septic systems for the disposal of sewage as well. The primary exception is the approximately 300 residences within six subdivisions in the Bennet Lake area, near the Abbey and Bennet Lake Roads intersection. These lots are serviced by the Argentine Township sewer system.

### Emergency Services

Deerfield Township provides fire protection to area residents through the Hartland Deerfield Fire Authority – a joint fire authority between Hartland and Deerfield Townships. The Authority maintains three fire stations, the closest being located at the Deerfield Township Hall on Center Road and being approximately 4,000 sq. ft. in floor area. Funding for fire protection services is through a township-wide special assessment. Ambulatory service is provided principally by Livingston County EMS, a county-operated service funded through a county-wide millage. Livingston County EMS maintains five ambulance deployment stations, the closest being in Howell and Hartland Townships. Police protection services are provided principally by the Livingston County Sheriff's Department. The State Police provide emergency service on a limited basis during times of special need.

### Recreation

Deerfield Township operates a single park – the Deerfield Hills Nature Area in the northeast corner of the township in Sections 1 and 12. The park covers approximately 375 acres and is of a resource conservation character, comprised principally of woodland and wetland environments through which trails are present. A fishing dock and canoe launch are also available.

Deerfield Township also includes the state-owned and managed Oak Grove State Game Area. The facility is located along the western edge of Deerfield Township and extends into eastern Cohoctah Township. The vast majority of the facility is located in Deerfield Township and occupies approximately 1,500 township acres. The principal goals of Michigan state game areas are to preserve wildlife habitats and provide opportunities for hunting and passive recreation.

The third public recreation facility in the township is the Lutz County Park, covering approximately 300 acres and located in the township's northwest corner. The park was an active farm operation and includes fallow and active farmland, pasture, woodlands, wetlands and various structures. This facility was established as a county park in 2005 and is undergoing modifications to afford increased access and recreation opportunities including parking facilities, over 7,000 feet of trails with interpretative signs, and picnicking facilities.

The Huron Valley Girl Scout Council operates an approximately 375-acre private camp facility (Camp Linden) off of Hogan Road, along Louise Lake.

Deerfield Township residents also have access to a number of regional recreation opportunities including Seven Lakes State Park near Holly (1,450 acres), Holly State Recreation Area near Holly (7,800 acres), Brighton State Recreation Area near Brighton (5,000 acres), and the Highland State Recreation Area near Milford (5,900 acres). These and several other regional facilities are all within 25 miles of Deerfield Township.

### **Cemeteries**

Deerfield Township does not operate any cemeteries though there are several privately maintained cemeteries in the township.

### **Education**

Four public school districts serve Deerfield Township residents (see School Districts map). Hartland Consolidated Schools covers the majority of the eastern two thirds of the township, with Linden Community Schools serving portions of its northeast quarter. Howell Public Schools covers nearly the entire western third of the township, the principal exception being the northwest corner that is served by Byron Area Schools. There are no public school facilities in Deerfield Township.

## Appendix B

# ENVIRONMENTAL FEATURES

### Geology & Topography

During the Paleozoic era of geological history, Livingston County and Michigan as a whole was inundated by successive warm, shallow seas during which large amounts of sediment were deposited. These deposits subsequently lithified to form bedrock. Deerfield Township sits upon bedrock comprised principally of Coldwater Shale. Coldwater Shale is shale with interbedded siltstone, sandstone, dolomite and limestone. Coldwater Shale is present across the township except in its northeast periphery where Marshall Sandstone is dominant. Marshall Sandstone in the Livingston County area is comprised principally of sandstone along with secondary occurrences of silty and sandy shale and siltstone.

The Ice Age brought four successive continental glaciers across the Great Lakes area. As these ice sheets moved southward from Canada, they scoured and abraded the surface of the land leaving behind deeper valleys and more rounded hilltops. The advancing glaciers carried large quantities of rock materials scraped and gouged from the land's surface. These materials were then deposited during the melting of the ice to form drift materials covering the bedrock below. While the depth to bedrock exceeds 800 feet in some parts of Michigan, bedrock depth in Deerfield Township ranges from approximately 100 to 200 feet and generally increases as one moves west to east across the township.

The township's surface geology is the product of the glaciation that occurred 13,000 to 14,000 years ago, and the resulting carving of the area's landscape and depositing of earthen material. This process has resulted in hills and ridge lines that help to define the sub-watersheds (commonly called "moraines"), outwash channels such as Cranberry Creek and North Ore Creek, and small shallow, sediment-filled lakes and ponds formed principally by ice calving from the front of a receding glacier and becoming partially to wholly buried by glacial outwash (commonly called "kettles").

Overall, the township's topography is largely level to gently rolling in character (see Steep Slopes map). More than 75% of the township reflects grades of 6% or less, and those areas that reflect greater topographic relief are scattered and generally comparatively small. Those areas of heightened topographic relief are generally in association with stream corridors including the Yellow River Drain, North Ore Creek and Cranberry Creek. Topographic elevations in the township range from approximately 835' above sea level, along the shores of the Shiawassee River (south branch) in Section 6, to approximately 1,013' at McGuire and Faussett Roads intersection. The township's surface elevations generally fall as one moves from the township's southeast corner in a northerly and westerly direction.

The character of an area's geology and topography can have bearing on development and land use planning. The prevailing Coldwater Shale bedrock is not considered to be a productive source of potable ground water though the above glacial drift does provide a generally reliable source of potable water.

As surface grades increase in severity, significant challenges arise for septic systems and there is an increased potential for soil erosion and sedimentation of water courses and wetlands. Construction costs frequently increase as well. Slopes exceeding 7% present special challenges in this regard. It is generally recommended that development be restricted in intensity where grades exceed approximately 12%, and be strongly discouraged where grades exceed 18%.

## Drainage & Water Resources

Deerfield Township lies entirely within the Shiawassee River watershed, and is drained by six smaller sub-watersheds (see Watersheds and Drainage maps). The largest of these sub-watersheds is the Yellow River Drain Watershed, which occupies and drains more than half of the township including the vast majority of the township’s central and southern portions and extends from south of the township to the Shiawassee River to the north. Cranberry Creek is located within this same sub-watershed and collects much of the runoff in the central and southeast regions of the township before flowing into the Yellow Drain southwest of Ryan Lake. The North Ore Creek sub-watershed is the second largest of the six sub-watersheds and covers approximately five square miles in the east-central region of the community including the Lake Shannon area and further north. All of the sub-watersheds ultimately empty into the Shiawassee River, which in turn flows into the Saginaw River before emptying into the Saginaw Bay.

Of the 37.7 square miles comprising Deerfield Township, 1.3 sq. miles is comprised of surface waters. The vast majority of this surface water is contained within the township’s numerous lakes and ponds. Those comprising more than 10 acres are as follows:

Lake	Location by Section	Approximate Township Acreage
Bennett Lake	1, 2	181
Indian Lake	8, 17	155
Lake Shannon	24	117
Lobdell Lake	2	70
Ryan Lake	3, 4	65
Louis Lake	10, 15	65
Unnamed	33	34
Unnamed	34	22
Hidden Lake	18, 19	19
Unnamed	8	13

Drainage in Deerfield Township is also facilitated through a network of wetland areas that collect and store significant volumes of runoff. Wetlands are discussed in more detail on the following page.

Lands abutting or in close proximity to drainage courses, such as streams, ponds, and lakes, are subject to flood conditions where the drainage courses do not have the capacity to accommodate the rate of runoff from a single heavy rainfall or numerous lighter rainfalls over a relatively short period of time. The Federal Emergency Management Administration has identified certain areas in Deerfield Township that are subject to a flood event that has a 1% chance of happening in any single year, commonly referred to as the 100-year flood. The boundaries of these areas, commonly referred to as the 100-year floodplain, are generally limited to the immediate Lobdell and Bennett Lake shorelines and area wetlands including low-lying subdivisions, the Shannon Lake shoreline and nearby wetland areas, the North Ore Creek corridor between Bennett Lake and Tyrone Township to the east, wetland areas along the Shiawassee River (south branch) corridor, and the Yellow Drain corridor between Latson Road and Lovejoy Road including adjacent wetlands.

Serious flooding has not been a common occurrence in Deerfield Township. This is due in large part to the comparatively limited development (impervious surfaces), the network of drainage courses and wetlands that carry and store runoff, the predominantly loamy and sandy soils that facilitate the absorption of rainfall, and the township's location near the head of the Shiawassee River watershed. Improperly managed land development practices can impact flood conditions both locally and in communities downstream.

## Groundwater

As runoff flows across land surfaces and travels through drainage courses, a portion of the runoff seeps into the ground and collects in great quantities in the underlying soils and deeper bedrock. These reservoirs of water are referred to as aquifers and serve as the sources of drinking water for nearly all residents of Deerfield Township. A random survey of well records for Deerfield Township suggests that the vast majority of wells in the township extend only into the glacial drift below the surface (versus the bedrock further below) and typically do not extend deeper than approximately 125'. Many extend less than 75' in depth. The overall quality of the groundwater is considered to be good but, like other areas of Livingston County and southeast Michigan in general, there are instances of higher levels of arsenic and nitrates than what is recommended. Arsenic is a naturally occurring element in the soil and is classified as a known human carcinogen. At high levels, arsenic has been linked to skin, bladder, lung and prostate cancer. High nitrate levels are typically a result of runoff from fertilizer use, leachate from septic drain fields, and erosion of natural deposits. At high enough levels, nitrates can cause serious health issues particularly in regard to the blood's ability to carry oxygen. Infants are at particular risk with high nitrate levels. Nitrate levels can be minimized through water purifying devices.

Aquifers can be "*confined*" or "*unconfined*" systems. Confined systems have an impermeable soil layer (typically clay) above them which acts to confine the aquifer and protect the aquifer from contaminants seeping into the subsurface above the confining soil layer, such as petroleum products, fertilizers, and improperly disposed household liquids. Unconfined systems do not have this protective layer of clay soil and are much more prone to contamination. Even confined systems can be contaminated due to hazardous material entering the groundwater as a result of groundwater flows from non-confined aquifers. Local well logs suggest there is a confining layer of clay across most of Deerfield Township but not completely, and the depth of the clay liner is variable with increased opportunities for ground water contamination. Wells that draw from the glacial drift above the bedrock where a confining clay layer is not present or otherwise fragmented with sandy or gravelly soils, are especially vulnerable to groundwater contamination.

Contamination of ground water resources can originate from a number of sources including, but not necessarily limited to poorly operating septic drain fields, floor drains that discharge to the outdoors, the storage of hazardous and toxic substances without the necessary safeguards, the improper disposal of fuels and oils, excessive use of fertilizers, and improper disposal of wastes by industrial, commercial and residential activities. The protection of groundwater quality requires appropriate land use management along various fronts.

## Woodlands and Wetlands

Deerfield Township is comprised of approximately 7,000 acres of woodlands and wetlands, or 29% of the township's area (see Woodlands and Wetlands maps). The woodland/wetland environments can be classified into three broad categories:

- upland pines and hardwood stands that are not classified as wetlands such as maple, elm, beech and cherry (4,100 acres)
- lowland hardwood stands and other forested areas classified as wetlands such as oak, red maple, and willow (1,900 acres)
- other wetland areas comprised of shrub and other limitedly vegetated wetlands (1,000 acres)

Covering approximately one-third of the township's land area, woodlands and wetlands are evident in all areas of the township. Some of these woodland and wetland areas include more than 300 contiguous areas, with the largest contiguous expanses being most concentrated in the western third of the township including the Oak Grove State Game Area. The majority of the wetlands are along and/or in close proximity to the township lakes and stream corridors.

Of particular significance is the abundant networks of interconnected wetlands and upland woodlands, some of which extend for more than two miles in length. These networks are important because of the vital role these resources play in flood control, runoff purification, groundwater recharge, wildlife habitats, recreational opportunities, and supporting the rural character of the township.

Wetlands are environmentally sensitive resources and can experience degradation and destruction due to changes in water levels, erosion and sedimentation, filling, dredging, and draining. The degradation or pollution of a wetland area can have a destructive impact upon wetlands and related woodland resources distances away due to the frequent physical linkages between these resource areas. In addition to the environmental constraints wetlands pose for development, they present severe physical constraints for land development due to flooding and instability of soils.

Because of the important environmental role of wetlands, they are protected by the Michigan Environmental and Natural Resources Protection Act, Part 303. Wetlands are regulated by the state if they meet any of the established criteria including, but not limited to, wetlands connected to one of the Great Lakes or located within 1,000 feet of one of the Great Lakes, wetlands located within 500 feet of an inland lake, pond, river or stream, and other wetlands of five acres or more in area. The law requires a permit be obtained from the state for depositing fill in a wetland, dredging or removing soil from a wetland, constructing or operating a use in a wetland, or draining surface water from a wetland. The Michigan Department of Environmental Quality will not issue a permit unless it finds, in part, that there would be no unacceptable disruption to aquatic resources and that the proposed activity is wetland dependent or no feasible and prudent alternatives exists.

## Soils

The U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS), has prepared a soil survey for Livingston County. The survey reveals that, like much of the county as a whole, the vast majority of Deerfield Township is characterized by loam, sandy loam and loamy sand soils. Soils classified as "loam" typically have near equal proportions of sand, silt and clay.

Soil conditions can directly impact the relative ease and/or cost of development. According to the NRCS, almost one-half of the township presents moderate or severe limitations for septic systems (see Septic Limitations map). A primary concern in this regard is the soil's ability to absorb and break down the leachate from the septic drain fields before it reaches underground water supplies. Those



## DEERFIELD TOWNSHIP MASTER PLAN

soils that are more marginal are typically characterized by increased wetness and/or a reduced ability to provide the necessary filtering capabilities. Limitations on septic systems by soils can often be overcome with increased lot sizes and/or specially engineered systems at additional cost. "Mound" systems are not uncommon, where the septic system is raised above the normal ground elevation as a means of modifying the soil conditions below to provide adequate septic field conditions. The Livingston County Health Department is responsible for issuing permits for on-site sewage disposal. A permit will not be issued unless all Department requirements have been met.

More than three-quarters of the township soils present moderate and/or severe limitations for the construction of basements (see Basement Limitations map).

It should be noted that while a site may be classified by the NRCS as presenting a particular limitation to septic systems and building construction, on-site investigation may show the classification to be less than fully accurate and/or show that the deeper soils (more than five feet deep) present different characteristics than the upper layer soils and thus, varying limitations. On-site investigations should be carried out before specific land development projects are initiated.

Approximately half of the township' land area is classified as "prime farmland" (see Prime Farmland map) The NRCS generally defines *prime farmland* as land that is, under proper management, particularly well suited to food, feed, forage, fiber, and oilseed crops and is capable of producing sustained high yields. The prime farmland classification is largely based on soil characteristics but also takes into consideration slopes, water tables and related matters. The vast majority of the township classified as prime farmland is located in the southeastern half of the community.

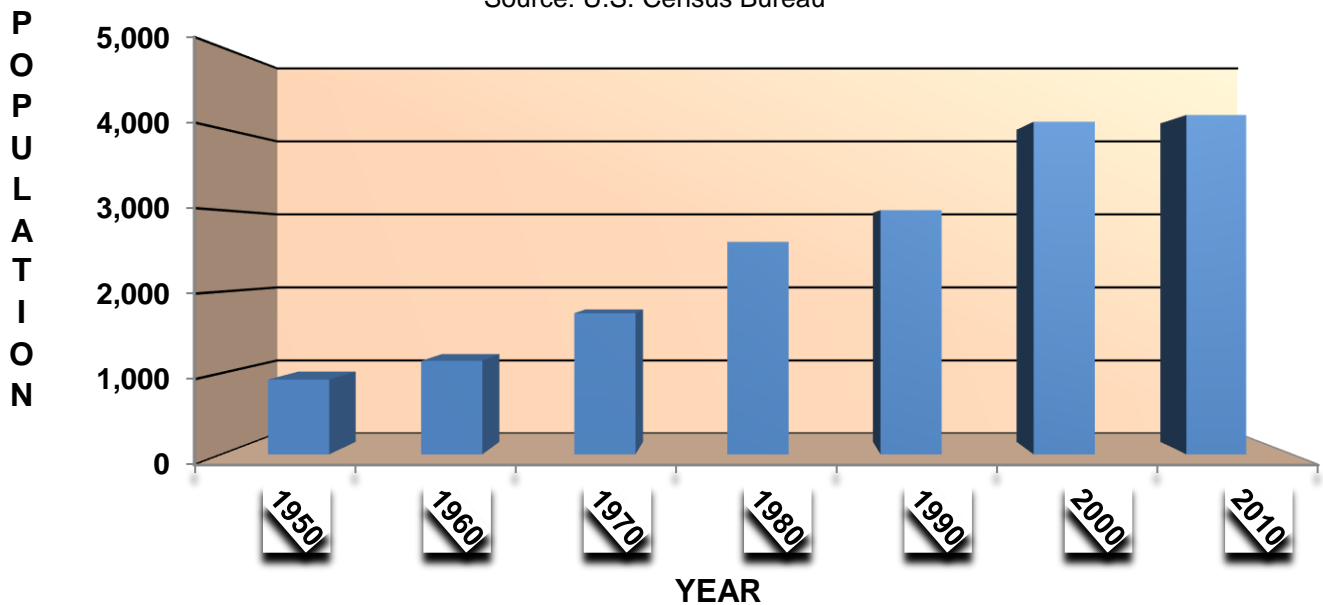
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# Appendix C DEMOGRAPHIC FEATURES

## Population Growth Trends

The 2010 U.S. Census (Census) recorded a Deerfield Township population of 4,170 persons, an increase of 83 persons over its 2000 population of 4,087. The township's 2010 population was about 3.5 times that of its 1950 population of 919 persons. The township has shown positive growth in each decade since 1950, with its strongest growth occurring in the 1960s (50.0%) and 1970s (51.5%). The township's slowest growth occurred between 2001 and 2010 – a growth rate of 2.0%.

**FIGURE C-1**  
**Deerfield Township Growth**  
Source: U.S. Census Bureau



The township's 2.0% population growth between 2001 and 2010, and the county's 15.3% growth during the same period, stands in contrast to Michigan's overall 0.5% decline in population – the only state to record a population loss and a reflection of the economic and housing market decline across the nation and particularly evident in Michigan. Like the township, Livingston County has experienced positive growth each decade during the past 60 years. During this period, except for the 1990s, Livingston County's growth rate exceeded that of Deerfield Township. The county's growth rate in the 1990s (35.7%) was 0.5% less than that of the township. The county's growth rates during the 1950s, 1970s and 2000s were particularly robust as compared to the township. The 2010 Census recorded a total county population of 180,967 persons, nearly seven times that of its 1950 population of 26,725.

The varying growth rates of the township and county since 1950 have resulted in a 32.3% decrease in the proportion of Deerfield Township residents comprising the total county population. The township’s population comprised 3.4% of the county population in 1950 and 2.3% of the county’s population in 2010.

**TABLE C-1**  
**Population Trends & Growth Rates Comparison**  
 (previous ten-year growth rate indicated by “%”)

YEAR	DEERFIELD TOWNSHIP	LIVINGSTON COUNTY	STATE of MICHIGAN
1950	919	26,725	6,371,766
1960	1,149 25.0 %	38,233 43.1%	7,823,194 18.6%
1970	1,724 50.0%	58,967 54.2%	8,881,826 11.9%
1980	2,611 51.5%	100,289 70.1%	9,262,078 4.1%
1990	3,000 14.9%	115,645 15.3%	9,295,297 0.4%
2000	4,087 36.2%	156,951 35.7%	9,938,444 6.9%
2010	4,170 2.0%	180,967 15.3%	9,883,640 -0.5%

Source: U.S. Census Bureau

The township’s overall rising population has increased population density. Its land-based population density was 25 persons per square mile in 1950 and 115 persons per square mile in 2010, about one-half that of the county as a whole (320 persons per square mile). By comparison, the City of Brighton is the most densely populated communities in the county and had a 2010 population density of 2,093 persons per square mile.

## POPULATION PROJECTIONS

Estimating future population growth can provide important insights into identifying future land use and public services needs. Projecting the growth of a community's population over a prescribed period of time is not an exact science. The many unpredictable factors that affect growth make population projections somewhat speculative. Because of the severity of the housing and financial market that surfaced in 2007, both in Michigan and nationally, projecting population growth at this particular time is uniquely challenging. By using several projection techniques, a range of growth estimates can be generated. These shed light on potential growth scenarios provided planning policies and land development regulations do not limit or encourage growth any more than in the past.

The historical trend assumes the township will grow 29.9% every ten years – the same average 10-year growth rate between the years 1950 and 2010. The low growth trend assumes the township will grow at a rate 50% less than that of the historical trend rate, or 15.0% every ten years. The very low growth trend assumes the township will grow at a rate 75% less than that of the historical trend rate, or 7.5% every ten years. The high growth trend assumes the township will grow at a rate 25% greater than that of the historical trend rate, or 37.4% every ten years.

The low or very low growth trends may well be the most likely over the next 20 years given current (though improving) economic conditions in Michigan. This is further supported by the U.S. Census Bureau’s estimated 2013 Deerfield Township population of 4,221 – only 1.2% greater than its 2010 Census population. See Table C-2.

**TABLE C-2**  
Deerfield Township Population Projections

Projection Trend	Population In 2010	2020 Projection	2030 Projection	2040 Projection
Very Low Growth Trend (7.5%)	4,170	4,483	4,819	5,180
Low Growth Trend (15.0%)	4,170	4,796	5,515	6,342
Historical Trend (29.9%)	4,170	5,417	7,036	9,140
High Growth Trend (37.4%)	4,170	5,730	7,872	10,817

**SOCIAL and ECONOMIC CHARACTERISTICS**

**RACE:** The 2010 Census showed Deerfield Township to have a racial composition nearly identical to that of the county as a whole and far more homogeneous than the state (See Table C-3). 97.1% of the township population was white, compared to 78.9% for the state. The township’s homogeneity is typical of rural Michigan communities, as compared to more urban areas such as Howell and Brighton.

**TABLE C-3**  
Race Profile Comparison, 2010 (By Percent)

Source: 2010 U.S. Census

RACE	DEERFIELD TOWNSHIP	LIVINGSTON COUNTY	STATE of MICHIGAN
White Only	97.1	96.7	78.9
Black/African American Only	0.3	0.4	14.2
American Indian, Alaska Native Only	0.6	0.4	0.6
Asian Only	0.6	0.8	2.4
Native Hawaiian/Other Pacific Islander Only	0.1	0.0	0.0
Some Other Single Race Only	0.1	0.4	1.5
Two or More Races	1.3	1.5	2.3

**AGE:** The township’s population in 2010 can be divided into near equal thirds according to the following age groups:

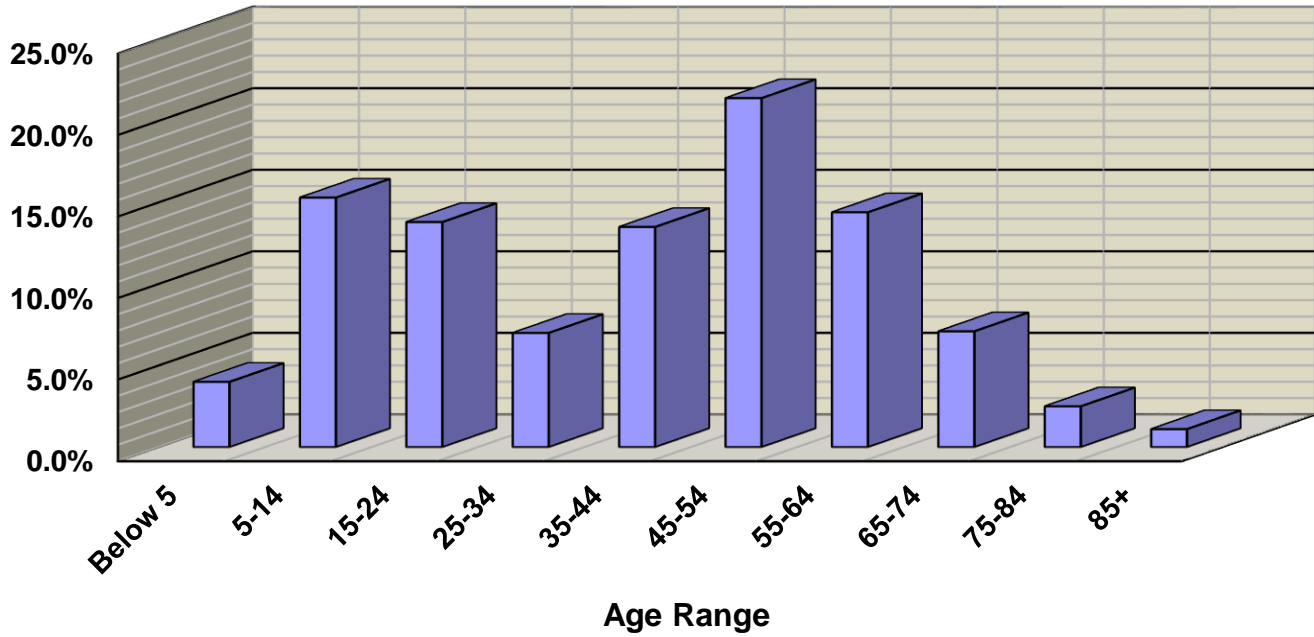
- Less than 25 years of age
- 25 – 51 years of age
- 52 years of age and greater

Deerfield Township’s overall age composition in 2010 was generally similar to that of the county’s as a whole but noticeably different than that of the state. The township 21.4% of the population that was between 45 and 54 years of age was 40.8% higher than state-wide (15.2%). In contrast, the township’s 7.0% of the population that was between 25 and 34 years of age was 40.7% lower than the 11.8% state-wide.

The township’s median age of 43.1 years in 2010 was noticeably higher than that of the county (40.9) and state (38.9). Like the balance of the state and nation, the township’s residents are continuing to mature. The township’s 2010 median age of 43.1 years reflects:

- a 18.4% increase over its 2000 median age of 36.4 years
- a 32.6% increase over its 1990 median age of 32.5 years
- a 56.7% increase over its 1980 median age of 27.5. years

**FIGURE C-2**  
**Deerfield Township Age Profile**  
 Source: 2010 U.S. Census



**TABLE C-4**  
**Age Profile Comparison (By Percent, except where noted)**  
 Source: 2010 U.S. Census

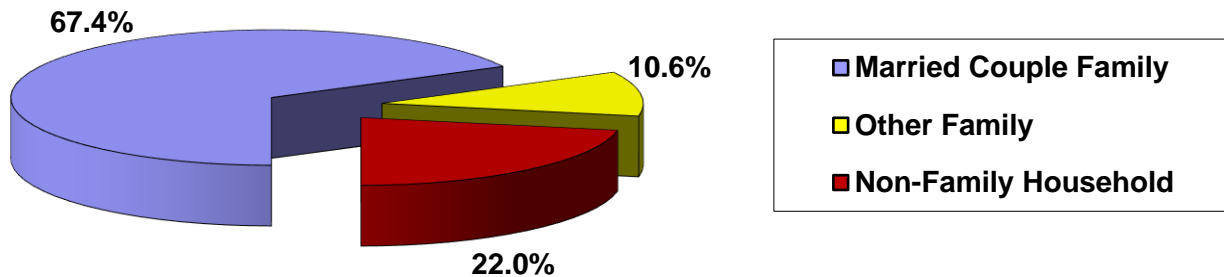
AGE	DEERFIELD TOWNSHIP	LIVINGSTON COUNTY	STATE of MICHIGAN
Under 5 yrs.	4.0	5.5	6.0
5 - 14 yrs.	15.3	15.0	13.3
15 - 24 yrs.	13.8	12.0	14.3
25 - 34 yrs.	7.0	9.6	11.8
35 - 44 yrs.	13.5	14.4	12.9
45 - 54 yrs.	21.4	18.1	15.2
55 - 64 yrs.	14.4	13.4	12.7
65 - 74 yrs.	7.1	7.2	7.3
75 - 84 yrs.	2.5	3.4	4.5
85 yrs. or more	1.1	1.4	1.9
Under 18 yrs.	25.6	25.5	20.8
65 yrs and over	10.7	12.0	13.8
Median Age	43.1 yrs.	40.9 yrs.	38.9 yrs.

**HOUSEHOLDS:** The 2010 Census recorded 1,481 households, 78.0% of which were family households. The 1,481 households reflected an increase of 6.9% households since the 2000 Census (1,386 households), despite the economic downturn across Michigan and the nation.

- The township’s average **household size** of 2.8 persons was slightly greater than the county (2.7 persons) and more noticeably greater than the state (2.5 persons). The township’s 2010 average household size of 2.8 persons was 6.7% lower than in 2000 (3.0 persons) – reflective of the national trend toward smaller households.
- The township’s average **family size** of 3.2 persons in 2010 was slightly above both that of the county and state (3.1). Like its average household size, the township’s average family household size also decreased during the previous ten years, dropping from 3.3 persons to 3.2 persons.

**FIGURE C-3**  
Deerfield Township Household Type

Source: 2010 U.S. Census



67.4% of the township households in 2010 included a married-couple. This proportion is 7.3% greater than that of the county (62.8%) and 40.4% greater than of the state (48.0%). With the township reflecting a comparatively high proportion of married-couple families, it is not surprising that the 22.0% of all households comprised of non-family households was 12% to 55% less than the county (24.9%) and state (34.0%). Of the township’s non-family households, 79.1% were comprised of the householder living alone. See Figure C-3 and Table C-5.

**TABLE C-5**  
Household Type and Size Comparison  
(by percent, except where otherwise noted)

Source: 2010 U.S. Census

	DEERFIELD TOWNSHIP	LIVINGSTON COUNTY	STATE of MICHIGAN
<b>HOUSEHOLD TYPE</b>			
Married-couple family	67.4	62.8	48.0
Other family:	10.6	10.3	18.0
Male householder	4.5	4.1	4.8
Female householder	6.1	8.2	13.2
Non-family household	22.0	24.9	34.0
<b>PERSONS Per HOUSEHOLD</b>	2.8 persons	2.7 persons	2.5 persons
<b>PERSONS Per FAMILY</b>	3.2 persons	3.1 persons	3.1 persons

**DEERFIELD TOWNSHIP MASTER PLAN**

**EMPLOYMENT and INCOME:** Of the 2,986 township residents of age 16 years and over in 2009, 2,085 of the residents (69.8%) were in the labor force and all were in the civilian labor force. The three principal employment industries for employed Deerfield Township workers were: 1) education, health, and social services; 2) retail trade; and 3) manufacturing. These three industries alone accounted for 48.9% of township workers' employment. In contrast, retail trade was not one of the three largest employment industries for the county and state as a whole, with professional and related services having a stronger role.

The township's work force was more evenly dispersed among employment industries as compared to the county and state. For example, township workers were employed in the following industries in 2010 at a rate at least 28% higher than county and state-wide workers:

- Construction
- Finance, insurance and real estate
- Information
- Agriculture, forestry, fishing, hunting and mining

Though small in overall number, the 2.3% of township workers employed in the agriculture, forestry, fishing, hunting, and mining industries was proportionally far greater than the county (0.9%) and state (1.2%). See Table C-6.

4.5% of township's work force worked within their place of residence, a percentage comparable to the county (4.7%) and noticeably higher than the state (3.6%). For those township residents who commuted to work, the mean travel time was 35.2 minutes, somewhat higher than that of the county (31.4 minutes) and considerably higher than the state (24.0 minutes). This is a reflection of comparatively limited employment opportunities in the township and immediately surrounding areas.

**TABLE C-6**  
**Employment by Industry Comparison**  
**(employed persons 16 years and older, by percent)**  
 Source: 2009 – 2013 American Community Survey, U.S. Census Bureau

INDUSTRY	DEERFIELD TOWNSHIP	LIVINGSTON COUNTY	STATE of MICHIGAN
Education, health, and social services	20.7	22.0	22.4
Retail trade	15.0	12.2	11.6
Manufacturing	13.2	17.5	18.3
Professional, scientific, management, administrative, waste management, other services not listed (excluding public administration)	12.4	14.8	13.5
Construction	9.6	6.7	5.6
Finance, insurance, and real estate	8.9	6.4	5.7
Information	4.6	1.7	1.9
Art, entertainment, recreation, accommodations, and food services	4.3	8.1	9.0
Transportation, warehousing, and utilities	4.2	3.3	4.2
Public administration	2.5	3.4	3.7
Wholesale trade	2.3	3.0	2.9
Agriculture, forestry, fishing, hunting, mining	2.3	0.9	1.2

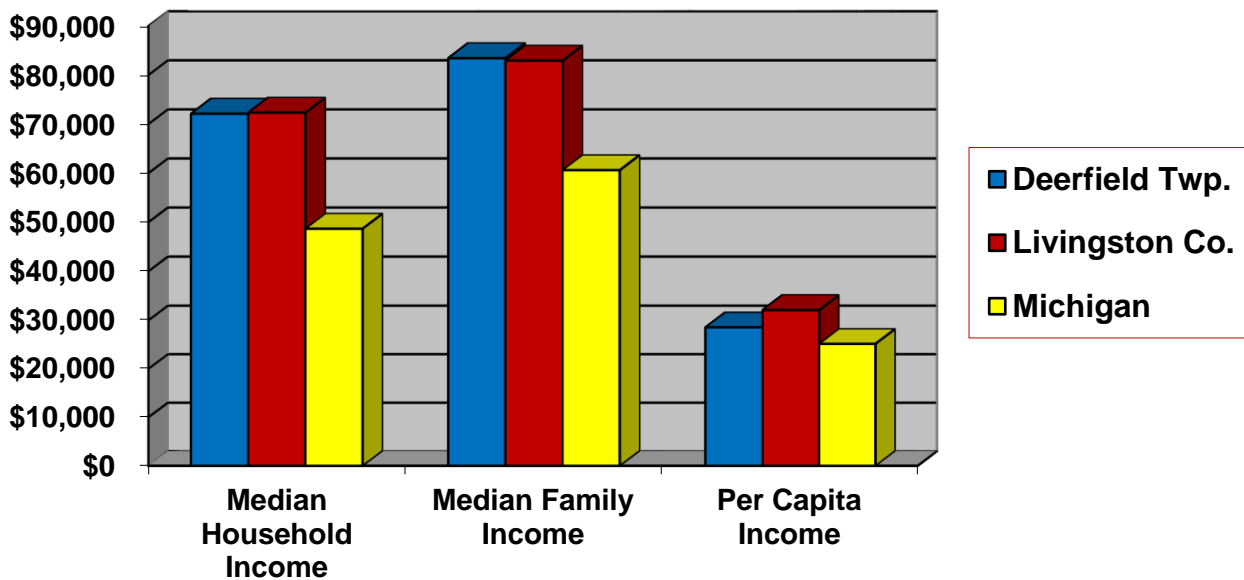


The prosperity of Deerfield Township is comparable to the county as a whole and much stronger than that of the state as a whole.

- The township’s 2013 **median household income** of \$72,148 was nearly equal to that of the county’s and was 48.1% higher than that of the state (\$48,700).
- The township’s 2013 **median family income** of \$83,472 was nearly equal to that of the county’s and was 37.7% higher than that of the state (\$60,635).
- The township’s 2013 **per capita income** of \$28,589 fell between that of the county (\$32,129) and state (\$25,172).
- The portions of families and persons **below poverty level** in the township in 2009, 5.5% and 8.0% respectively, were somewhat above the county as a whole but about half that of the state as a whole.

See Figure C-4 and Table C-7.

**FIGURE C-4**  
**Income Characteristics Comparison, 2013**  
 Source: 2009 American Community Survey, U.S. Census Bureau



**TABLE C-7**  
**Income Characteristics Comparison**  
 Source: 2013 American Community Survey, U.S. Census Bureau

INCOME CHARACTERISTIC	DEERFIELD TOWNSHIP	LIVINGSTON COUNTY	STATE of MICHIGAN
Median household income	\$72,148	\$72,359	\$48,700
Median family income	\$83,472	\$82,959	\$60,635
Per capita income	\$28,589	\$32,129	\$25,172
Families below poverty level	5.5%	4.3%	10.3%
Persons below poverty level	8.0%	6.2%	14.5%

**EDUCATION:** Formal education levels for Deerfield Township residents in 2013 were comparable or somewhat higher than that of the state as a whole, and noticeably lower than county-wide.

- The township’s 31.6% of residents 25 years of age or older that did not pursue formal education beyond the attainment of a high school diploma (or equivalent) was comparable to that of the state (31.8%) and noticeably higher than the county (26.4%).
- The township’s 28.3% of residents 25 years of age or older that had attained a bachelor’s degree or higher level of education fell between that of the state (24.5%) and county (32.9%).
- The 6.3% of township residents that pursued formal education after attaining a bachelor’s degree was noticeably lower than that of the county (%11.2) and state (9.3%).

See Table C-8 and Figures C-5 and C-6.

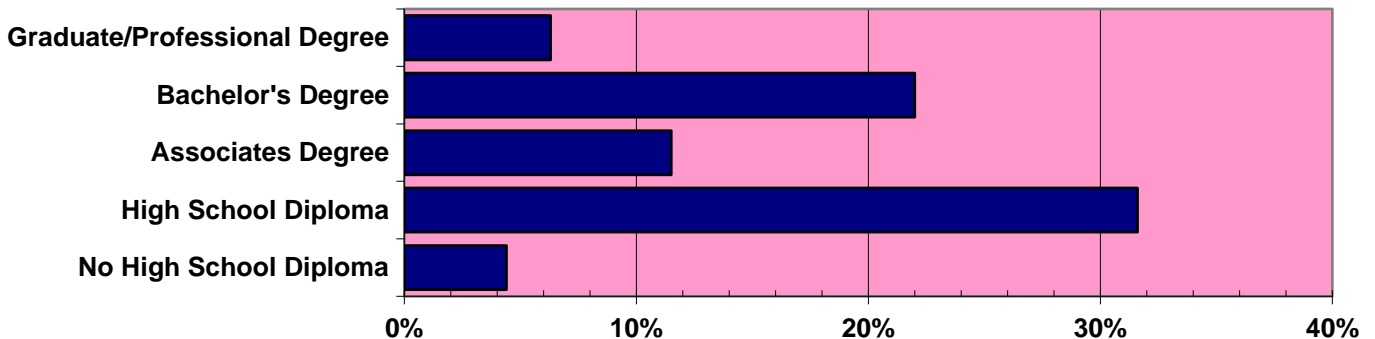
**TABLE C-8**  
**Highest Level of Education Attainment Comparison**  
 (for persons 25 years of age or greater, by percent)

Source: 2013 American Community Survey, U.S. Census Bureau

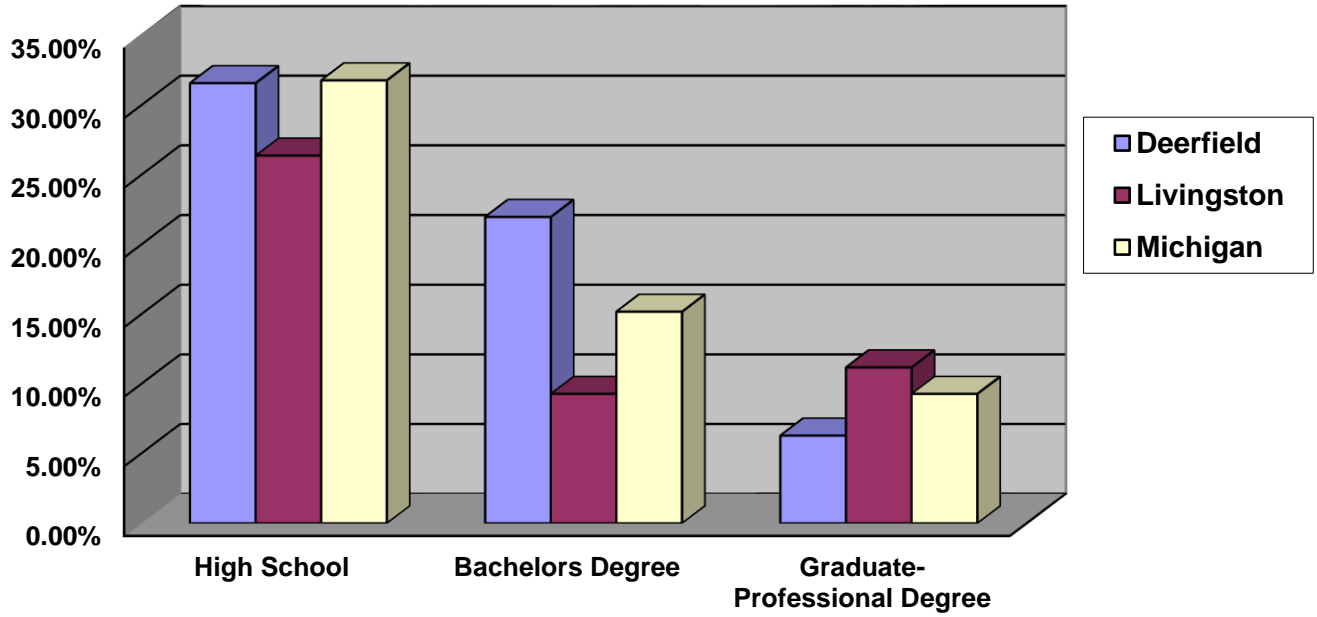
HIGHEST EDUCATION ATTAINMENT	DEERFIELD TOWNSHIP	LIVINGSTON COUNTY	STATE of MICHIGAN
Less Than 9th Grade	0.7	1.2	3.7
9th to 12th, no diploma	3.7	4.4	8.9
High School Diploma	31.6	26.4	31.8
Some college, no degree	24.2	25.8	23.1
Associates Degree	11.5	9.3	8.0
Bachelor’s Degree	22.0	21.7	15.2
Graduate/Professional Degree	6.3	11.2	9.3
High school graduate or higher	95.6	94.4	87.4
Bachelor’s degree or higher	28.3	32.9	24.5

**FIGURE C-5**  
**Highest Level of Education Attainment, Deerfield Township**  
 (for persons 25 years of age or greater)

Source: 2013 American Community Survey, U.S. Census Bureau



**FIGURE C-6**  
**Highest Level of Education Attainment Comparison**  
**(for persons 25 years of age or greater)**  
Source: 2013 American Community Survey, U.S. Census Bureau



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# Appendix D INVENTORY MAPS

**Public Roads**

**Land Use**

**School Districts**

**Steep Slopes**

**Drainage Features**

**Woodlands**

**Wetlands**

**Septic Limitations**

**Basement Limitations**

**Prime Farmland**

# DEERFIELD TOWNSHIP LIVINGSTON COUNTY, MICHIGAN

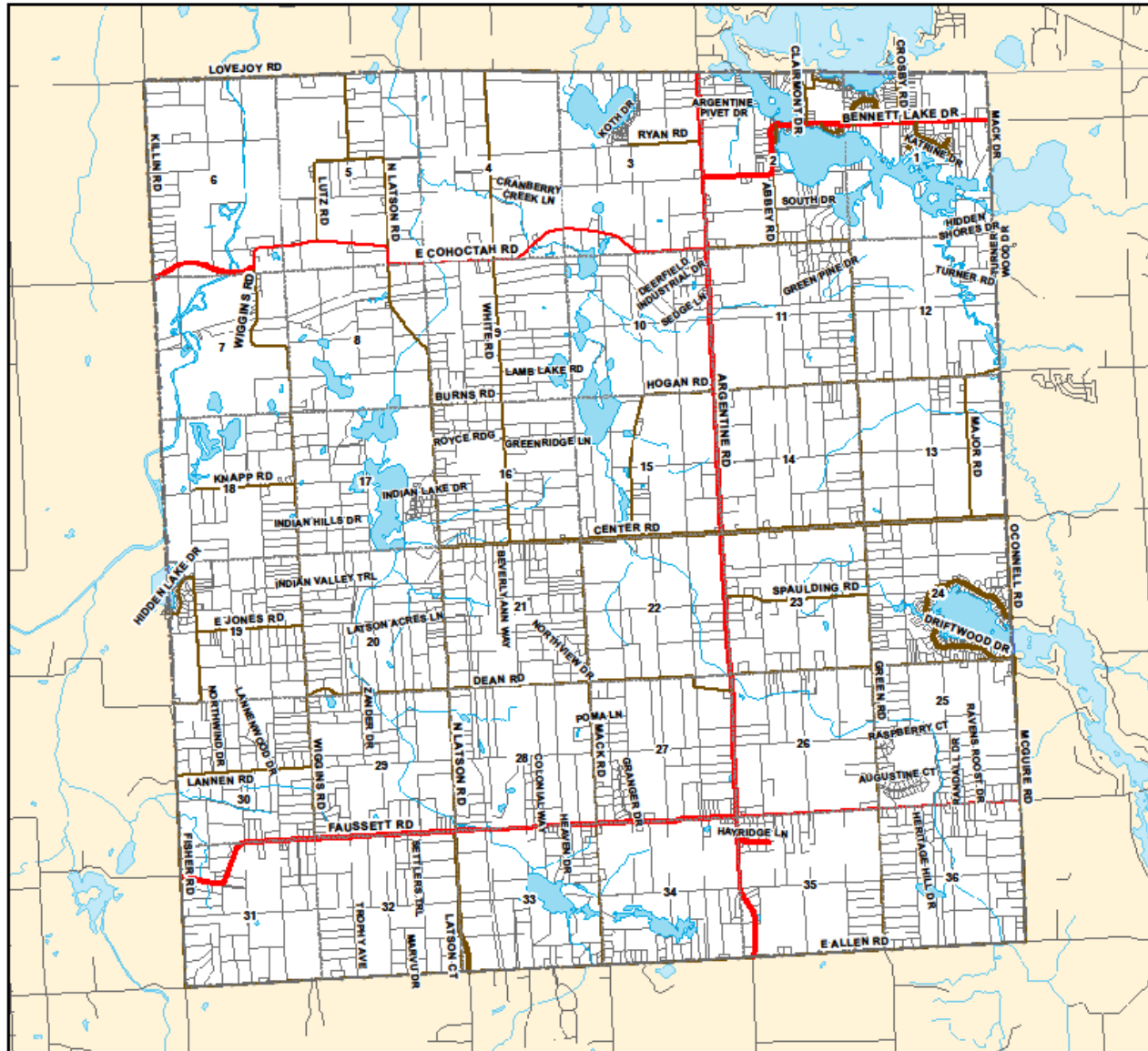
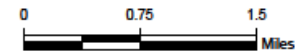
5/30/2017

## MASTER PLAN PUBLIC ROADS

### Legend

-  County Primary - Paved
-  County Primary - Not Paved
-  County Local - Paved
-  County Local - Not Paved
-  Deerfield Township Boundary

Roads data provided by Livingston County



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Coordinate System: NAD 1983 StatePlane Michigan South FIPS 2113 Feet Intl

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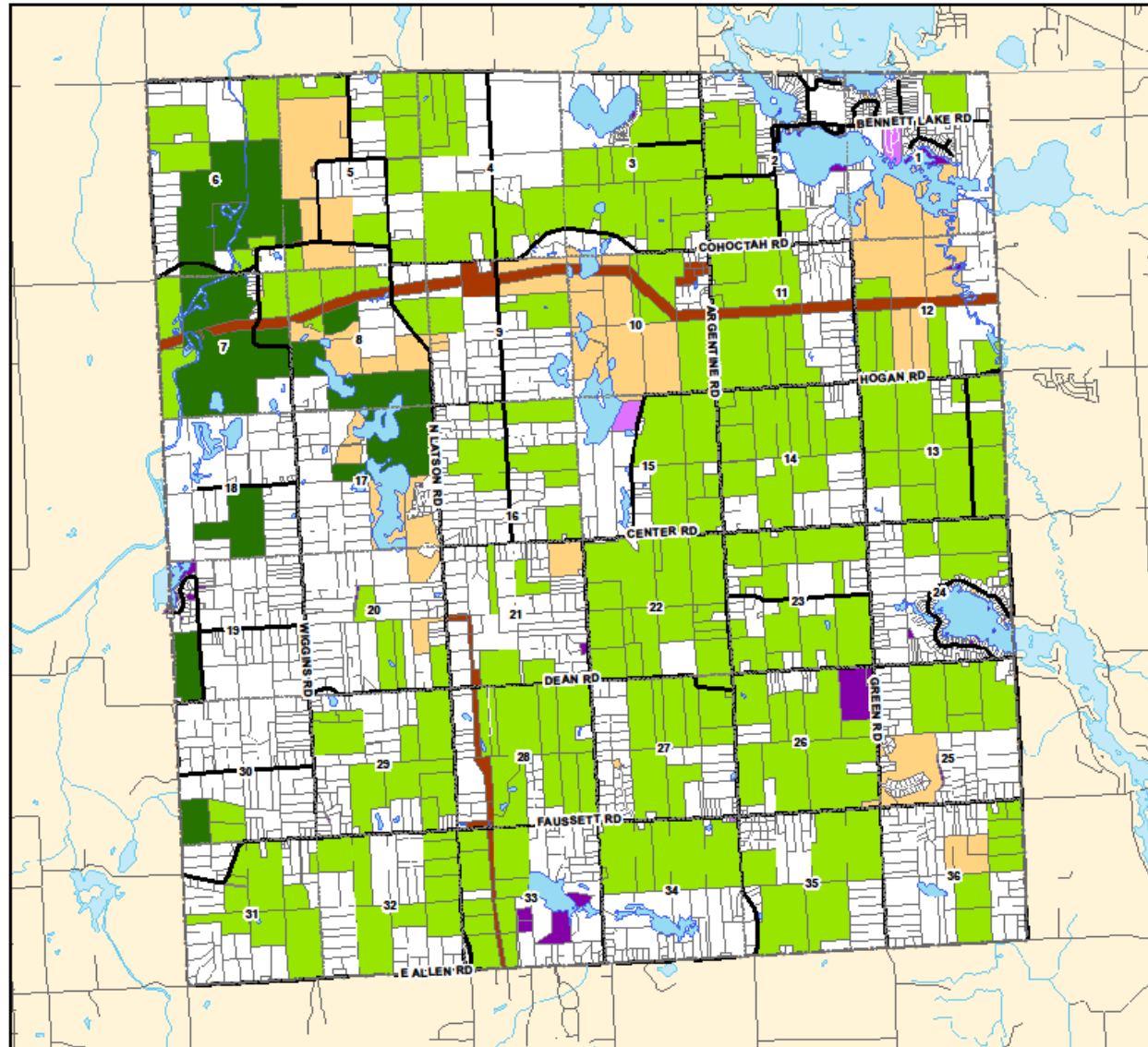
5/30/2017

## MASTER PLAN LAND USE

### Legend

-  Agricultural
-  Commercial
-  DNR Act 513
-  Exempt (Non-Profit, Religious, Government Owned)
-  Industrial
-  Residential
-  Undefined
-  Deerfield Township Boundary

Parcel data provided by Livingston County



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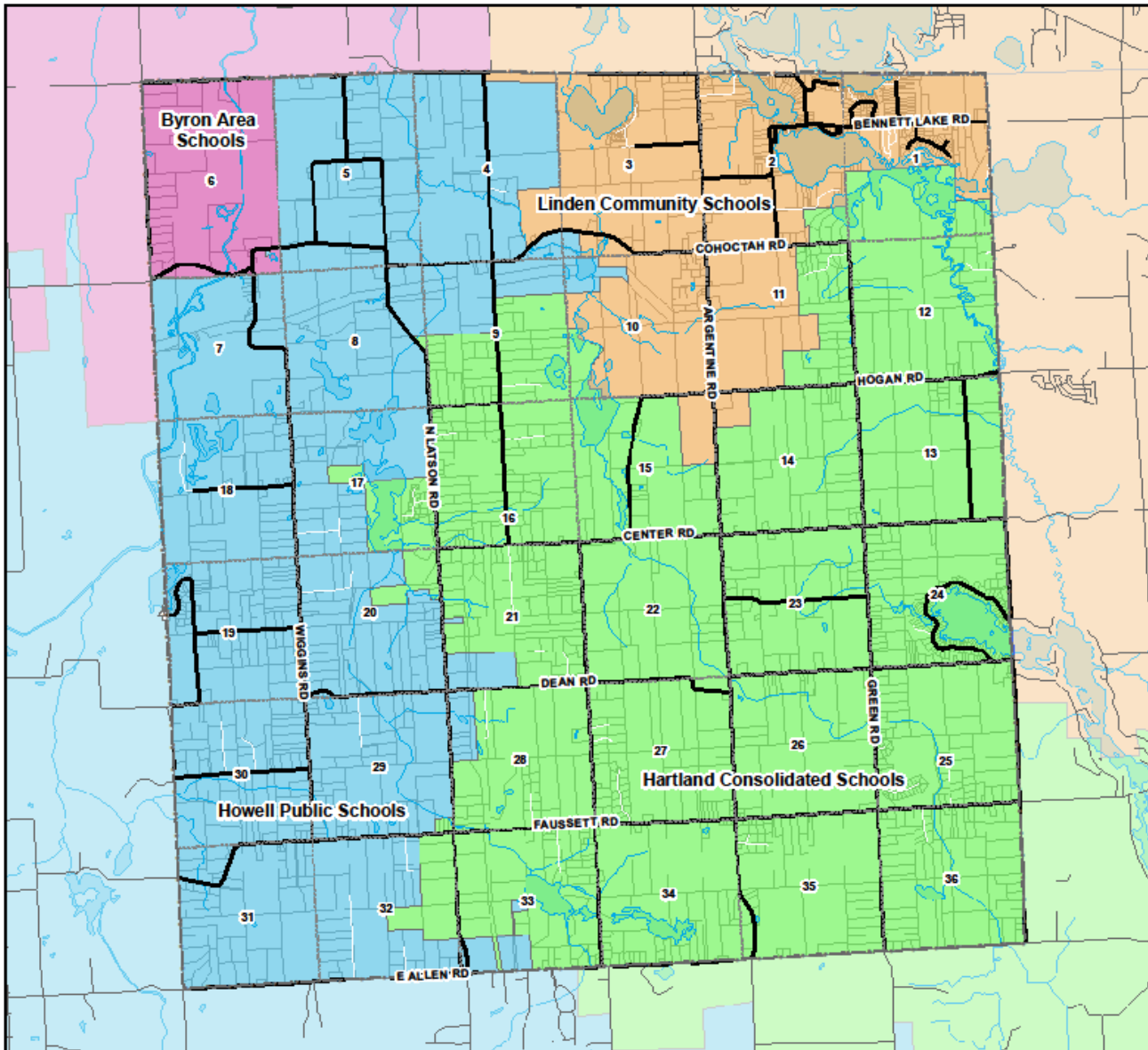
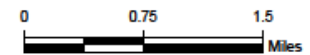
5/30/2017

## MASTER PLAN SCHOOL DISTRICTS

### Legend

- Byron Area Schools
- Hartland Consolidated Schools
- Howell Public Schools
- Linden Community Schools
- Deerfield Township Boundary

School district data provided by Livingston County



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





## LIVINGSTON COUNTY, MICHIGAN

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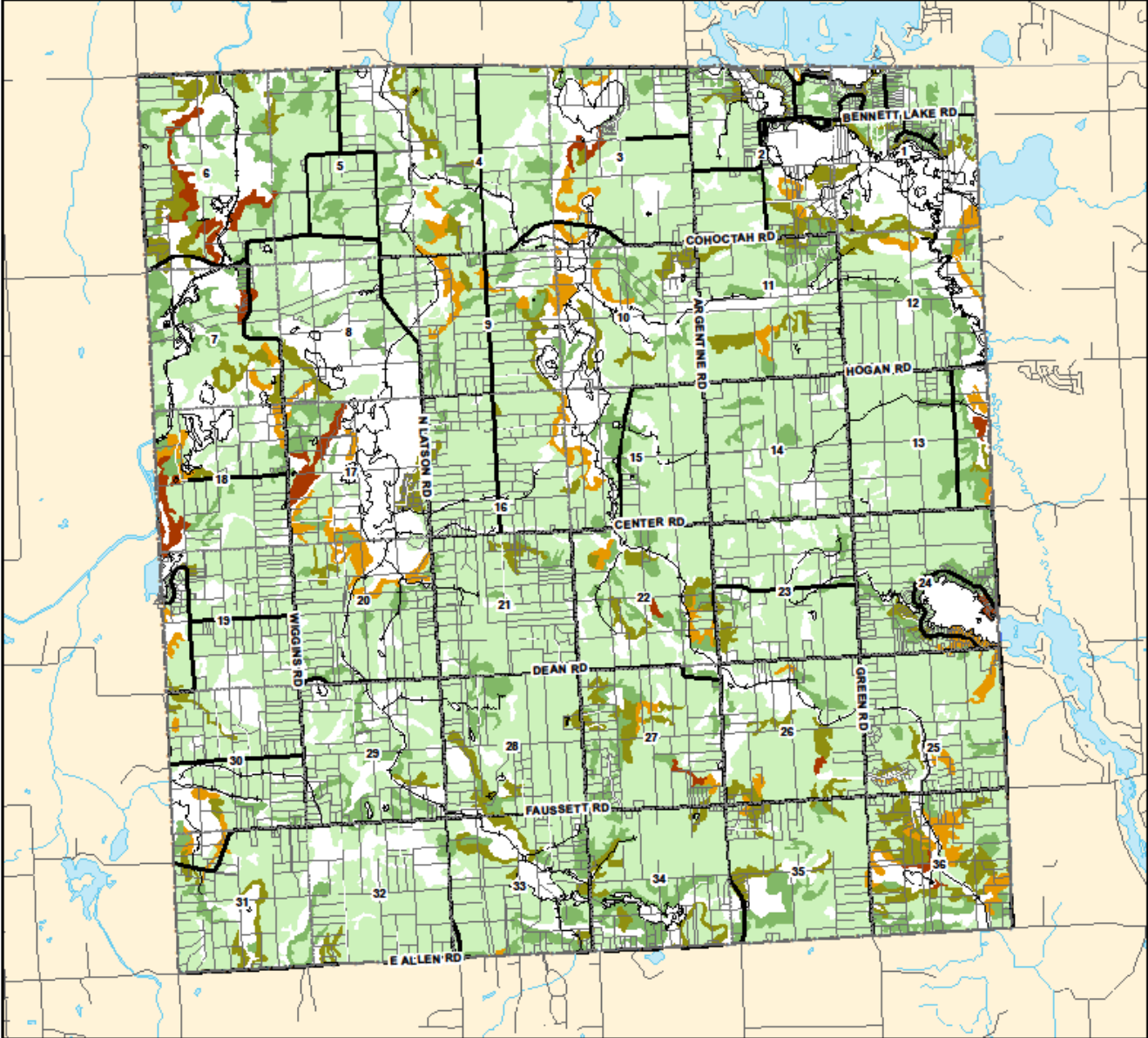
### MASTER PLAN

#### STEEP SLOPES

**Legend**

-  No Slope Information
-  0 - 6% Slopes
-  6 - 12% Slopes
-  12 - 18% Slopes
-  18 - 25% Slopes
-  25 - 40% Slopes
-  Deerfield Township Boundary

Slope data provided by Livingston County



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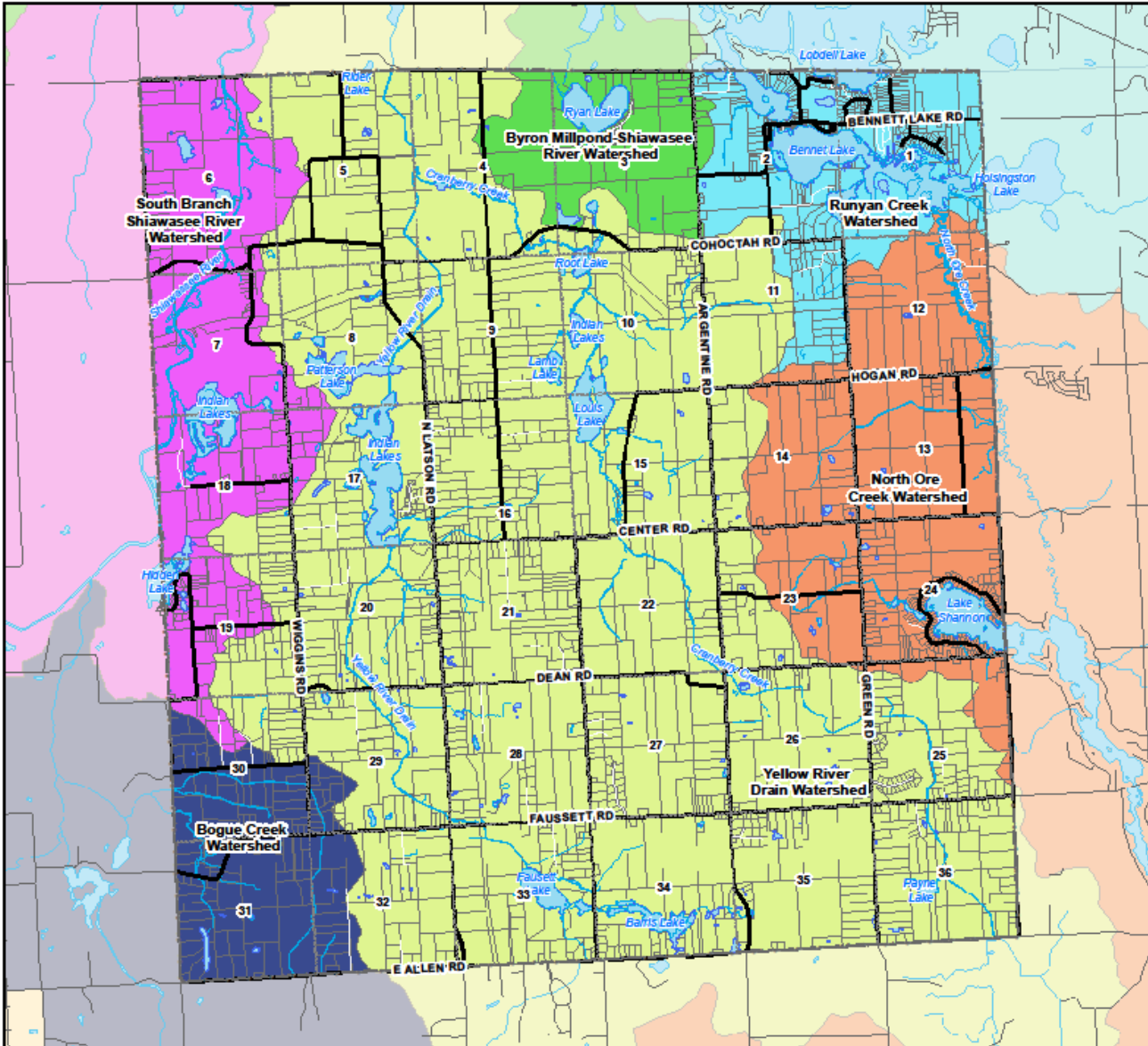
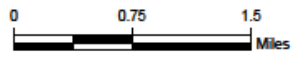
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## MASTER PLAN DRAINAGE FEATURES

### Legend

-  Bogue Creek Watershed
-  Byron Millpond-Shiawasee River Watershed
-  North Ore Creek Watershed
-  Runyan Creek Watershed
-  South Branch Shiawasee River Watershed
-  Yellow River Drain Watershed
-  Lakes and Ponds
-  Drainage Courses
-  Deerfield Township Boundary

Data provided by Livingston County  
and the State of Michigan



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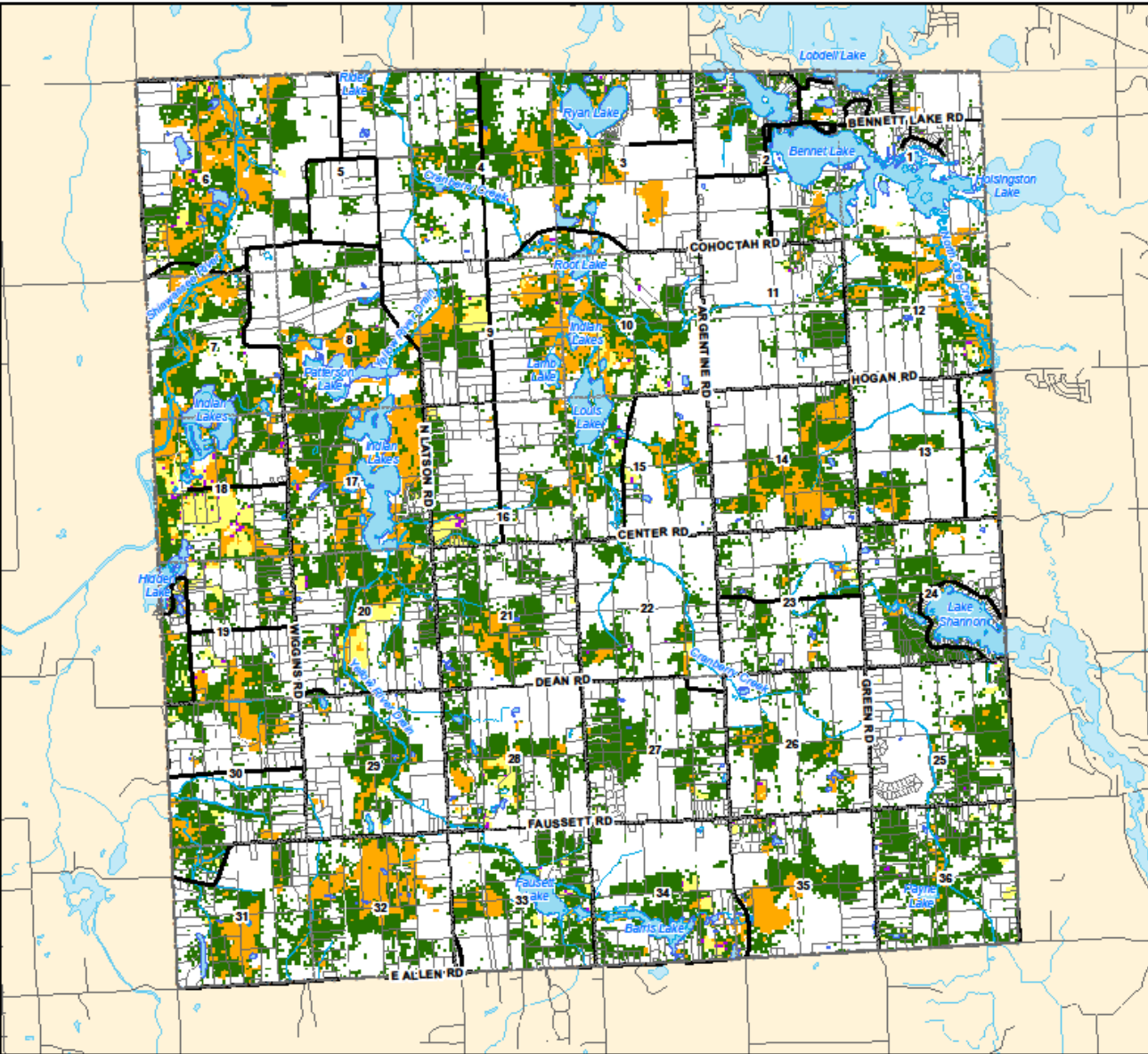
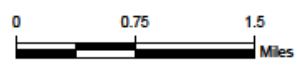
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## MASTER PLAN WOODLANDS

### Legend

- Deciduous Forest
- Evergreen Forest
- Mixed Forest
- Wooded Wetland
- Lakes and Ponds
- Drainage Courses
- Deerfield Township Boundary

Woodlands data from the 1992  
National Land Cover Dataset;  
Provided by the State of Michigan



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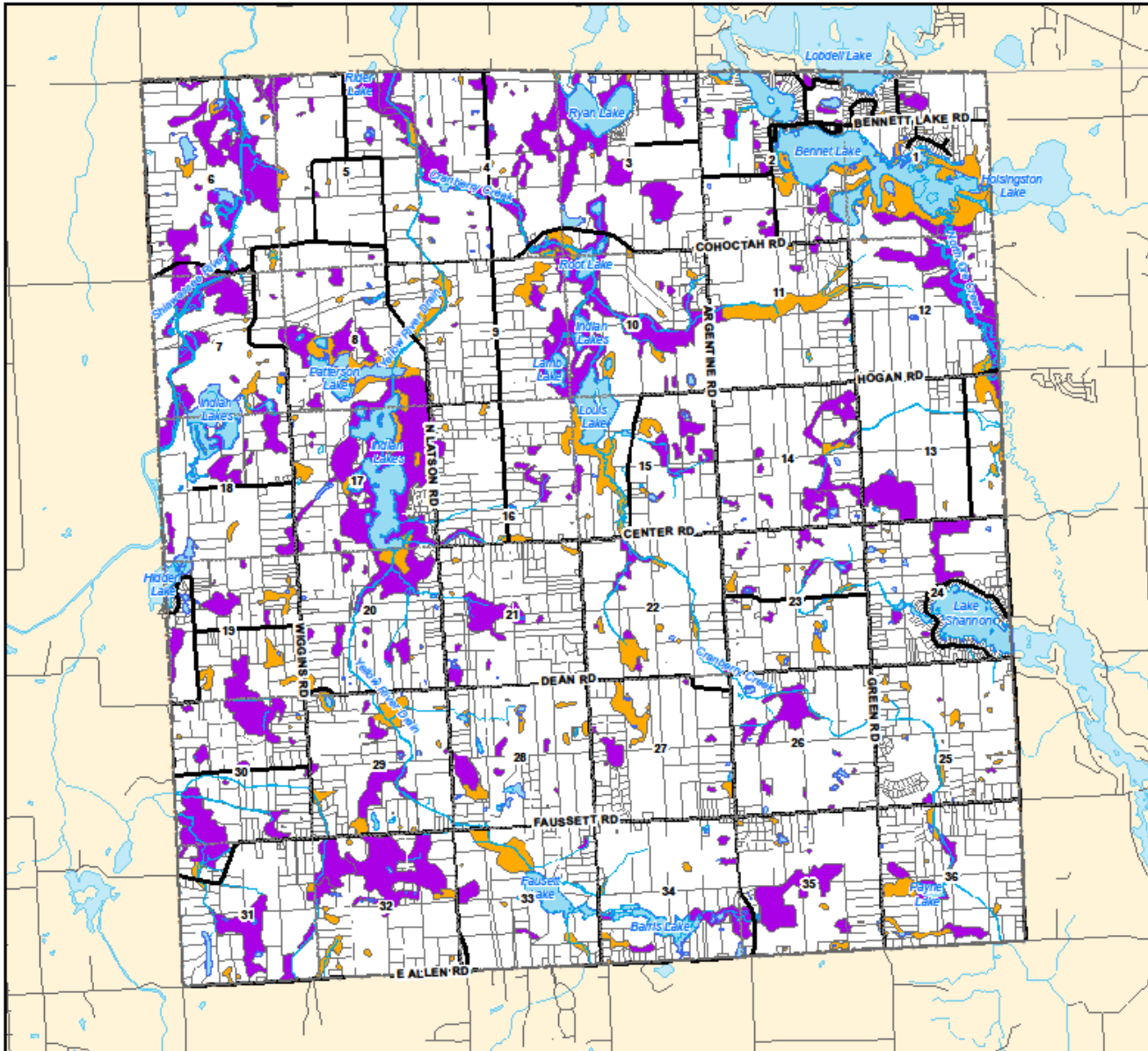
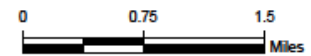
5/30/2017

## MASTER PLAN WETLANDS

### Legend

-  Freshwater Emergent Wetland
-  Freshwater Forested/Shrub Wetland
-  Lakes, Ponds and Open Water
-  Drainage Courses
-  Deerfield Township Boundary

Wetlands data provided by U.S Fish & Wildlife Service, National Wetlands Inventory



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# DEERFIELD TOWNSHIP







## LIVINGSTON COUNTY, MICHIGAN

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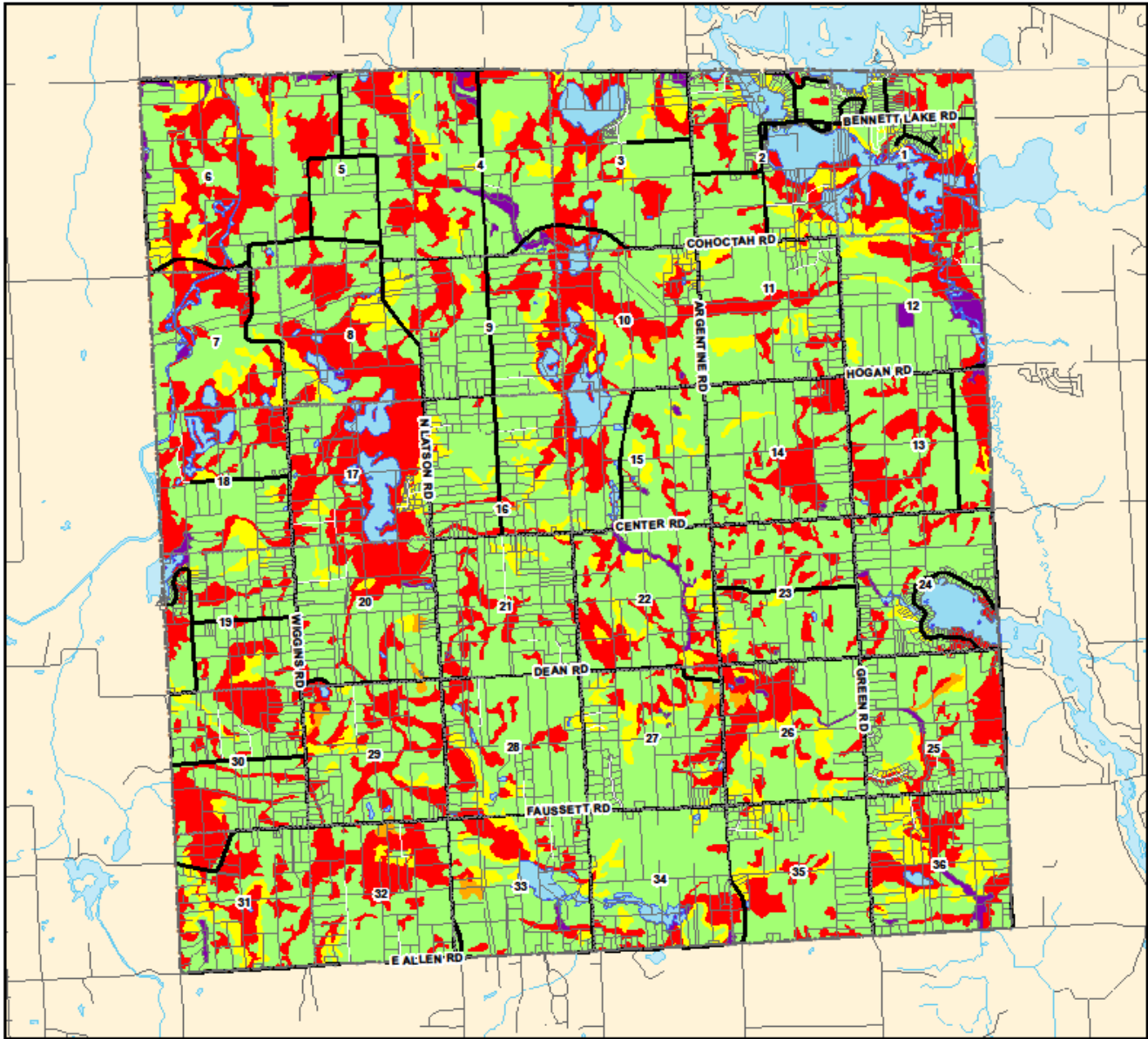
### MASTER PLAN

#### SEPTIC LIMITATIONS

#### Legend

-  Information not provided
-  Slight Limitation
-  Moderate Limitation
-  Moderate to Severe Limitation
-  Severe Limitation
-  Deerfield Township Boundary

Septic data provided by Livingston County



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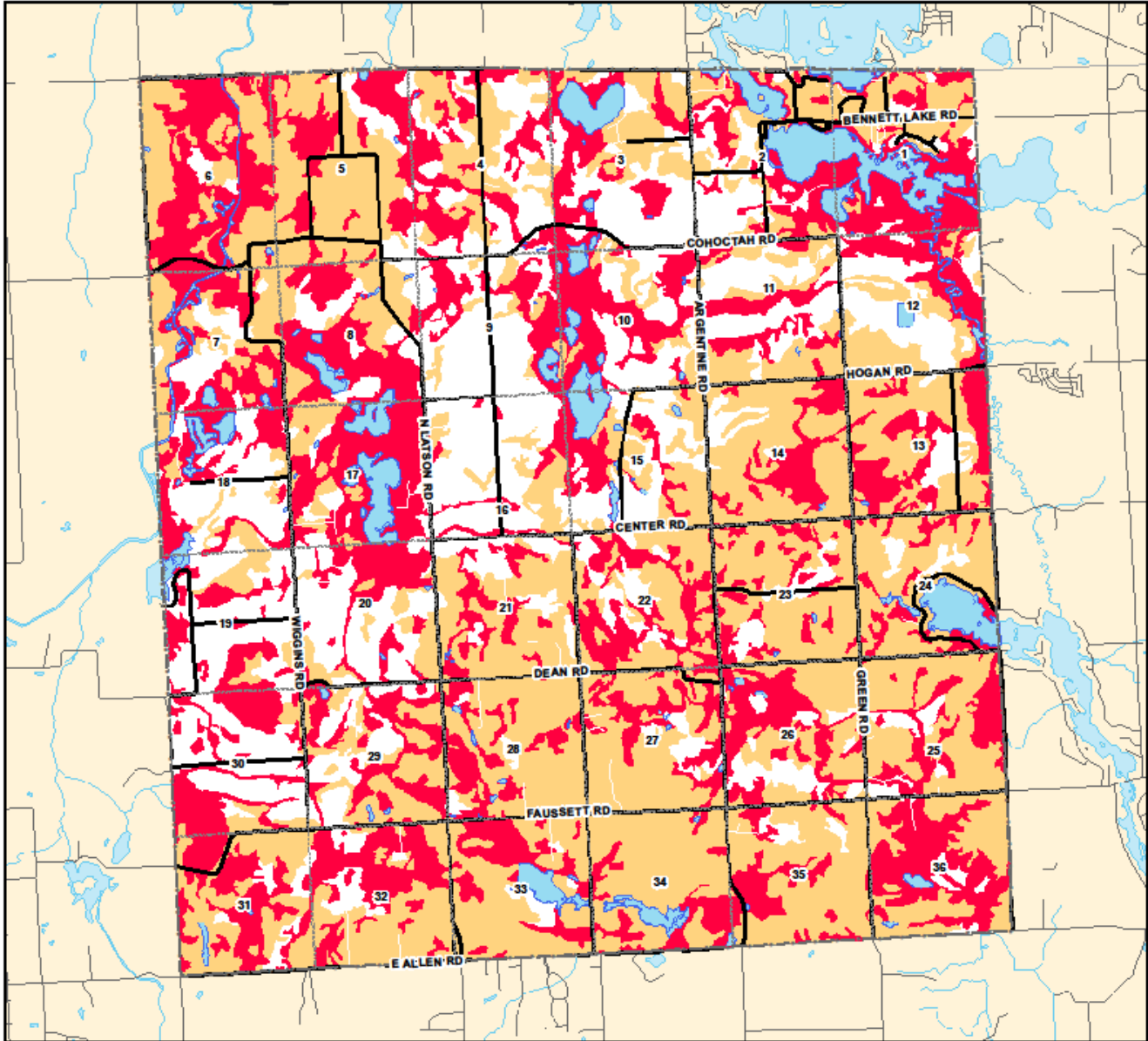
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## MASTER PLAN BASEMENT LIMITATIONS

### Legend

-  Slight Limitations
-  Moderate Limitations
-  Severe Limitations
-  Water
-  Deerfield Township Boundary

Soil data provided by USDA



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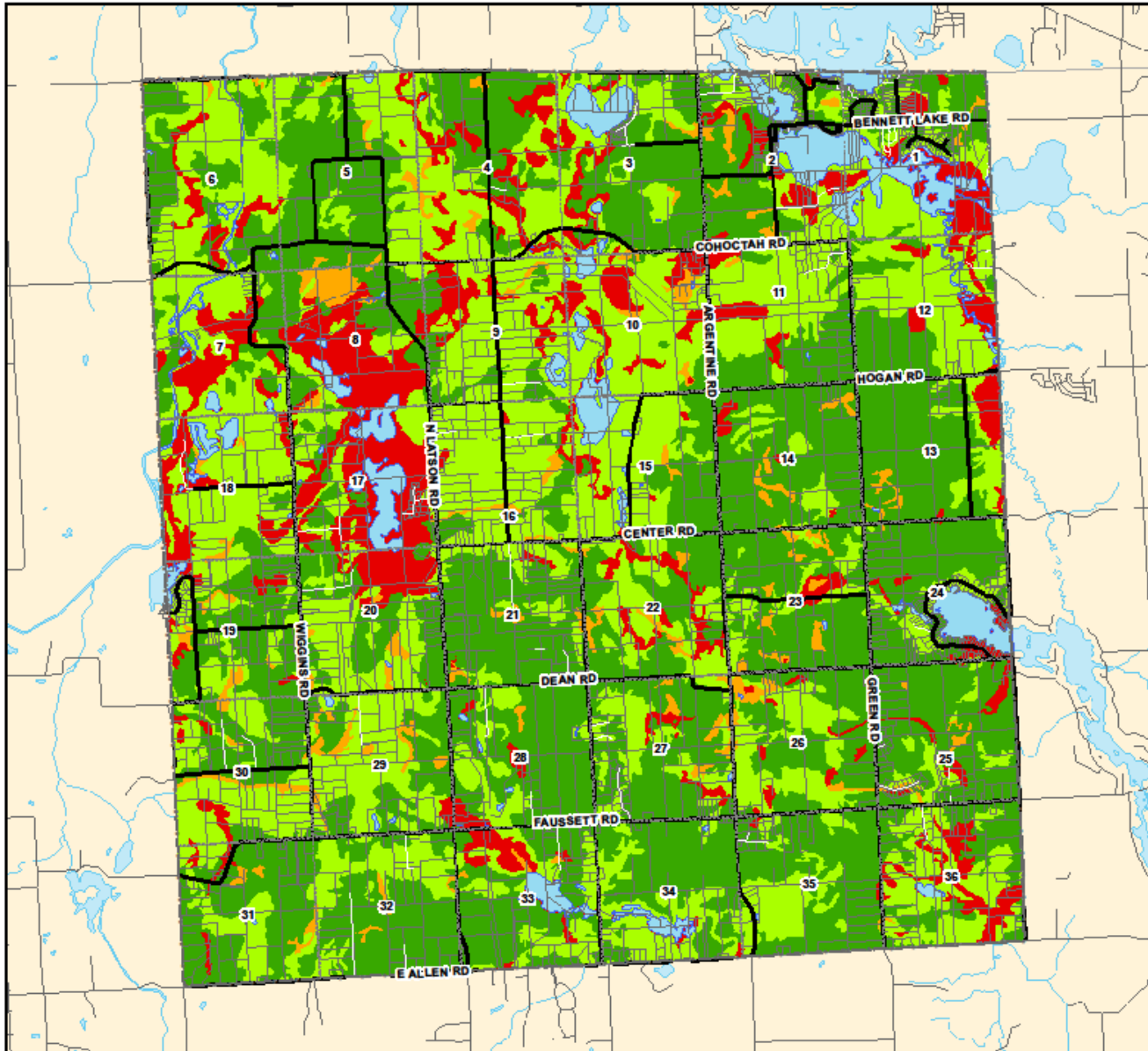
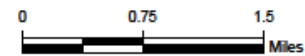
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## MASTER PLAN PRIME FARMLAND

### Legend

-  All areas are prime farmland
-  Farmland of local importance
-  Prime farmland if drained
-  Not prime farmland
-  Deerfield Township Boundary

Soils data provided by Livingston County



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