

# UNADILLA TOWNSHIP

## MASTER PLAN

Prepared By The  
Unadilla Township  
Planning Commission

REVISION DATE JANUARY 27, 2009

AMENDED 2017, AUGUST 22



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## CHAPTER ONE

### OVERVIEW

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#### INTRODUCTION

Though introductory in nature, this chapter is as important as any other section in this document. Master Plans are often misunderstood as to what they consist of and what they are intended to do. This is particularly true in areas where Master Plans are not commonplace, where a community is undertaking the preparation of a Master Plan for the first time, or, as in case of Unadilla Township, where a Planning Commission is updating a Master Plan prepared many years ago. Understanding the fundamentals of what the Unadilla Township Master Plan is all about will assist the residents and officials of the Township in appreciating the role it plays in assuring the future welfare of the Township, 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. This Chapter provides an overview of the Master Plan including its role, its importance, how it should be used, and the process followed during its preparation.

#### WHAT IS THE UNADILLA TOWNSHIP MASTER PLAN

##### Purpose

Just as individuals and families undertake projects in an effort to plan for their future well being, so must municipalities. Whereas individuals may open savings accounts in order to purchase new farm equipment five (5) years into the future, or develop plans for a larger home to house a growing family, municipalities must look to the future and take specific actions to address the current and future needs of the community. Such actions may involve improvements to the roadway network, improvements to the level of emergency services, and the pursuit of new local employment opportunities.

The Unadilla Township Master Plan is a policy document, which identifies how growth within the Township, and associated land development and public services, should best be guided to better assure the future welfare of the community. The Master Plan can generally be described by the following key words and phrases:

**FUTURE ORIENTED:** The Plan concerns itself with long-term planning in guiding growth and land use needs. The Plan is not only a picture of the community today, but a guide to how the community should evolve over the next ten (10) to twenty (20) years in response to growth and community aspirations.

**GENERAL:** The Plan does not focus upon details and specifics but establishes broad principles and policies to address future growth, land use, and public services.

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

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**A PLAN:** The Plan is a specific tangible document which consists of both text and maps, a key portion of which presents and illustrates the Township's policies regarding its planned future land use pattern and delivery of public services.

**DYNAMIC:** The Master 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, land use, and public services.

The Unadilla Township Master Plan was prepared by the Unadilla Township Planning Commission, under the authority of the Michigan Township Planning Act, P.A. 168 of 1959. The Act provides for the development of plans by a Planning Commission for the purposes of, in part:

*"to promote public health, safety, and general welfare; to encourage the use of resources in accordance with their character and adaptability; to avoid the overcrowding of land by buildings or people; to lessen congestion on public roads and streets...and to consider the character of each Township and its suitability for particular uses judged in terms of such factors as the trend in land and population development."*

This Master Plan is not a regulatory document, but a "policy plan" which serves as a foundation upon which the Township will adopt regulations to implement the policies embodied in the Plan. For example, though the Master Plan is not a Zoning Ordinance, the Master Plan will serve as a basis for new provisions in the Unadilla Township Zoning Ordinance. In fact, the Township Rural Zoning Act stipulates that a municipality's zoning ordinance "shall be based upon a plan..." This Master Plan has been prepared, in part, to meet this statutory requirement and maintain a strong legal foundation for the Township's zoning regulations.

## **Elements of the Master Plan**

The Unadilla Township Master Plan consists of five (5) key components:

- 1) An overview of the Township as it exists today, its intended characteristics in years to come, and important planning considerations (Chapter Two).
- 2) A set of goals and objectives intended, in part, to guide the development of a strategy for future land use and public services in the Township (Chapter Three).
- 3) The planned future land use pattern for the Township (Chapter Four).
- 4) The planned future delivery of public services in the Township (Chapter Five).
- 5) Background studies, which provide an extensive review of the conditions and trends in the Township (Appendix).



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## **Importance & Application of The Master Plan**

The importance and application of the Unadilla Township Master Plan is reflected in both the long term interests of the Township and 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 of Unadilla Township that can be expected to continue for years to come and be similarly shared by new future residents and Township officials. Some of these key interests include:

- Minimizing increased tax burdens.
- Protecting open spaces, natural resources, and rural character.
- Assuring appropriate land use and adequate services to protect the public health, safety, and welfare of Township residents and visitors.

The Unadilla Township Master Plan supports these long term interests of the local residents and officials through the provision of a future-oriented strategy, which aggressively seeks to protect these interests. Intensive development without adequate public services to meet the demands of such development, as well as development which places excess demands upon the Township's natural resources (on-site sewage disposal, potable water quality, etc.) can lead the Township into a future of tremendous social and environmental risks which will seriously threaten the public's health, safety, and welfare. Chapters Four and Five establish specific future land use and public services strategies intended to secure these long term interests noted above and others.

### **Day-To-Day Administration**

The Unadilla Township Master Plan plays an equally vital important role in the day-to-day planning and zoning efforts of the Township.

**Advisory Policies:** The Unadilla Township Master Plan is an official advisory policy statement which should be readily shared with existing and prospective landowners and developers to inform such persons and bodies about the long term intentions of the Township regarding land use and public services and, thus more closely integrate development proposals with the policies of the Plan.

**Zoning Ordinance Basis:** The Plan establishes a practical basis for the Township to revise, update, or otherwise prepare regulatory programs to better assure the policies of the Plan are implemented, including zoning, lot split, and subdivision relations.

**Review of Rezoning Requests:** Chapter Three includes a list of Township goals and objectives which should be reviewed in light of future proposed rezoning requests to further establish a record upon which the rezoning request can be evaluated. Just as important, chapters Four and Five provide policies regarding the planned future land use pattern and public services in the Township and provides valuable reference upon which such rezoning requests should be evaluated.

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**Public Services Improvements:** The cost-effective use of Unadilla Township tax dollars requires the identification of a planned future land use pattern in order to then pinpoint future population centers in the Township and areas planned for commercial and/or industrial growth. While many areas in the Township may require future improvements to public services and infrastructure, such as roads and fire protection, population centers and commercial/industrial areas typically require higher levels of public services. The Plan provides the Township with the ability to plan ahead and better pinpoint areas of future need, rather than always playing “catch-up” while the Township's health, safety, and welfare may be at risk. Again, Chapters Three and Four are invaluable in this regard.

**Intergovernmental Coordination:** This Plan provides the basis for Unadilla Township to communicate effectively with its neighbors regarding both the impact of neighboring planning and zoning issues and opportunities for mutual gain through coordinated efforts in the areas of land use and public services.

## HOW THE PLAN WAS PREPARED

During the early 1990s, Unadilla Township grew increasingly concerned about the proper management of future growth and development, and the ability of its zoning regulations to assure the type of future Township character that its residents supported. In order to address these concerns in 1994, the Unadilla Township Planning Commission initiated the preparation of the first Master Plan.

The Planning Commission's initial efforts were directed at establishing a data base about the Township for use during the planning process. This involved a review of physical and cultural conditions in the Township including soils, topography, road network, existing land use patterns, public services, and demographic characteristics, and the preparation of maps to illustrate some of this factual data. The Planning Commission held a town meeting in the winter of 1994 to establish an understanding of the local residents desires and aspirations for the Township, and held a meeting with local farmers to gain insight into important farming issues facing the Township. The Planning Commission then directed its efforts at the development of goal and objective statements upon which more specific land use and public services policies could be founded. An open house was held in the Spring of 1995 to provide residents an opportunity to review the draft goals and objective statements and offer comments and suggestions.

Several alternative future land use patterns were then developed based upon the data collected, and the goal and objective statements. A mail survey was prepared in the Fall of 1995 to assist the Planning Commission in identifying the relative support of local residents for the alternative concepts. The Planning Commission studied these alternatives and input from the public and assembled a complete draft of the Plan suitable for presentation to the residents of the community. The Planning Commission held a town meeting in the Summer of 1996 to receive public comment on the Plan's principle recommendations. The draft Plan was revised and another public hearing was held in the Winter of 1996. The Plan was subsequently adopted on March 25, 1997.

The Planning Commission initiated efforts to update the original Unadilla Township Master Plan in the Fall of 2006. A Citizen Survey was distributed to the public to gather community input for the revision.

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## CHAPTER TWO

# UNADILLA TOWNSHIP: TODAY, TOMORROW, & PLANNING CONSIDERATIONS

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### INTRODUCTION

A fundamental purpose of this Plan is to establish a basis upon which Unadilla Township can plan for the needs of its future residents regarding land use and public services. Prior to the preparation of this Plan, Unadilla Township adopted the position that it wanted to be actively involved in guiding and shaping future growth and development in the community and not allow the community to evolve merely by chance. A key question which must be answered in this regard is : “What should Unadilla Township be like in the future?” This important question must be answered at the onset if this Plan is to develop a sound strategy for future land use and public services. Just as an architect must first identify the desired components of a building before he or she can begin to prepare the plans, so must Unadilla Township first identify its desired future character and characteristics. Only then can strategies be developed to assure the Township’s goals.

The purpose of this Chapter is to provide an overview of the Township as it exists today and the intended character of the Township in the coming years. The Chapter concludes with a review of key planning considerations in light of the future intended character of the Township.

### UNADILLA TOWNSHIP TODAY

Unadilla Township is a small quiet community in the south-central region of Michigan, thirty (30) miles southeast of Lansing and situated in the far southwest corner of Livingston County. One can travel in any direction within the Township without losing sight of open spaces, including expansive farmlands along sections of Dutton, VanSyckle, Spears, and Wasson Roads; abundant woodlands and wetlands along sections of Doyle, Donohue, and Williamsville Roads, and other characteristics often associated with “rural” living. Of the approximately twenty-two thousand (22,000) acres comprising the Township, approximately ten thousand four hundred (10,400) are devoted to agriculture and a similar amount of woodlands, wetlands, and other open spaces. Agriculture within the Township is predominantly characterized by crop farming, although livestock operations are not uncommon.

Unadilla Township was formed in 1835. Previously visited by Indians of the Chippewa and Pottowottomie tribes, the early Township settlers of the 1830s arrived after the tribes’ presence had long faded away. By 1837, the Township’s population approached six hundred fifty (650) persons. It was not until the 1940’s that the Township’s population exceeded one thousand (1,000). In the 1960’s and 1970’s, the population grew rapidly and reached nearly twenty-nine hundred (2,900) persons. The population then grew modestly to approximately thirty-two hundred forty-six (3,246) by May 2007. There has been no significant expansion of commercial or industrial land use in the Township for many years. Compared to the surrounding Townships of Iosco, Marion, and Putnam, Unadilla is expected to gain significantly less population between the years 2000 and 2030.

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State highways M-36 and M-106 intersect in the unincorporated village of Gregory at the heart of the Township. Gregory is the principle activity center of the Township covering approximately forty (40) acres and composed of approximately sixty-five (65) residences and a dozen small to moderately sized commercial enterprises including a grocery store, hardware store, small engine repair shop, restaurant, barber shop, bank and service station. The quiet village reflects a strong "small town" character in harmony with the expansive rural landscape which surrounds it. All other urbanized areas of the Township are predominantly residential in character. The largest of these are Kaiserville, situated along Woodburn, Patterson, and Watson lakes in the Township's far southeast corner, and the Unadilla Mobile Home Estates subdivision, approximately two (2) miles to the east at M-36 & Livermore Road. Each of these residential areas has more than one hundred (100) dwelling units and, together, comprised approximately twenty percent (20%) of the Township's dwelling units. Other residential centers include the early frontier settlements of Plainfield, Unadilla, and Williamsville. The majority of the Township's residences are located south of Dexter Trail Road. This portion of the Township is also characterized by a more extensive network of paved roads. The relative absence of paved roads in the Township's northern half is particularly noticeable in those areas associated with the Gregory State Game Area. Most of the residences within the Township are sited on parcels outside of platted subdivisions, and the majority are situated on lots approaching five (5) acres or more in size.

Industrial land uses within the Township are limited to a gear manufacturing facility near Kaiserville, and a brine injection well site on Bull Run Road in the Township's far northern limits.

Public services within the Township are limited to a volunteer fire department and a small police department, both situated in Gregory. There is no public water service. Public Sewer is limited to three (3) designated areas in the Township.

Unadilla Township is surrounded by municipalities which generally reflect a similar level of development with expansive farms and other open spaces.

## UNADILLA TOWNSHIP TOMORROW

The following paragraphs are intended to portray a picture – a “vision statement” – of the desired character of Unadilla Township during the coming ten (10) to twenty (20) years. The “vision statement” was developed based upon input from local residents and Township officials during the preparation of the Plan (see Chapter 1, “How The Plan Was Prepared”).

*The coming ten (10) to twenty (20) years will witness the growth of Unadilla Township while maintaining intact the fundamental qualities of the community which have always made it such a desirable place to reside. The Township’s historical rural landscape will continue to dominate throughout most areas of the community. The area’s wetlands, woodlands, and fields will continue to serve as an open space network within which wildlife will be abundant, surface waters will be pristine, and recreation opportunities will be plenty. The natural environment of the Township will continue to command a high level of integrity. The continuance of the many public recreation and wildlife resources in the Township, including the Gregory State Game Area and Pinckney State Recreation Area, will provide area residents with convenient and unique recreation resources not typically available to residents of other communities.*

*Much of the Township’s resources and rural character will be maintained through accommodating residential development in a responsible and orderly manner. The protection of natural resources and open spaces will be a vital concern in all large scale development projects including an emphasis on maintaining rural and panoramic views as seen from the county road network. Higher density residential developments will be located only where public services are adequate to accommodate the needs of such land uses, as will be the case with expansion of future commercial and industrial uses. Gregory will continue to be the principle activity center of the Township and provide for modest expansion of retail and other commercial establishments. Its “small town” quality, characterized by an air of friendliness, comfort, and security, will be protected by maintaining its compact form and pedestrian scale. Future commercial and industrial development will provide new employment opportunities and will be orderly located to minimize conflicts with neighboring land uses, assure ease of access for shoppers and workers, and benefit from available public services and infrastructure.*

*Public services will continually improve as the Township grows. Fire and police protection will be available to meet the needs of the growing community and the Township will continue to rely predominantly upon on-site disposal and private wells for potable water. Public sewer service has been limited to the Gregory and Lake areas, however, future environmental policies may require further expansion into the Lake areas. All improvements to public services, including roads, will be largely keyed to the Township’s population and activity centers and/or those areas of the Township intended to accommodate the future higher levels of growth and development. Both gravel and paved roads will be adequately maintained and the paving of gravel roads will occur only when there are sufficient support and funds, and existing or projected traffic levels demand.*

*Persons and families will thrive in the growing community, fed by the high quality of life and the responsiveness of Township officials to local needs. Public participation will continue to play an important role in Township decision-making and the community will exist as a cohesive entity living in balance with its natural assets.*

## PLANNING CONSIDERATIONS

A number of key planning issues are apparent today in Unadilla Township in light of the intended future character of the Township and aspirations of local residents. These issues vary in scope but are clearly not independent of one another. The future quality of life in the Township and the future character of the Township will be largely shaped by the manner in which the Township’s strategy for future land use and public services responds to these issues. Below is a review of these important planning considerations.

## **Accommodating Future Growth & Development**

Future growth and development in Unadilla Township is inevitable. A number of factors contribute to this scenario. Township population has continued to grow since the mid-1900s and this trend is expected to continue. No municipality is permitted to adopt a Zoning Ordinance or make a zoning decision which has the effect of totally prohibiting a legal land use where a local or regional need for such a land use can be demonstrated (unless there are no appropriate locations in the municipality for the land use).

Accordingly, recommendations in this Plan must squarely address the growth and development issues facing the Township and provide a strategy for effectively shaping and guiding future growth and development in a legally defensible manner and consistent with both the aspirations of the Township's citizenry and the opportunities and constraints presented by the Township's natural and cultural characteristics.

## **Farmland Protection**

Unadilla Township has, historically, been a strong farming community. Even today, nearly eighty-six hundred (8,600) acres of the Township is devoted to agricultural use. However, it is important to note that the number of farms in the Township has declined over the years, as has the total acreage devoted to farming. The decline of farming in the Township reflects similar conditions evident throughout areas of Livingston County and the State. Factors encouraging the disinvestment in farming are numerous, including the economic environment and the limited number of younger persons interested in continuing in their parents' footsteps. Cumulative consumption of farmland for residential purposes and conflicts with nearby nonfarm residences further encourages disinvestment. In addition, much of Unadilla Township farmland is not considered to be "prime" by the Soil Conservation Service and apt to produce somewhat less than the high yields characteristic of regions elsewhere in the County and the State. Many of the local farmers in the Township have openly expressed concerns about their ability to continue farming on a long-term basis due to these and other factors.

The Township's current zoning regulations do not encourage the continuation of farming in the Township on a long-term basis. The comparatively large lot sizes, five (5) acres or more, required throughout most of the Township for residences results in the loss of considerable and unnecessary agricultural acreage and further hinders the economic viability of the farm operations.

It is important that the Plan's recommendations recognize the problems faced by the local farming community. Recommendations regarding future land use patterns in the Township should not place unreasonable limitations upon the future use of existing farm parcels. At the same time, the recommendations should encourage the continuation of farming operations for as long as there is interest among local farmers and/or such operations are economically viable.

## **Protection of Rural Character and Natural Resources**

Protection of the Township's "rural character" is extremely important to the residents of Unadilla Township. "Rural Character" is a subjective quality – an issue of personal perception. What one family considers to be "rural" may not be the same as their neighbor, and this Plan does not attempt to define "rural character". However, the Plan does recognize that people typically associate "rural character" with an overall perception of limited urban development, expansive open spaces of farmland and/or natural landscapes including woodlands, wetlands, and fields. Not only are these elements important in shaping the character of the Township, but also provide vital environmental roles including wildlife habitats, food control, water purification, groundwater recharge, and air quality.

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This Plan does not propose that the protection of “rural character” and natural resources means the prohibition of future growth and development. Managed growth and development does not have to jeopardize the Township’s overall rural character, and such an “anti-growth” position will not stand in a judicial courtroom. Rather, this Plan must constructively guide growth and development to assure its compatibility with the Township’s existing natural resources and rural character. The Plan recognizes that protection of “rural character” in the face of residential growth and development is dependent upon site development practices which minimize the negative visual impact of residential development consisting of numerous dwelling units (such as platted subdivisions and condominium subdivisions) and incorporate the protection of open spaces and natural resources into such developments through effective site planning. Current zoning regulations do not provide for substantive protection of the Township’s natural resources and open spaces where large scale residential development is permitted. Rather, current zoning regulations encourage multiple lot residential developments (such as platted subdivisions) void of any semblance of the previous open spaces and natural resources, which characterized the development parcel.

The Plan also recognizes that future non-residential land uses, such as retail service and other commercial land uses, must similarly incorporate measures intended to protect the “small town” character of Gregory and any other future activity nodes of the Township.

## **Residential Lot Split Patterns**

The future pattern of residential lot splits and subdivisions within Unadilla Township will have an important impact upon the future quality of life within the Township. For example:

- The Township’s growing number of five (5) and ten (10) acre lot splits for residential purposes is consuming unnecessary amounts of farmland since it is only the front acre or so that is typically used for residential purposes. The balance of the lot is usually left to lay vacant. When these lot splits occur throughout the Township, one by one, the cumulative impact upon the Township’s agricultural base can be devastating.
- Throughout many unsuspecting rural townships, residential development has evolved largely in a strip residential pattern – residences are “stripped” along the county road network. This pattern of lot splits can be debilitating to Unadilla Township because:
  - 1) The increased number of driveways directly accessing the county roads increases the level of congestion and safety hazards along these corridors;
  - 2) Travel times are increased;
  - 3) The dispersed population pattern increases the cost, and decreases the quality, of public services; and
  - 4) The Township’s previously rich rural panoramic views of woodlands, fields, and other open spaces, as experienced from the roadway, can be reduced to images of never ending driveways, cars, garages, and front yards. The Township’s current zoning regulations encourage this development pattern and negatively impact the effectiveness and character of the Township’s roadway network.

Accordingly, the Plan must encourage future residential lot split patterns which maintain the integrity of the Township’s roadway network and open spaces and fosters the continuation of economically viable farming operations.

## **Roads**

Aside from M-36 and M-106, the Township's roadway network is not well developed. Area wetlands and topography and the surrounding regional road network have discouraged the construction of continuous and convenient cross-Township circulation. Many of the road miles in the Township are gravel or dirt surfaced. The Livingston County Road Commission estimates that as few as ten (10) residences along a gravel road segment can produce enough traffic to cause persistent and regular road maintenance problems.

Recommendations regarding a planned future land use pattern for the Township should guide more intensive growth and development toward those areas of the Township planned to receive, or already have, road improvements and infrastructure better capable of accommodating the increased traffic needs. Similarly, the allocation of funds for future road improvements should be aimed, in part, at those areas of the Township expected to generate higher levels of traffic.

## **Limited Tax Base & Public Services**

The future land use pattern planned for the Township must recognize the comparatively limited tax base. Tax revenues dictate, in part, the extent and quality of public services and area residents do not generally support increases in taxes. Though any new development can be expected to increase the Township's tax base, the new development will, never-the-less, place additional demands upon current public services available to Township residents and businesses.

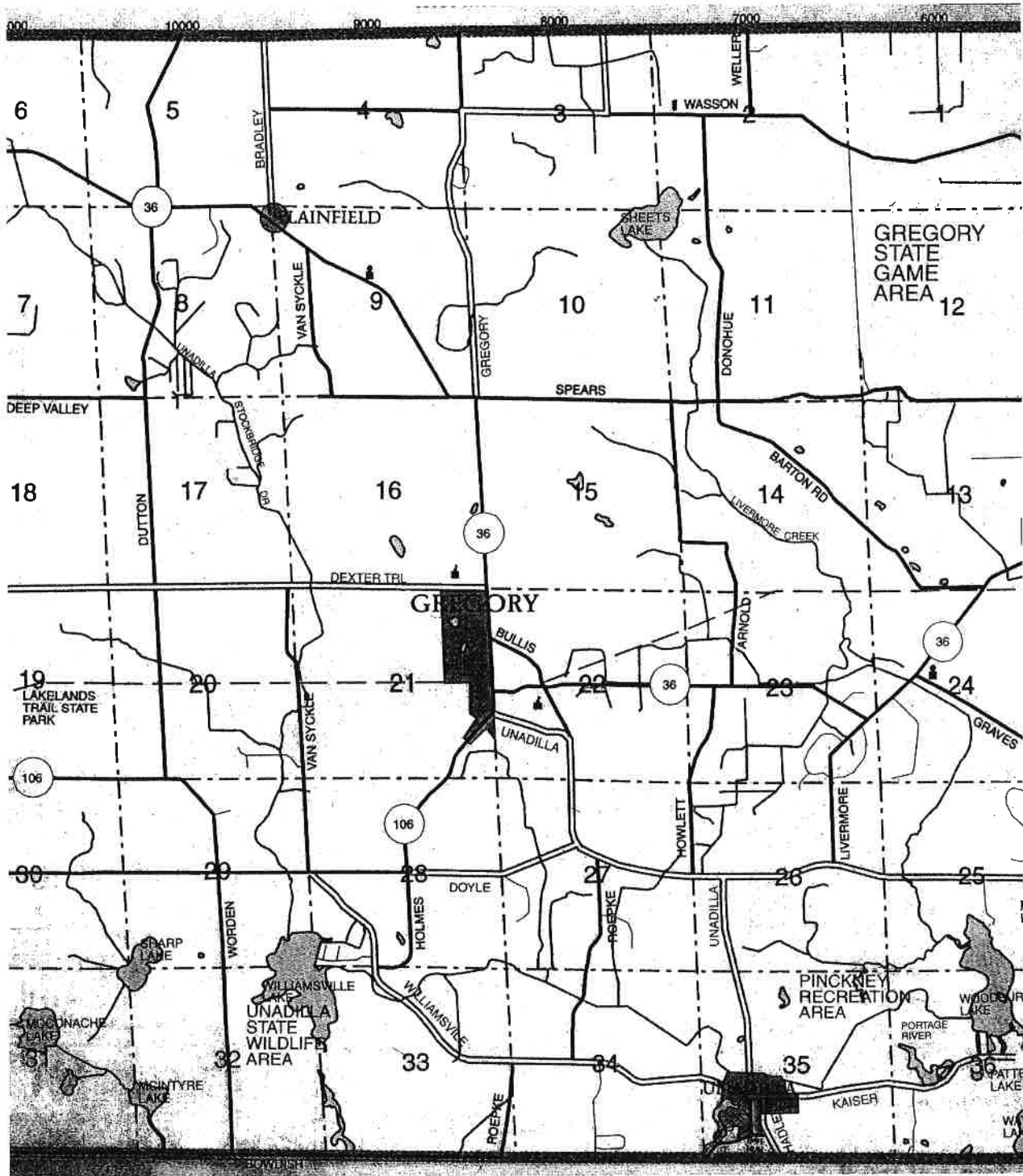
Comparatively, recent research which has shown that new development does not necessarily (and contrary to traditional planning wisdom and thought) "pay its way". The lack of local support for tax increases should encourage development patterns, which minimize new public costs. To this end, it is advantageous to maintain a degree of compactness in future growth and development; and, to the extent it is possible, locate higher density and intensity development near or adjacent to areas currently being served with higher levels of public services or anticipated to be served by such services in the future.

## **Compatibility Among Land Uses**

Individual properties and land uses do not exist as islands. Individual properties and land uses exist within a network of adjoining and nearby properties and land uses. The Plan should provide for a Township-wide land use pattern, which assures compatibility between nearby and neighboring land uses through both recommendations regarding land use type, land use intensity, and screening. If compatibility among land uses is to be achieved, the planned future land use pattern must take into consideration adjacent land uses in neighboring communities as well. The principle adjoining municipalities, including the Townships of Iosco, Putnam, Lyndon, and Stockbridge, are similar in character to Unadilla Township in that the vast areas of these communities are devoted to agriculture and other open spaces and the majority of residential acreage is of a low density character. This is particularly true in regard to those land areas immediately abutting Unadilla Township.



# Unadilla Road Map



STREETS - ROADS & BOUNDARY LINES	
	Interstate/Divided Highway
	Primary Road
	Secondary Road
	Gravel/Earth/Abandoned Roads
	Minor City Streets or Subdivision Roads
	Railroad
	Section Line
	Trail
	Township Boundary
	County Boundary

NUMBERS & SYMBOLS			
T-21-N	Town Number		Airport
R-21-E	Range Number		Cemetery
POK RD	911 Road Names		Church
	State Highway Symbol		School or
	Federal Highway Symbol		Narrow S
	Interstate Highway Symbol		Wide Stru
25	Section Numbers		City
1	Plat Offset Names		City Name
160	Plat Number Of Acres		County I
3	Government Lot #		State Lar
	Land Hook, Connects Properties With Common Owner		Subdivisi
			DNR Lar



**Protection of Public Health, Safety, & Welfare**

Unadilla Township government functions to provide for the health, safety, and welfare of the residents within the municipality. Developing & updating the Master Plan is an extension of that function and as such, the Plan should provide for a foundation upon which the future health, safety, and welfare of the Township and its residents can be assured. The Plan should take steps to satisfy fundamental health, safety, and welfare concerns including the avoidance of intensive development in environmentally sensitive and/or structurally unsound areas, the assurance of adequate public facilities (including sewage disposal, water, storm water management, and emergency services) to serve new land uses and developments at the time they become functional, and the protection of property values and the Township's economic stability.



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## CHAPTER THREE

### GOALS & OBJECTIVES

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#### INTRODUCTION

To effectively plan for the Township's well being with regard to future land use and public services, it is necessary to clarify the goals and objectives of the Township. Planning goals are statements that express the Township's long range desires. Each goal has accompanying objectives, which are general strategies that the Township will pursue to attain the goal. For example, one of the goals of a hardworking family may be to take a summer vacation while two (2) of the family's objectives may be to make additional deposits into their savings account and visit a travel agent for suggestions and information.

The "*vision statement*" in Chapter Two provided an initial flavor of Unadilla Township's goals with regard to accommodating future growth and development. The following goals and objectives are comprised of concise statements, which support the "*vision statement*" while also being more comprehensive in scope.

The following goals and objectives are important for several reasons:

The goals and objectives provide current and potential residents of Unadilla Township with an overview of the intended future character of the Township.

The goals and objectives identify and outline the basic parameters which should be used in guiding future land use and public services in the Township.

The goals and objectives serve as references upon which future rezonings and land development decisions can be evaluated.

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

- Growth Management
- Community Character and Environment
- Farmland
- Residential Development
- Commercial & Industrial Development
- Transportation & Roads
- Public Services

## GOALS & OBJECTIVES

### Growth Management

**Goal:** Guide future development in a manner which is consistent with the natural limitations of the land, the preservation of open spaces, natural resources, and rural character, and the planned provision or expansion of necessary public facilities and services.

**Objectives:**

- Discourage the expansion of public facilities and services (sewer and paved roads, for example) except where the intensity of development requires such services or where the public health, safety, or welfare is at risk.
- Prohibit new growth and development that requires levels of public facilities and services unavailable in the Township, until the time such levels of services become available.
- Provide for the preservation of open spaces through a coordinated future land use plan and related regulations which permit reasonable use of land while discouraging development which leads to premature consumption and/or loss of natural resources and open spaces, including farmlands.
- Wherever legally permissible, local regulations should require new developments to pay for the direct and indirect Township costs associated with that development. These costs should not be imposed on existing residents. Exceptions should be made where public interests and benefits may be at stake.
- Recognize that intergovernmental coordination in growth management and planning decisions is essential because Unadilla Township is a critical link in a regional network of communities.
- Develop and maintain a meaningful communication program with area municipalities and county agencies to discuss local and area-wide public facilities and service needs, land use conditions and trends, contemporary planning issues, and strategies to address short and long term needs and issues in a mutually beneficial manner.
- Continually provide regular opportunities for substantive public input on growth and development issues facing the Township and the future character of the Township.

### Community Character & The Environment

**Goal:** Preserve the quiet, small town, and rural character of Unadilla Township and its environmental integrity.

**Objectives:**

- Recognize that the Township's open spaces, including woodlands, fields, and farmland are a fundamental component of the Township's rural character and should be protected while still providing a land owner with reasonable use of his or her land.
- Protection of the Township's open spaces should equally apply to environmentally sensitive areas, such as steep slopes, wetlands and stream corridors, and land not suitable for development because of soil and/or topographic limitations on structures or septic systems.
- 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 land and water resource environments including aquifers and groundwater resources, and that all development and land uses be in compliance with applicable local, County, State, and Federal regulations.

- Enact standards for residential, commercial and industrial development, which encourage protection of environmentally sensitive areas, open spaces, and the landscape's natural assets.
- Limit disruptions to the Township's prevailing rural and small town character by limiting the future locations within which new or expanded commercial and industrial development may occur.
- Encourage the use of programs and tools designed to preserve open spaces including the use of conservation easements and land trusts.
- Educate the public regarding the Township's fundamental reliance upon groundwater resources for potable water supplies and the potential detrimental effects of irresponsible land development and/or domestic refuse disposal practices.
- Consider the adoption of regulations specifically aimed at protecting wetlands and woodlands in the Township, particularly where such resources do not fall under the regulatory authority of the State.

### **Farmland**

**Goal:** Encourage the continuation of local farming operations while also providing opportunities for appropriate alternative land uses should farming no longer be economically feasible.

#### **Objectives:**

- Establish a disclosure program which requires new builders/owners of homes in designated agricultural areas to acknowledge their awareness of the fact that the primary and preferred use of land in designated agricultural areas is for agricultural use, and that they should expect the normal smells, odors, noises, dust, and associated characteristics of farming operations including the use of pesticides, herbicides, fertilizers and fungicides as a part of daily farm life in the area.
- Adopt zoning regulations designed to protect farming activities in designated agricultural areas from the nuisances (destruction of crops, complaints about legitimate day-to-day farming operations, etc.) associated with incompatible adjacent uses, including but not limited to residences occupied by non-farmers.
- To the extent that residential development is permitted to occur in agricultural areas, encourage such development to be sited on less productive farmland.
- Ensure through responsible and innovative development and site planning regulations that new development minimizes disturbances to, and premature destruction of farmland areas.
- Provide opportunities for residential development of portions of farms in order to increase income to the farmers and thus avoid their abandonment of farming activities altogether.
- Provide farmers with the opportunity to convert portions of their farms to residential use without having to give up unnecessary acreage to accommodate such residential development.
- Support state legislation aimed at permitting the transfer of development rights and purchase of development rights as a means of allowing a farmer to continue farming operations while receiving a reasonable financial return on the development potential of the farmland property, and consider the adoption of local regulations to facilitate these programs.

## **Residential Development**

**Goal:** Provide for a broad range of housing opportunities which respond to the varying economic, family stage, and lifestyle needs of the Township. Encourage stable and attractive housing stock, that are sensitive to the rural and “small town” community character.

### **Objectives:**

- Encourage the continued dominance of single family housing as the principle housing option in the Township and identify land areas, through land use planning and zoning, more appropriate for single family housing.
- While maintaining single family low density housing as the primary housing option in the Township, seek to assure additional housing alternatives to meet the housing needs of the Township’s aging persons and families wishing to continue living in the Township, and the future generations of existing Township families.
- Maximize the amount of open spaces and natural areas preserved where multiple lots or dwelling units are created by encouraging development on only a small portion of the original parcel, thereby preserving the remaining balance in open space.
- Encourage innovative residential development which incorporates the preservation of natural resource systems and open spaces within the site planning process and the preservation of the Township’s rural character.
- Prohibit residential development densities in areas where public services and/or natural conditions are inadequate to support the proposed density of development.

## **Commercial & Industrial Development**

**Goal:** Provide opportunities for the limited expansion of commercial and industrial land uses in a manner, which minimizes impacts upon adjacent land uses, responds to the rural and “small town” character of the community, and assures adequate services to meet the needs of these land uses.

### **Objectives:**

- Evaluate the opportunities and constraints for new commercial and industrial development presented by the Township’s natural features and available public facilities and services to identify the appropriate locations for future commercial and industrial development and the conditions necessary to accommodate such development.
- Ensure that commercial and industrial land uses have adequate provisions for sewage disposal, storm water management, potable water, and other critical public health and welfare concerns.
- Limit land division and access along major roads to prevent commercial or industrial strip development.
- Ensure that elements for preservation of the Township’s rural character are incorporated into new commercial and industrial developments by establishing appropriate site design and building standards, including screening and protection of natural resources.
- Prevent the premature conversion of land to uses other than their planned use for future commercial or industrial development to ensure their long term available for commercial and industrial development.
- Ensure that new commercial and industrial development does not adversely impact the normal use and enjoyment of adjoining land uses through appropriate buffering and other techniques.



- Provide opportunities for home-based occupations within residential dwelling units in appropriate areas of the Township and under conditions which will not negatively impact the residential character, appearance, and quality of life experienced by surrounding existing and future residential properties and neighborhoods.

### **Transportation & Roads**

**Goal:** Develop and maintain a transportation network throughout the Township which moves vehicular traffic in an efficient and safe fashion, utilizes road segments specifically designed to accommodate higher traffic flows where higher traffic levels are being generated, and provides safe and functional opportunities for alternative modes of transportation including walking and bicycling.

#### **Objectives:**

- Identify priority road segments for maintenance and improvement, based upon the planned future land use pattern for the Township and existing traffic patterns, and systematically undertake these projects.

Discourage high traffic generating land uses and development patterns along the Township's gravel roads until the time when such roads have been improved to accommodate such development.

- Discourage the paving of gravel roads where such improvements will encourage growth and development in areas of the Township not specified for such growth.
- Adopt land use and/or other regulations which minimize the potential for traffic congestion and safety hazards along adjacent roadways, including limitations on the number, size, and shape of new land divisions along county roads and the prevention of "strip" development.
- Develop plans and regulations to expand alternative transportation facilities, including walkways and bicycle trails, in coordination with public recreation areas, neighboring municipalities and regional efforts.
- Maintain regular contact with the Livingston County Road Commission and Michigan Department of Transportation to discuss local road improvement issues, the identification and monitoring of local road conditions, and the planning and financing of future local road improvements.

### **Public Facilities & Services**

**Goal:** Expand the Township's public facilities and services only as necessary for maintenance of the public health, safety, and welfare, provided such improvements are consistent with the Master Plan's proposed future land use pattern and do not encourage excessive growth over vast areas of the Township.

#### **Objectives:**

- Identify those areas of the Township which, due to existing conditions and the planned future land use pattern of the Township, may be in need or will be in need of improved public services including police and fire protection services, sewage disposal, potable water, and storm water management.
- All improvements to Township public services and facilities should be planned so that tax dollars are spent wisely and efficiently and any increase in local taxes is minimized.
- Establish a regionally coordinated Township-wide recycling program, which facilitates ease and convenience of use.

- Develop and maintain a regular meaningful communications program with adjoining municipalities and regional agencies to discuss and investigate both infrastructure-based and non-infrastructure-based public facilities and services needs, opportunities for shared facilities and services, and alternative strategies for contracted services versus Township-operated services.

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## CHAPTER FOUR

### FUTURE LAND USE STRATEGY

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#### INTRODUCTION

Unadilla Township's principal planning components are embodied within the Master Plan's Future Land Use Strategy, as discussed in this Chapter, and the Public Services Strategy described in the following Chapter. The Future Land Use Strategy identifies the desired pattern of land use and development throughout the Township. The Public Services Strategy in Chapter Five specifies policies regarding future infrastructure improvements and decisions to better assure future public services are coordinated with the planned future land use pattern in the Township, and that the goals and objectives of the Plan can be achieved.

The Future Land Use Strategy consists of policies regarding future land use and development in the Township. Implementation of these policies rests with regulatory tools of the Township – most importantly the Unadilla Township Zoning Ordinance. The Unadilla Township Zoning Ordinance will be the primary implementation tool of the Unadilla Township Master Plan through appropriate changes in the provisions of the Ordinance. The Township's Zoning Ordinance generally regulates the type, location, bulk, and intensity of land development throughout the Township.

The Township may also adopt other supporting regulatory tools to further the implementation of the policies of the Master Plan. Lot split and private road regulations are very important as a means to further implement the Master Plan and the Future Land Use Strategy presented within. Lot split regulations are intended to assure efficient land division patterns, the avoidance of non-buildable lots, and adequate access to public roads. They are particularly valuable when lots are being created outside of the regulatory authority and administrative review procedures of the Subdivision Control Act. Private road regulations are intended to provide opportunities for road circulation networks restricted from general public use, in response to the local housing market, while at the same time assuring such roads are built to minimum public health, safety, and welfare standards and so maintained. Other related ordinances and a capital improvement program, may, from time to time, be adopted or amended to further carry out this Plan.

## OVERVIEW OF THE FUTURE LAND USE STRATEGY

### Basis

The Future Land Use Strategy establishes the planned future land use pattern throughout the Township for the next 10 to 20 years. The goals and objectives presented in Chapter Three are the foundation on which the Future Land Use Strategy is based, including:

- Protection of public health and safety;
- Environmental protection and the conservation of natural resources including preservation of woodlands, wetlands, lakes, and streams;
- Rural character preservation;
- Minimizing public service costs; and
- Insuring compatibility between land uses.

The future land use pattern was established based upon an analysis of the Township's natural and cultural characteristics, public input, existing and nearby public infrastructure, environmentally sensitive areas, existing land use, neighboring municipal land use, and the Plan's goals and objectives.

### RELATIONSHIP TO REGIONAL PLANS

The townships of Iosco, Putnam, Lyndon, and Stockbridge abut the north, east, south, and west boundaries of Unadilla Township, respectively. Their respective future land use plans were evaluated during the development of Unadilla's Future Land Use map and land use categories. Much like Unadilla Township, the neighboring communities are rural. Their adopted future land use designations support continuation of this rural character and are generally compatible with future land uses proposed for Unadilla's perimeter.

Planned land use along the north end of Unadilla is entirely *Agricultural – Low Density Residential*, which recommends a minimum lot size of one (1) to two (2) acres. This is consistent with planned land uses on the southern end of Iosco Township, which includes agricultural and rural residential designations. According to Iosco's Master Plan minimum lot sizes are also two (2) acres.

The east edge of Unadilla Township includes a mixture of *Agriculture – Low Density Residential*, *Natural Features and Recreation*, and *High Density Residential*, which corresponds to existing developments in and around the lakes in the southeast corner of the Township. Putnam Township also has a mixture of planned land uses that corresponds well with Unadilla although the recommended densities are generally lower. *Agricultural Preservation* north and south of M-36 recommend a minimum lot size of ten (10) acres. Putnam recommends a lower density, three (3) to five (5) acres minimum lot size, residential category along the M-36 corridor. Another category, *Rural Preservation*, found on the southwest corner of Putnam Township recommends lot sizes of five (5) to ten (10) acres. Existing residential around the lakes in Putnam are planned for higher density similar to what it is in Unadilla.

Lyndon Township to the south has a significant amount of public land much of which is contiguous with land in Unadilla Township. Adjacent land planned in Lyndon includes rural residential, natural areas, and lake development. Minimum lot sizes of two (2) acres are recommended primarily on the west side of its border with Unadilla. Public land, which occurs primarily on the east side of the border, is maintained for outdoor recreation and wildlife protection. Lake development, one (1) to two (2) acres, occurs in and around Joslin Lake.

Future land use along Stockbridge Township's east edge is either agriculture on the north end and rural residential on the south. The minimum recommended lot sizes are one (1) acre. This is consistent with planned land uses along Unadilla's west edge [i.e. one (1) to two (2) acres] with the exception of the *Industrial* area planned at M-36 and Kane Road.

## LAND USE DESIGNATIONS

The following sections describe the various land use designations used in this Plan and as depicted on the map on page 4-14. Collectively, these land uses comprise the desired pattern of land use in the Township and their approximate geographic limits.

### **Natural Features and Recreation**

The Future Land Use Strategy establishes a Natural Features and Recreation category, which includes areas with environmentally sensitive natural features such as lakes, rivers, streams, wetlands, floodplains, woodlands, steep slopes, parks, preserves, public trails, and conservation easements. They are found primarily in the northeast, southeast, and southwest corners of the Township and 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 passive recreation and contribute to the Township's overall rural character. The Lakelands Trail, which crosses the Township east to west, is a good example of a popular recreational amenity that makes living in the Township attractive.

Land designated Natural Features and Recreation are primarily publicly-owned acreage including the Gregory State Game Area, Unadilla Wildlife Area, and the Pinckney State Recreation Area. All of these public resources are managed for the purposes of providing outdoor resource-based recreation opportunities and/or managing wildlife resources and habitats. Other areas in the Township designated Natural Features and Recreation are owned by the University of Michigan, Livingston Land Conservancy, and the Southeast Michigan Land Conservancy, and allow only limited public access, if any.

In the light of the critical roles which the Township's wetland areas play, the severe limitations the wetlands present toward development, and the importance of the public resource management and recreation areas in the Township, the Natural Features and Recreation designation provides for the protection of these resources and their long term viability by limiting the introduction and intensities of new land uses in to, or adjacent to these areas. Development near sensitive lands would compromise the environmental benefits accrued from these resources as well as increase public safety concerns between hunting activities and neighboring land uses. Future use and development of Natural Features and Recreation areas should be limited to open-space and natural resource based land uses.

Residential uses are not permitted unless the property is part of a private conservation easement in which some form of use such as a single home is permitted. Alteration of the natural landscape and development of new roads should be avoided to the greatest extent feasible, and no development should occur within these areas without receipt of appropriate Township and/or state or federal permits. 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.

While many wetlands within Natural Features and Recreation areas are protected, there remain many wetlands in the balance of the Township under private ownership that should also be protected. Future and use decisions must recognize the importance of wetlands and the benefits they provide. Any loss in the quantity or quality of wetland resources must be considered permanent; therefore, the Township should establish measures to protect them to the greatest extent possible. To accomplish this, the

Township could adopt a wetland protection ordinance or establish development guidelines aimed at protection and preservation.

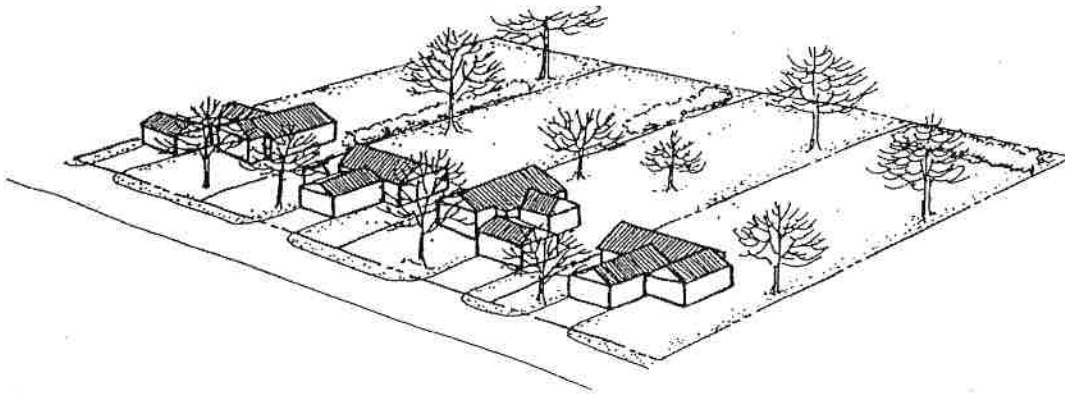
### **Agricultural – Low Density Residential**

Areas designated as Agricultural – Low Residential are intended to maintain existing agricultural operations and protect prime farmland. These areas provide opportunities for residential development within a low density, open space, rural setting. There are several issues that support low density development in the Township including the lack of public sewer and water, prevalence of poor soil conditions for septic systems, limited capacity of the predominantly unpaved roadway network, the interest of the Township to minimize land use conflicts between agricultural operations and neighboring land uses, and the public’s interest in protecting natural resources and rural character of the Township.

Nearly all lands in the Township currently being farmed are within the Agricultural – Low Density Residential designation. This Plan recognizes that farming plays an important role in the history and character of Unadilla Township, contributes food and fiber to local and regional populations, and is a vital source of income. Therefore, the Township encourages the continuation of all current farming activities as well as the introduction of new farming operations. Typical farming activities, including the raising of crops, the use of stables, silos, and barns are encouraged provided that they meet Department of Agriculture requirements as “generally accepted agricultural land management practices (GAAMPS).” Special land uses appropriate for these areas could include communication towers, extraction operations, wind turbine generation, and gas/oil production.

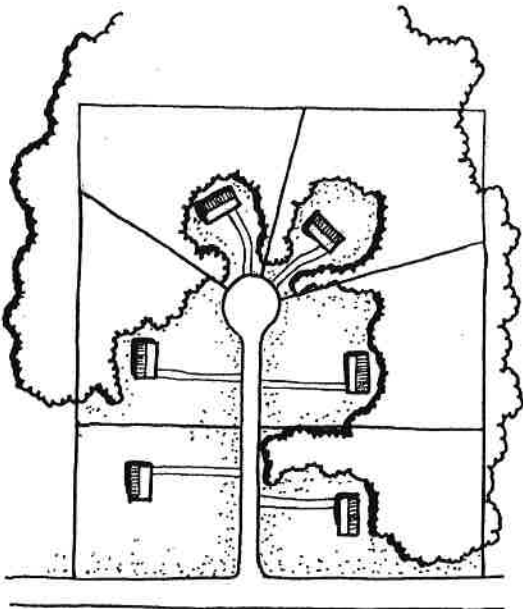
The Plan also recognizes that farming, as an industry, is becoming more difficult in Unadilla Township due to a number of factors including economic conditions, retiring farmers, and an overall decrease of younger generations interested in farming as a career.

Recommended minimum residential densities are one (1) dwelling unit per one (1) to two (2) acres. Typical residential development in the Township’s lower density areas is illustrated by the figure below. This is the easiest form of development, but it also impacts public safety due to all of the driveways directly abutting the major roads and it can significantly undermine the rural character of the Township.

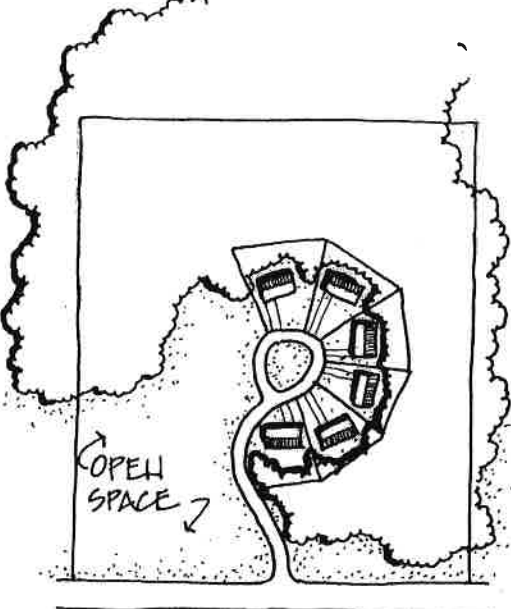


Multiple Drives on Rural Road

Therefore, Planned Unit Developments (PUD) are the preferred development technique particularly in environmentally sensitive areas or in areas with valuable rural vistas or active farmland. The overarching intent of a PUD for these areas is to preserve open space, protect natural features, and allow the continuation of farming operations. Provisions of a PUD ordinance can accomplish these goals by requiring natural feature/open space protection, buffering of sensitive environmental features or farmlands, and/or through density bonuses. The figure below illustrates how natural features and open space can be preserved by grouping home sites on a lot of land.



Typical Residential Development



Preferred Residential Development Pattern

The figure shows how development could be limited to one (1) area [larger developments could be limited to more than one (1) area] of the site while designating remaining portions as open space and natural areas by way of conservation easements, deed restrictions, or similar tools. Other elements of a PUD in these areas should include:

- Limiting direct access to, or proximity to, paved roads, where possible;
- Lots in the development shall gain direct access to the existing county road network;
- Ensure the project has provisions for fire protection infrastructure; and
- Ensure the project has adequate provisions for potable water and sewage disposable.

Potential new residents considering living in the Agriculture – Low Density Residential areas of the Township should recognize that the traditional smells, noises, pesticide applications, and generally recognized agricultural activities associated with farming may well continue on a long term basis in this area of the Township and that the Township does not consider such activities and operations as nuisances,

but rather supports the long term continuation of farming in the Township. Similarly, local developers and real estate agents should disclose this information to prospective buyers of land in Agriculture – Low Density Residential areas.

### **Medium Density Residential**

The Medium Density Residential designation is intended to be a transition between low- and high-density residential and areas which accommodate existing and future single-family development. The recommended density for Medium Density Residential is one (1) dwelling unit per one-half (½) to two (2) acres provided adequate measures exist for potable water and sewage disposal. Development densities of approximately one (1) dwelling unit per one-half (½) acre should not be permitted to encroach indiscriminately throughout land planned for Medium Density Residential, but should be limited to suitable locations. These locations should be close to Gregory where a similar urban pattern has already been established and a heightened level of retail and public services exists. Land surrounding Plainfield and Unadilla is planned for Medium Density Residential.

In general, considerations regarding the appropriateness of higher densities on a particular parcel should include, but not necessarily be limited to, presence of natural features (e.g. topography, wetlands, woodlands), and adjacent residential development patterns. This Plan recommends buffer setbacks where new development abuts agricultural areas, or public recreation and resource lands, to protect the quality and quantity of these resources including those located in neighboring Putnam and Lyndon Townships. Planned Unit Developments is the preferred development technique when multiple dwelling units are proposed. In addition, these larger developments should utilize one (1) access drive, where possible, and otherwise employ good access management techniques to limit curb cuts.

The location of the Medium Density Residential area is based on a number of key factors including:

- These areas are already characterized by some of the most urbanized areas of the Township and permits additional development of similar character, lessening the potential for incompatible land uses;
- These areas are served by the most extensive network of paved primary roads, including M-36, to better accommodate the increased traffic demands generated by residential development of this character; and
- Potential loss of agricultural resources is lessened due to the limited presence of farming compared to other Township areas.
- Potential introduction of public sewer service in the future date, as adjacent communities to the south and southeast witnessed by current plans to introduce public sewer into Lyndon and Dexter Townships review plans for new public sewer systems.

### **High Density Residential**

The High Density Residential designation includes many of the Township's lake areas and Gregory. Lakes in the southeast corner of the Township in particular have witnessed the greatest levels of development. This Plan recognizes the extremely fragile environments of the Township's lakes, the roles these water resources play in contributing to the desired character of the Township; and the particular challenges these resources present in regard to adjacent land use management. While the Township's water resources are, and have been, magnets for development, this development places tremendous pressure upon the aesthetic, environmental, and recreational values of the lakes. These resources are at risk due to potential degradation through shoreline erosion, septic field leaching (where public sewer is not available), sediment discharge, alteration of the natural landscape, and excess use of surface waters by water craft.



This Plan encourages the continuation of the residential land uses along the lakes but in a manner, which more effectively recognizes the sensitive environmental qualities embodied in these resources and their aesthetic and recreational aspects. The Plan recommends lakefront redevelopment projects, as well as new development along the remaining undeveloped yet buildable portions of the Township's lakes designated High Density Residential at a development density of one (1) dwelling unit per one-half (1/2) acre or less. Development densities should not exceed one (1) dwelling unit per one-quarter (1/4) acre where public sewer service is provided. The Plan encourages the renovation and/or redevelopment of those lakefront residential areas, which are or may become characterized by deteriorating conditions of both a visual and/or structural nature. These conditions do not support the intended character of the Township, threaten the public health, safety, and welfare, and negatively impact the use, enjoyment and value of surrounding development.

Keyhole, or funnel development, should be discouraged on lakes within the Township. Keyhole development is the use of a waterfront lot as common open space that provide water access to individuals that are not owners of the keyhole lot. Continued use of keyhole development could result in greater lake use than would normally occur if the lot was used for its intended use, such as a single-family residence. As use of the Township's water resources increase, so does the potential for shore erosion from speedboats and water skiers, lowering of property values, oil and gas spillage from powerboats, increased noise, conflict between lake users (sailboats, fishermen, swimmers, etc.), and increased lake maintenance costs. Such threats become greater if canals are constructed on keyhole lots to increase lake frontage access to back lot residences. This form of development should be prohibited in the interest of preserving the water quality of the Township's lakes, protecting the public health, safety, and welfare, and preserving the lake and shoreline character.

**Commercial**

The confluence of insufficient infrastructure (e.g. roads, public sewer and water) rural regional setting, existing land use patterns, and abundant natural resources will likely limit commercial expansion in the Township. As shown on the Future Land Use map (page 4-14) commercial development is recommended for areas in and around Gregory, Plainfield, and Unadilla. These areas currently support commercial uses although to different degrees and are expected to continue to do so by serving residents of the Township, adjacent communities, or visitors.

Future commercial development should be of a smaller scale to help preserve the rural character of the Township and the "small town" appearance, particularly in Gregory where there is an established, older downtown. This can be achieved by adopting comprehensive design standards that include provisions that relate to architecture, landscaping, lighting, access management, parking, signage, pedestrian access, stormwater management, and site layout.

Lands designated as *Commercial* are intended to accommodate a wide range of uses. Therefore, the *Commercial* category is further subdivided into four (4) categories, Historical Center, Neighborhood/Local, General, and Office to distinguish between particular land uses and their appropriate location in the Township.

**Historical Centers (i.e. CBD, Hamlet)**

The Historical Center sub-category is exclusive to Gregory. This sub-category encompasses existing commercial establishments operating out of older structures along M-106 south of M-36 and on the northeast corner of M-36 and M-106. Due to small lot sizes in this area, development density is typically high and includes a mixture of uses. Appropriate uses include ground floor retail, restaurants, banks, offices and personal service establishments, single- and/or multiple-family residential on upper floors, and public spaces. The intent is to maintain and promote the appearance, the services provided, and

pedestrian activity commonly found in small towns in the 1900's; therefore, uses that are more auto-oriented should be discouraged. Buildings cover the majority of a parcel and parking cannot be accommodated on most sites. Therefore, on-street parking or public parking must be available. Continued maintenance of historical buildings may be needed to preserve the downtown's character. In addition, future development should adhere to architectural design standards to maintain historical characteristics. These may include smaller setbacks regulations, traditional façade materials, and locating commercial uses directly below residential uses.

### **Neighborhood/Local**

The Neighborhood/Local sub-category is intended to provide a mix of existing and future commercial development adjacent to downtown Gregory and throughout the Plainfield and Unadilla areas. Uses typical of these areas include convenience retail, personal services, offices, public spaces, and single- and multiple-family residences. Businesses in this sub-category should compliment but not compete with retail, service, or office establishments already present in these areas. These areas exhibit a compact development pattern, but should have enough land to accommodate small on-site parking lots. Redevelopment and new development with historically consistent architecture should improve the viability and attractiveness of these areas resulting in vibrant and walkable areas.

### **General Commercial**

The General Commercial sub-category includes uses that are generally more intensive compared to Neighborhood/Local. Client base will come from a larger region; therefore, uses will be primarily auto-oriented. This sub-category of commercial uses should be limited to M-36 east of Bullis Road. More land area will be necessary to accommodate larger stores and greater parking areas. Appropriate uses for this area may include planned shopping centers, retail establishments, and clusters of small retail and service businesses in accordance with comprehensive design standards. Due to the more intensive nature of the uses, access to public sewer and water may be necessary.

### **Office**

The Office sub-category is intended to provide areas in the Township for a variety of professions that are office-based. These may include medical and dental, architects, engineers, attorneys, or other similar professional uses. Compared to commercial, office uses are less intensive because they generate fewer automobile trips per day. As such they are good transitional land uses that could be located between residentially and commercially used land. However, due to the relatively benign nature of office uses, they may be integrated into a variety of commercially used areas including land designated Historical Center. Offices may also include converted single-family homes; however, it is important that they adhere to design standards intended to reduce potential impacts to adjacent uses.

### **Industrial**

Traditional industries such as heavy industry (i.e. manufacturing) continues to decline. In addition, the limitations of the necessary infrastructure, such as Class A roads, in the Township do not support expansion of traditional industries. For these reasons, the Township will focus on providing areas for industry that are less intensive such as research and development and high technology businesses. Existing industrial uses in the Township should be allowed to continue operation. The Industrial designation includes a wide variety of applied technology, research, and related office uses. Convenient access to major transportation corridors may be necessary for their future development. Therefore, land at the Kane Road / M-36 intersection has been designated Industrial because of the access afforded to I-94 and I-96 via M-52, which is approximately 2 ½ miles to the west in Ingham County. This area contains significant amounts of woodlands and possibly wetlands; therefore, new developments should be designed as business parks with cluster(s) of buildings to protect natural features, improve aesthetics, and

lessen potential impacts that may be generated by these uses (e.g. noise, vibration, smoke, dust, dirt, gases or offensive odors, glare, or radiation). Establishment of design standards specific to business park development would be necessary. Access to public sewer and water may be necessary as well.

As previously noted, this Plan does not support the introduction of heavier industry in the Township. These types of industrial land uses often require large acreage, public sewer and water, Class A roads, and proximity to major transportation routes and an available work force. These factors typically make Unadilla Township unattractive to prospective heavy traditional industry. Further, the established land use pattern in the Township does not suggest a particularly suitable location where such uses could be appropriately accommodated. The Boos industrial facility located on Kaiser Road just east of Unadilla, is the primary industrial facility in the Township; however, this area is not particularly well suited for industrial use. This Plan may be amended in the future should it become apparent that there is a strong demand for light industrial uses outside of the area already designated along west M-36.

### **Public / Semi-Public**

The Future Land Use Map designates uses such as existing and planned municipal buildings and facilities, churches, cemeteries, public schools, and other uses providing public or semi-public services within this category. This category provides for establishments that are purely governmental as well as joint public and private facilities. These uses are limited to Gregory.

## **SUMMARY OF FUTURE LAND USE PATTERNS**

The Future Land Use Strategy calls for a land use pattern in the Township characterized predominantly by agricultural, low-density residential development, open spaces, and significant amounts of public lands containing woodlands, wetlands, and other environmentally valuable lands. Opportunities for higher density residential development are limited to existing residential areas in the Township's southeast quarter and around Gregory. Opportunities for a variety of commercial developments are available in Gregory, Plainfield, and Unadilla. Light industry is located on M-36 on the west edge of the Township. This Plan does not support introduction of heavy, traditional industry in the Township. It is a major premise of the Future Land Use Strategy that Gregory, Plainfield, and Unadilla maintain their "small town" character even in the face of potential commercial expansion.

### **Gregory**

Gregory is the hub of the Township, both in terms of its geographic location and as an activity center. Good access to Gregory provided by the intersection of M-36 and M-106 supports its existing role as the primary commercial services area in the Township. In addition to commercial uses, Gregory also maintains higher density single-family residential neighborhoods. As described in the following chapters, future land use in Gregory is planned for a mixture of commercial and residential uses within a compact development pattern to promote pedestrian activity and the viability of the downtown. Provision of public and/or private sewer and water may be required as commercial and residential development increases.

As proposed on page 4-14, future commercial development is planned for the center of Gregory, east and north along M-36, and south down M-106. A variety of uses are intended; however, less intensive, pedestrian-oriented uses should be located in the downtown area. More intensive, automobile-oriented uses are more appropriate on the outskirts of Gregory. To limit potential traffic impacts, future commercial development that abuts Dexter Trail shall gain access off M-36. While the Master Plan provides for commercial uses that may draw customers from the larger region, the overall intent is for commercial uses that serve Township residents, passersby, and visitors to the nearby recreational

facilities. Gregory does not offer the convenience or visibility to attract commercial development in general; however, the influx of visitors to local parks could be viewed as a customer base that could be capitalized on by local entrepreneurs.

Concentric rings of residential development are planned around the center of Gregory. Residential uses in Gregory should range from medium- to high-density residential, which may include a variety of housing types including single family, condominiums, two (2)-family, apartments, and living spaces located above commercial establishments. Residences in higher density areas should be located in close proximity to shopping and other commercial uses. To ensure compatibility with the small town character of Gregory, multi-family developments should adhere to certain standards such as:

- Limitations on bulk and size, and the number of dwelling units within each building;
- Adequate buffering of surrounding land uses; and
- Detailed review of potential impact of a multi-family development on the proposed site and adjacent land uses.

Industrial land uses are not proposed for Gregory. Less intensive, light industrial facilities as described in this Plan, may be appropriate if strategically located to minimize negative impacts. These uses should be considered special land uses in the Township's Zoning Ordinance.

Allocation of land for future development of a large park is proposed east of Gregory between M-36 and Church Street. In general, park land is an amenity that attracts families. This future park area could make Gregory and Unadilla Township an appealing location for future residential development.

In general, future land use decisions should take into account the appropriate arrangement of these mixed land uses to better assure both a healthy residential and retail environment. Locations of future commercial, light industrial, and residential land uses should take into account basic functional considerations including adjacent land uses, vehicular circulation, parking, and the maintenance of retail frontage. This Plan strongly recommends the maintenance of retail establishments along the M-106 and M-36 frontage in the Gregory area and residential units on upper floors of commercial buildings.

Proposals for residential, commercial, or industrial developments in Gregory must demonstrate that there are adequate provisions for sewage disposal and potable water before approval. In addition, light industrial uses proposed for Gregory should only be permitted through rezoning and/or the issuance of special use permits to assure thorough review and evaluation of the appropriateness of the property proposed for development.

### **Plainfield**

Plainfield currently has commercial and residential uses including several small commercial facilities involving the sales of convenience goods and farm equipment sales and service and low density residential. The Plan recognizes Plainfield as a viable location for limited commercial development surrounded by a ring of medium-density residential. Future commercial land uses should be designed at a small scale in keeping with local character, the types of which cater only to Township residents.

Plainfield is approximately five (5) miles east of the M-52/M-36 intersection, providing convenient access to I-69 and I-96 to the north and I-94 to the south. As noted earlier, there is no suitable location in the Township for traditional, heavier industrial facilities. However, an area on the west side of the Township just west of Plainfield provides good access, which may attract light industry, research and development, or high technology businesses.

## Unadilla

Limited commercial development is planned for Unadilla in recognition of its location near the Pinckney Recreation Area. Although density in this general area does not support substantial commercial expansion in Unadilla, the frequent day and overnight visitors of the recreation area represent a potentially untapped segment of consumers. Commercial land is designated on the north and south sides of Kaiser Road, and east of Unadilla Road. No commercial access drives shall be allowed on the gravel portion of Joslin Lake Road, starting at the Kaiser Road intersection and continuing south.

Similar to Gregory and Plainfield, it is a key premise of this Plan that commercial expansion in Unadilla recognize the small town character of the community and the Township's desire to maintain this character and identity; therefore, Unadilla is not considered an appropriate location for commercial land uses catering to regional markets. Examples of appropriate land uses for Unadilla could include small retail establishments such as a convenience store or bait shop or restaurants.

A minimal amount of medium density residential is planned west of Unadilla Road.

### **SPECIAL LAND USES**

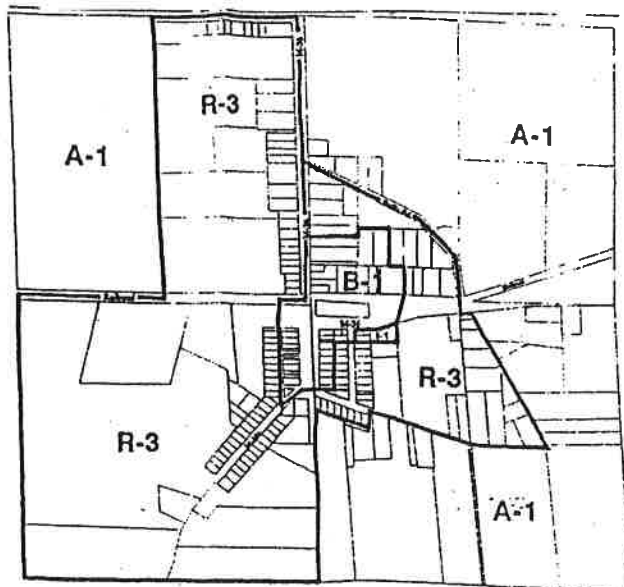
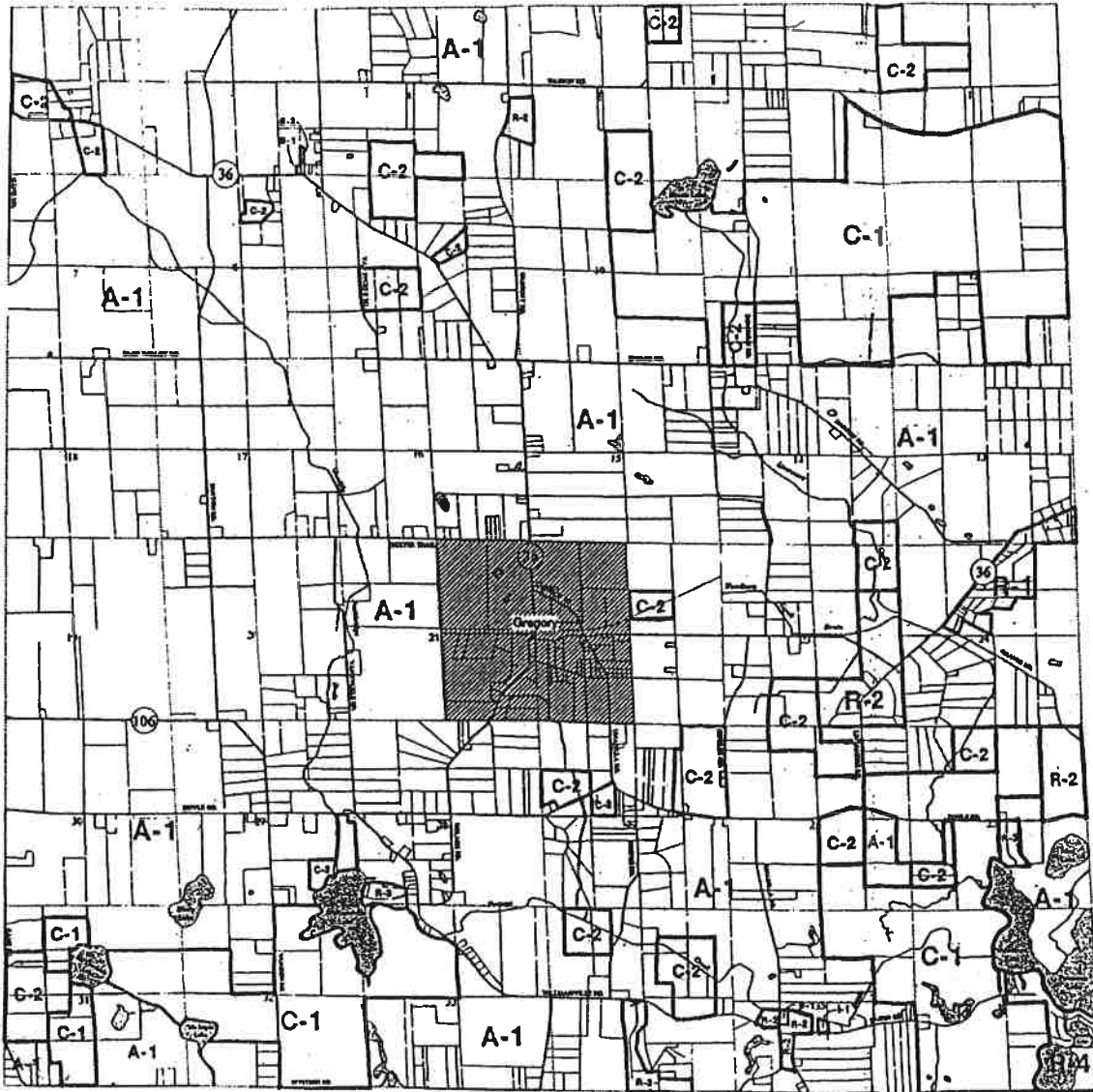
There are a growing number of land uses which present unique or special circumstances in regard to land use management. These are typically regulated as *special land uses* in community zoning ordinances. A special land use is a use, which is permitted only after a special review has determined that the land use and associated site development proposal meets special standards to assure its compatibility with both surrounding land uses and the other permitted uses in the district. Though such uses may be considered generally compatible with the intent of the zoning district within which they are permitted, such uses may not necessarily be appropriate on a particular parcel in the subject zoning district. These unique or special circumstances may be a result of traffic, noise, or visual or operational characteristics, which if unmitigated could result in significant public or private nuisances. Special land uses often include but are not limited to day care facilities, landing strips (e.g. airport), gravel pits, commercial kennels, and multiple-family projects.

Special land uses should be permitted in appropriate locations pursuant to specific standards and review procedures established in the Township's zoning ordinance. Approval should not be indiscriminate and conditions may be imposed to minimize impacts on surrounding lands. These standards shall accomplish the following:

- Assure that the design, construction, operation and maintenance of land uses are in a manner harmonious with the character of adjacent property and the surrounding area;
- Avoid inappropriate changes to the essential character of the surrounding area;
- Avoid interference with the general enjoyment of adjacent property;
- Improve the use or character of the property under consideration and the surrounding area in general, yet also be in keeping with the natural environment of the site;
- Avoid negative impacts upon adjacent property or conditions, which will be detrimental to the health, safety, or welfare of persons, or property through the excessive production of traffic, noise, smoke, odor, fumes, or glare;

- Assure availability of adequate essential public facilities and services, or evidence that the person responsible for the proposed special facilities and services, or evidence that the person responsible for the proposed special land use shall be able to continually provide adequately for the services and facilities deemed essential to the special land use under consideration; and
- Avoid demands on public services and facilities in excess of current capacity.

# CURRENT LAND USE MAP



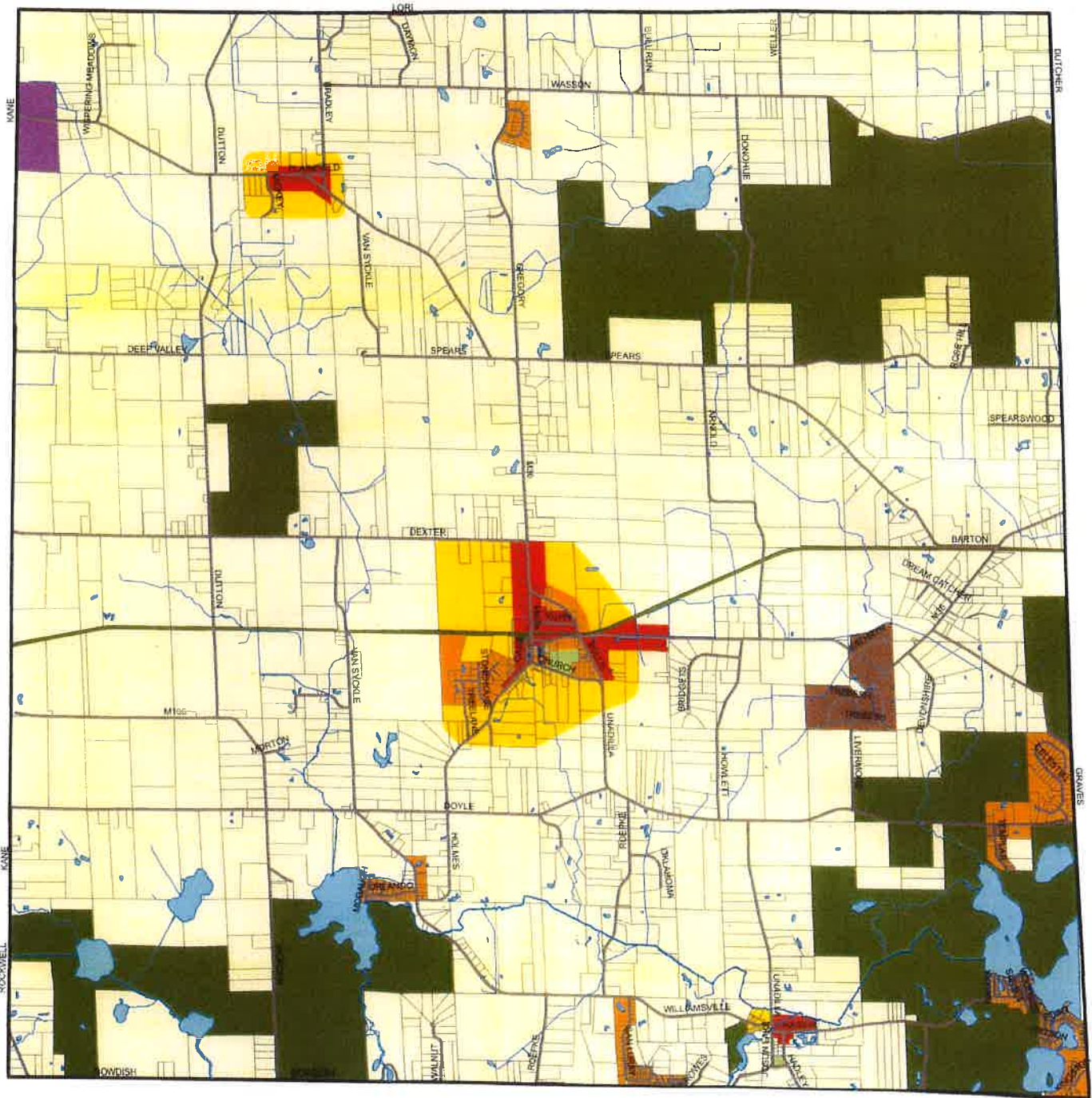
1" = 490'

Gregory Inset

- LEGEND**
- C-1: Public Recreation District
  - C-2: Resource Protection District
  - A-1: Farm Residential District
  - R-1: Low Density Residential District
  - R-2: Medium Density Residential District
  - R-3: High Density Residential District
  - R-4: Lakes Residential District
  - B-1: Local Business District
  - B-2: General Business District
  - I-1: Light Industrial District

*NOTE: See Section 8.04 of Zoning Ordinance regarding clarification of boundaries for zoning districts.*

# FUTURE LAND USE MAP



## Land Use Categories

- Agricultural - Low Density Residential
- Medium Density Residential
- High Density Residential
- Manufactured Housing
- Commercial
- Public / Semi-Public
- Industrial
- Park
- Natural Features and Recreation

## FUTURE LAND USE

UNADILLA TOWNSHIP  
Livingston County, MI



0 2,500 5,000 Feet

Landscape/Planning Associates, Inc.  
Landscape Planners & Land-use Architects  
Ann Arbor, MI  
Plan Commission #24-08



Data Source: Livingston County GIS Department



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## CHAPTER FIVE

### PUBLIC SERVICES STRATEGY

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#### INTRODUCTION AND PURPOSE

The future Land Use Strategy discussed in Chapter Four describes the planned pattern of land use throughout the Township. The Public Services Strategy described in this Chapter identifies the manner and degree to which public infrastructure and services are to be provided within the Township to support the planned future land use pattern. Public services and related infrastructure include sewage disposal and potable water, roads and highways, police and fire protection, recreation, and general government services. As the character and feasibility of land development is directly impacted by the extent to which public services are available, the Public Services Strategy works hand-in-hand with the future Land Use Strategy and is a critical element of the Township's effort to control and guide future growth and development.

#### OVERVIEW OF PUBLIC SERVICES STRATEGY

##### Basis

The Future Land Use Strategy presented in the previous Chapter provides the Township residents with considerable flexibility in the development of property in regard to development densities. While these development options are purposeful and provide the Township with the means to effectively preserve the rural character and natural resources of the Township, this same flexibility provides added challenges for the Township to effectively plan for public service improvements in advance. Specifically, the permitted range in development density does not provide the Township with a definitive geographic area that can clearly be anticipated to develop with the greatest intensities, or at the fastest rate. Thus it becomes that much more difficult to target areas for public service improvements.

The Public Services Strategy is based on the principle of no new development occurring unless concurrent with or after the public services necessary to serve it are in place. This emphasis will, in effect, place more burden upon the landowner to finance (in part or in whole) the necessary improvements if the proposed densities dictate the need for improvements and if the landowner is unwilling to wait for the time when the township is able to schedule and fund the necessary improvements.

The Public Services Strategy consists of policies which address future decisions regarding improvements to the Township's delivery of individual public services in response to existing conditions and anticipated needs. These policies formulate the manner by which, and conditions upon which, future improvements should be made regarding public services.

## Township-Wide Public Services Pattern

The Public Services Strategy calls for a future public services pattern not very different than the current pattern in the Township. The vast majority of the Township is proposed to receive limited expansion of those services currently available. It is expected that the gravel roadway network will continue to dominate as will the reliance upon on-site potable water and sewage disposal.

## INDIVIDUAL PUBLIC SERVICE COMPONENTS

### Roads

**Issues:** As new residential land uses, and possibly new non-residential land uses are introduced in the Township, the need for a roadway network able to accommodate the increased traffic demand will increase. The additional rural residential development anticipated in this Plan, despite its overall low density, will result in higher traffic levels and eventually lower the level of service these roads provide, particularly those that are unpaved. Expected impacts include heightened congestion, vehicular and pedestrian hazards, longer travel time, and higher auto "wear and tear".

Conversely, it must be recognized that an improved roadway network may well attract new or expanded intensive land uses, which, in turn, place additional demand on the infrastructure network. Such change must be managed so that the rate of land use change does not overtax the ability of the Township and County to make the necessary improvements. The Roads component of Public Services Strategy seeks to assure that land development does not occur in a manner which will sacrifice the public health, safety, and welfare due to inadequate roadway infrastructure, nor prematurely encourage changes in land uses due to improved conditions.

Even with the extensive unpaved road network, which greatly reduces traffic flow capacity, the Township's roadway infrastructure fulfills its function fairly well. This is due, in large part, to three (3) conditions:

- 1) The existing low development density throughout the vast majority of the Township;
- 2) The presence of paved roads in those areas of the Township where development densities are considerably higher;
- 3) The presence of M-36 and M-106, paved state highways which accommodate the vast majority of the local traffic flow in the Township.

However, the level of service of the Township's gravel roads is declining and it is these roads that are frequently relied upon to gain access to the paved roads and highways in the Township.

As the average household produces ten (10) vehicle trips daily, and most of the unpaved roads in the Township have an inadequate base, a stretch of gravel road in the Township with more than seven (7) dwelling units is apt to be characterized by regular and persistent maintenance problems. Traffic counts which have been taken along some of the Township's unpaved roads, and the residential lot split patterns along many of the unpaved roads, suggest the excess demand is already being placed on many segments of the Township's unpaved road network.

# DRAFT

As the Township continues to grow and develop according to the land use policies contained in this Plan, traffic volumes will increase and further threaten the current levels of service along all of the roads.

**Strategies:** The following policies are intended to guide Unadilla Township officials on future decisions regarding improvements to the Township's vehicular circulation network and in response to new traffic demands associated with proposed land uses:

- 1) Unadilla Township will strive to improve the Township roadway network, as financial resources become available, based upon the following guidelines:
  - a) Greatest priority for road improvements will be assigned to those road segments whose current conditions present imminent danger to the public health and safety of Township residents. Such dangerous conditions include roadway impasses and flooding.
  - b) Functional classification of roads shall dictate the priority of improvements when all other conditions are generally equal. The functional importance of the various roads in the Township, from highest to lowest, is as follows:
    - i. County primary;
    - ii. County local; excluding public roads in a platted subdivision or similar neighborhood development; and
    - iii. Minor roads, such as local neighborhood roads in platted subdivisions.
  - c) Where imminent danger is not a factor, county local gravel roads shall only be paved based upon the following considerations:
    - i. There is general consensus among residents living along the road segment of such paving;
    - ii. The costs to maintain a gravel road become excessive compared to the long term costs of paving a road, thereby, threatening the financial stability of the Township, and Township residents are unwilling to pay additional taxes to cover the maintenance costs; and
    - iii. A development approaching high density is proposed, in which case approval of such a project may be withheld until such time that arrangements are made for the paving of that portion of the road segment which abuts the project site prior the time when the use becomes operational.
  - d) The extension of road improvements near or through the public resource management and recreation lands and other environmentally sensitive areas shall be strongly discouraged.
- 2) The Planning Commission will strive to obtain and maintain current traffic counts throughout the entire Township and, upon the development of a Township-wide traffic count profile, establish a level of service rating for each road segment to assist in the identification of priority improvements.

# DRAFT

- 3) The Township Board will coordinate with the Livingston County Road Commission to identify needed improvements and the perceived relative priority of such improvements.
- 4) Proposed land uses and site development projects larger than a single-family home on an individual lot will be analyzed in regard to traffic impacts and roadway improvements.
- 5) The Planning Commission will develop standards to regulate new development along roadway corridors, to minimize negative impacts of such development including; but not limited to poorly sited and/or designed access, and too many points of access.
- 6) Subdivisions platted according to PA 288 of 1967 must be built to County Road Commission standards. Development of private roads, whether lot-by-lot or via the Condominium Act, PA 59 of 1978, must be built to meet minimum design standards to assure adequate means of access, including emergency vehicle access. All roads shall be provided with adequate right-of-way or easement widths to assure ease of maintenance, improvements, and installation of utilities.

## **Sewage Disposal and Potable Water**

**Issues:** As is often typical among rural communities, the vast majority of Unadilla Township residents rely upon septic systems and private wells for sewage disposal and potable water. However, improperly operating septic systems can contaminate potable groundwater resources, inland lakes and streams, and pose public health threats to those using the contaminated resources. As land 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 water (potable and otherwise) 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 consequences while the premature provision of these services can lead to unmanaged growth and land development. The Sewage Disposal and Potable Water component of the Public Services Strategy strives to guide the use and applicability of on-site sewage disposal, potable water sources, and the provision of public sewer and water facilities in concert with the Future Land Use Strategy.

The fact that many of the Township soils present severe or moderate limitations to on-site sewage disposal highlights the critical relationship between land use, development densities, and on-site sewage disposal and potable water. Because of the frequent limitations toward septic systems in the Township and yet the Township-wide use of this type of sewage disposal process and private wells for potable water, the public health, safety, and welfare is always at risk. Already, there exist sites in the Township, which have documented high nitrate levels in area wells. These and related threats to the public welfare will only increase as the Township grows and develops unless specific measures are taken. These measures must address the assurance of adequate on-site sewage disposal practices including, in some cases, the provision of public sewer and water. Unadilla Township is currently serviced by limited public sewer. Up to this point in time, the need for such public services has been limited, but the need may well increase. It is not the intent of the Public Services Strategy to suggest public sewer and/or water is a necessity within the Township within the ten (10) to twenty (20) year planning period of this Plan. It is the intent of this Plan, however, to establish strategies for the introduction of such systems.

**Strategies:** The following strategies are intended to assure adequate sewage disposal and potable water in the Township during the next ten (10) to twenty (20) years.

- All on-site sewage disposal and potable water facilities shall be constructed and maintained in accordance with the requirements and standards of the Livingston County Public Health Department and Michigan Public Health Department as well as those of other applicable local, County, State or Federal agencies.
- No land uses or land development projects will be permitted if any applicable regulations regarding on-site sewage disposal and potable water facilities can not be met and public sewer and water services are not available.
- Any future decision by the Township to provide public sewer and water services should be based upon an in-depth analysis of all available options, including services provided through cooperative agreements with neighboring municipalities.
- Any public sewer and water services introduced into the Township should be only where the public welfare is threatened due to anticipated or discovered environmental hazards, or where this Master Plan specifically identifies portions of the Township intended to accommodate development typically requiring such services – the Suburban Residential Area and Mixed-Use Gregory Village Area.
- Any future introduction of a sewer and/or water service area, and associated infrastructure, should be established in a phased manner so as not to open up too great a land area to new and higher density development at one time.
- All land uses and land development projects should be serviced by public sewer and water infrastructure if the infrastructure abuts the property in question.

### **Storm Water Management**

**Issues:** As the land surface is covered by buildings, parking lots and other impermeable surfaces, the quantity of stormwater runoff increases. The soils and vegetated landscape which previously absorbed and slowed much of the water associated with storms are gone. Unless specific preventive measures are taken, these conditions encourage increases in runoff flow, soil erosion, sedimentation and pollution of area water resources, and flood potential. Though these conditions originate from site-specific circumstances, their impact can extend to the entire community and communities beyond if within the same watershed. Inadequate management of stormwater produced due to land development and urbanization threatens the public health, safety, and welfare through life threatening flood conditions, contamination of groundwater resources, deterioration of water-based recreation facilities, and damage and loss of property values. In contrast, stormwater management aims to minimize flood conditions, and ensure the quality of runoff which is collected and ultimately discharged into the watershed system (streams, rivers, wetlands, lakes, etc.) is adequate.

**Strategies:** The following strategies will guide the Township in adequately controlling the quality and quantity of stormwater runoff associated with the introduction of new land uses.

- Proposed land uses will not be permitted if and where the level of service currently provided by existing stormwater management infrastructure and/or existing drainage patterns would be decreased, unless necessary improvements to such infrastructure or natural drainage are first made. The current level of service may vary from one site to another but will be generally defined as the rate, total volume, and quality of predevelopment stormwater runoff.

# DRAFT

- All new and existing land uses must comply with all County, State, and Federal regulations regarding stormwater management and soil erosion, including those regulations of and administered by the Livingston County Drain Commissioner.
- All proposed and existing land uses situated on sites which reflect slopes of twelve percent (12%) or greater shall take and maintain aggressive measures to prohibit the erosion of soils and sedimentation.

## **Support Services and Buildings**

**Issues:** Support services, as referred to within this Plan, includes all the public services a community may provide to its residents above and beyond sewer, water, roads and streets. In particular, these services include police and fire protection and general government services such as tax assessment, Senior Services, and governance services. The reference to these services as support services is not intended to suggest that they are of secondary importance but simply that they are of a different type than sewer, water, and roadway services. As community growth and land development increases, so does the demand for these services. For example, police and fire protection must be extended to more individuals, families, and properties. Similarly, as the demand for these services increase, so does the need for support services administration and the need for property and buildings from which these services are administered. The Support Services and Buildings component of the Public Services Strategy is intended to assure that fire and police protection services, and associated land and buildings, are available to provide for both the existing and future welfare of residents and property within Unadilla Township. While Unadilla Township currently maintains its own police and fire departments, ambulance service is provided by the Stockbridge Area Emergency Services Authority and the Livingston County Ambulance Service. Specific standards upon which to evaluate the level of police protection in Unadilla Township do not exist due to the high number of variables that impact police protection needs. The limited commercial, industrial, and high density residential development in the Township greatly reduces the need for a level of police protection typically associated with a geographically smaller and more urbanized community of similar population size. As a whole, Township residents are generally satisfied with the current level of police and fire protection services.

**Strategies:** The following strategies will guide the Township in its pursuit of maintaining, and as necessary, improving the level of service for general government, police, fire and emergency services:

- Township regulations 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. A guideline for such developments shall be projects of a net density of two (2) dwelling units per acre where more than ten (10) lots or dwelling units are provided for.
- The Township Board will continually monitor police and fire protection needs and service and if necessary, explore expanding services through departmental improvements and/or through service agreements with neighboring municipalities.
- The Township will continue to meet the basic governance needs of its citizens in existing facilities, until a demonstrated need for improved service and/or facilities is identified and adequate financial resources are available to meet that need.

## Recreation

**Issues:** Unadilla Township recognizes that the health of its residents is, in part, impacted by the quality of opportunities available for spending leisure time. The Township further recognizes that a critical consideration in this regard is the type of recreational facilities nearby and available to the residents of the Township. Demands for recreational opportunities increase with population growth and available land resources for recreation decrease as residential and other land uses consume greater amounts of what was previously open space and potential outdoor recreation land. Recreational lands must be purposefully pursued and planned for, as with any other principle land use, if these uses are to be appropriately located within the community and provide the services in demand.

The Recreation component of the Public Services Strategy is to plan for, identify and address the recreation needs of the Township. There is ample state-owned acreage set aside in the Township for resource management and resource based recreation. The Township operates a one point six (1.6) acre park facility in Unadilla, which is largely an open field with a backstop, a pavillion, picnic tables and a grill. The Howlett Elementary School in Gregory offers the most fundamental of public recreational facilities – a school playground.

The extent to which Township residents are satisfied with available recreational opportunities in the Township is not clearly understood at this time. Up to this time, a survey of resident attitudes specifically addressing recreation issues in the Township has not been pursued. Recreation standards adopted by the Michigan Department of Natural Resources suggest that the Township, with a population of approximately thirty-one hundred (3,100) persons, is not particularly lacking in facilities except possibly the amount of locally operated park land acreage and picnic facilities. These standards identify the minimum number of suggested recreation facilities, by facility type, based upon a community's population. These standards are presented as guidelines and not as absolute "*hard and fast rules.*" While these standards suggest only limited inadequacies at present, future Township growth may well result in additional and more severe inadequacies. The public's perception of "*inadequacy*" is not clear. To address, this issue the Township Board established a Parks and Recreation Committee and developed a Parks and Recreation Plan. The mission of the Parks and Recreation Committee is to enhance the quality of life for citizens of Unadilla Township and promote a sense of community by providing a variety of programs, recreational activities and green spaces that will contribute to the physical, social and emotional well being of citizens of all ages.

**Strategies:** The following strategies will guide the Township in its pursuit of an improved recreational environment:

- The Planning Commission will determine, approximately every five (5) years, the extent to which area residents are satisfied with recreation opportunities in the Township through the use of surveys, public meetings, and/or interviews with residents.
- Should sufficient public sentiment warrant, the Planning Commission will pursue the development of a MDNR-approved five (5) year action plan which will provide a specific action plan aimed at providing needed Township facilities and enable the Township to compete for state and federal recreation development monies.
- The Township Board will strive to provide recreation facilities in a manner which recognizes the recreation standards of the MDNR and the particular recreation needs expressed by its residents.
- The Township will adopt incentives to encourage the provision of open space and recreation areas within future development projects.

# DRAFT

- The Township will encourage ease of access to future recreation facilities through the pursuit of a linked open space system, siting recreation lands with recognition of existing and future primary population centers, and facilitating movement to and within future recreation facilities for motorists, bicyclists, pedestrians, and the physically disabled.



# Appendix A

## Demographic Profile

AMENDED AUG.  
2017

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# PROFILE OF GENERAL DEMOGRAPHIC CHARACTERISTICS: U.S. CENSUS 2000

**Table DP-1. Profile of General Demographic Characteristics: 2000**

Geographic area: Unadilla township, Livingston County, Michigan

[For information on confidentiality protection, nonsampling error, and definitions, see text]

Subject	Number	Percent	Subject	Number	Percent
<b>Total population</b> .....	<b>3,190</b>	<b>100.0</b>	<b>HISPANIC OR LATINO AND RACE</b>		
<b>SEX AND AGE</b>			<b>Total population</b> .....	<b>3,190</b>	<b>100.0</b>
Male.....	1,597	50.1	Hispanic or Latino (of any race).....	40	1.3
Female.....	1,593	49.9	Mexican.....	24	0.8
Under 5 years.....	187	5.9	Puerto Rican.....	4	0.1
5 to 9 years.....	224	7.0	Cuban.....	-	-
10 to 14 years.....	253	7.9	Other Hispanic or Latino.....	12	0.4
15 to 19 years.....	239	7.5	Not Hispanic or Latino.....	3,150	98.7
20 to 24 years.....	139	4.4	White alone.....	3,073	96.3
25 to 34 years.....	387	12.1	<b>RELATIONSHIP</b>		
35 to 44 years.....	607	19.0	<b>Total population</b> .....	<b>3,190</b>	<b>100.0</b>
45 to 54 years.....	536	16.8	In households.....	3,165	99.2
55 to 59 years.....	168	5.3	Householder.....	1,156	36.2
60 to 64 years.....	109	3.4	Spouse.....	735	23.0
65 to 74 years.....	191	6.0	Child.....	990	31.0
75 to 84 years.....	121	3.8	Own child under 18 years.....	736	23.1
85 years and over.....	29	0.9	Other relatives.....	128	4.0
Median age (years).....	37.8	(X)	Under 18 years.....	61	1.9
18 years and over.....	2,362	74.0	Nonrelatives.....	156	4.9
Male.....	1,195	37.5	Unmarried partner.....	73	2.3
Female.....	1,167	36.6	In group quarters.....	25	0.8
21 years and over.....	2,281	70.9	Institutionalized population.....	-	-
62 years and over.....	402	12.6	Noninstitutionalized population.....	25	0.8
65 years and over.....	341	10.7	<b>HOUSEHOLD BY TYPE</b>		
Male.....	164	5.1	<b>Total households</b> .....	<b>1,156</b>	<b>100.0</b>
Female.....	177	5.5	Family households (families).....	877	75.9
<b>RACE</b>			With own children under 18 years.....	396	34.3
One race.....	3,145	98.6	Married-couple family.....	735	63.6
White.....	3,105	97.3	With own children under 18 years.....	320	27.7
Black or African American.....	12	0.4	Female householder, no husband present.....	90	7.8
American Indian and Alaska Native.....	14	0.4	With own children under 18 years.....	49	4.2
Asian.....	12	0.4	Nonfamily households.....	279	24.1
Asian Indian.....	-	-	Householder living alone.....	219	18.9
Chinese.....	1	-	Householder 65 years and over.....	71	6.1
Filipino.....	6	0.2	Households with individuals under 18 years.....	445	38.5
Japanese.....	1	-	Households with individuals 65 years and over.....	236	20.4
Korean.....	3	0.1	Average household size.....	2.74	(X)
Vietnamese.....	-	-	Average family size.....	3.11	(X)
Other Asian <sup>1</sup> .....	1	-	<b>HOUSING OCCUPANCY</b>		
Native Hawaiian and Other Pacific Islander.....	-	-	<b>Total housing units</b> .....	<b>1,292</b>	<b>100.0</b>
Native Hawaiian.....	-	-	Occupied housing units.....	1,156	89.5
Guamanian or Chamorro.....	-	-	Vacant housing units.....	136	10.5
Samoa.....	-	-	For seasonal, recreational, or occasional use.....	91	7.0
Other Pacific Islander <sup>2</sup> .....	-	-	Homeowner vacancy rate (percent).....	1.3	(X)
Some other race.....	2	0.1	Rental vacancy rate (percent).....	3.7	(X)
Two or more races.....	45	1.4	<b>HOUSING TENURE</b>		
<b>Race alone or in combination with one or more other races:</b> <sup>3</sup>			<b>Occupied housing units</b> .....	<b>1,156</b>	<b>100.0</b>
White.....	3,148	98.7	Owner-occupied housing units.....	1,051	90.9
Black or African American.....	18	0.6	Renter-occupied housing units.....	105	9.1
American Indian and Alaska Native.....	46	1.4	Average household size of owner-occupied units.....	2.75	(X)
Asian.....	12	0.4	Average household size of renter-occupied units.....	2.61	(X)
Native Hawaiian and Other Pacific Islander.....	2	0.1			
Some other race.....	9	0.3			

- Represents zero or rounds to zero. (X) Not applicable.

<sup>1</sup> Other Asian alone, or two or more Asian categories.

<sup>2</sup> Other Pacific Islander alone, or two or more Native Hawaiian and Other Pacific Islander categories.

<sup>3</sup> In combination with one or more of the other races listed. The six numbers may add to more than the total population and the six percentages may add to more than 100 percent because individuals may report more than one race.

Source: U.S. Census Bureau, Census 2000.

U.S. Census Bureau

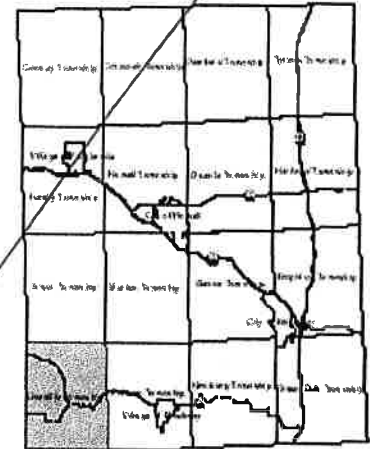
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Appendix A-2

Unadilla Township Master Plan

UNADILLA TOWNSHIP DEMOGRAPHIC PROFILE

Unadilla Township is located in the southwest corner of Livingston County. The Township was first settled in 1833 and today contains the small agricultural community of Plainfield, the bustling little business center of Gregory, and the picturesque hamlet of Unadilla. Unadilla Township residents are able to enjoy the beautiful wildlife habitat preserves within the Gregory State Game Area and the Pinckney State Recreation Area, as well as along the Lakeland Trail. Each of these recreational amenities are located within the Township.



Unadilla Township, lower left corner.  
Livingston County Section Map

**Population**

The Township's population remained relatively stable for decades until more rapid population growth occurred after 1960. For nearly one hundred (100) years between 1870 and 1960, the decennial census

recorded a Township population that fluctuated by no more than one hundred seventy-one (171) persons per decade.

**HISTORICAL POPULATION PROFILE**

1870	1880	1890	1900	1910	1920	1930	1940	1950	1960
1041	1094	1010	930	909	835	861	907	1078	1216

Source: U.S. Bureau of the Census

Between the 1970 and 1980 censuses, the Township population finally exceeded two thousand (2,000) persons. This decade was also the period of time in which the percent population growth was most dramatic, mirroring the most dramatic period of growth for the County as a whole. The year 2000 population has since risen to a Census population of thirty-one hundred ninety (3,190).

*Unadilla Township's percent population change was most dramatic between 1970 and 1980*

**PERCENT POPULATION CHANGE**

1960 Census	% change 1960 - 1970	1970 Census	% change 1970 - 1980	1980 Census	% change 1980 - 1990	1990 Census	% change 1990 - 2000	2000 Census
1216	47.5%	1793	60.3%	2874	2.6%	2949	8.2%	3190

Source: U.S. Bureau of the Census

Compared with the surrounding communities of Iosco, Marion, and Putnam Townships, and the Village of Pinckney, Unadilla Township had the least population gain between the 1990 and 2000 Censuses.

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Unadilla Township gained two hundred forty-one (241) new residents during this time period. Unadilla Township's eight point two percent (8.2%) population increase was also significantly lower than that of surrounding communities and the County's growth rate of thirty-five point seven percent (35.7%) during this decade.

## 1990 – 2000 POPULATION COMPARISON

Community	1990 Population	2000 Population	Numerical Change 1990 – 2000	% Change 1990 - 2000
<i>Unadilla Township</i>	2949	3190	241	8.2%
Iosco Township	1567	3039	1472	93.9%
Marion Township	4918	6757	1839	37.4%
Putnam Township	4580	5359	779	17.0%
Village of Pinckney	1603	2141	538	33.6%

Source: U.S. Bureau of the Census

*Between 2000 and 2030, Unadilla Township's largest period of growth is forecasted to be between the years 2010 and 2015.*

The Southeast Michigan Council of Governments (SEMCOG) estimates that Unadilla Township's May 1, 2007, population is 3,496, a numerical change of three hundred six (306) persons in approximately a seven (7) year time period. This estimate reflects a nine point six percent (9.6%) population growth for this decade, which already surpasses the growth rate of the 1990 – 2000 decade.

In the long term, SEMCOG forecasts that Unadilla Township's population will grow to thirty-six hundred thirty-six (3,636) by 2010, forty-two hundred thirty-eight (4,238) by 2020 and forty-six hundred six (4,606) by 2030. This reflects a 2000 to 2030 population gain of fourteen hundred sixteen (1,416) persons for a percent change of forty-four point four percent (44.4%). Growth is expected to be very incremental between the years 2000 and 2030, with the largest gain in population expected between 2010 and 2015 when Unadilla Township is forecasted to gain three hundred twenty-three (323) new residents for a percent population change of eight point nine percent (8.9%). For each five (5) year period thereafter, SEMCOG forecasts that the Township will gain progressively less population with a smaller percent population change.

## UNADILLA TOWNSHIP POPULATION FORECAST

2000	Pop. Gain 2000 2005	2005	Pop. Gain 2005 2010	2010	Pop. Gain 2010 2015	2015	Pop. Gain 2015 2020	2020	Pop. Gain 2020 2025	2025	Pop. Gain 2025 2030	2030
3,190	137	3,327	309	3,636	323	3,959	279	4,238	211	4,449	157	4,606

Source: Southeast Michigan Council of Governments 2030 Regional Development Forecast

Compared to the four (4) surrounding communities mentioned above, Unadilla Township is expected to gain significantly less population between 2000 and 2030 than all surrounding communities except the Village of Pinckney. The Village of Pinckney is expected to gain six hundred fifty-one (651) new residents, seven hundred sixty-five (765) less than Unadilla Township, for a percent population change of thirty point four percent (30.4%).

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**Dependent Population**

**Unadilla Township Dependent Population**

Census 2000 = 1,169 persons

The dependent population consists of persons under the age of eighteen (18), and persons that are age sixty-five (65) and older. When the total number of persons in these age categories is divided by the total number of persons considered to be the non-dependent ages of eighteen (18) through sixty-four (64), a dependency ratio results. This ratio can help a community plan for housing and services that primarily serve the dependent population. In Unadilla Township the dependency ratio derived from the 2000 Census is fifty-eight percent (58%), which means that there are approximately fifty-eight (58) dependent persons for every one hundred (100) non-dependent persons in the Township. This Township dependency ratio is nearly the same as Livingston County's year 2000 dependency ratio of fifty-nine percent (59%).

**DEPENDENT POPULATION COMPARISON**

<b>Community</b>	<b>Under 18 Population</b>	<b>% of Total Population</b>	<b>65 and Older Population</b>	<b>% of Total Population</b>	<b>Dependency Ratio</b>
<i>Unadilla Township</i>	828	26%	341	10.7%	58%
Iosco Township	990	32.6%	153	5%	60.3%
Marion Township	1,978	29.3%	530	7.8%	59%
Putnam Township	1,380	25.8%	404	7.5%	49.9%
Village of Pinckney	701	32.7%	128	6%	63.2%

Source: U.S. Bureau of the Census

In comparison with the surrounding four (4) municipalities, Unadilla Township has a low percentage of population that is under eighteen (18) and the highest percentage of population that is age sixty-five (65) and older. Unadilla Township's dependency ratio is low when compared to neighboring communities.

*There are approximately 58 dependent persons for every 100 non-dependent persons in Unadilla Township.*

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PROFILE OF SELECTED HOUSING CHARACTERISTICS:  
U.S. CENSUS 2000

Table DP-4. Profile of Selected Housing Characteristics: 2000

Geographic area: Unadilla township, Livingston County, Michigan

(Data based on a sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see text)

Subject	Number	Percent	Subject	Number	Percent
<b>Total housing units</b> .....	<b>1,292</b>	<b>100.0</b>	<b>OCCUPANTS PER ROOM</b>		
<b>UNITS IN STRUCTURE</b>			Occupied housing units .....	<b>1,156</b>	<b>100.0</b>
1-unit, detached .....	1,118	86.5	1.00 or less .....	1,137	98.4
1-unit, attached .....	9	0.7	1.01 to 1.50 .....	19	1.6
2 units .....	6	0.5	1.51 or more .....	-	-
3 or 4 units .....	4	0.3			
5 to 9 units .....	-	-	Specified owner-occupied units .....	<b>616</b>	<b>100.0</b>
10 to 19 units .....	-	-	VALUE		
20 or more units .....	-	-	Less than \$50,000 .....	33	5.4
Mobile home .....	155	12.0	\$50,000 to \$99,999 .....	123	20.0
Boat, RV, van, etc. ....	-	-	\$100,000 to \$149,999 .....	198	32.1
			\$150,000 to \$199,999 .....	172	27.9
<b>YEAR STRUCTURE BUILT</b>			\$200,000 to \$299,999 .....	73	11.9
1999 to March 2000 .....	33	2.6	\$300,000 to \$499,999 .....	17	2.8
1995 to 1998 .....	128	9.9	\$500,000 to \$999,999 .....	-	-
1990 to 1994 .....	102	7.9	\$1,000,000 or more .....	-	-
1980 to 1989 .....	120	9.3	Median (dollars) .....	137,200	(X)
1970 to 1979 .....	396	30.7			
1960 to 1969 .....	98	7.6	<b>MORTGAGE STATUS AND SELECTED</b>		
1940 to 1959 .....	156	12.1	<b>MONTHLY OWNER COSTS</b>		
1939 or earlier .....	259	20.0	With a mortgage .....	469	76.1
			Less than \$300 .....	4	0.6
<b>ROOMS</b>			\$300 to \$499 .....	16	2.6
1 room .....	-	-	\$500 to \$699 .....	40	6.5
2 rooms .....	27	2.1	\$700 to \$999 .....	163	28.5
3 rooms .....	56	4.3	\$1,000 to \$1,499 .....	192	31.2
4 rooms .....	108	8.4	\$1,500 to \$1,999 .....	42	6.8
5 rooms .....	383	29.6	\$2,000 or more .....	12	1.9
6 rooms .....	279	21.6	Median (dollars) .....	1,020	(X)
7 rooms .....	194	15.0	Not mortgaged .....	147	23.9
8 rooms .....	121	9.4	Median (dollars) .....	261	(X)
9 or more rooms .....	125	9.7			
Median (rooms) .....	5.8	(X)	<b>SELECTED MONTHLY OWNER COSTS</b>		
Occupied housing units .....	<b>1,156</b>	<b>100.0</b>	<b>AS A PERCENTAGE OF HOUSEHOLD</b>		
<b>YEAR HOUSEHOLDER MOVED INTO UNIT</b>			<b>INCOME IN 1999</b>		
1999 to March 2000 .....	102	8.8	Less than 15.0 percent .....	242	39.3
1995 to 1998 .....	317	27.4	15.0 to 19.9 percent .....	105	17.0
1990 to 1994 .....	241	20.8	20.0 to 24.9 percent .....	117	19.0
1980 to 1989 .....	236	20.4	25.0 to 29.9 percent .....	46	7.5
1970 to 1979 .....	158	13.7	30.0 to 34.9 percent .....	53	8.6
1969 or earlier .....	102	8.8	35.0 percent or more .....	53	8.6
			Not computed .....	-	-
<b>VEHICLES AVAILABLE</b>			Specified renter-occupied units .....	<b>93</b>	<b>100.0</b>
None .....	27	2.3	<b>GROSS RENT</b>		
1 .....	253	21.9	Less than \$200 .....	-	-
2 .....	496	42.9	\$200 to \$299 .....	-	-
3 or more .....	380	32.9	\$300 to \$499 .....	15	16.1
			\$500 to \$749 .....	40	43.0
<b>HOUSE HEATING FUEL</b>			\$750 to \$999 .....	12	12.9
Utility gas .....	484	41.9	\$1,000 to \$1,499 .....	18	19.4
Bottled, tank, or LP gas .....	448	38.8	\$1,500 or more .....	-	-
Electricity .....	47	4.1	No cash rent .....	8	8.6
Fuel oil, kerosene, etc .....	125	10.8	Median (dollars) .....	715	(X)
Coal or coke .....	-	-			
Wood .....	52	4.5	<b>GROSS RENT AS A PERCENTAGE OF</b>		
Solar energy .....	-	-	<b>HOUSEHOLD INCOME IN 1999</b>		
Other fuel .....	-	-	Less than 15.0 percent .....	-	-
No fuel used .....	-	-	15.0 to 19.9 percent .....	23	24.7
			20.0 to 24.9 percent .....	17	18.3
<b>SELECTED CHARACTERISTICS</b>			25.0 to 29.9 percent .....	15	16.1
Lacking complete plumbing facilities .....	10	0.9	30.0 to 34.9 percent .....	13	14.0
Lacking complete kitchen facilities .....	-	-	35.0 percent or more .....	13	14.0
No telephone service .....	20	1.7	Not computed .....	12	12.9

-Represents zero or rounds to zero. (X) Not applicable.

Source: U.S. Bureau of the Census, Census 2000.

U.S. Census Bureau

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**Housing Units**

Although population is an important factor to consider when contemplating the potential future impacts upon a community, it is the built environment or housing units that will accommodate this future population growth and have the most impact on future land use.

The number of housing units in Unadilla Township grew slowly between 1990 when the Census recorded one thousand ninety-six (1,096) housing units and 2000 when the Census recorded twelve hundred ninety-two (1,292) housing units. This change reflects a growth of one hundred ninety-six (196) new housing units. In comparison to surrounding communities, this growth in housing units is considerably lower. In terms of total housing units, the surrounding communities of Marion Township and Putnam Township have the top two (2) total number of housing units, while Unadilla Township has the third largest stock of housing units.

**HOUSING UNIT COMPARISON**

Community	Total Housing Units				Vacant Housing Units		Seasonal Housing Units	
	1990	2000	Change		1990	2000	1990	2000
			#	%				
<i>Unadilla Township</i>	<i>1,096</i>	<i>1,292</i>	<i>196</i>	<i>17.9%</i>	<i>121</i>	<i>136</i>	<i>90</i>	<i>91</i>
Iosco Township	509	964	455	89.4%	16	43	3	6
Marion Township	1,629	2,388	759	46.6%	91	117	64	51
Putnam Township	1,722	2,116	394	22.9%	217	221	163	160
Village of Pinckney	542	778	236	43.5%	24	47	1	4

Source: U.S. Bureau of the Census

According to the most recent Planned and Proposed residential development list that is compiled by the Livingston County Department of Planning with the assistance of the twenty (20) local units of government, in March 2006 Unadilla Township had four (4) developments under construction and two (2) developments proposed in the site plan review process.

*In March 2006 Unadilla Township reported 4 developments under construction with another 2 developments proposed in site plan review*

In total these developments involve over three hundred (300) acres of land and are projected to result in one hundred thirty-six (136) new residential units. Compared with surrounding communities, the planned and proposed residential developments in Unadilla Township far surpass the new developments recorded in Putnam Township and the Village of Pinckney.

Iosco Township has a few more developments recorded than Unadilla [seven (7) developments totaling over six hundred (600) acres and two hundred seventy-four (274) units] and Marion Township far surpasses any other Livingston County community in terms of the number and volume of new residential developments that are planned and proposed [forty nine (49) developments totaling over thirty-six hundred (3,600) acres and forty-two hundred fifty-five (4,255) units]. This is due in large part to one (1) Marion Township development that is proposed to consist of over one thousand (1,000) acres and two thousand (2,000) housing units.

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None of the planned and proposed residential developments in Unadilla Township are for rental housing. Unadilla Township has the sixth lowest number of rental units in Livingston County. The one hundred five (105) rental units recorded in the 2000 Census comprise nine point one percent (9.1%) of all housing units in the Township.

The vacancy rate in Livingston County ranges from a low of two point five percent (2.5%) in Handy Township to a high of ten point five percent (10.5%) in Unadilla Township. The one hundred thirty-six (136) vacant units recorded in the 2000 Census comprise ten point five percent (10.5%) of the Township's total housing units. This vacancy rate is largely attributed to ninety-one percent (91%) of the vacant housing units being used only seasonally or for recreational use. This type of housing is understandable since Unadilla Township contains five (5) major lakes that consist of sixty (60) acres or more of open water (Bass, Patterson, Sheets, Williamsville, and Woodburn). Other Livingston County communities have significantly more seasonal housing units than Unadilla Township [e.g. Hamburg Township with four hundred six (406)], but the seasonal housing of these communities does not account for as great of a percentage of total housing units.

## Households

Unadilla Township has gained one hundred eighty-one (181) households since 1990 [an eighteen point six percent (18.6%) change]. This numerical change in households during this time period is less than all surrounding communities. The Township's eleven hundred fifty-six (1,156) households also contain a smaller average household size two point seven four (2.74) persons and a smaller average family size [three point one one (3.11) persons] than the four (4) surrounding Livingston County communities.

*More than 3/4 of Unadilla Township's total households are family households*

### HOUSEHOLD COMPARISON

COMMUNITY	Total Households		2000 Census Family Households		2000 Census Non Family Households		Average Household Size	Average Family Size
	1990	2000	#	%	#	%		
<i>Unadilla Township</i>	975	1,156	877	75.9%	279	24.1%	2.74	3.11
Iosco Township	493	921	797	86.5%	124	13.5%	3.19	3.40
Marion Township	1,538	2,271	1,926	84.8%	345	15.2%	2.97	3.22
Putnam Township	1,505	1,895	1,514	79.9%	381	20.1%	2.84*	3.18*
Village of Pinckney	518	731	573	78.4%	158	21.6%	2.90	3.28

Source: U.S. Bureau of the Census Note: \*includes village of Pinckney

Like all Livingston County Townships, Unadilla Township households are predominantly composed of families [seventy-five point nine percent (75.9%)] with a lesser number of households consisting of a non-family composition twenty-four point one percent (24.1%).

Sixty-three point six percent (63.6%) of Unadilla Township's total households are family households headed by a married couple. A lesser number of family households are headed by a female [seven point eight percent (7.8%)] or a male parent [four point five percent (4.5%)]. Non-family households comprise twenty-four point one percent (24.1%) of all households in Unadilla Township; over three-quarters (3/4) of these householders live alone.

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UNADILLA TOWNSHIP HOUSEHOLD FORECAST

HOUSEHOLD TYPE	2010	Change 2010 - 2015	2015	Change 2015 - 2020	2020	Change 2020 - 2025	2025	Change 2025 - 2030	2030
Households With Children	499	27	526	24	550	21	571	30	601
Households Without Children	876	116	992	101	1,093	76	1,169	39	1,208
Total Households	1,375	143	1,518	125	1,643	97	1,740	69	1,809

Source: Southeast Michigan Council of Governments 2030 Regional Development Forecast

SEMCOG forecasts that Livingston County will experience substantial growth in both households with children and households without children. This is contrary to the region which is expected to experience a decline in the number of households with children. Between 2010 and 2030 Unadilla Township is expected to gain one hundred two (102) new households with children and a more dramatic three hundred thirty-two (332) households without children. Growth is expected in both Unadilla Township households with children and households without children for each five (5) year period. SEMCOG forecasts that most of these households will be gained between 2010 and 2015, one hundred forty-three (143) households. Thereafter, the change in households is expected to be less, with one hundred twenty-five (125) new households forecasted between 2015 and 2020, ninety-seven (97) new households between 2020 and 2025, and sixty-nine (69) new households between 2025 and 2030.

*Between the year 2010 and the year 2030 Unadilla Township is expected to gain 434 households for a 31.6% change*

The Southeast Michigan Council of Governments (SEMCOG) forecasts that from the 2000 Census to the year 2030, ten (10) of the sixteen (16) Townships in Livingston County will experience a doubling of their number of households (this does not include Unadilla Township).

Housing Value

Census 2000 figures show that among all eighty-three (83) counties in Michigan, Livingston County has the highest median housing value for owner-occupied housing units (\$187,500). Unadilla Township's median housing value of \$137,200 is significantly lower than the County's median value and lower than the median housing value of the other fifteen (15) Townships in the County. The Village of Fowlerville is the only Livingston County community that has a lower median value of \$123,900. The value of most Unadilla Township homes range from \$50,000 to \$200,000, with the largest number of homes in the \$100,000 to \$149,999 category. The change in these values over the last ten (10) years has been dramatic. Between the 1990 and 2000 censuses, Unadilla Township's median housing value doubled [from \$68,600 to \$137,200 for a percent change of one hundred (100%)].

*The value of most Unadilla Township homes fall in the \$100,000 to \$149,999 category*

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## COMPARISON OF MEDIAN HOUSING VALUES

Community	Median Value of Owner-Occupied Units			
	1990	2000	# Change	% Change
<i>Unadilla Township</i>	<i>\$68,600</i>	<i>\$137,200</i>	<i>\$68,600</i>	<i>100%</i>
Iosco Township	\$79,800	\$170,900	\$91,100	114.2%
Marion Township	\$98,900	\$186,600	\$87,700	88.7%
Putnam Township	\$84,300	\$164,900	\$80,600	95.6%
Village of Pinckney	\$71,600	\$150,100	\$78,500	109.6%

Source: U.S. Bureau of the Census

In comparison, surrounding communities had a greater numeric change in value, but only Iosco Township and the Village of Pinckney surpassed Unadilla Township in percent change in median housing value over the ten (10) year period.

According to the Livingston County Planning Department's housing sale price database, the southeast quadrant of Livingston County has long maintained the highest median housing sale price in the county, followed by the northeast quadrant, the central portion of the county, and then the western portion of the county which includes Unadilla Township. As of January 2002, the median housing sale price for western Livingston was \$179,900.

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PROFILE OF SELECTED ECONOMIC CHARACTERISTICS:  
U.S. CENSUS 2000

Table DP-3. Profile of Selected Economic Characteristics: 2000

Geographic area: Unadilla township, Livingston County, Michigan

[Data based on a sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see text]

Subject	Number	Percent	Subject	Number	Percent
<b>EMPLOYMENT STATUS</b>			<b>INCOME IN 1999</b>		
Population 16 years and over .....	2,470	100.0	Households .....	1,147	100.0
In labor force .....	1,655	67.0	Less than \$10,000 .....	32	2.8
Civilian labor force .....	1,655	67.0	\$10,000 to \$14,999 .....	32	2.8
Employed .....	1,625	65.8	\$15,000 to \$24,999 .....	109	9.5
Unemployed .....	30	1.2	\$25,000 to \$34,999 .....	146	12.7
Percent of civilian labor force .....	1.8	(X)	\$35,000 to \$49,999 .....	200	17.4
Armed Forces .....	-	-	\$50,000 to \$74,999 .....	300	26.2
Not in labor force .....	815	33.0	\$75,000 to \$99,999 .....	200	17.4
Females 16 years and over .....	1,230	100.0	\$100,000 to \$149,999 .....	95	8.3
In labor force .....	746	60.7	\$150,000 to \$199,999 .....	22	1.9
Civilian labor force .....	746	60.7	\$200,000 or more .....	11	1.0
Employed .....	743	60.4	Median household income (dollars) .....	52,433	(X)
Own children under 6 years .....	216	100.0	With earnings .....	1,019	88.8
All parents in family in labor force .....	147	68.1	Mean earnings (dollars) <sup>1</sup> .....	56,132	(X)
<b>COMMUTING TO WORK</b>			With Social Security income .....	261	22.8
Workers 16 years and over .....	1,593	100.0	Mean Social Security income (dollars) <sup>1</sup> .....	12,283	(X)
Car, truck, or van -- drove alone .....	1,330	83.5	With Supplemental Security Income .....	47	4.1
Car, truck, or van -- carpooled .....	147	9.2	Mean Supplemental Security Income (dollars) <sup>1</sup> .....	6,938	(X)
Public transportation (including taxicab) .....	4	0.3	With public assistance income .....	20	1.7
Walked .....	36	2.3	Mean public assistance income (dollars) <sup>1</sup> .....	1,220	(X)
Other means .....	16	1.0	With retirement income .....	235	20.5
Worked at home .....	60	3.8	Mean retirement income (dollars) <sup>1</sup> .....	16,246	(X)
Mean travel time to work (minutes) <sup>1</sup> .....	36.1	(X)	Families .....	895	100.0
Employed civilian population 16 years and over .....	1,625	100.0	Less than \$10,000 .....	18	2.0
<b>OCCUPATION</b>			\$10,000 to \$14,999 .....	21	2.3
Management, professional, and related occupations .....	441	27.1	\$15,000 to \$24,999 .....	51	5.7
Service occupations .....	267	16.4	\$25,000 to \$34,999 .....	96	10.7
Sales and office occupations .....	314	19.3	\$35,000 to \$49,999 .....	168	18.8
Farming, fishing, and forestry occupations .....	11	0.7	\$50,000 to \$74,999 .....	248	27.7
Construction, extraction, and maintenance occupations .....	275	16.9	\$75,000 to \$99,999 .....	173	19.3
Production, transportation, and material moving occupations .....	317	19.5	\$100,000 to \$149,999 .....	99	11.1
<b>INDUSTRY</b>			\$150,000 to \$199,999 .....	13	1.5
Agriculture, forestry, fishing and hunting, and mining .....	32	2.0	\$200,000 or more .....	8	0.9
Construction .....	176	10.8	Median family income (dollars) .....	58,036	(X)
Manufacturing .....	349	21.5	Per capita income (dollars) <sup>1</sup> .....	21,689	(X)
Wholesale trade .....	49	3.0	Median earnings (dollars): .....		
Retail trade .....	133	8.2	Male full-time, year-round workers .....	42,262	(X)
Transportation and warehousing, and utilities .....	53	3.3	Female full-time, year-round workers .....	28,017	(X)
Information .....	38	2.3			
Finance, insurance, real estate, and rental and leasing .....	91	5.6			
Professional, scientific, management, administrative, and waste management services .....	128	7.9	<b>POVERTY STATUS IN 1999</b>		
Educational, health and social services .....	317	19.5	Families .....	22	2.5
Arts, entertainment, recreation, accommodation and food services .....	123	7.6	With related children under 18 years .....	9	2.1
Other services (except public administration) .....	78	4.8	With related children under 5 years .....	5	2.9
Public administration .....	58	3.6	Families with female householder, no husband present .....	8	8.2
<b>CLASS OF WORKER</b>			With related children under 18 years .....	5	11.4
Private wage and salary workers .....	1,268	78.0	With related children under 5 years .....	5	62.5
Government workers .....	201	12.4	Individuals .....	100	3.2
Self-employed workers in own not incorporated business .....	140	8.6	18 years and over .....	82	3.5
Unpaid family workers .....	16	1.0	65 years and over .....	15	4.4
			Related children under 18 years .....	15	1.8
			Related children 5 to 17 years .....	10	1.7
			Unrelated individuals 15 years and over .....	44	12.5

-Represents zero or rounds to zero. (X) Not applicable.

<sup>1</sup>If the denominator of a mean value or per capita value is less than 30, then that value is calculated using a rounded aggregate in the numerator.

See text.

Source: U.S. Bureau of the Census, Census 2000.

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2017

# DRAFT

## INCOME

Most Unadilla Township households have an income range of \$35,000 - \$99,999.

Livingston County has the highest 1999 median household income in the State (\$67,400), and is second only to Oakland County for the highest 1999 median family income (\$75,284). Unadilla Township's median values of \$52,433 (household) and \$58,036 (family) are in the lower half of Livingston County community values. Compared with surrounding communities, Unadilla Township has the lowest 1999 household median income and 1999 family median income. The Township's income figures are most comparable to the Village of Pinckney. Over the last ten (10) years, Unadilla Township's household median income has increased by \$14,061 or thirty-six point six percent (36.6%). Most Unadilla Township households have an income between \$35,000 and \$99,999, with the bulk of households in the \$50,000 - \$74,999 range.

### MEDIAN INCOME COMPARISON

COMMUNITY	Median Income 1989		Median Income 1999		Household Change	
	Household	Family	Household	Family	#	%
<i>Unadilla Township</i>	\$38,372	\$43,291	\$52,433	\$58,036	\$14,061	36.6%
Iosco Township	\$41,616	\$43,600	\$63,808	\$65,156	\$22,192	53.3%
Marion Township	\$52,673	\$54,728	\$72,378	\$76,112	\$19,705	37.4%
Putnam Township	\$41,576	\$44,241	\$61,388	\$63,704	\$19,812	47.7%
Village of Pinckney	\$37,813	\$42,647	\$58,077	\$60,776	\$20,264	53.6%

Source: U.S. Bureau of the Census

## OCCUPATIONS

According to the 2000 Census, Unadilla Township has an employed civilian population aged sixteen (16) and over, consisting of sixteen hundred twenty-five (1,625) workers. Most of these workers, seventy-eight percent (78%), are private wage and salary workers [twelve hundred sixty-eight (1,268) workers] with government workers comprising the second largest class of workers in the Township [twelve percent (12%) or one hundred ninety-five (195) workers] and self-employed workers in their own unincorporated business comprising the third largest class of workers in the Township [approximately nine percent (9%) or one hundred forty-six (146) workers].

As recorded in the 2000 Census, the dominant occupation category in Unadilla Township is management, professional, and related occupations. Over four hundred forty-one (441) or twenty-seven percent (27%) of the sixteen hundred twenty-five (1,625) workers claim this as their occupation. Production, transportation, and material moving occupations is the second largest occupation category with three hundred seventeen (317) workers or nineteen point five percent (19.5%) of the employed civilian population aged sixteen (16) and over. The third largest occupation category in the Township is sales and office occupations. This occupational category has three hundred fourteen (314) workers or nineteen point three percent (19.3%) of workers. The occupational category with the least number of Unadilla

Appendix A-12

Unadilla Township Master Plan

AMENDED  
2017

# DRAFT

Township workers, is farming, fishing and forestry occupations. Only eleven (11) workers are recorded in this occupational category.

## UNADILLA TOWNSHIP OCCUPATIONS

Occupation	Number	Percent
Management, Professional, and Related Occupations	441	27.1%
Service Occupations	267	16.4%
Sales and Office Occupations	314	19.3%
Farming, Fishing, and Forestry Occupations	11	.7%
Construction, Extraction, and Maintenance Occupations	275	16.9%
Production, Transportation, and Material Moving Occupations	317	19.5%

Source: U.S. Bureau of the Census

## EDUCATION

Unadilla Township is part of three (3) public school districts, the largest being Stockbridge Community Schools. A northern segment of the township is in the Fowlerville Community Schools District, while an eastern segment of the township is in the Pinckney Community Schools District. Unadilla Township does not contain any school facilities that are currently in use, although Stockbridge Community Schools does own the elementary school that currently houses the Unadilla Township Hall, and an additional sixteen point five (16.5) acres of open or recreational land in the settlement of Gregory.

The 2000 Census recorded eight hundred fifty-four (854) Unadilla Township residents age three (3) years and older that are enrolled in school. The majority of these students forty-four point six percent (44.6%) are enrolled in elementary school grades one (1) through eight (8). The second largest percent of students twenty-eight point one percent (28.1%) are enrolled in high school grades nine (9) through twelve (12) and the third largest percent of students are enrolled in college or graduate school at eighteen percent (18%).

Unadilla Township consists of a well educated population age twenty-five (25) years and older. Eighty-four point six percent (84.6%) of this adult population group has graduated from high school or obtained a higher degree level. Unadilla Township's educational attainment level is slightly lower than Livingston County's ninety-one point four percent (91.4%) high school graduate or higher attainment, and slightly lower than that achieved by surrounding communities. However, Unadilla Township's percentages of educational attainment are very comparable to that of Iosco Township.

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Educational Attainment

POPULATION 25 YEARS AND OVER

COMMUNITY	Population 25 years and over	Less than 9 <sup>th</sup> grade	9 <sup>th</sup> - 12 <sup>th</sup> grade, no diploma	High School graduate	% High School graduate or higher	% Bachelor's degree or higher
<i>Unadilla Township</i>	2,116	63	262	768	84.6%	14.7%
Iosco Township	1,829	77	202	614	84.7%	15.3%
Marion Township	4,384	47	211	1,342	94.1%	23.2%
Putnam Township	4,847	71	448	1,616	89.3%	19.1%
Village of Pinckney	1,209	31	66	395	92.0%	22.8%

Source: U.S. Bureau of the Census.

Unadilla Township does not have as large a percent of population twenty-five (25) years and over that have obtained a bachelor's degree or higher. Of this adult population group in Unadilla Township fourteen point seven percent (14.7%) has obtained a bachelor's degree or higher as compared to twenty-eight point two percent (28.2%) in Livingston County as a whole.

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## PROFILE OF SELECTED SOCIAL CHARACTERISTICS: U.S. CENSUS 2000

**Table DP-2. Profile of Selected Social Characteristics: 2000**

Geographic area: Unadilla township, Livingston County, Michigan

[Data based on a sample. For information on confidentiality protection, sampling error, nonsampling error, and definitions, see text]

Subject	Number	Percent	Subject	Number	Percent
<b>SCHOOL ENROLLMENT</b>			<b>NATIVITY AND PLACE OF BIRTH</b>		
Population 3 years and over enrolled in school	854	100.0	Total population	3,190	100.0
Nursery school, preschool	54	6.3	Native	3,148	98.7
Kindergarten	25	2.9	Born in United States	3,140	98.4
Elementary school (grades 1-8)	381	44.6	State of residence	2,681	84.0
High school (grades 9-12)	240	28.1	Different state	459	14.4
College or graduate school	154	18.0	Born outside United States	8	0.3
<b>EDUCATIONAL ATTAINMENT</b>			Foreign born	42	1.3
Population 25 years and over	2,116	100.0	Entered 1990 to March 2000	-	-
Less than 9th grade	63	3.0	Naturalized citizen	25	0.8
9th to 12th grade, no diploma	262	12.4	Not a citizen	17	0.5
High school graduate (includes equivalency)	768	36.3	<b>REGION OF BIRTH OF FOREIGN BORN</b>		
Some college, no degree	557	26.3	Total (excluding born at sea)	42	100.0
Associate degree	155	7.3	Europe	23	54.8
Bachelor's degree	232	11.0	Asia	6	14.3
Graduate or professional degree	79	3.7	Africa	-	-
Percent high school graduate or higher	84.6	(X)	Oceania	-	-
Percent bachelor's degree or higher	14.7	(X)	Latin America	-	-
<b>MARITAL STATUS</b>			Northern America	13	31.0
Population 15 years and over	2,520	100.0	<b>LANGUAGE SPOKEN AT HOME</b>		
Never married	555	22.0	Population 5 years and over	2,981	100.0
Now married, except separated	1,537	61.0	English only	2,921	98.0
Separated	23	0.9	Language other than English	60	2.0
Widowed	156	6.2	Speak English less than "very well"	27	0.9
Female	103	4.1	Spanish	11	0.4
Divorced	249	9.9	Speak English less than "very well"	11	0.4
Female	110	4.4	Other Indo-European languages	26	0.9
<b>GRANDPARENTS AS CAREGIVERS</b>			Speak English less than "very well"	3	0.1
Grandparent living in household with one or more own grandchildren under 18 years	93	100.0	Asian and Pacific Island languages	16	0.5
Grandparent responsible for grandchildren	58	62.4	Speak English less than "very well"	6	0.2
<b>VETERAN STATUS</b>			<b>ANCESTRY (single or multiple)</b>		
Civilian population 18 years and over	2,358	100.0	Total population	3,190	100.0
Civilian veterans	323	13.7	Total ancestries reported	3,681	115.4
<b>DISABILITY STATUS OF THE CIVILIAN NONINSTITUTIONALIZED POPULATION</b>			Arab	5	0.2
Population 5 to 20 years	749	100.0	Czech <sup>1</sup>	23	0.7
With a disability	81	10.8	Danish	30	0.9
Population 21 to 64 years	1,893	100.0	Dutch	54	1.7
With a disability	384	20.3	English	482	14.5
Percent employed	62.5	(X)	French (except Basque) <sup>2</sup>	235	7.4
No disability	1,509	79.7	French Canadian <sup>1</sup>	52	1.6
Percent employed	81.5	(X)	German	922	28.9
Population 65 years and over	339	100.0	Greek	8	0.3
With a disability	148	43.7	Hungarian	41	1.3
<b>RESIDENCE IN 1995</b>			Irish <sup>1</sup>	481	15.1
Population 5 years and over	2,981	100.0	Italian	189	5.9
Same house in 1995	1,835	61.6	Lithuanian	25	0.8
Different house in the U.S. in 1995	1,146	38.4	Norwegian	32	1.0
Same county	521	17.5	Polish	237	7.4
Different county	625	21.0	Portuguese	-	-
Same state	554	18.6	Russian	47	1.5
Different state	71	2.4	Scotch-Irish	82	2.6
Elsewhere in 1995	-	-	Scottish	83	2.6
			Slovak	4	0.1
			Subsaharan African	-	-
			Swedish	-	-
			Swiss	59	1.8
			Ukrainian	10	0.3
			United States or American	-	-
			Welsh	246	7.7
			West Indian (excluding Hispanic groups)	37	1.2
			Other ancestries	317	9.9

-Represents zero or rounds to zero. (X) Not applicable.

<sup>1</sup>The data represent a combination of two ancestries shown separately in Summary File 3. Czech includes Czechoslovakian. French includes Alsatian. French Canadian includes Acadian/Cajun. Irish includes Celtic.

Source: U.S. Bureau of the Census, Census 2000.

U.S. Census Bureau

Appendix A-15

Unadilla Township Master Plan

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2017

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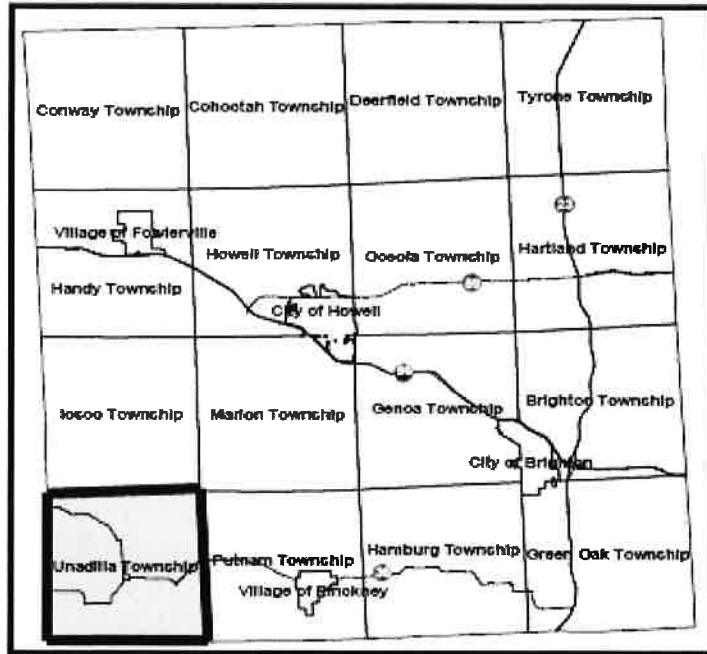


2013

**COMMUNITY  
ECONOMIC  
PROFILE**

For

**Unadilla  
Township**



Livingston County, Michigan

**LOCATION**

Unadilla Township is located in the southwest corner of Livingston County. First settled in 1833, the Township is scenic in character and hosts the Gregory State Game Area and the Pinckney State Recreation Area.

**TAX RATES:**

**2012 Millage Residential Rate:**

**Homestead:**

24.0296 to 27.8388/ \$1,000 of taxable value

**Non-Homestead:**

42.0296 to 45.8388/ \$1,000 of taxable value

Sources: Livingston County Department of Planning, Southeast Michigan Council of Governments (SEMCOG), Livingston County Equalization, U.S.Census Bureau, Michigan Department of Technology, Management & Budget.  
Prepared by: Livingston County Department of Planning, July 2013.

**GOVERNMENT**

Hall Address: 126 Webb Street  
Gregory, MI 48137

Mailing Address: 126 Webb Street  
Gregory, MI 48137

Phone: (734) 498-2502

Web Site: <http://www.twp.unadilla.mi.us>

**Business Hours**

Tuesday & Thursday, 9:00 a.m. to 4:00 p.m.  
Saturday, 9:00 a.m. to noon

**County Commissioners**

Ronald Van Houten - District 4

**Township Officials**

Supervisor: Linda Walker

Clerk: Linda Topping

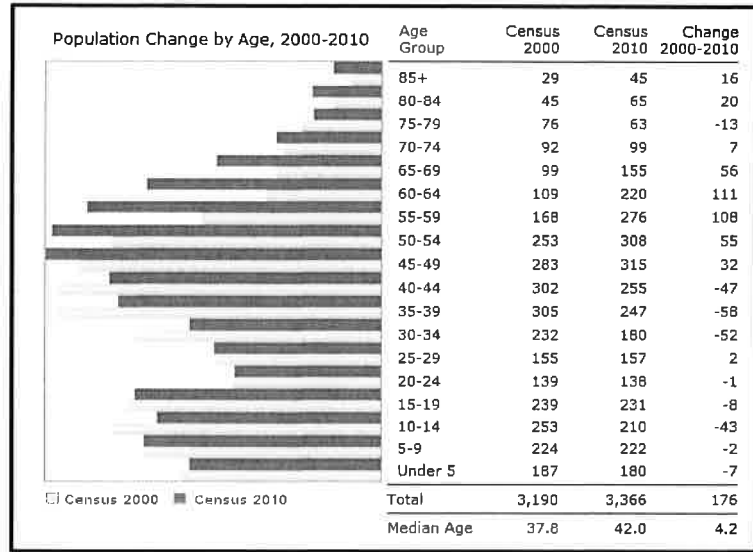
Treasurer: Julie Weiland



**POPULATION**

2000 Population	3,190
2010 Population	3,366
Male	1,707
Female	1,659

Population Estimate  
(July 2013) 3,564



Source: SEMCOG and U.S. Census Bureau American Factfinder, 2010

**POPULATION FORECAST**

2020	3,930
2030	4,135
2040	4,635

Percent Change  
2020-2040 17.9%

Forecasted Jobs by Industry	SEMCOG 2010	SEMCOG 2040	Change 2010-2040
Natural Resources, Mining, & Construction	36	41	5
Manufacturing	C	C	C
Wholesale Trade, Transportation, Warehousing, & Utilities	15	26	11
Retail Trade	31	37	6
Knowledge-based Services	C	C	C
Services to Households & Firms	27	60	33
Private Education & Healthcare	C	C	C
Leisure & Hospitality	C	C	C
Government	C	C	C
<b>Total</b>	<b>184</b>	<b>289</b>	<b>105</b>

Note: "C" indicates data blocked due to confidentiality concerns of ES-202 files.

Source: SEMCOG and U.S. Census Bureau American Factfinder, 2010

**2010 INCOME AND POVERTY**

Median Household Income	\$57,078
Per Capita Income	\$24,923

Persons in Poverty	539
Percentage of Persons in Poverty	15.8%
Households in Poverty	180
Percentage of Households in Poverty	13.2%



**HOUSING**

2010 Total Households	1,286
2010 Persons per Household	2.60
<hr/>	
2010 Total Family Households	941
Family Households Occupied By:	
Husband-Wife Family	60.2%
Male Householder	5.4%
Female Householder	7.5%
<hr/>	
2010 Total Non-Family Households	345
2010 Total Housing Units	3,770
<hr/>	
Occupied By: Owner	89.9%
Renter	10.1%
Vacancy: Total Units	
Rate	8.8%
<hr/>	
2010 Median Housing Value	\$290,300
2010 Median Gross Rent	\$1,036

**HOUSING ESTIMATES AND FORECASTS**

2011 Estimated Households (December)	1,299
2013 Estimated Housing Units	1,491
2013 Estimated Persons per Household	2.56

**EDUCATION**

Highest Level of Education*	5-Yr ACS 2010	Percentage Point Chg 2000-2010
Graduate / Professional Degree	5.9%	2.2%
Bachelor's Degree	11.3%	0.4%
Associate Degree	9.7%	2.3%
Some College, No Degree	30.8%	4.5%
High School Graduate	33.8%	-2.5%
Did Not Graduate High School	8.5%	-6.8%

\* Population age 25 and over

Source: SEMCOG and U.S. Census Bureau American Factfinder, 2010



**RACE AND HISPANIC ORIGIN**

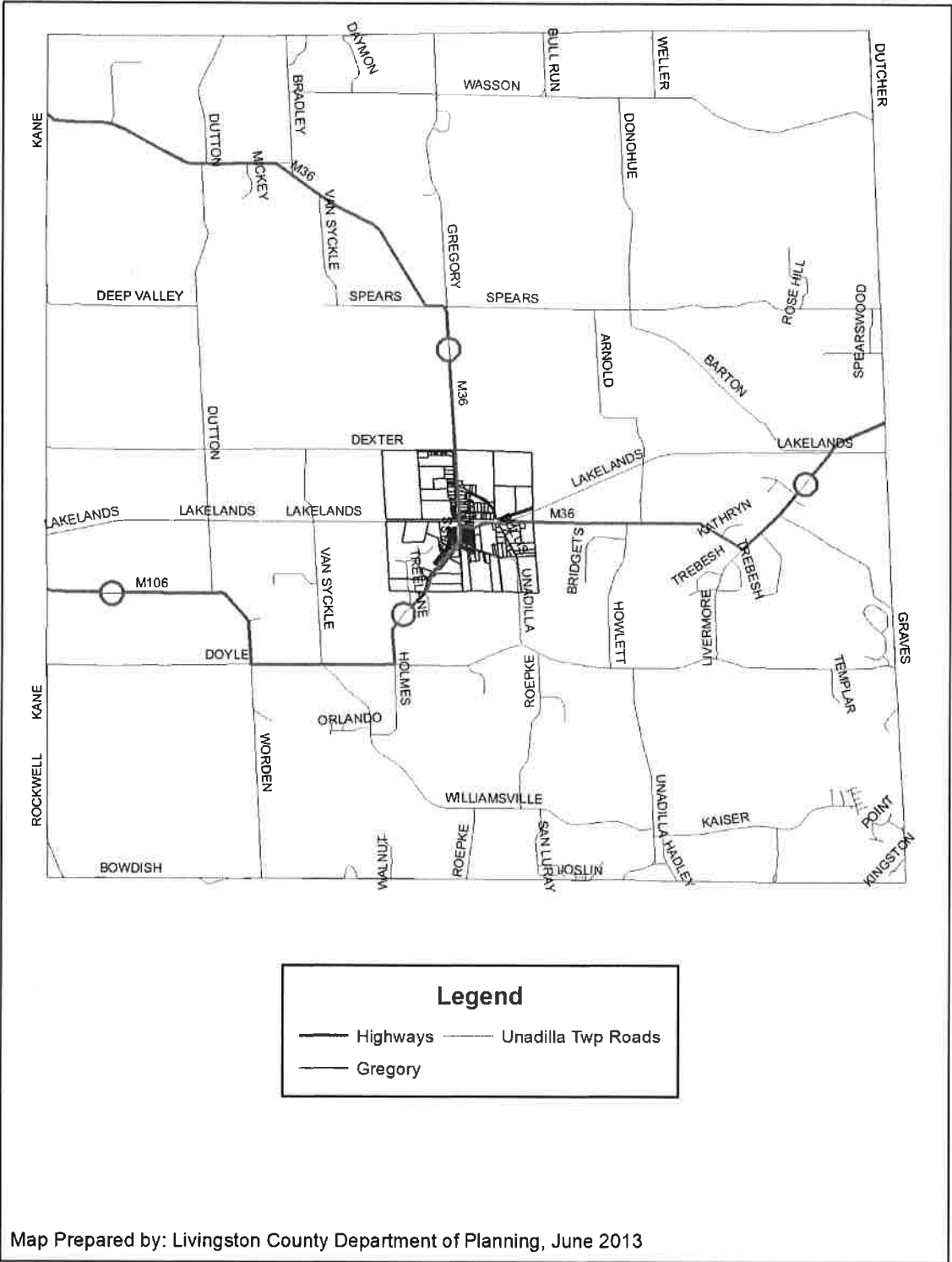
Race and Hispanic Origin	Census 2000		Census 2010		Percentage Point Chg 2000-2010
Non-Hispanic	3,150	98.7%	3,322	98.7%	-0.1%
White	3,073	96.3%	3,250	96.6%	0.2%
Black	12	0.4%	12	0.4%	-0.0%
Asian	12	0.4%	9	0.3%	-0.1%
Multi-Racial	39	1.2%	34	1.0%	-0.2%
Other	14	0.4%	17	0.5%	0.1%
Hispanic	40	1.3%	44	1.3%	0.1%
Total Population	3,190	100.0%	3,366	100.0%	0.0%

Source: SEMCOG and U.S. Census Bureau American Factfinder, 2010





**TRANSPORTATION**





**Rail:** No railroad facilities or infrastructure

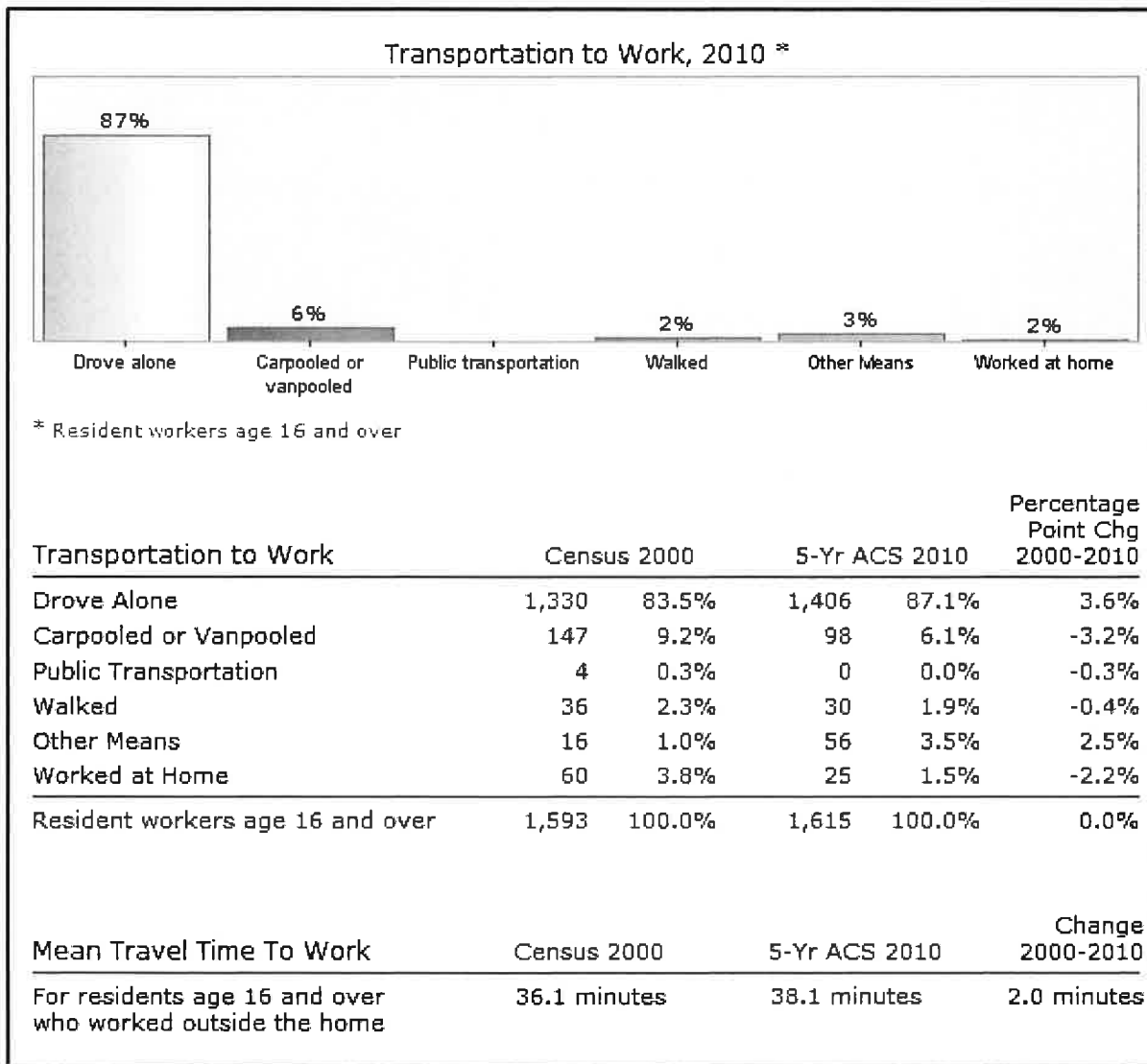
**Air:** No major airports

**Highway:** M-36 and M-106 are the major transportation routes through the Township

**Bus:** LETS (Livingston Essential Transportation Service) will travel anywhere in the Township or County with advance notice. Call 517-546-6600 for rates and scheduling information.



**COMMUTING DATA**



Source: SEMCOG and U.S. Census Bureau American Factfinder, 2010

**STREETS**

**DEDICATION REQUIREMENTS:** Roads may become dedicated via an approval process with the Livingston County Road Commission.

**IMPROVEMENTS PROCESS:** Subject to Township and Livingston County Road Commission approval.



**2008 LAND USE**



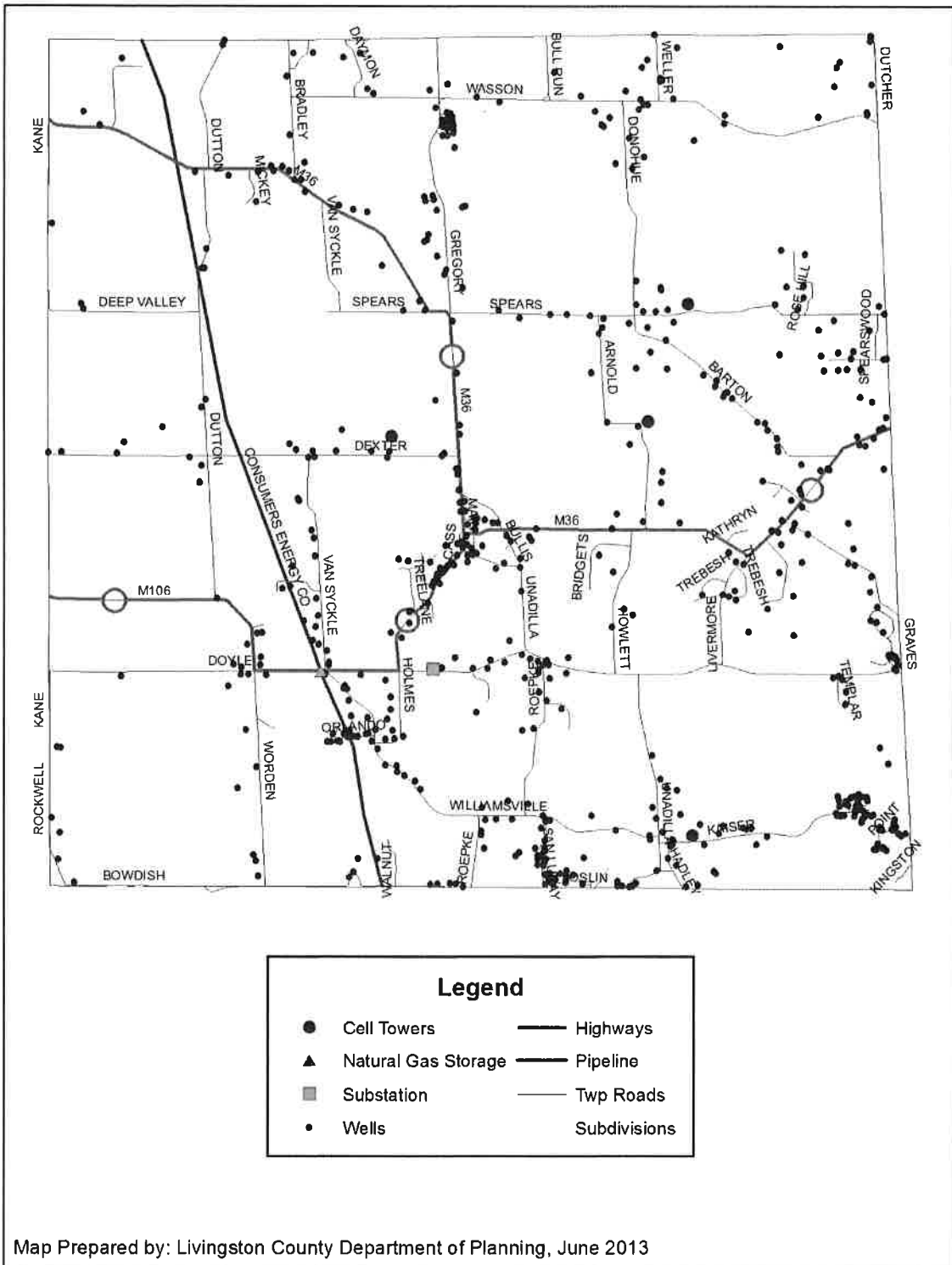
SEMCOG 2008 Land Use	Acres	Percent
Agricultural	10,191	49.4%
Single-family residential	7,872	38.2%
Multiple-family residential	5	0.0%
Commercial	245	1.2%
Industrial	903	4.4%
Governmental/Institutional	255	1.2%
Park, recreation, and open space	248	1.2%
Airport	0	0.0%
Transportation, Communication, and Utility	819	4.0%
Water	86	0.4%
<b>Total Acres</b>	<b>20,624</b>	<b>100.0%</b>

Note: SEMCOG's 2008 Land Use data set represents land use only and not land cover. Due to this difference, change analysis using this data set and previous SEMCOG land use/land cover data sets is not possible. Noticeable differences in map appearance and classification acreage totals are the result of this land use data originating from digital parcel files assigned land use codes based on their assessed property class and the lack of any land cover data.





**UTILITIES**





**UTILITIES INFORMATION**

**ELECTRICAL POWER:** DTE ENERGY ([www.dteenergy.com](http://www.dteenergy.com), 800-477-4747)

**NATURAL GAS DISTRIBUTOR:** CONSUMERS ENERGY ([www.consumersenergy.com](http://www.consumersenergy.com), 800-477-5050)

**TELEPHONE SERVICE:** AT&T ([www.att.com](http://www.att.com), 800-464-7928)

**BROADBAND/INTERNET SERVICE:** AT&T, COMCAST ([www.comcast.com](http://www.comcast.com), 800-266-2278)

**CABLE TELEVISION:** COMCAST ([www.comcast.com](http://www.comcast.com), 800-266-2278)

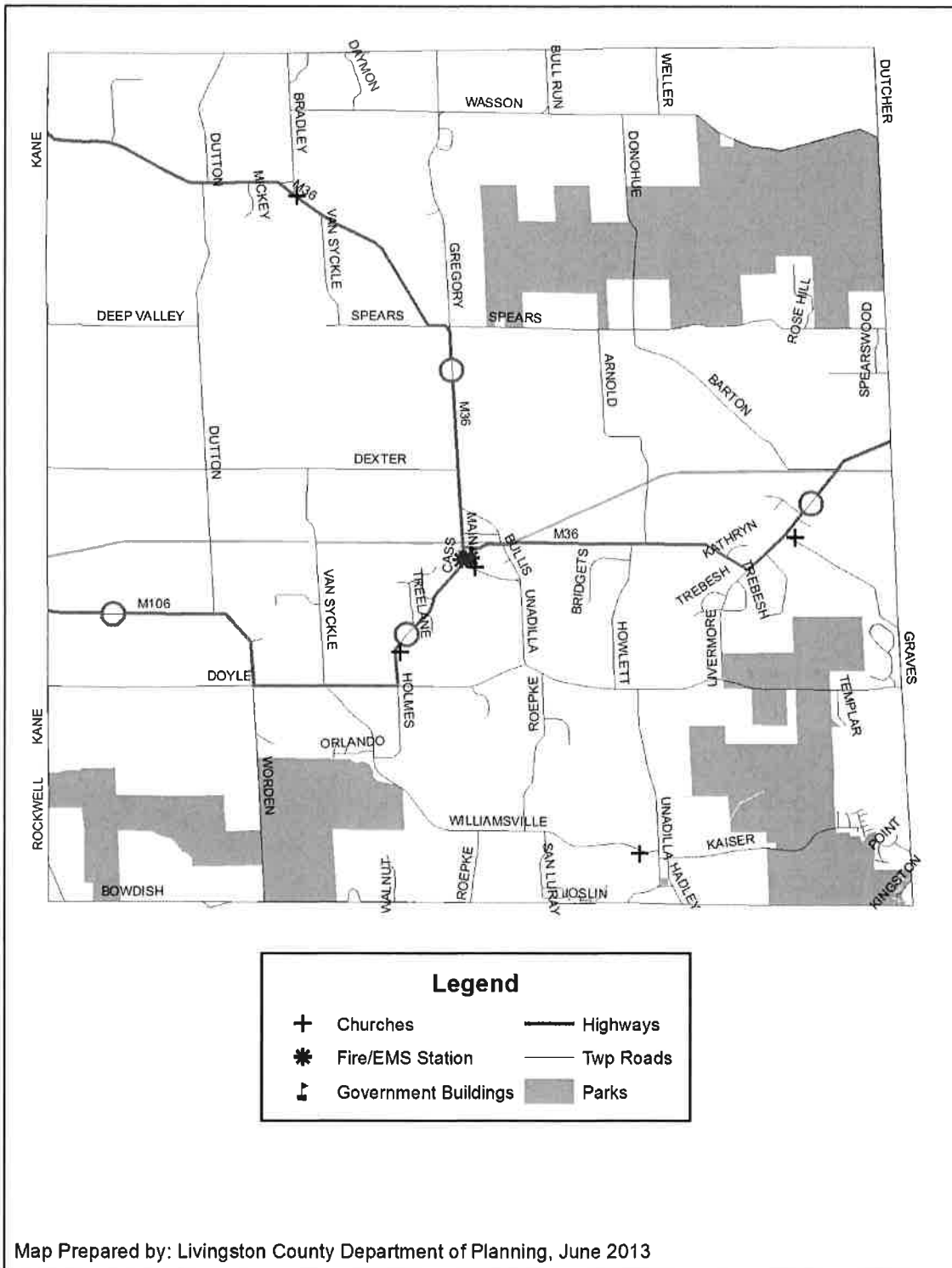
**WATER SUPPLY:** THE TOWNSHIP IS COVERED BY PRIVATE WELLS  
([www.twp.unadilla.mi.us](http://www.twp.unadilla.mi.us), 734-498-2502)

**SEWER SERVICE:** PRIVATE SEPTIC COVERS THE TOWNSHIP ([www.twp.unadilla.mi.us](http://www.twp.unadilla.mi.us), 734-498-2502)

*\* For rates and types of service applicable to Unadilla Township, contact the utility provider for the most up to date information.*



**COMMUNITY FACILITIES**





**COMMUNITY FACILITIES (cont.)**

**Public Facilities:** The Unadilla Township Hall is located at 126 Webb Street, one block east of Main Street in the Village of Gregory. The Township Hall houses the offices of elected officials including the Clerk, Treasurer, Supervisor, and other Township personnel. The Hall also houses the Unadilla Township Police Department and Senior Services.

Police protection is provided by the Unadilla Township Police Department, Livingston County Sheriff Department, and the Michigan State Police. The Township police department currently employs a Chief, a sergeant, an investigator, two (2) officers, and two (2) reserve officers. Police are dispatched under the 'closest car' policy. If there are emergencies requiring police service, the closest car to the scene will be dispatched and will be either a Township, County, or State Police patrol.

Fire protection for the Township is provided by the Unadilla Township Fire Department and is located at 116 Main Street in Gregory. There are five (5) firefighters on the department staff including a Fire Chief, Assistant Chief, Second Assistant Chief, Third Assistant Chief, and an Apparatus Technician.

**Hospitals and Clinics:** St. Joseph Mercy Livingston located in Howell, MI.

**Higher Education:** Cleary University located in Howell, MI.

**Public Schools:** Unadilla Township is part of three (3) public school districts, the largest being Stockbridge Community Schools. The northern segment of the Township is in the Fowlerville Community School District, while an eastern segment of the Township is in the Pinckney School District. Stockbridge Community Schools has five (5) school facilities located in the Village of Stockbridge including a high school, an alternative school, a middle school and two (2) elementary schools.

**Recreational / Cultural Opportunities:** Residents are afforded the Pinckney State Recreation Area and the Lakeland Trail for nonmotorized paths that are well suited for hiking, trail biking, and horseback riding in the Township. Additionally, the Gregory State Game Area provides natural habitat for hunting and fishing.

Public recreation opportunities also include open space owned by Unadilla Township, Stockbridge Community Schools, and the University of Michigan. Unadilla Township owns approximately 1.6 acres of open space in the settlement of Unadilla. Stockbridge Community Schools owns 16.5 acres of open space in the settlement of Gregory. A portion of this land contains the playground for Howlett Elementary School (which is no longer used and houses the Township offices). The University of Michigan also owns approximately 268 acres of land adjacent to the Pinckney State Recreation Area, which is a camp facility and biological research facility used by students and researchers alike.





**LABOR FORCE****Livingston County Unemployment Stats (May 2012)**

<b>Labor Force:</b>	87,635
<b>Employment</b>	80,572
<b>Unemployment</b>	7,063
<b>Unemployment Rate</b>	8.1%

**EMPLOYMENT FORECASTS**

<b>2020 Forecast</b>	212
<b>2030 Forecast</b>	259
<b>2040 Forecast</b>	289
<b>Total Numerical Change 2020 - 2040</b>	77
<b>Total Percent Change 2020 - 2040</b>	36.3%

**TOP 10 LARGEST INDUSTRIES BY PAID EMPLOYEES:**

<b>10 Largest Industries by Paid Employees:</b>	<b>Number of Employees</b>
• Food Services & Drinking Places	4,403
• Insurance Carriers and Related Activities	2,754
• Professional, Scientific and Technical Services	2,650
• General Merchandise Stores	2,497
• Ambulatory Health Care Services	2,389
• Administrative & Support	2,149
• Transportation Equipment Manufacturing	1,831
• Specialty Trade Contractors	1,348
• Clothing and Clothing Accessories Stores	1,245
• Food & Beverage Stores	1,116



**INDUSTRIAL SITES:****INDUSTRIAL SITES INFORMATION:**

Unadilla Township's goals of maintaining a rural environment and atmosphere have led the community to focus its growth and development on the preservation of natural features and open space. While there are some minor industrial uses scattered throughout the Township, most of these uses are small in scale and are not mapped. For more information on possible industrial expansion, the Township Zoning Administrator may be reached at 734-498-2502.

Additionally, the limitations of infrastructure and Class A roads in the Township have not made Unadilla Township a base for industrial expansion. Convenient accesses to major transportation corridors such as M-36 are needed for serious consideration of industrial uses in the Township.



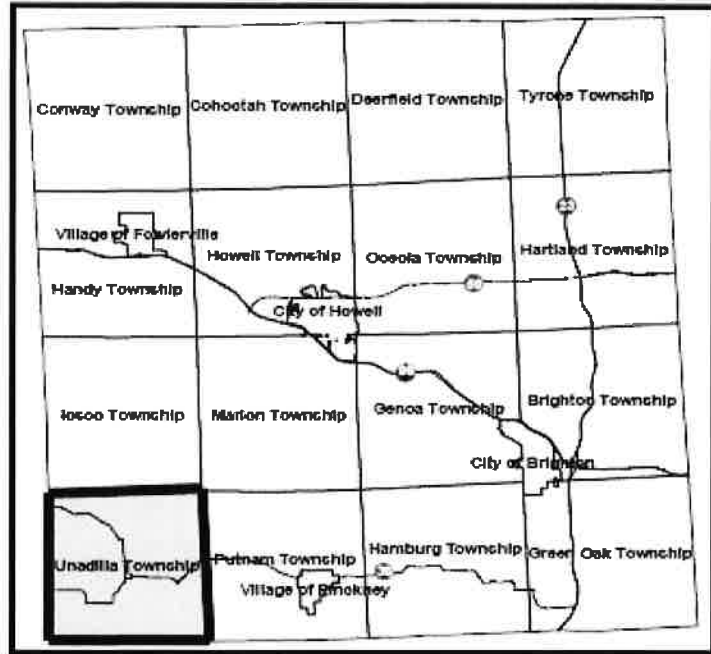
# MASTER PLAN

## Community Profile

For

## Unadilla Township

Livingston County, Michigan



### LOCATION

Unadilla Township is located in the southwest corner of Livingston County. First settled in 1833, the Township is scenic in character and hosts the Gregory State Game Area and the Pinckney State Recreation Area.

### GOVERNMENT

**Hall Address:** 126 Webb Street  
Gregory, MI 48137

**Mailing Address:** 126 Webb Street  
Gregory, MI 48137

**Phone:** (734) 498-2502

**Web Site:** <http://www.twp.unadilla.mi.us/>

### TAX RATES

**2019 Residential Millage Rates:**

#### Homestead:

26.4324/ \$1,000 of taxable value

#### Non-Homestead:

44.3604/ \$1,000 of taxable value

### **Business Hours**

Tuesday (9AM to 4PM), Thursday (9AM to Noon), Saturday (10AM to Noon)

### **County Commissioners**

Doug Helzerman, District 4

### **Township Officials**

Supervisor: Linda Walker  
Clerk: Linda Topping  
Treasurer: Julie Weiland

**Sources:** Livingston County Department of Planning, Southeast Michigan Council of Governments (SEMCOG), Livingston County Equalization, U.S. Census Bureau, Michigan Department of Technology, Management & Budget.



**POPULATION AND HOUSEHOLD DATA FOR UNADILLA TOWNSHIP**

	Census 2010	SEMCOG (July 2018)	SEMCOG 2045
<b>Total Population</b>	<b>3,366</b>	<b>3,494</b>	<b>4,246</b>
<b>Household Population</b>	<b>3,344</b>	<b>3,479</b>	<b>4,230</b>
<b>Housing Units</b>	<b>1,484</b>	<b>1,495</b>	-
<b>Occupied Units</b>	<b>1,286</b>	<b>1,394</b>	<b>1,655</b>
<b>Average Household Size</b>	<b>2.60</b>	<b>2.50</b>	<b>2.56</b>

\*Source: U.S. Census Bureau & SEMCOG

**FORECASTED POPULATION CHANGE 2015-2045**

Age Group	2015	2020	2025	2030	2035	2040	2045	Change 2015 - 2045	Pct Change 2015 - 2045
<b>Under 5</b>	162	146	189	227	211	175	194	32	19.8%
<b>5-17</b>	495	400	354	449	500	538	541	46	9.3%
<b>18-24</b>	357	311	252	207	173	210	247	-110	-30.8%
<b>25-54</b>	1,285	1,183	1,189	1,391	1,471	1,508	1,595	310	24.1%
<b>55-64</b>	599	529	486	468	390	381	447	-152	-25.4%
<b>65-84</b>	444	638	761	943	993	1,026	967	523	117.8%
<b>85+</b>	41	37	48	106	158	207	255	214	522%
<b>Total</b>	3,383	3,244	3,279	3,791	3,896	4,045	4,246	863	25.5%

\*Source: SEMCOG 2045 Regional Development Forecast



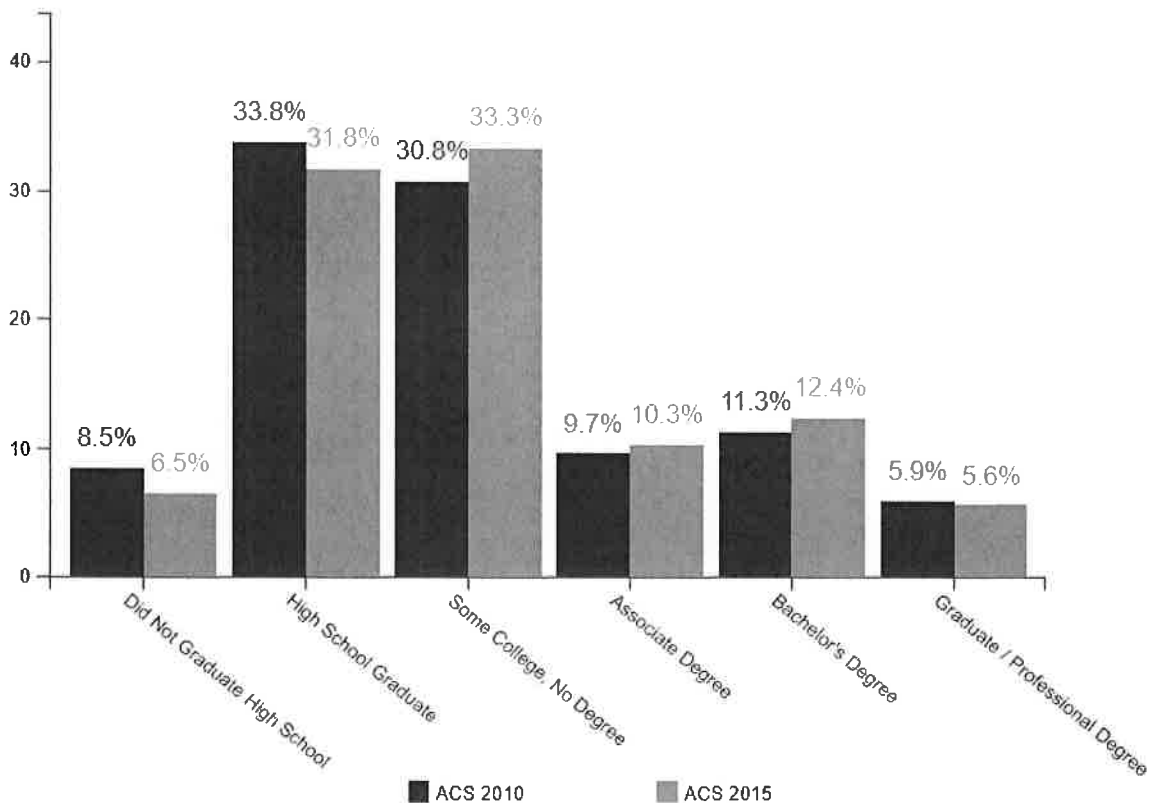


## RACE

Race and Hispanic Origin	Census 2010	Percent of Population 2010	ACS 2015	Percent of Population 2015	Percentage Point Change 2010-2015
<b>Non-Hispanic</b>	3,322	98.7%	3,345	98.7%	0%
↳ <b>White</b>	3,250	96.6%	3,278	96.7%	0.2%
↳ <b>Black</b>	12	0.4%	12	0.4%	0%
↳ <b>Asian</b>	9	0.3%	0	0%	-0.3%
↳ <b>Multi-Racial</b>	34	1%	51	1.5%	0.5%
↳ <b>Other</b>	17	0.5%	4	0.1%	-0.4%
<b>Hispanic</b>	44	1.3%	44	1.3%	0%
<b>Total</b>	3,366	100%	3,389	100%	0%

\*Source: U.S. Census Bureau, SEMCOG, & 2015 ACS 5 Year Estimates

## HIGHEST LEVEL OF EDUCATION



\*Source: U.S. Census Bureau, SEMCOG, & ACS 5 Year Estimates



## **HOUSING TYPES**

Housing Type	ACS 2010	ACS 2015	Change 2010-2015	New Units Permitted 2015-2018
Single Family Detached	1,335	1,418	83	34
Duplex	0	8	8	0
Townhouse / Attached Condo	10	0	-10	0
Multi-Unit Apartment	0	9	9	0
Mobile Home / Manufactured Housing	154	134	-20	0
Other	0	0	0	
<b>Total</b>	<b>1,499</b>	<b>1,569</b>	<b>70</b>	<b>34</b>
Units Demolished				-1
Net (Total Permitted Units - Units Demolished)				33

**\*Source: U.S. Census Bureau, 2010 & 2015 ACS 5 Year Estimates, SEMCOG**

## **HOUSING VALUE AND RENT**

Housing Value (in 2015 dollars)	ACS 2010	ACS 2015	Change 2010-2015	Percent Change 2010-2015
Median housing value	\$209,487	\$156,400	\$-53,087	-25.3%
Median gross rent	\$1,140	\$817	\$-323	-28.4%

**\*Source: SEMCOG & U.S. Census Bureau**

## **BUILDING PERMITS 2010-2018**

	Single Family	Two-Family	Attached Condo	Multi-Family	Total
<b>2010</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
<b>2011</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3</b>
<b>2012</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
<b>2013</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
<b>2014</b>	<b>4</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>4</b>
<b>2015</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>5</b>
<b>2016</b>	<b>9</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>9</b>
<b>2017</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>
<b>2018</b>	<b>12</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>12</b>

**\*Source: SEMCOG**



## **HOUSEHOLD INCOME**

Income (in 2015 dollars)	ACS 2010	ACS 2015	Change 2010-2015	Percent Change 2010-2015
Median Household Income	\$62,041	\$61,719	\$-322	-0.5%
Per Capita Income	\$27,090	\$28,177	\$1,087	4%

\*Source: U.S. Census Bureau, ACS 5 Year Estimates 2010 & 2015

## **POVERTY**

Poverty	ACS 2010	% of Total (2010)	ACS 2015	% of Total (2015)	% Point Chg 2010-2015
Persons in Poverty	539	15.8%	143	4.2%	-11.5%
Households in Poverty	180	13.2%	77	6.1%	-7.1%

\*Source: U.S. Census Bureau, ACS 5 Year Estimates 2010 & 2015

## **HOUSING TENURE**

Housing Tenure	Census 2010	ACS 2015	Change 2010-2015
Owner occupied	1,156	1,179	23
Renter occupied	130	89	-41
Vacant	198	301	103
↳ Seasonal/migrant	102	166	64
↳ Other vacant units	96	135	39
Total Housing Units	1,484	1,569	85

\*Source: U.S. Census Bureau, 2010 & 2015 ACS 5 Year Estimates

## **TOWNSHIP AND COUNTY MAP AND MASTER PLAN LINKS:**

***Unadilla Township Zoning Map:***

**<http://twp.unadilla.mi.us/Portals/28/Docs/2014/Unadilla%20Twp%20Zoning%20Map%2011X17%204-28-14.pdf>**

***Unadilla Township Master Plan:***

**<http://twp.unadilla.mi.us/Portals/28/Docs/Master%20Plan%20PDF.pdf>**

***Countywide Generalized Zoning Map:***

**<https://livgov.maps.arcgis.com/apps/webappviewer/index.html?id=1e91d68c9eb540d5b63d8cc51f8b3652>**

***2018 Livingston County Master Plan: <https://www.livgov.com/plan/Pages/County-Plans.aspx>***



# Appendix B

## Community Character

# LOCAL ATTENTION MASTER PLAN DRAFT

## UNADILLA TOWNSHIP COMMUNITY CHARACTER

### Regional Setting

Unadilla Township is located in the southwest corner of Livingston County, Michigan. The Township borders Washtenaw County to the south, Jackson County to the southwest and Ingham County to the west. Unadilla Township is approximately thirteen (13) miles south of I-96 and therefore, is not highly accessible from a regional perspective. Locally, State Highway M-36 links the Township to U.S. 23 to the east and U.S. 127 to the west. This route also connects the Township to the Village of Pinckney, approximately four (4) miles distance, and the settlement of Hamburg, approximately ten point five (10.5) miles distance, to the east and the communities of Dansville and Mason to the west in Ingham County. M-106 is another State Highway that provides access into the Township and connects it to the Village of Stockbridge and State Highway M-52 (which runs north-south) just over the County line in Ingham County, and to the City of Jackson, approximately twenty-five (25) miles to the southwest).

The Township has four (4) settlements: Williamsville in the southwest, Plainfield in the northwest, Unadilla in the southeast, and Gregory in the middle of the Township (see historical accounting of each settlement on the next page).

The Southeast Michigan Council of Governments (SEMCOG) is the regional planning agency for a seven (7) County area, including Unadilla Township in Livingston County. The remaining SEMCOG Counties include: Washtenaw, Oakland, Wayne, Monroe, Macomb and St.Clair.

### History



The territory now covered by Livingston County was partly the domain of the Pottawattamie and partly that of the Saginaw Chippewa. The frontiers of each Native American tribe joined each other in Livingston County, but it does not appear that their proximity produced feuds or hostility. They made Livingston County part of their territory as sort of a summer campground, to which they came in the warm season to fish in the streams and clear lakes, and to plant their crops. When the frosts and storms of November heralded the approach of winter, they returned to their comparatively comfortable villages within the shelter of the denser forests.

When the first white explorers came to this wilderness region, they found it peopled by roving bands of both Chippewa and Pottawattamie. However, they were mere remnants of those once powerful and warlike tribes. They were scattered, dispirited, and cowed by the disastrous results of their alliance with the English in the war of 1812-1815, and they were already seeing their approaching extinction.



## LCDP APPENDIX B MASTER PLAN DRAFT

### Williamsville

The tide of emigration from the East was moving slowly but steadily westward. On June 20, 1833, Eli Ruggles of Brookfield, Connecticut, became owner of the first farm ever purchased in Unadilla. The farm consisted of forty (40) acres of land in the northwest quarter of Section 33 along the Portage River. Pioneer life did not agree with Mr. Ruggles, who became sick and returned to Connecticut. His brother-in-law, Mr. Amos Williams, after whom the settlement of Williamsville is named, became owner of the land. He settled in the area with his wife, his son, daughter and son-in-law, Garry Briggs. Mr. Williams was a millwright and he established a saw-mill in the settlement that was operational by 1834. In 1836, Garry Briggs and his wife gave birth to the first white child born in the township, Minerva Briggs.

Settlers located rapidly in the Township boosting the 1837 population to six hundred forty-two (642). The Township bore the appearance of a much older settled community. Its villages were flourishing, and its forests were rapidly giving place to cultivated farms. The smoke from the chimneys of the log cabins ascended from many localities over the territory then included in the Township, which embraced what are now Unadilla and Iosco.

### Plainfield

Numerous Indian trails crossed each other at or near the site of Plainfield, and the locality seemed to be a favorite camping-ground among the Native American people. Cranberries abounded there. Some time in 1835, Jacob Dunn traveled west from Newton, New Jersey, purchased land in Unadilla and settled upon it, being the first to locate on the site of Plainfield. Mr. Dunn kept a tavern in the settlement which was originally known as Dyersburg. Upon establishment of a post-office in 1837, the name Plainfield was given by Mr. Dunn, named after a town in New Jersey.

### Unadilla

A village called "East Unadilla" was platted April 14, 1837, and recorded three (3) years later in 1840. Originally the village was locally known as Milan, but when it became necessary to establish a post-office it was ascertained that another office of the same name existed in Monroe County. While the post office was named Unadilla, the village was recorded as East Unadilla. John Drake, the founder and one of the proprietors of the village, built a dam across the Portage creek in 1835, and as soon as possible thereafter, he erected a saw-mill. He also built the first frame building in the village for the purpose of a store and a dwelling for John Dunning of New York.

### Gregory

Philander Gregory received a common-school education and learned his father's trade. His start in life was made in Rochester, New York, in the glove and mitten business. In 1836 his brother purchased for him, the west half of the southeast quarter of Section 21 in Unadilla. That same year on the 16<sup>th</sup> day of July, he was married to Miss Martha Halsted, and in August of the following year, he, his wife and infant child, came to the wilderness home. It was entirely new, as was most of the township. There were then but few neighbors except the Indians. Deer and other game were plentiful, the deer often going through their door-yard. A frame house was soon built. Mr. Gregory found a ready market of settlers eager to buy his gloves and mittens. He was assisted by his wife in his work; she made the mittens while he tanned the leather.

Source: History of Livingston County, Michigan., Philadelphia: Everts & Abbott, 1880

# LCDP APPENDIX B MASTER PLAN DRAFT

## COMMUNITY FACILITIES

Unadilla Township's continued growth has forced the public service base to expand to meet the increased needs. Those needs have changed because of the gradual transition from an agricultural community to a rural residential one. It is anticipated that the demands on community facilities will continue to increase as the Township's population grows.

### Township Offices

The Unadilla Township Hall is located at 126 Webb Street in the settlement of Gregory. The Township Hall is located in the Howlett Elementary School building owned by Stockbridge Community School District. The facility has been utilized for Township government since 2004. The Township Hall houses the offices of Unadilla Township elected officials such as the Township Supervisor, Clerk, Treasurer, and various other Township personnel. The hall also houses the Unadilla Township Police Department and the Unadilla Township Area Senior Citizens' Center.

### Police Service

Police protection is provided by the Unadilla Township Police Department, Livingston County Sheriff Department and the Michigan State Police. Unadilla Township officially formed a police department in 1978 when the need for better police response and service was required. In 2004, the police department moved into the former Howlett Elementary School along with the Township offices. The new police facilities offer a larger office area, interview room, administrative office, squad room, records room, locker room and evidence room. Presently, the department employs a Chief of Police, a sergeant, an investigator, two (2) officers and two (2) reserve officers.

Police are dispatched under the "closest car" policy. If there is an emergency requiring police service, the closest car to the emergency is dispatched to the scene. The closest car could be either a Township Police car, a County Sheriff car or a State Police car. Back-up assistance is provided under the same policy.

### Fire Service

Fire protection for all thirty-six (36) square miles of the Township is provided by the Unadilla Township Fire Department. The Fire Department is located at 116 Main Street in Gregory. There are five (5) firefighters on the department staff including: the Fire Chief, First Assistant Chief, Second Assistant Chief, Third Assistant Chief and an Apparatus Technician.

### Senior Services

Seniors age 60 and over can take advantage of the following services:

- Senior lunch is served on Tuesdays and Thursdays at noon at the Township Hall.
- Bingo on Thursdays.
- Annual flu shots.
- Income services i.e. home heating and state of Michigan homestead tax credit form assistance.
- Various services are planned throughout the year.

# LCDP APPENDIX B MASTER PLAN DRAFT

## **Health Services**

Emergency ambulance service in Unadilla Township is provided by Stockbridge Area Emergency Services Authority and the Livingston County Ambulance Service. The closest hospital facility is Chelsea Community Hospital in the Village of Chelsea, approximately twelve (12) miles distance. Saint Joseph Mercy Livingston Hospital in the City of Howell and W.A. Foote Memorial Hospital in the City of Jackson are also within close proximity, twenty (20) miles and thirty-one (31) miles distance respectively. Urgent care facilities are located nearby in the cities of Brighton and Howell.

## **School Districts**

Unadilla Township is part of three (3) public school districts, the largest being Stockbridge Community Schools. A northern segment of the Township is in the Fowlerville Community School District, while an eastern segment of the Township is in the Pinckney Community Schools district. Unadilla Township does not contain any school facilities that are currently in use, although Stockbridge Community Schools does own the Howlett Elementary school that currently houses the Unadilla Township Hall, and the district owns an additional sixteen point five (16.5) acres of open or recreational land in the settlement of Gregory.

Stockbridge Community Schools has five (5) school facilities located in the Village of Stockbridge, including: a high school, an alternative school, a middle school and two (2) elementary schools. The district contains land area in Ingham and Livingston counties. Fowlerville Community Schools district also contains five (5) school facilities which are located in the Village of Fowlerville and include: a high school, a junior high school, a middle school and two (2) elementary schools. The district contains western Cohoctah Township along with most of Conway, Handy and Iosco Townships and a small area of Howell and Unadilla Townships. Pinckney Community Schools contains nine (9) school facilities located in the Village of Pinckney and surrounding areas. These facilities include: a high school, a middle school, an intermediate school, a community education center and five (5) elementary schools. The district contains the Village of Pinckney, the majority of land area in Hamburg and Putnam Townships, small portions of southern Genoa and Marion Townships, and the northeast corner of Unadilla Township.

## **Sewer and Water Service**

Most Unadilla Township residents are served by individual septic systems and private wells. Sewer service is available to some Township residents through the Multi-Lakes Sewer and Water Authority Dexter, Michigan (Washtenaw County). Sewers have been extended to southern portions of Patterson Lake in the southeast corner of the Township in an effort to alleviate septic problems that contribute to lake and down-stream water pollution. Sewers have also been extended to the settlement of Gregory where one hundred fifty-six (156) Residential Equivalent Units (REU's) are serviced.

## **Public Recreation Land**

Unadilla Township is a sportsperson's wonderland. The Pinckney State Recreation Area and the Lakeland Trail have an array of non-motorized paths that are well suited for hiking, trail biking and horseback riding in the Township. Additionally, the Gregory State Game Area provides natural habitat for hunting and fishing.

## LCDP APPENDIX B MASTER PLAN DRAFT

The Pinckney State Recreation Area covers approximately ten thousand (10,000) acres in Unadilla and Putnam Townships as well as Washtenaw County. Approximately one-thousand (1,000) acres of the recreation area is situated in Unadilla Township's southeast corner. Recreational facilities include: camping; boating access to a chain of seven (7) lakes; boat rental; boat launch; playground; fishing piers; picnic shelters; and trails open to hiking, mountain biking and cross country skiing.

The Lakelands Trail provides six (6) miles of excellent non-motorized hiking and trail biking path through Unadilla Township. The State trail follows an abandoned railroad bed and stretches from Hamburg Township to the Village of Pinckney, through Unadilla Township to the Village of Stockbridge. The Unadilla Friends of the Lakelands Trail is a volunteer organization that provides maintenance of the trail, and is dedicated to preserving and improving the trail system.

The Gregory State Game Area is one (1) of two (2) State game areas in Livingston County. It covers thirty-three hundred twelve (3,312) acres in three (3) clusters of land within Unadilla and Putnam Townships. One Unadilla Township area is located near the northeast corner of the Township by Sheets Lake, and the other area is near the southwest corner of the Township adjacent to Williamsville Lake. Game areas are intended as wildlife habitat in which hunting, fishing, hiking and camping is allowed.

Additionally public recreation resources include open space owned by Unadilla Township, Stockbridge Community Schools and the University of Michigan. Unadilla Township owns approximately one point six (1.6) acres of open space in the settlement of Unadilla. Stockbridge Community Schools owns approximately sixteen point five (16.5) acres of open space in settlement of Gregory. A portion of this land contains the playground for Howlett Elementary School (which is no longer used as a school and currently houses the Township offices). The University of Michigan also owns approximately two hundred sixty-eight (268) acres of land adjacent to the Pinckney State Recreation Area, which is used as a camp facility and biological research facility.

### Cemeteries

There are five (5) cemeteries located in Unadilla Township. Wright's Chapel (a.k.a. Harford or Lewis) Cemetery is located in Section 2 near the intersection of Wasson and Donohue roads. Plainfield Cemetery is located just west of the settlement of Plainfield in Section 5. Livermore Cemetery is located along the north side of M-36 in Section 24. Williamsville Cemetery is located within the settlement of Williamsville in Section 28 of the Township, and Unadilla (a.k.a. Baseline) Cemetery is located within the settlement of Unadilla in Section 35. Unadilla Township owns and maintains a one-half (½) acre portion of the Unadilla Cemetery.

## OTHER FACILITIES IN NEIGHBORING COMMUNITIES

Unadilla Township is closely located to the Villages of Pinckney and Stockbridge where additional community facilities are available. For instance, Township residents have access to the Pinckney District Library. There are also U.S. Post Offices located in both neighboring communities.

# Appendix C

## Natural Features

# LCDP APPENDIX C DRAFT

## UNADILLA TOWNSHIP NATURAL FEATURES

The natural environment forms the basis of a community's development, so it is important to include within this Master Plan a chapter that details the natural features found within a community and how those features interact with each other in the ecosystem. This will allow a community to grow while maintaining the important natural features that attracted people to the community in the first place.

Ideally, development within the Township should be directed to areas that could best sustain the physical changes to the landscape without negatively impacting the community's natural features. Conversely, those areas of the Township that contain valuable environmental features should be Master Planned for less dense development.

The abundance of natural features within Unadilla Township is one reason that many people have moved to the Township. Natural features are important to these people and natural feature preservation will serve to increase their quality of life by providing a variety of aesthetic and recreation functions as well as protecting the rural character of the community. The Township will face significant development pressures now and into the future, and pristine lands which are highly suitable for recreational and other open space uses and which are useful for the preservation of native plant and animal species, will be in danger of being swallowed up by development if an eye is not kept on their preservation now.

### Geology and Topography

Unadilla Township sits upon bedrock composed primarily of Marshall Formation and secondarily of Coldwater Shale. Both types of bedrock are composed predominantly of shales and they were created during the Paleozoic Era. Coldwater Shale occupies the southeast and southwest corners of the Township where lakes are more abundant. There are no bedrock outcroppings within the Township.

The elevation of Unadilla Township ranges from a low of eight hundred ninety (890) to a high of one thousand fifteen (1,015) feet above sea level. The topography throughout most of the Township varies between nine hundred (900) and nine hundred sixty (960) feet with the elevation falling from the northern boundary of the Township to the southern boundary. The highest spot in the Township is in the southwest corner of Section 17 at an elevation of one thousand fifteen (1,015) feet. The lowest spots in the Township at an elevation of eight hundred ninety (890), are along both sides of M-36 in Sections 35 and 36, just east of the settlement of Unadilla extending to the west side of Woodburn and Watson Lakes.

### Soils

According to the Soil Conservation Service, soils in Unadilla Township consist of five (5) soil associations; Carlisle-Houghton-Gilford, Fox-Boyer Oshtemo, Fox-Boyer-Oshtemo-Houghton, Miami-Hillsdale, and Spinks-Oakville-Boyer-Oshtemo (See Map 1, Appendix C-9 Unadilla Township General Soil Classifications).

Carlisle-Houghton-Gilford soils are the predominant soil association in Unadilla Township and they comprise about nineteen percent (19%) of the County. This soil association can be characterized as follows: Nearly level, very poorly drained, organic soils and moderately coarse textured soils on outwash plains, in glacial drainageways, and on lake plains. This soil association is present in all four (4) corners of the Township, and a swath extends through the middle of the Township and includes the settlement of Gregory. The major soils in this association are moderately well suited to crops if they are adequately drained. This soil association poses severe limitations for non-farm uses because the soils are very poorly drained.

## LCDP APPENDIX C DRAFT

The Fox-Boyer Oshtemo association is found throughout the middle of the Township surrounding the settlement of Gregory and also west of and including the settlement of Unadilla. This soil association makes up about eighteen percent (18%) of the County and it can be characterized as follows: steep or hilly, well-drained, moderately coarse textured and coarse textured on moraines. The major soils in this association are generally on steeper slopes that are not well suited for crops. In areas where slopes are twelve percent (12%) or less, this soil association presents only slight limitations for most nonfarm uses.

Fox-Boyer-Oshtemo-Houghton soils are only present in a relatively small swath that extends from northeast from the area surrounding the Doyle Road/Unadilla Road intersection to north of M-36 in Section 13. This soil association makes up about fourteen percent (14%) of the County and it is described in the following way: nearly level to steep, well-drained, moderately coarse textured and coarse textured soils and very poorly drained organic soils on outwash plains. The major soils in this association are medium or low in fertility and erosion is a concern. Most of the soils are underlain by gravelly sand and are a potential source for sand and gravel. In areas where slopes are twelve percent (12%) percent or less, this soil association presents only slight limitations for most nonfarm uses.

Miami Hillsdale soils are strongly sloping to hilly, well-drained, medium-textured and moderately coarse textured soils on moraines and till plains. In Unadilla Township these soils are present along the western boundary and northwest quadrant of the Township. County-wide this soil association makes up about 6 percent of the soils. The major soils in this association are only moderately well suited to poorly suited as cropland. This soil association presents only slight or moderate limitations for most nonfarm uses where slopes are twelve percent (12%) or less.

A small area of the Spinks-Oakville-Boyer-Oshtemo association is found along the eastern boundary of the Township in Sections 24 and 25 and extending into Putnam Township. This soil association consists of strongly sloping to hilly, well-drained, coarse textured soils dominantly on moraines. Across the county this soil association makes up about six percent (6%) of the soils. The major soils in this association are poorly suited as cropland, and they present only slight limitations for most nonfarm uses.

As described in these five (5) soil associations, each soil has a different capacity for drainage and therefore a varying ability to support onsite septic disposal. A map of the Township soil's septic limitations is a great tool to use when deciding where to direct development. Areas under greater septic constraints should be planned for less density (See Map 2, Appendix C-10 Unadilla Township Septic Limitations).

Areas that contain steep slopes should remain undisturbed. These areas should be viewed as natural and aesthetic open space areas. If development should occur, sensitive site planning would be required along these slopes to prevent soil erosion. Care must be taken to ensure that extensive grading is minimized and to ensure that other natural features such as vegetation and topsoil are retained (See Map 3, Appendix C-11 Unadilla Township Slopes Greater Than 12%).

# LCDP APPENDIX C DRAFT

## Watersheds

A watershed is a land area that drains into a particular river system, a region, or an area bounded peripherally by a divide. A watershed ultimately drains into a particular watercourse or water body such as a Great Lake.

Unadilla Township drains into two (2) different watersheds. The northern tier of sections in the Township are in the Red Cedar Watershed, which drains to Lake Michigan. The remainder of the Township and the majority of land area, is in the Huron Watershed which drains to Lake Erie.

Planning and management at the watershed level helps ensure that appropriate upstream and downstream activities are coordinated to address water quality concerns unique to that watershed.

## Lakes, Rivers, Creeks and Drains

Surface water in the Township is in the form of lakes, rivers, creeks, and drains. There are nine (9) lakes in Unadilla Township that consist of ten (10) acres or more; they are described in the following table:

UNADILLA TOWNSHIP LAKES OF 10 ACRES OR MORE

Lake Name	Section(s)	Acreage	Maximum Depth In Feet	Public Access
Patterson	36	170 (additional acreage in Putnam Township)	60	Yes – All sports lake
Williamsville	28,29,32, and 33	75.5	27	Yes
Woodburn	25 and 36	67	26	No
Sheets	2,3,10, and 11	61	20	Yes
Mud	25	33	Unknown	No
Watson	36	30 (additional acreage in Washtenaw County)	Unknown	No
McConachie	31	22	Unknown	No
Sharp	29,30,31, and 32	20	Unknown	No
McIntyre	31, and 32	10.5	23	No

Source: Michigan Lake Inventory Bulletin No. 47 by Humphrys and Green

The majority of lakes consisting of ten (10) acres or more, are located near the southern boundary of the Township. The three (3) largest lakes in this southern area of the Township include: Patterson Lake, which is split between Unadilla and Putnam Townships, Williamsville Lake and Woodburn Lake. The fourth largest lake in the Township, Sheets Lake, is the only large lake located in the northern portion of the Township. Five (5) additional lakes in the Township range in size from ten point five (10.5) to thirty-three (33) acres. Each of these lakes is located near the southern boundary of the Township; they include: Mud, Watson, McConachie, Sharp and McIntyre Lakes.



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The shores of these Township lakes are very popular for land development. Consequently, lakefront developments are often built at the highest densities allowed by local zoning. Most lake lots in Unadilla Township were created decades ago and they are very narrow in width. Many were constructed as summer homes but have been converted to year-round use as a result of rising housing prices and the desirability of lakefront living.

Dense lakefront development often results in groundwater contamination from septic systems located near lake shores in high water table areas. Surface waters are also polluted from runoff over impervious surfaces such as driveways, roads, and roofs. This runoff carries with it tar, rubber, salt, oil, gasoline, and other fluids from automobiles. Lakefront lawns also contribute to lake pollution by speeding runoff into lakes and carrying fertilizer, weed killer, insecticides, and other chemicals with it.

Unadilla Township does not contain any major river courses, however there are two (2) important creek systems. The Livermore Creek collects the majority of runoff in the eastern half of the Township as it travels in a north/south direction between Sheets Lake and Woodburn Lake. Portage Creek collects the majority of runoff in the southern portion of the Township as it travels in a west/east direction between Williamsville and Woodburn Lakes.

In addition to the Township creeks, the Unadilla Stockbridge Drain travels in a north/south direction and collects water runoff from the western half of the Township. The drain extends from Section 7 near the northwest corner of the Township to connect with Williamsville Lake in Section 29 (See Map 4, Appendix C-12 Unadilla Township Lakes, Rivers, Creeks and Drains).

## **Wetlands**

Wetlands are complex ecological systems that function in a number of beneficial ways. Wetlands reduce flood hazards by providing storm water storage. Wetlands that overlay groundwater recharge areas improve groundwater quality by filtering the water as it percolates through the soil. They act similarly near surface water by filtering run-off. They are also highly productive ecosystems which provide an essential habitat to much of Michigan's fish and wildlife at some time during their life cycles.

Wetland areas are interspersed throughout the Township. The largest wetland systems are primarily adjacent to lakes. A wetland system associated with Mud, Woodburn, Patterson and Watson Lakes in the southeast corner of the Township is the largest contiguous area of wetlands in the Township. Under Public Act 451 of 1994, certain wetland areas are protected more stringently by the Michigan Department of Environmental Quality. These include wetlands that are contiguous to an inland lake, pond, river, stream, or similar surface water feature and wetlands that are five (5) acres or larger in area and located in counties which contain a population of at least one hundred thousand(100,000) people, which includes Livingston County (See Map 5, Appendix C-13 Unadilla Township Wetlands).

## **Woodlands**

Woodlands have been examined on a section by section basis throughout Livingston County for emergency management purposes such as assessing the risk of wild fire. Most sections in Livingston County are one (1) square mile in size or six hundred forty (640) acres. The largest woodland areas in the County are those that comprise approximately thirty to sixty-five percent (30-65%) of the section or approximately one hundred ninety (190) to four hundred fourteen (414) acres of the six hundred forty (640) acre section. Six (6) of the thirty-six (36) sections in Unadilla Township meet these standards; largely because much of the land in these sections is publicly owned and preserved. Sections 1, 11 and 12

# LCDP APPENDIX C DRAFT

in the northeast corner of Unadilla are one such large woodland area. Collectively these three (3) sections form the largest contiguous area of woodlands in Unadilla Township. Approximately eleven hundred sixty-three (1,163) acres of woodland area in these sections is preserved in public ownership by the Michigan Department of Natural Resources (MDNR) in the Gregory State Game Area. Other sections in the Township that contain significant woodlands include: Section 17 with approximately two hundred thirty-six (236) acres of woodland preserved by the Southeast Michigan Land Conservancy; Section 32 with four hundred thirty-seven (437) acres of woodland owned by the MDNR, and Section 25 that contains three hundred two (302) acres of woodland owned by the Michigan Department of Natural Resources in the Pinckney State Recreation Area and one hundred eighteen (118) acres owned by the University of Michigan.

## ENVIRONMENTAL CONCERNS

The Environmental Health Division of the Livingston County Health Department compiles and maps information on known or suspected sites of environmental sensitivity in Livingston County. The six (6) categories of sites they identify are: 1.) Sites of Environmental Contamination; 2.) Open/Closed Leaking Underground Storage Tanks; 3.) Areas of High Nitrate Levels; 4.) Areas of High Arsenic Levels; 5.) Closed Dump/Landfill Sites; and 6.) Active Septage Disposal Sites (See Map 6, Appendix C-14 Unadilla Township Environmental Concerns).

**Sites of Environmental Contamination** - Part 201 (Environmental Remediation) of the Natural Resources and Environmental Protection Act (1994 P.A. 451, as amended) regulates sites of environmental contamination in Michigan. A site of environmental contamination is defined as: "the release of a hazardous substance, or the potential release of a discarded hazardous substance, in a quantity which is or may become injurious to the environment or to the public health, safety or welfare." Clean-up of these sites is administered by the Environmental Response Division of the Michigan Department of Environmental Quality. Unadilla Township has one (1) site of environmental contamination on Main Street in downtown Gregory.

**Underground Storage Tanks** - Underground storage tanks are widely used by large and small industries, farmers, and individual homeowners to store fluids such as petroleum fuels, acids, metals, solvents and chemical wastes. Leaking underground storage tanks account for roughly fifty percent (50%) of all groundwater contamination sites. There are underground storage tanks listed with the Michigan Department of Environmental Quality (MDEQ) as "Open" and "Closed." "Open" means that the site is currently listed with MDEQ as either "inactive" or "Cleanup Actions Taken or in Progress". "Closed" means a site where cleanup actions have been completed, although the site may not meet current environmental standards. Unadilla Township has three (3) "Open" Underground Storage Tanks, and five (5) "Closed" tanks. The "Open" sites are located in or near the settlements of Unadilla, Gregory and Plainfield, and include: Boos Products/Michigan Gear, Inc. in Unadilla, Tom's/Millie's/Gregory Market in Gregory, and Plainfield Farm Bureau near the settlement of Plainfield. The "Closed" sites are located primarily in the southeast quadrant of the Township, and include: Max's Mall (now known as Plainfield Station) in Section 9, Mugg & Bopps/Sunoco Station in Gregory, Richmond Field in Section 27, Unadilla store in Section 35, and Young's/N&K Marine Inc. in Section 36.

**Areas of High Nitrate Levels** - Nitrate is a naturally occurring form of nitrogen found in soil and groundwater, that in moderate amounts is a harmless part of food and water. However, nitrates in sufficient concentrations in drinking water can be toxic to infants and young animals. This happens when nutrients, especially nitrogen and phosphorous, leach into the ground and enter the ground water. The sources of the nutrients are usually from water running off well-fertilized agricultural fields, water containing high levels of phosphorous-based detergents, or some industrial process. Excessive levels of

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nitrate can cause methyhemoglobinemia, or blue baby disease, which is a blood disorder that primarily affects infants under six (6) months of age.

The U.S. EPA has established a maximum contaminant level of ten (10) milligrams per liter for public water systems. The Livingston County Department of Public Health has chosen 5 milligrams per liter as an indicator of possible aquifer vulnerability. Using this standard, there are three (3) recent sites of elevated nitrate levels in Unadilla Township (1994 to 2001). These sites include: 1.) a site on Doyle Road in Section 25 near the Unadilla/Putnam Township line; 2.) a site on Arnold between Sections 14 and 15; 3.) a site on Wasson Road in Section 4.

**Areas of High Arsenic Levels** - Arsenic is a naturally occurring element that, through erosion and weathering of rock, can end up in groundwater, soil, and plants. Arsenic can combine with other elements to form inorganic and organic arsenicals. Inorganic arsenicals are generally more toxic than organic arsenicals, and are more often found in drinking wells and groundwater. The primary danger from arsenic is that it is a known carcinogen, but other effects of arsenic consumption are nausea, vomiting, diarrhea, thickening and discoloration of the skin (which may lead to skin cancer), and numbness of feet and hands. Arsenic has also been associated with the development of diabetes and has been reported to affect the human vascular system.

Based on guidelines from the Safe Drinking Water Act, the United States Environmental Protection Agency (U.S. EPA) set the Maximum Contaminant Level (MCL) of arsenic at 10 micrograms per liter or parts per billion (ppb). Arsenic has been detected in three (3) well samples in Unadilla Township. All three (3) wells have an arsenic level between eleven (11) and twenty-five (25) micrograms per liter.

**Closed Dump and Landfill Sites** – The Livingston County Department of Public Health maintains a list of closed dump/landfill sites within the County. The information includes where the landfill was located, who operated it, and when the landfill closed. In general, little information is available and there are a number of landfill sites around the County that are either untraceable or unknown entirely, possibly because they were illegal operations. There are currently eighteen (18) known closed landfill sites in Livingston County, one of which is found in Unadilla Township. This landfill near the intersection of Wasson and Weller in Section 2 closed in the late 1960's.

**Licensed Septage Disposal Sites** – Septage is defined as the anaerobic slurry of residual wastes, sludge and scum that is mechanically pumped from a septic tank and subsequently transferred to a licensed disposal facility.

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## HIGH-QUALITY NATURAL AREAS

In partnership with a group of County citizens and government officials, aerial photography was used to map natural areas throughout the County resulting in a 2003 Livingston County Department of Planning study entitled: Livingston County's High-Quality Natural Areas. The natural areas were then prioritized by using a set of criteria to differentiate one natural area from another. These criteria include: the size and shape of the natural area, the presence of rivers or streams, and the amount of connection one natural area has to surrounding natural areas, among others. Using these criteria natural lands are grouped into three (3) categories of varying conservation priority; Priority I, Priority II and Priority III natural areas with "Priority I" areas having the highest cumulative scores and being considered the most ecologically valuable.

Map 7, Appendix C-15 Unadilla Township Natural Areas, illustrates that Unadilla Township contains fifteen (15) Priority I areas that are primarily located in the northeast, southeast and southwest corners of the Township where public lands are abundant. The northeast corner of the Township contains over seventeen hundred seventy-nine (1,779) acres of Priority I natural area in Sections 1,2,3,10,11 and 12, and connects to large expanses of natural area in Iosco Township. Most of this Priority I natural area is owned by the Michigan Department of Natural Resources in two (2) large contiguous areas of eleven hundred forty-five (1,145) acres and five hundred fourteen (514) acres (which also contains Sheets Lake). The southeast corner of the Township contains over fourteen hundred fifty-nine (1,459) acres of Priority I natural area in Sections 24,25,26,27,34,35, and 36 and connects to large expanses of natural area in Putnam Township. Again, much of this natural area is publicly owned by the University of Michigan and the MDNR. The two (2) largest pieces of this ecologically valuable area surround the cluster of lakes in the southeast corner of the township; the areas are three hundred thirteen (313) acres in size and six hundred seventy-three (673) acres in size. The southwest corner of the Township is the last of the three (3) Township areas with a large amount of Priority I natural area. Surrounding Williamsville, Sharp, McConachie and McIntyre Lakes is twelve hundred forty-four (1,244) acres of Priority I natural area in Sections 31,32,33,28,29 and 30. Most of this land area is publicly owned by the MDNR.

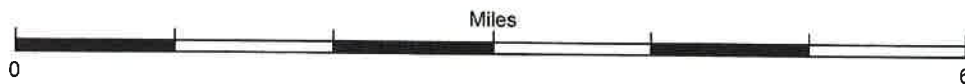
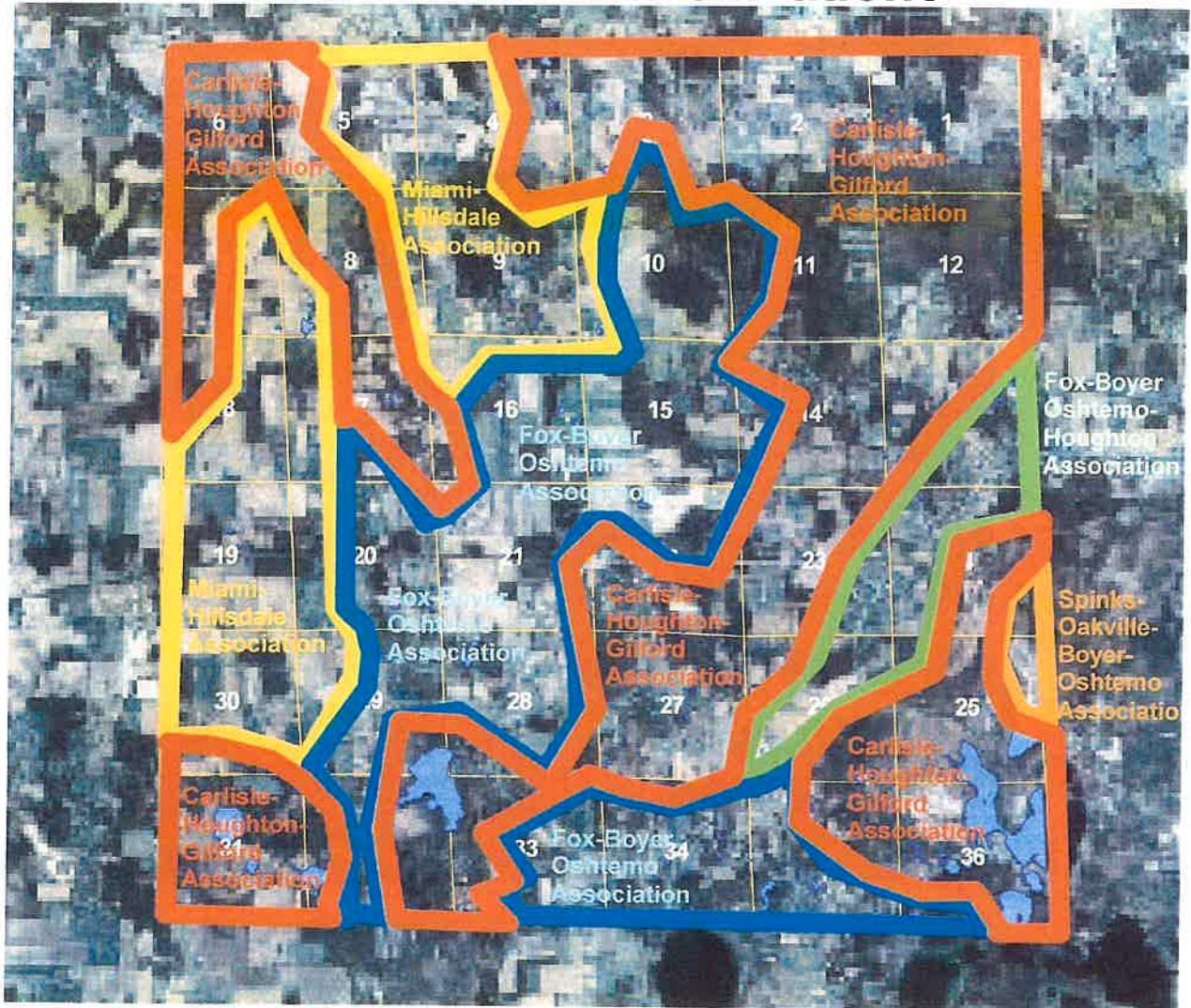
Priority II areas are more abundant and are scattered throughout the Township. These areas have cumulative scores of eleven (11) to sixteen (16), they are usually between fifty (50) and two hundred (200) acres in size, and they are often located near other natural areas. Priority III areas have cumulative scores of ten (10) points or less and are typically less than forty (40) acres in size. These areas are also scattered throughout the Township.

One of the most straightforward planning methods for preserving the high quality of natural areas that have been identified through this study, is an Open Space Development or Planned Unit Development option enabled through a Zoning Ordinance. When working with a developer proposing an Open Space or Planned Unit Development, a community may be able to negotiate what portions of the site are preserved. Using the Livingston County's High-Quality Natural Areas report, a community can insist that high quality natural areas are preserved as open space, focusing residential land uses onto adjacent vacant or cleared land. Doing so will preserve high quality natural areas, while also serving as a selling point for the development.

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MAP OF SOIL CLASSIFICATION (Map 1)

## General Soil Classifications



### Legend

- Fox-Boyer-Oshtemo Association
- Fox-Boyer-Oshtemo-Houghton Association
- Miami-Hillsdale Association
- Carlisle-Houghton-Gilford Association
- Spinks-Oakville-Boyer-Oshtemo Association

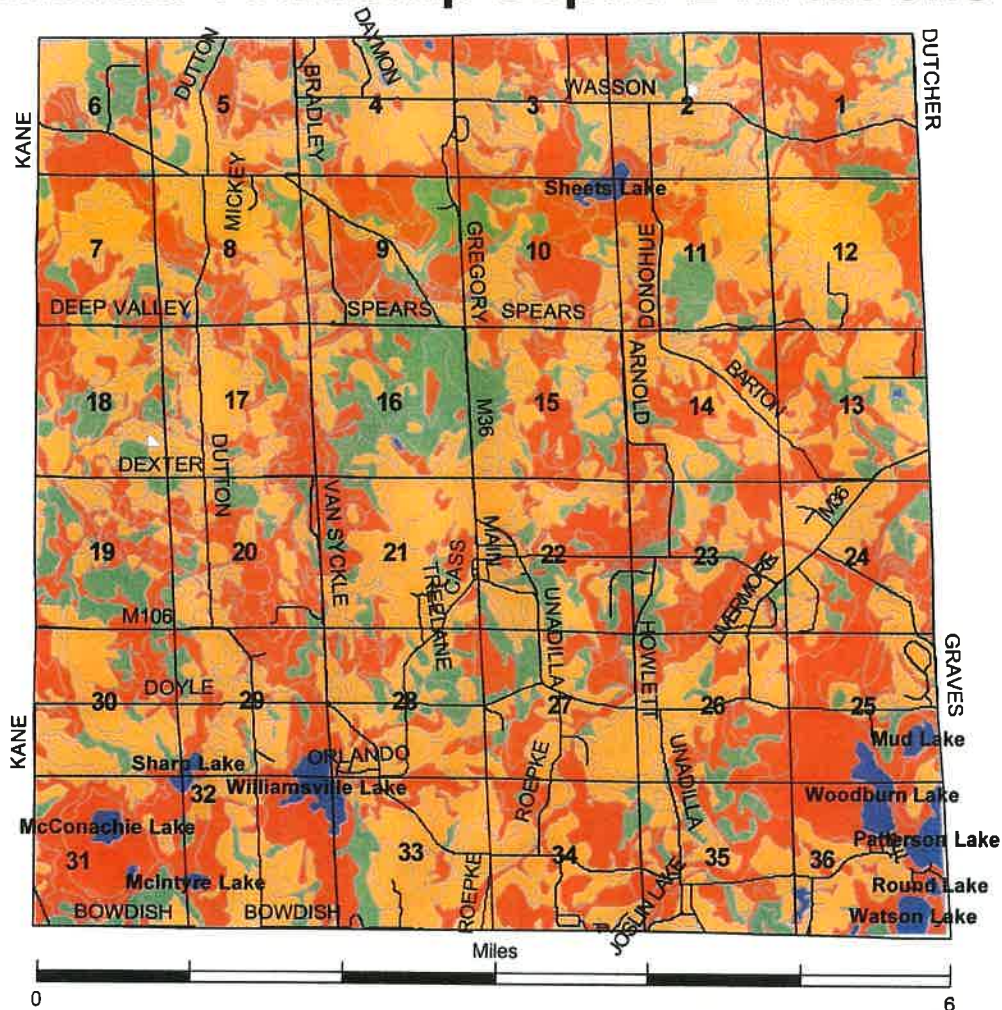


Prepared by: Livingston County  
 Department of Planning, January 2008  
 Source: USDA Soil Survey of Livingston  
 County, Michigan

# LCDP APPENDIX C DRAFT

## MAP OF SEPTIC CLASSIFICATION (MAP 2)

### Unadilla Township Septic Limitations



#### Legend

- Unadilla\_roads
- Unadilla\_sections

#### Unadilla\_soils

##### SEPTIC

- Moderate
- Severe
- Slight
- Water

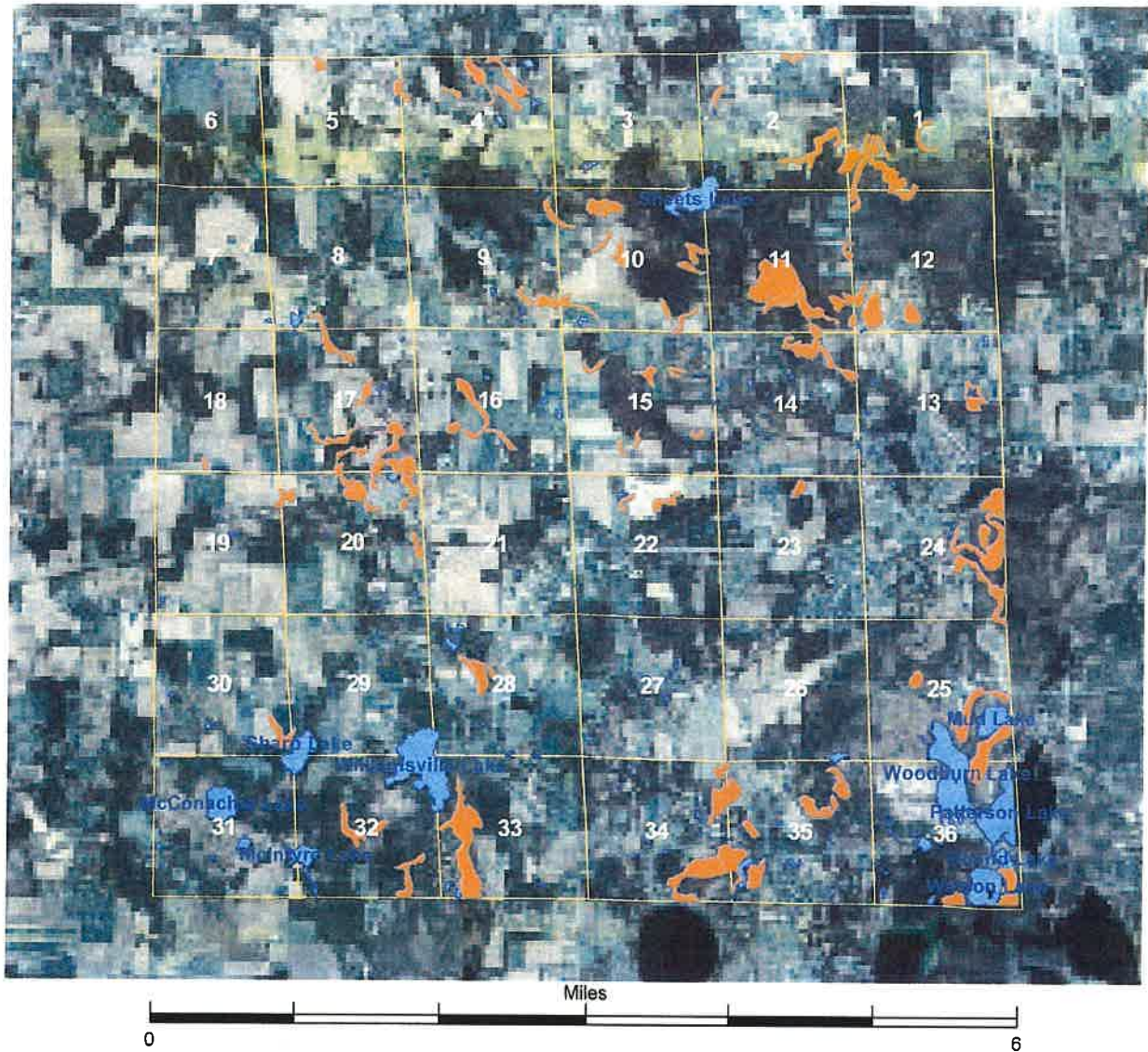
Prepared by: Livingston County  
 Department of Planning, January 2008  
 Source: Soil Survey of Livingston County





# LCDP APPENDIX C DRAFT

## MAP OF SLOPES (MAP 3)

### Slopes Greater Than 12%



#### Legend

-  Slopes Greater Than 12%
-  Water

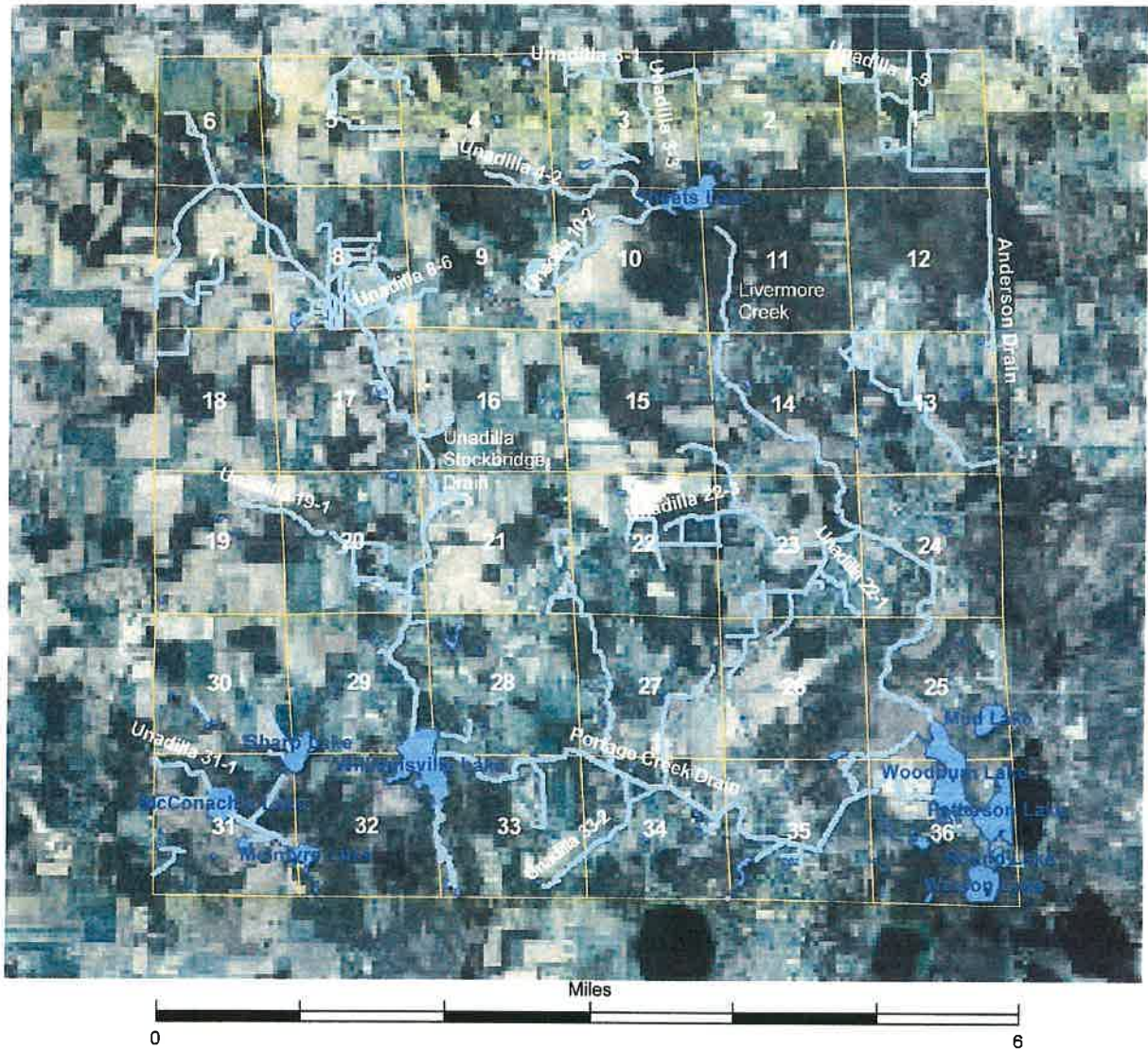


Prepared by: Livingston County  
Department of Planning, January 2008  
Source: Soil Survey of Livingston County, Michigan

# LCDP APPENDIX C DRAFT

MAP OF LAKES, RIVERS, CREEKS AND DRAINS (MAP 4)

## Unadilla Township Lakes, Rivers, Creeks and Drains



### Legend

-  Unadilla\_lakes
-  Unadilla\_sections
-  Unadilla\_rivers

Prepared by: Livingston County  
Department of Planning, January 2008  
Source: National Wetland Inventory

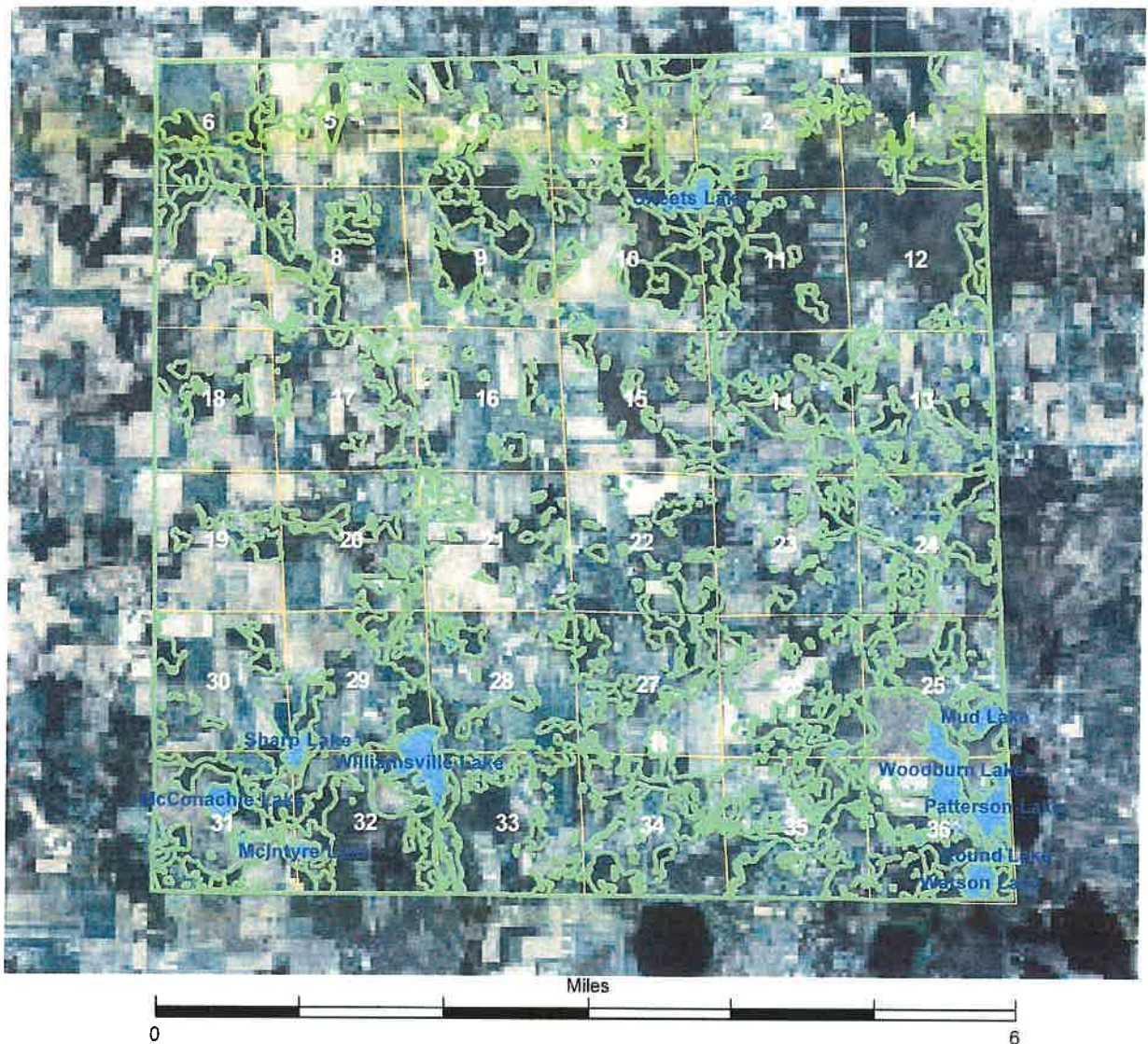






# LCDP APPENDIX C DRAFT

MAP OF WETLANDS (MAP 5)

## Unadilla Township Wetlands



### Legend

-  Unadilla\_wetlands\_NWI
-  Unadilla\_lakes
- Unadilla\_sections

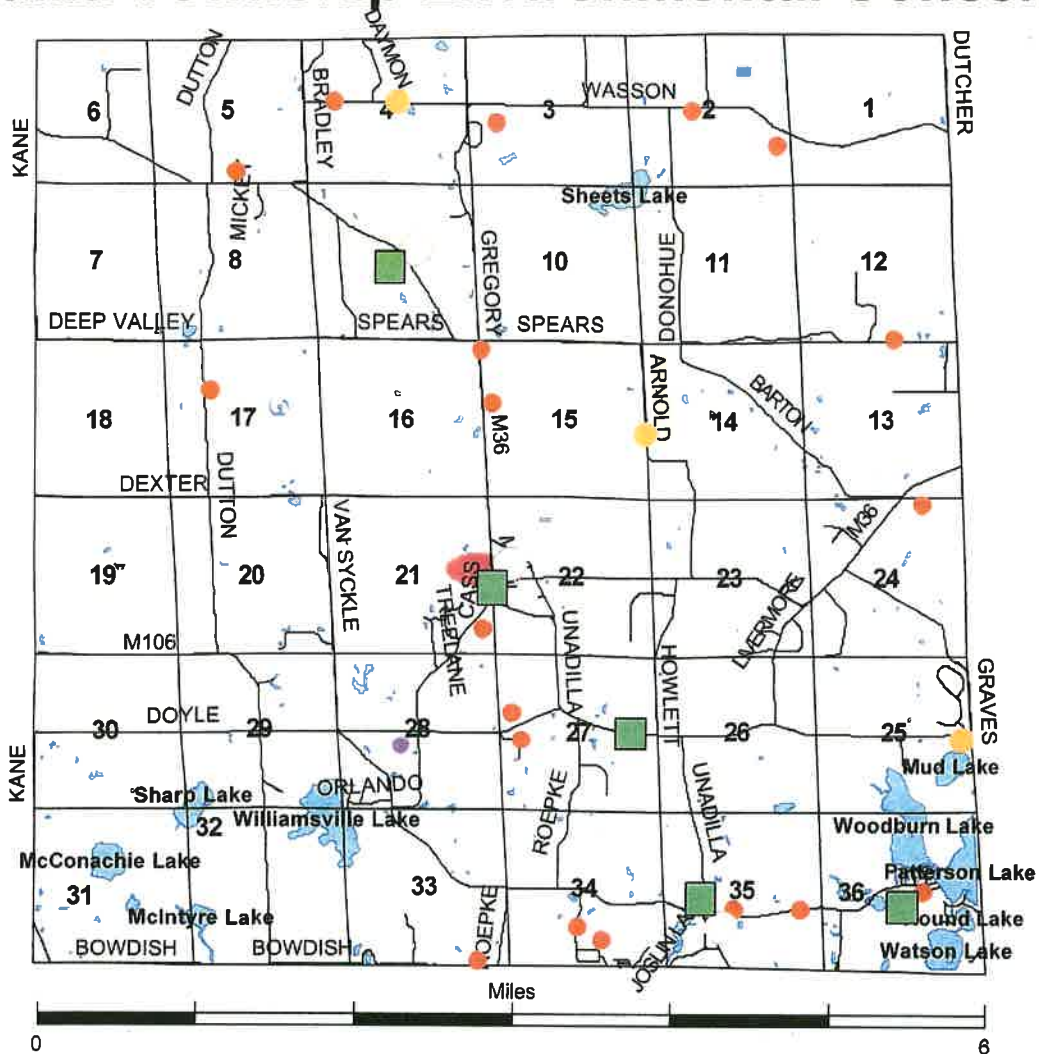
Prepared by: Livingston County  
Department of Planning, January 2008  
Source: National Wetland Inventory



# LCDP APPENDIX C DRAFT

## MAP OF ENVIRONMENTAL CONCERNS (MAP 6)

### Unadilla Township Environmental Concerns



### Legend

- Open Leaking Underground Storage Tanks
- Closed Leaking Underground Storage Tanks
- Sites of Environmental Contamination
- >5 ppm Nitrate (prior to 1994)
- >5 ppm Nitrate 1994 - 2001
- Closed Landfills
- Active Septage Sites

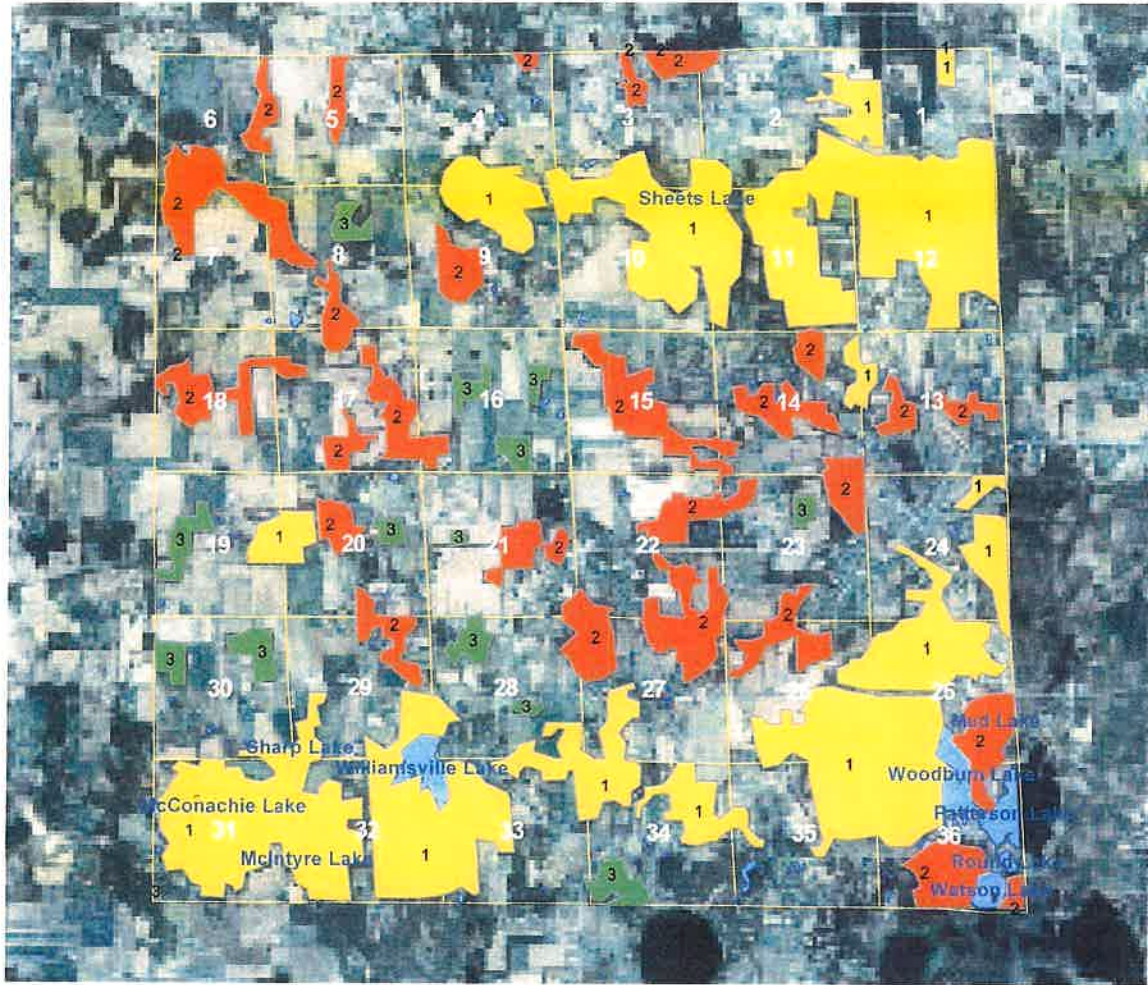
Prepared by: Livingston County  
 Department of Planning, January 2008  
 Source: Livingston County Department of  
 Public Health, Environmental Health Division,  
 Livingston County Environmental Awareness  
 Handbook 2002



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## MAP OF NATURAL AREAS (MAP 7)

### Unadilla Township Natural Areas



#### Legend

##### Unadilla\_lakes



Unadilla\_sections

##### Unadilla\_natural\_areas

##### priority



1



2



3

Prepared by: Livingston County  
Department of Planning, January 2008  
Source: Livingston County's High-Quality  
Natural Areas



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# Appendix D

## Transportation Features

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## TRANSPORTATION FEATURES

This chapter of the Plan will address transportation features within and surrounding Unadilla Township. The Township is not highly accessible from a regional perspective. It is centrally located within a semi-rectangular federal highway network consisting of I-96 to the north, U.S. 23 to the east, I-94 to the south, and U.S. 127 to the west but there is a very limited State or County highway network linking the Township to this larger arterial network.

The transportation character of the Township is largely influenced by Michigan Highways M-36 and M-106. M-36 travels east and west through the Township. To the east it connects Unadilla Township to the Village of Pinckney and eventually to U.S. 23. To the west it connects Unadilla Township to the communities of Dansville and Mason in Ingham County, and to U.S. 127. M-106 primarily travels north and south and connects the settlement of Gregory in Unadilla Township with the Village of Stockbridge in nearby Ingham County and the City of Jackson in Jackson County. M-106 also connects to Michigan Highway M-52 in Ingham County which provides further connection to the City of Chelsea and other locales south of Livingston County.

### Existing Transportation Systems

Unadilla Township's local roadway network pattern does not reflect the Township section-line grid pattern which characterizes the vast majority of rural townships in Michigan. A number of factors have contributed to the Township's less structured roadway pattern including extensive areas of natural constraints (wetlands, steep slopes, ownership of land in public). Unadilla Township's transportation system is made up of eighteen point five (18.5) miles of paved and thirty-five point six nine (35.69) miles of unpaved road surfaces, including all primary, local and subdivision roads. In Livingston County, Unadilla Township is one of the local communities with the least number of miles of paved roadway; only the communities of Conway, Deerfield and Iosco Townships contain less miles of paved roadway.

In compliance with the requirements of Michigan Act 51 of 1951, the Livingston County Road Commission classifies all roads under its jurisdiction as either primary roads or local roads. Primary roads are considered the most critical in providing circulation throughout the County and more regional areas. Gregory, Bradley and Unadilla Roads are primary paved roads that stem off of M-36 and provide the three (3) major north-south thoroughfares. Bradley Road extends north of Unadilla Township to the settlement of Parker's Corners in Iosco Township, and Gregory Road extends north from the Township to the Village of Fowlerville and beyond (it also connects to a short segment of Wasson and then to Bull Run Road, which are primary paved roads extending towards the Village of Fowlerville). Unadilla Road extends to the settlement of Unadilla in the southeast portion of the Township, and continues south of the settlement as Hadley Road. The major east-west routes are M-36, M-106, Doyle and Williamsville Roads which stem off of M-106. Each of these primary paved roadways is found in the southern half of the Township. All other roads in the Township are classified as "local" by the Livingston County Road Commission (See the map on page D-9).

*The Lakelands Trail is the primary non-motorized path in Unadilla Township. This trail is one of four linear state parks in the Michigan*

The only public transit available is county-wide small bus dial-a-ride service from Livingston Essential Transportation Service (LETS). Eighty-eight percent (88%) of users of LETS are elderly or have a disability.

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The Lakelands Trail serves as the primary non-motorized path for bicycles or pedestrians in the Township. This trail is one (1) of four (4) linear parks in the Michigan parks system and it is converted from abandoned railroad corridors. The trail has a gravel surface designed for hiking, biking, horseback riding, cross-country skiing and wheelchair use that extends for approximately thirteen (13) miles. The Lakelands Trail connects the settlement of Gregory in Unadilla Township to the villages of Stockbridge and Pinckney. Trailheads are located on M-52 in Stockbridge and a quarter (¼) mile north of M-36 on D-19 in Pinckney. On June 23, 2007, Hamburg Township dedicated the portion of the Lakelands Trail State Park that runs through Hamburg Township. This portion of the trail features an asphalt surface and a tunnel under M-36.

There is one (1) privately owned, public airport located within Unadilla Township: Richmond Field Airport in Section 26. The Spencer J. Hardy Airport, located in Howell Township, is another public airport within close proximity of the Township. This airport is owned and operated by Livingston County government. The Capital City Airport, three (3) miles northwest of Lansing, is the closest public airport with commercial airline passenger service.

### **Existing Traffic Volumes and Road Conditions**

Two-way, twenty-four (24) hour traffic counts for roads within Unadilla Township are recorded by the Livingston County Road Commission and by the Michigan Department of Transportation. A look at the traffic count data in the table below, shows that the most recent traffic counts in Unadilla Township were taken in the years 2004 through 2006, and they range from a low of forty-five (45) on Van Syckle to thirty-one hundred nineteen (3,119) on Unadilla Road between Williamsville and Kaiser Roads. Overall, there are a dozen segments of roadway in the Township that have traffic counts of over one thousand (1,000) (see table below). Each occurrence is on a hard top road, implying that an area will tend to increase in traffic volume if the roadway is paved.

**UNADILLA TOWNSHIP TRAFFIC COUNTS GREATER THAN 1,000**

<b>Year of Traffic Count</b>	<b>Traffic Count</b>	<b>Road Segment</b>
2004	1,012 – 1,091	Williamsville Road between Holmes and Unadilla
2006	1,041	Bull Run Road between Wasson and the Township Line
2006	1,139	Wasson Road between Gregory and Bull Run Roads
2006	1,152	Gregory Road between Spears and Wasson Roads
2004	1,293 and 1,316	Unadilla Road between M-106 and Doyle Road
2004	1,554	Unadilla Road between Doyle and Williamsville Rd.
2004 and 2005	1,278 – 1,891 (5 total counts over 1,000)	Doyle Road between Worden and Livermore
2004	1,862 - 2,640	Hadley Road between Kaiser and the Township Line
2004	2,600	M-36 between Bullis and Howlett Roads
2006	2,729	Kaiser Road between Unadilla and Hadley Roads
2004	2,800	M-36 north of Spears
2005	3,119	Unadilla Road from Williamsville to Kaiser Roads

Source: Livingston County Road Commission

# LCDP APPENDIX D) DRAFT

In partnership with the Livingston County Road Commission, the Livingston County Department of Planning analyzed the capacity of all gravel roads in Livingston County, which resulted in the 2005 publication of *Gravel Road Capacity Analysis, Livingston County, Michigan*. This analysis revealed that Unadilla Township has 38 County gravel road segments totaling thirty-three point four (33.4) miles, which is five percent (5%) of the County's approximate six hundred twenty-five (625) miles of County gravel roads. In the table below, letter grades have been assigned to each of the gravel road segments in order to simplify the score each road received in regard to its physical characteristics, traffic volumes and level of service. Sixty-six percent (66%) of the County gravel roads in Unadilla Township are Grade C or lower compared to thirty-seven percent (37%) countywide. This indicates that County gravel roads in Unadilla Township are of lower quality, and can accommodate less traffic than the County average.

## Unadilla Township Gravel Road Capacity Analysis

Status of Unadilla Township Gravel Road Segments	Number of Gravel Road Segments	Percentage of Gravel Road Segments
Grade A	0	0%
Grade B	13	34%
Grade C	17	45%
Grade D	8	21%
Grade E	0	0%
Number of Segments	38	100%

Source: Gravel Road Capacity Analysis/ Livingston County, Michigan, Livingston County Department of Planning, 2005

There is only one (1) road segment in Unadilla Township that is considered over capacity. It is Livermore Road between Doyle and M-36. This one (1) over capacity roadway comprises only five percent (5%) of the County gravel roads in Unadilla Township, compared to one hundred forty-six (146) or eighteen percent (18%) over capacity gravel roads throughout Livingston County.

### Descriptions of Road Grade Levels

**Grade B:** Has good crown and drainage. There may be some loose aggregate or slight washboarding. The width still allows for vehicles to travel in both directions without slowing down for each other.

**Grade C:** Width allows for two-way traffic, but only at slow speeds. The aggregate surface is fairly loose which can mean moderate dust and an obstruction of vision. Moderate washboarding (1 to 2 inch holes) may be present. Drainage may be a concern in small areas of the roadway, particularly in the springtime months after heavy rains.

**Grade D:** Has significant ponding problems after rains. Width is too narrow for two-way traffic. Loose aggregate, causes excessive dust in dry times. Potholes, rutting and washboarding may be fairly severe.



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## Existing Traffic Crash Data

2001-2005 traffic crash data is available on a Southeast Michigan Council of Governments website feature called SEMCOG Transportation Planning – Data Resource Center. With this website feature, users can look up any intersection or road segment in Southeast Michigan and find details on every traffic crash that occurred there between 2001 and 2005.

The 2001-2005 traffic crash data by intersection reveals that there are fifty (50) high crash intersections in Unadilla Township. One hundred and fifty-two (152) accidents have occurred at these intersections over the five (5) year span. Six (6) of the intersections have incurred an average of one (1) traffic crash per year between 2001 – 2005 [for a total of at least five (5) crashes]. Intersections that include Doyle, Livermore and Gregory Roads figured prominently in the six (6) highest crash intersections (see table below). The remaining forty-four (44) high crash intersections incurred four (4) or less crashes over the five (5) year period.

### **High Crash Intersections in Unadilla Township, 2001 - 2005**

<b>Intersection</b>	<b>Total Crashes 2001 - 2005</b>	<b>Year That The Most Crashes Occurred</b>
Doyle Road @ Holmes Road	12	2002 (six crashes)
Livermore Road @ M-36	10	2002 (three crashes)
Livermore Road @ Doyle Road	8	2004 (four crashes)
Doyle Road @ VanSyckle Rd.	6	2004 (three crashes)
Berkshire Road @ Gregory Rd.	5	2004 (two crashes)
Wasson Road @ Gregory Rd.	5	2003 (three crashes)

Source: Southeast Michigan Council of Governments

There were no fatalities recorded at any of these six (6) intersections during the five (5) year time period. Out of the forty-six (46) crashes occurring at these intersections, five (5) or eleven percent (11%) resulted in a crash in which the worst injury was incapacitating, two (2) or four percent (4 %) resulted in a crash in which the worst injury was a non-incapacitating injury, six (6) or thirteen percent (13%) resulted in a crash in which their was only possible injury and the bulk of crashes resulted in property damage only [thirty-three (33) or seventy-two percent (72%)]. A total of ten (10) crashes or approximately twenty-two percent (22%) of all the crashes at these six (6) intersections, involved deer. Alcohol played a part in three (3) crashes or six point five percent (6.5%) of the total forty-six (46) crashes and motorcycles were involved in another three (3) crashes [six point five percent (6.5%) of the total forty-six (46) crashes].

# LCDP APPENDIX D) DRAFT

## HIGH CRASH ROAD SEGMENTS IN UNADILLA TOWNSHIP, 2001 - 2005

Road Segment	Total Crashes 2001 - 2005	Year That The Most Crashes Occurred
Bull Run Road from Wasson Road to Coon Lake Road	61	2005 (17 crashes)
Bradley Road from M-36 to Bradley/Iosco Cutoff	51	2002 (16 crashes)
West Carr St. from Gregory Road to Livermore Road	42	2002 (11 crashes)
West M-36 from M-36 to Pingree Road	41	2003 (12 crashes)
M-106 from end of road to Doyle Road	21	2001 and 2005 (5 crashes)
Gregory Road from Gregory/Wasson cutoff to Spears/M-36 cutoff	20	2003 (7 crashes)
Doyle Road from Unadilla Road to Patterson Lake/ Doyle cutoff	20	2003 (7 crashes)

Source: Southeast Michigan Council of Governments

SEMCOG's 2001-2005 traffic crash data by road segment reveals that there are fifty (50) high crash road segments in Unadilla Township. Five hundred and forty-seven (547) accidents have occurred on these road segments over the five (5) year span. Seven (7) of the road segments have incurred at least twenty (20) traffic crashes between 2001 and 2005 (see table below). The remaining forty-three (43) high crash road segments incurred eighteen (18) or less crashes over the five (5) year period. There were no fatalities reported in the two hundred fifty-six (256) crashes occurring on the seven (7) high crash road segments noted above. The largest contributing factor to these crashes were deer. Seventy percent (70%) of the two hundred fifty-six (256) crashes involved deer.

# LCDP APPENDIX D DRAFT

## Future Traffic Volumes

Future traffic volumes will be dependant upon the amount, type, and intensity of development. However, future traffic generation can be estimated by referencing the accompanying table. Different land uses have been shown to generate different amounts of traffic. By looking at the land uses on the table, the Peak Hour Trips and the Average Daily Trip Totals can be discerned.

### TRAFFIC GENERATOR CHARACTERISTICS

Type of Land Use	Peak Hour Trips *	Average Daily Trip *
<b>Residential (Per Unit)</b>		
Single Family Home	0.74	9.55
Apartment	0.51	6.47
Condominium	0.44	5.86
Mobile Home	0.40	4.81
<b>Commercial (Per Unit)</b>		
Small Retail Strip	4.80	91.65
Moderate Retail Strip	6.56	70.67
Large Retail Strip	3.66	38.65
Quality Sit-Down Restaurant	7.66	96.51
Fast Food Restaurant (drive-thru)	36.53	632.12
Service Station (per pump)	16.30	Not Available
Convenience Store	52.74	737.99
Drive-in Bank	51.23	265.21
<b>Industrial (per 1,000 sq. ft. of floor area)</b>		
Light Industrial	1.08	6.97
Heavy Industrial	0.68	1.5
Industrial Park	0.86	6.97
Manufacturing	0.75	3.85
Warehousing	0.60	4.88
Note: A trip is defined as a one-way movement, i.e. 10 trips = 5 in, 5 out Source: ITE Generation Manual 54th Edition Prepared by Livingston County Department of Planning		

Actual volumes of traffic in the future will be dependent on a variety of factors. Among those factors are:

- Timing of development.
- Specific types of uses developed.
- Availability and price of gasoline.
- Characteristics of travel.
- Amount of competing retail development.

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The process for evaluating future traffic is as follows:

- Inventory existing traffic conditions.
- Project traffic production and attraction for future land uses.
- Estimate where the future traffic will travel.
- Distribute the future traffic on the road system.
- Add estimate for future through traffic.
- Identify needed transportation improvements.

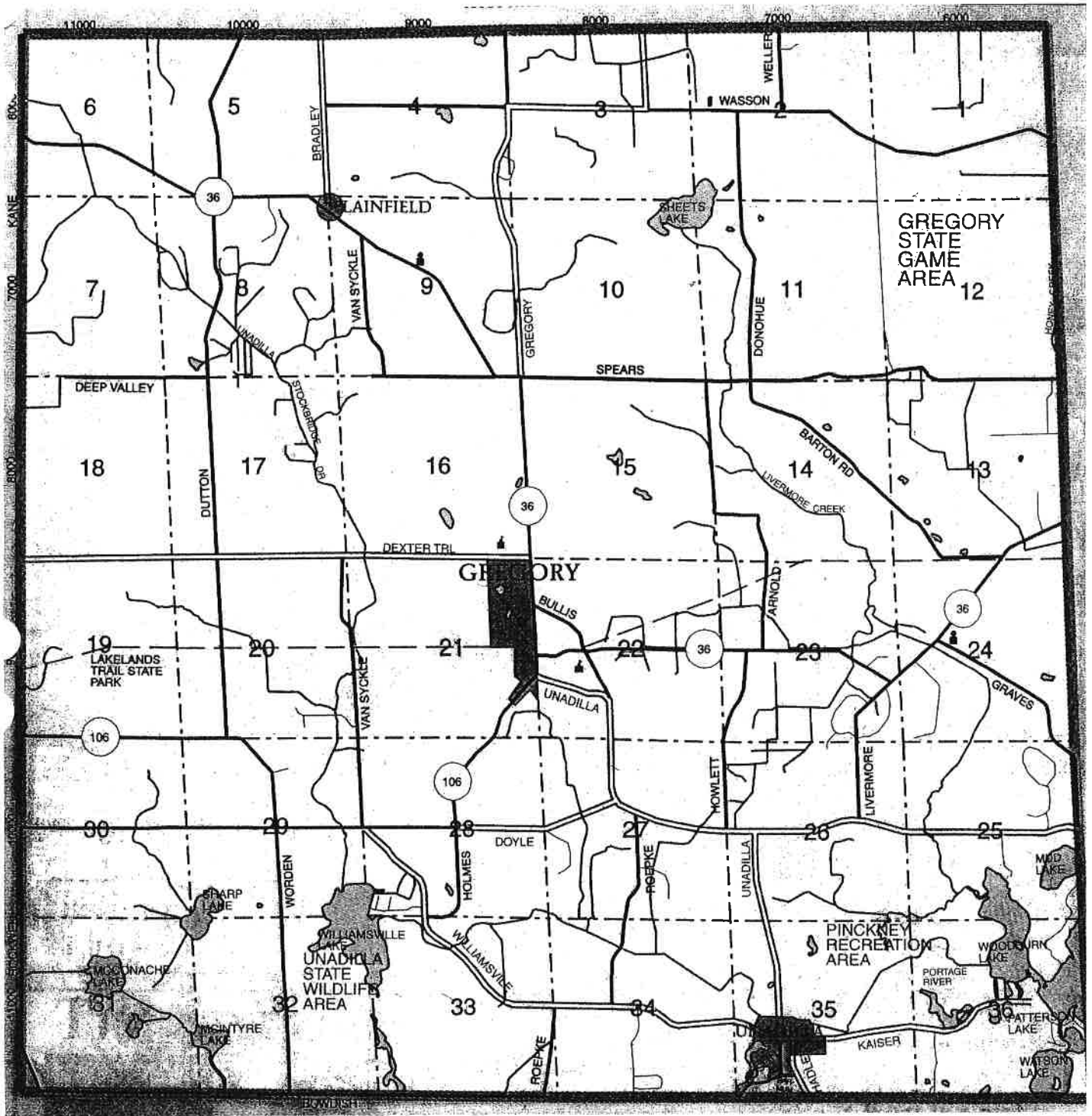
## Future Transportation Improvements

*The Regional Transportation Plan replaced the Roepke Bridge over the Portage River in Unadilla Township.*

The 2030 Regional Transportation Plan for Southeast Michigan (RTP) is the vision for transportation in the seven (7) county Southeast Michigan region. It serves as a guide for developing a transportation system that is accessible, safe, and reliable. The Plan is necessary to meet requirements allowing federal transportation

money to be spent in the region. It contains \$41 billion in federal, state, and local funding for road and transit projects for funding year 2005 – 2030, as well as policies and initiatives designed to guide the region forward.

# Unadilla Road Map



STREETS - ROADS & BOUNDARY LINES	
	Interstate/Divided Highway
	Primary Road
	Secondary Road
	Gravel/Earth/Abandoned Roads
	Minor City Streets or Subdivision Roads
	Railroad
	Section Line
	Trail
	Township Boundary
	County Boundary

NUMBERS & SYMBOLS			
T21-N	Town Number		Airport
R-21-E	Range Number		Cemetery
POK RD	911 Road Names		Church
	State Highway Symbol		School or Town Hall
	Federal Highway Symbol		Narrow Stream
	Interstate Highway Symbol		Wide Stream/Lake
25	Section Numbers		City
1	Plat Offset Names		City Name
100	Plat Number Of Acres		County Land
3	Government Lot #		State Land
	Land Hook, Connects Properties With Common Owner		Subdivisions
			DNR Land



# Appendix E

## Existing Land Use

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### SEMCOG LAND USE CATEGORIES AND DATA

SEMCOG's most recent update of land use/land cover data for the County was in the year 2000 when new aerial photographs of Livingston County were taken. The 1990 land use/land cover data file was also revised at this time to ensure comparability between time periods. SEMCOG uses the following thirteen (13) land use categories to describe and map land use throughout the region.

To better understand these various categories of land use/land cover, SEMCOG defines them as follows:

**Single-Family Residential** - This category includes detached single and two-family structures; traditional single-family residential structures, duplexes, two flats, rural non-farm residences, seasonal dwellings, and manufactured housing [one (1) or two(2)] not in a manufactured housing park.

**Multiple-Family Residential** - This category includes multi-family and apartment buildings, townhouses, triplexes, double-duplexes, and quadraplexes.

**Commercial and Office** - The Commercial and Office category includes central business district areas, secondary mixed business areas, shopping centers, malls, and retail centers.

**Institutional** - This category includes religious, health, correctional, military, government and education administration and service facilities (including dormitories).

**Industrial** - The Industrial land use category includes general industrial, industrial parks and automotive test track complexes.

**Transportation, Communication and Utility** - This category includes all air, rail, road and water transportation facilities; communication areas associated with radio, radar, television, telegraph, telephone, cellular phone, and similar uses; and utilities such as electrical transmission lines, gas pipeline and storage, oil pipeline and storage, solid waste disposal sites, sewage and water treatment and transmission, and electrical utility facilities.

**Cultural, Outdoor Recreation and Cemetery** - This category includes outdoor and indoor public assembly, outdoor cultural, and outdoor and indoor sports facilities. It also includes all recreation facilities and areas which are basically on open land including playgrounds, athletic fields not associated with schools, golf courses, miniature golf, shooting ranges etc. Cemetery land use/land cover includes chapels, mausoleums, and maintenance buildings along with the burial ground.

**Active Agriculture** - Active Agriculture includes land used to produce crops, orchards, bush fruits, vineyards, ornamental horticulture, confined feeding operations, permanent pasture, greenhouses, non-commercial racetrack training areas, and farmsteads.

**Grassland and Shrub** - The Grassland and Shrub category includes area dominated by grasses and forbs on both upland and lowland sites, and upland sites dominated by native shrubs and low woody plants.

**Woodland and Wetland** - This category includes Woodland that is at least sixteen point seven percent (16.7%) stocked, approximately twenty-five percent (25%) crown cover] by trees of any size, or formerly having tree cover, and not currently developed for non-forest use. Wetland land use/land cover includes wetlands that are either forested (wooded) or non-forested (non-wooded).



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**Extractive and Barren** – Extractive land use/land cover includes open pits, above ground and underground extractive operations, and oil or gas wells. Barren land use/land cover includes beaches and riverbank, sand dunes and exposed rock.

**Water**–This category includes streams and waterways, lakes, reservoirs, Great Lakes and their connecting waterways.

**Under Development** -- This category includes single-family residential developments that are in intermediate stages [less than eighty-seven point five percent (87.5%) completion]. This category also includes sites of urban development (excluding single-family residential development) stripped of cover before construction begins and developing areas with on-going construction where the future land use of the area cannot be determined.

### UNADILLA TOWNSHIP LAND USE / LAND COVER BY ACRE

	Single-Family Residential		Multi-Family Residential		Commercial and Office		Institutional		Industrial		Transportation, Communication And Utility	
	#	%	#	%	#	%	#	%	#	%	#	%
1990 Acreage	1,864	8.4%	0	0%	19	0.1%	0	0%	0	0%	3	0.01%
2000 Acreage	2,232	10.1%	0	0%	19	0.1%	0	0%	0	0%	13	0.06%

### UNADILLA TOWNSHIP LAND USE / LAND COVER BY ACRE

	Cultural, Outdoor Recreation and Cemetery		Grassland And Shrub		Active Agriculture		Woodland and Wetland		Extractive and Barren		Water	
	#	%	#	%	#	%	#	%	#	%	#	%
1990 Acreage	22	0.1%	2,220	10%	9,285	41.8%	8,332	37.6%	0	0%	418	1.9%
2000 Acreage	22	0.1%	2,336	10.5%	9,380	42.3%	7,737	34.9%	0	0%	426	1.9%

### UNADILLA TOWNSHIP LAND USE/ LAND COVER BY ACRE

	Under Development		TOTAL Township Acreage
	#	%	
1990 Acreage	28	0.1%	22,191
2000 Acreage	25	0.1%	22,191

Source: Southeast Michigan Council of Governments (SEMCOG), Land Use in Southeast Michigan, Livingston County, 1990-2000, April 2004

This land use/land cover data reveals that over the ten (10) year time period, Unadilla Township has showed growth in the number of acres categorized as Single-Family Residential [nineteen point seven percent (19.7%) change], Transportation, Communication and Utility [three hundred thirty-three percent (333.3%) change], Active Agriculture [one percent (1%) change], Grassland and Shrub [five point three percent (5.3%) change], and Water [one point nine percent (1.9%) change] land use/land cover. During this same time period, a loss in acreage has occurred in the Woodland and Wetland [minus seven point

## APPENDIX E DRAFT

one percent (-7.1%) change] and Under Development [minus eleven point nine percent (-11.9%) change] land use/land cover categories. The remaining six (6) categories have stayed the same over time; four (4) of these categories including Multi-Family Residential, Institutional, Industrial and Extractive and Barren have no recorded land use/land cover acreage in Unadilla Township.

### YEAR 2000 LAND USE BY CATEGORY

Examining Livingston County 2005 digital ortho photography and applying Geographic Information System (GIS) layers such as parcel lines, wetlands, and woodlands provides a good tool for analyzing existing land use. Following are the results for each land use category represented in Unadilla Township.

**Agriculture (9,380 acres)** - Active Agriculture represents the largest land use/land cover category in Unadilla Township, ninety-three hundred eighty (9,380) acres. This is no surprise given the amount of land that is still farmed in Unadilla Township. The number of current Farmland and Open Space Preservation contracts in Unadilla Township far outnumbers most other Livingston County communities with the exception of Conway and Handy Townships. The table below illustrates the location of the Farmland and Open Space Preservation contracts in Unadilla Township. Eighty-seven percent (87%) of the contracts in the Township are for farms on the western side of the Township, particularly Sections 8 and 16 (in the northwest quadrant).

#### UNADILLA TOWNSHIP FARMLAND AND OPEN SPACE PRESERVATION CONTRACTS

SIZE IN ACRES	Section Number	Quadrant of Township
40	7	Northwest
46	7	Northwest
160	7	Northwest
40	8	Northwest
10	8	Northwest
40	8	Northwest
88	8	Northwest
200	8	Northwest
91	9	Northwest
145	9	Northwest
82	10	Northeast
5	15	Northeast
40	15	Northeast
197	15	Northeast
80	16	Northwest

Size in Acres	Section Number	Quadrant of Township
91	16	Northwest
39	16	Northwest
117	16	Northwest
40	16	Northwest
76	17	Northwest
92	19	Southwest
47	20	Southwest
149	20	Southwest
38	20	Southwest
77	21	Southwest
40	21	Southwest
78	21	Southwest
78	29	Southwest
81	29	Southwest
169	32	Southwest

Source: Michigan Department of Agriculture, Farmland and Open Space Preservation Program, 2007

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Each of these agreements between the State and a landowner, represents a temporary restrictive covenant regarding the use of the land. A landowner voluntarily agrees to preserve their land for agriculture in exchange for certain tax benefits and exemptions for various special assessments. An agreement runs with the land and is for a jointly agreed upon length of time [at least ten (10) years].

Like most communities in Livingston County, agriculture is not as prominent in Unadilla Township as it was in years past. Each decade, agricultural land use has diminished due to increased residential growth and development.

In the northwest quadrant of the Township there is five hundred eighty-six (586) acres of contiguous agricultural land within Sections 5, 7 and 8. In total, there are eleven (11) parcels consisting of eighty (80) or more acres that have tilled land. Together these parcels represent eleven hundred thirty-three (1,133) acres of land. Several smaller parcels of land also appear to be devoted to active agricultural production.

### AGRICULTURAL LAND MAP NW QUADRANT UNADILLA TOWNSHIP



Much like the northwest quadrant of the Township, the southwest quadrant of the Township contains a considerable number of privately owned parcels that contain over eighty (80) acres of tilled land. Sections 19 and 20 in the northwest portion of the quadrant, contain four hundred ninety-six (496) acres of contiguous land that appears to be farmed. In total, there are nine (9) privately owned parcels of more

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than eighty (80) acres in size, consisting of eleven hundred twenty-seven (1,127) acres of land that appears to have some agricultural land use. There are several additional parcels of fifty (50) to eighty (80) acres that also appear to contain tilled land, and there are very large parcels of land at the southern boundary of the Township that are owned by MDNR as part of the Unadilla Wildlife Area (which is part of the Gregory State Game Area).

### AGRICULTURAL LAND MAP SW QUADRANT UNADILLA TOWNSHIP



There are not as many large parcels of land in the northeast and southeast quadrants of the Township that appear to contain active agriculture. Most of the large parcels of land in both quadrants are owned by the Michigan Department of Natural Resources for the Gregory State Game Area in the northeast quadrant and the Pinckney State Recreation Area in the southeast quadrant. The University of Michigan also has significant land holdings in the southeast quadrant. In both quadrants there are only three (3) parcels of eighty (80) or more acres of privately owned land that appear to be tilled; a total of two hundred eighty-one (281) acres in the northeast quadrant and a total of two hundred forty (240) acres in the southeast quadrant.

**Woodland and Wetland / Grassland and Shrub (7,737 acres)** - Woodland and Wetland represents the second largest land use/land cover category in the Township [seventy-seven hundred thirty-seven (7,737) acres], and Grassland and Shrub represents the third largest category twenty-three hundred thirty-six (2,336 acres). The vast amount of public land owned by the Michigan Department of Natural Resources and the University of Michigan contributes greatly to these land use/land cover categories.

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One of the best Livingston County GIS layers for identifying significant Unadilla Township woodland, wetland, grassland and shrub areas, is based on the results of a 2003 Livingston County Department of Planning study entitled: Livingston County's High-Quality Natural Areas. In partnership with a group of County citizens and government officials, aerial photography was used to map natural areas throughout the County. These areas were then prioritized by using a set of criteria to differentiate one natural area from another. These criteria include: the size and shape of the natural area, the presence of rivers or streams, and the amount of connection one natural area has to surrounding natural areas, among others. Using these criteria natural lands are grouped into three (3) categories of varying conservation priority; Priority 1, Priority 2 and Priority 3 natural areas with "Priority 1" areas having the highest cumulative scores and being considered the most ecologically valuable.

Wetland areas are spread throughout Unadilla Township particularly adjacent to county drains, creeks and lakes. The natural features mapping layer shows us that three (3) of the four (4) corners of the Township contain the largest areas of woodland and wetland. The northeast corner of the Township contains over seventeen hundred seventy-nine (1,779) acres of Priority 1 natural area in Sections 1, 2, 3, 10, 11 and 12, and connects to large expanses of natural area in Iosco Township. Most of this Priority 1 natural area is owned by the Michigan Department of Natural Resources in two (2) large contiguous areas of eleven hundred forty-five (1,145) acres and five hundred fourteen (514) acres (which also contains Sheets Lake). The southeast corner of the Township contains over fourteen hundred fifty-nine (1,459) acres of Priority 1 natural area in Sections 24, 25, 26, 27, 34, 35 and 36 and connects to large expanses of natural area in Putnam Township. Again, much of this woodland and wetland area is publicly owned by the University of Michigan and the MDNR. The two (2) largest pieces of this ecologically valuable area surround the cluster of lakes in the southeast corner of the Township and the areas are three hundred thirteen (313) acres in size and six hundred seventy-three (673) acres in size. The southwest corner of the Township is the last of the three (3) Township areas with a large amount of Priority 1 natural area. Surrounding Williamsville, Sharp, McConachie and McIntyre Lakes is twelve hundred forty-four (1,244) acres of Priority 1 natural area in Sections 31, 32, 33, 28, 29 and 30. Most of this land area is publicly owned by the MDNR.

**Single-Family Residential (2,232 acres)** – Single-Family Residential represents the fourth largest land use/land cover category in Unadilla Township twenty-two hundred thirty-two (2,232) acres. Most of the residential land use in Unadilla Township can be characterized as rural residential with the exception of smaller lot residential in the settlement areas of Williamsville, Plainfield, Gregory and Unadilla and lakeside residential in the southeast quadrant of the County where most of the lakes are located.

According to Livingston County Department of Planning's Planned and Proposed Residential Development data base, over the last ten (10) years the number of planned and proposed housing units in Unadilla Township has more than doubled. A decade ago in January and in June 1997, Unadilla Township reported only one (1) planned and proposed residential development, a subdivision totaling fifty-two (52) housing units. Ten (10) years later in November 2007, Unadilla Township reports six (6) planned and proposed residential developments totaling one hundred thirty-six (136) housing units; this peak in developments was reached in 2006 and has remained consistent in 2007. Half of the residential developments, three (3), are small-scale private road developments consisting of seven (7) to sixteen (16) housing units. The remaining three (3) planned and proposed residential developments are for site condominium developments consisting of twenty-four (24) and twenty-four (24) units each and a subdivision consisting of forty-nine (49) units that has developed incrementally over the last decade. The six (6) developments comprise approximately three hundred forty-five (345) acres of land. With the exception of one (1) private road development, the location of these planned and proposed residential developments is in the southern half of the Township.

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**Commercial and Office (19 acres)** - Commercial and office establishments in Unadilla Township are located primarily in Gregory. Gregory has a concentration of commercial and office buildings in its downtown center surrounding the cross roads of M-106/Main and M-36. This commercial and office area includes land uses such as: a bank, a gas station, a shopping plaza, a hardware store, a restaurant, a pub, an antiques dealer, equipment sales and a market.

There are other small commercial establishments in the Township that are either permitted by right within the zoning district in which they are located or a special land use permit has been granted for the use.

**Transportation, Communication And Utility (13 acres)** – The limited amount of Transportation, Communication and Utility land use in Unadilla includes the Unadilla Mill Dam at Hell Creek in Section 35, a utility transformer substation is located along Doyle Road in Section 28, and natural gas storage at the corner of Williamsville and M-106 in Section 29 in the settlement of Williamsville.

The Multi-Lakes Sewer and Water Authority in Dexter, Michigan (Washtenaw County) provide sewer service to a limited number of Unadilla Township residents. Sewers have been extended to southern portions of Patterson Lake in the southeast corner of the Township and the settlement of Gregory where one hundred fifty-six (156) Residential Equivalent Units (REU's) are serviced.

**Cultural, Outdoor Recreation and Cemetery (22 acres)** - This existing land use/land cover category includes public assembly facilities such as the Unadilla Township Hall in the settlement of Gregory, and the five (5) cemeteries located in the Township. It does not include all of the vast acreage of the Pinckney State Recreation Area and Gregory State Game Area, but rather some of the recreational facilities that are located on these lands.

Outdoor recreational facilities in the Pinckney State Recreation Area include: camping; playground; fishing piers; picnic shelters; and boat rental; with the nearest public boat launch facility located at nearby Bruin Lake. Additional outdoor recreation opportunities are offered on land area owned by Unadilla Township, Stockbridge Community Schools and the University of Michigan which maintains a camp facility and biological research facility.

There are five (5) cemeteries located in Unadilla Township. Wright's Chapel (a.k.a. Harford or Lewis) Cemetery is located in Section 2 near the intersection of Wasson and Donohue roads. Plainfield Cemetery is located just west of the settlement of Plainfield in Section 5. Livermore Cemetery is located along the north side of M-36 in Section 24. Williamsville Cemetery is located within the settlement of Williamsville in Section 28 of the Township, and Unadilla (a.k.a. Baseline) Cemetery is located within the settlement of Unadilla in Section 35.

**Water (426 acres)** – Most of the open water in Unadilla Township is in several lakes located near the southern boundary of the Township. The three (3) largest lakes in this southern area of the Township include: Patterson Lake in Section 36, one hundred seventy (170) acres, which is split between Unadilla and Putnam Townships; Williamsville Lake located in Sections 28, 29, 32 and 33 [seventy-five point five (75.5) acres]; and Woodburn Lake located in Sections 25 and 36 [sixty-seven (67) acres]. The fourth largest lake in the Township, Sheets Lake, is the only large lake located in the northern portion of the Township. Sheets Lake is located in Sections 2,3,10 and 11 and it is sixty-one (61) acres in size. There are five (5) additional lakes in the Township ranging in size from ten point five (10.5) to thirty-three (33) acres. Each of these lakes is located near the southern boundary of the Township; they include: Mud [thirty-three (33) acres], Watson [thirty (30) acres], McConachie [twenty-two (22) acres], Sharp [twenty (20) acres] and McIntyre [ten point five (10.5) acres] Lakes. The combined surface area of these five (5) lakes is one hundred fifteen point five (115.5) acres. Additionally, numerous ponds, creeks, drains and other small water bodies are dispersed throughout the Township.

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**Under Development (25 acres)** - There are areas of vacant/undeveloped land scattered throughout Unadilla Township that are not designated by any other land use/land cover category. Some of these areas could include the undeveloped portions of the aforementioned single-family residential developments that are currently under construction.

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