

Delhi Charter Township
Planning Commission

A Resolution to Approve Amendments to the Delhi Charter Township Comprehensive
Development Plan to be Known as the 2013 Master Plan

At a regular meeting of the Planning Commission, of the Charter Township of Delhi, Ingham County, Michigan, held at the Community Services Center, 2074 Aurelius Road, Holt, Michigan on Monday, the 28th day of October, 2013, at 7:00 o'clock, p.m.

PRESENT: Craig, Berry-Smokoski, Goodall, Hayhoe, Leaf, Lincoln, O'Hara, Olson, Zietlow

ABSENT: None

The following Resolution was offered by Commissioner O'Hara, and supported by Commissioner Leaf.

WHEREAS, on February 17, 2012 the Planning Commission provided the required "Notice of Intent to Plan" to the appropriate agencies and Boards as outlined in Act 33 of 2008, and

WHEREAS, on August 12, 2013 the Planning Commission reviewed a draft of the proposed amendments to the Comprehensive Development Plan and forwarded that draft onto the Delhi Township Board for their review, and

WHEREAS, on August 20, 2013 the Delhi Charter Township Board reviewed the proposed amendments and authorized the distribution of the draft document to the appropriate agencies and Boards as provided in the Act, and

WHEREAS, on August 21, 2013 the Planning Commission Secretary caused to be mailed the draft to said agencies and Boards and specifically supplied a list of those entities that were sent the draft to the Ingham County Board of Commissioners in accordance with the Act, and

WHEREAS, those agencies and Boards have, by law, 63 days to provide their comments or suggestions on the proposed amendments, and

WHEREAS, the deadline to receive said comments was on October 28, 2013, and

WHEREAS, on October 13, 2013 notice of the public hearing appeared in a newspaper of general circulation within the community and was mailed to the appropriate agencies and Boards as required by the Act, and

WHEREAS, on October 28, 2013 the Planning Commission held a public hearing for the purpose of receiving public input regarding the proposed amendments.

NOW, THEREFORE, BE IT RESOLVED; as follows:

1. The 2013 Master Plan which shall be and is hereby adopted including all of the maps and descriptive matter intended by the Planning Commission to form the plan as setforth in Exhibit A of this Resolution, and
2. That the Director of Community Development be directed to place the following information on the 2013 Master Plan, outlined in number one (1) above, including a signature by the Planning Commission Chairperson and Secretary, and

*This Plan Approved by the Delhi Charter Township
Planning Commission on October 28, 2013.*


Elizabeth Zietlow, Chairperson
Delhi Charter Township Planning Commission


Kenneth O'Hara, Secretary
Delhi Charter Township Planning Commission

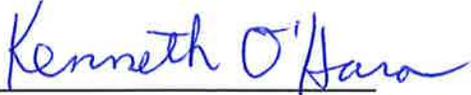
3. That the Planning Commission Secretary cause a copy of the adopted 2013 Master Plan to be submitted to the Delhi Township Board and each of the agencies and Boards that previously received notices throughout the planning process.

AYES: Craig, Goodall, Leaf, O'Hara, Zietlow, Berry-Smocoski, Hayhoe, Lincoln, Olson

NAYS: None

ABSENT: None

The foregoing Resolution declared adopted on October 28, 2013.


Kenneth O'Hara, Secretary
Delhi Charter Township
Planning Commission

STATE OF MICHIGAN)

)ss

COUNTY OF INGHAM)

I, the undersigned, the duly qualified Secretary of the Delhi Charter Township Planning Commission, Ingham County, Michigan, DO HEREBY CERTIFY that the foregoing is a true and complete copy of the action taken by the Planning Commission at their meeting on October 28, 2013.

IN WITNESS THEREOF, I have hereunto affixed my official signature this 28th day of October, 2013.



Kenneth O'Hara
Kenneth O'Hara, Secretary
Delhi Charter Township
Planning Commission

EXHIBIT A: 2013 Master Plan

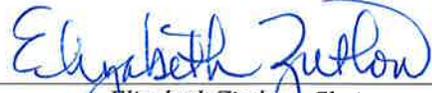
2013 MASTER PLAN

PREPARED BY:
DELHI CHARTER TOWNSHIP
2074 N. AURELIUS ROAD
HOLT, MI 48842

ORIGINAL ADOPTION DATE: OCTOBER 14, 2002
AMENDMENT DATE: SEPTEMBER 24, 2007
AMENDMENT DATE: OCTOBER 28, 2013

ORIGINAL 2002 VERSION PREPARED BY:
HNTB ARCHITECTS, ENGINEERS, PLANNERS
333 ALBERT STREET, SUITE 420
EAST LANSING, MI 48823

*This Plan Approved by the Delhi Charter Township
Planning Commission on October 28, 2013.*



Elizabeth Zietlow Chairperson
Delhi Charter Township Planning Commission



Kenneth O'Hara, Secretary
Delhi Charter Township Planning Commission

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Acknowledgements

Many individuals devoted considerable time and effort toward the creation and amendment of the Master Plan. The contributions of Township Officials and residents were invaluable in helping to formulate this Plan. Delhi Charter Township is sincerely grateful to all the people who contributed to the process.

Board of Trustees of Delhi Charter Township

- Mr. C.J. Davis, Supervisor
- Mr. Roy Sweet, Treasurer
- Mr. Evan Hope, Clerk
- Mr. Jon Harmon, Trustee
- Mr. John Hayhoe, Trustee
- Ms. Megan Ketchum, Trustee
- Ms. DiAnne Warfield, Trustee

Planning Commission of Delhi Charter Township

- Ms. Betsy Zietlow, Chair
- Mr. Donald Leaf, Vice-Chair
- Mr. Kenneth O'Hara, Secretary
- Mr. John Hayhoe, Trustee
- Mr. Michael Goodall
- Ms. Rita Craig
- Ms. Tonya Olsen
- Mr. Matt Lincoln
- Ms. Kimberly Berry-Smocoski

Delhi Charter Township Staff - Department of Community Development

- Ms. Tracy L.C. Miller, AICP, Director of Community Development
- Ms. Kathy Malone, Planning Secretary
- Ms. Noelle Tobias, Building Secretary
- Mr. Dennis Larner, Code Compliance Officer
- Mr. Randy Mastin, Building Official
- Mr. Rex Simons, Plumbing & Mechanical Inspector

A BRIEF INTRODUCTION

Delhi Charter Township is located in the south-central part of Michigan's Lower Peninsula in Ingham County. To the north, the Township directly borders the City of Lansing. It is considered part of the metro-Lansing area as well as a part of the Lansing Tri-County Area, which includes Ingham, Eaton and Clinton Counties. Delhi Township lies approximately halfway between the cities of Grand Rapids and Detroit, Michigan. Refer to Map 1, Tri-County Region, and Map 2, Ingham County, to locate Delhi Township in the Region and the County.

Before describing Delhi Township today and making plans for the future, it is important to take a brief look at the history of the area. The Township can be described as an urban bedroom community with a rural atmosphere, having grown out of an agricultural community founded in the mid-1840s.

The first white settlers in Delhi Charter Township, John Norris and Fred Luther moved into the area in 1836. One of the first school buildings was a log cabin structure built in 1840 on the site of the present Hope Middle School. On February 10, 1860, the post office at Delhi Center was renamed Holt after Joseph Holt, then the U.S. Postmaster General. Politically, the community remained Delhi Township as it is today. It was not until much later, after the schools also became known as Holt and the area began to take on a predominantly suburban residential character, that Holt became a more common name than Delhi Township.

In the early years, Holt was a small community with most of its businesses related to farming. Later (1866), the Jackson, Lansing, and Saginaw (Michigan Central) Railroad came through town to provide the first mode of public transportation, other than stagecoaches, to the area. Passengers could embark at the station on Depot Street.

By the turn of the century the education and transportation facilities became more developed. Telephone service was also introduced. However, the area remained largely a corn farming community. In 1907, the “interurban”, an electric railway, was approved for construction to further connect Township residents with Lansing, Jackson, and on to Detroit. The “yellow station” was located at the west end of Keller Road.

After World War I, the area started becoming more urbanized. In 1923, both electricity and a fire department were established in the Township. During the Great Depression the urbanization trend was put on hold as people in Delhi Township returned to simple, self-sustaining means like gardening. By the late 1950s, the Township was modernizing with public water, public sewer, and expanded educational facilities, police and fire services. Delhi became a chartered Township on September 18, 1961. Modernization and the expansion of roads and public infrastructure have transformed Delhi Township from a rural farming community into the lively suburb it is today.



A Brief Introduction

Delhi Township is a suburban community south of the City of Lansing. Delhi Township is the home to a large portion of the Tri-County Region's population and economic stamina. In addition to a thriving business environment and quality housing, the community has farmland and open space.

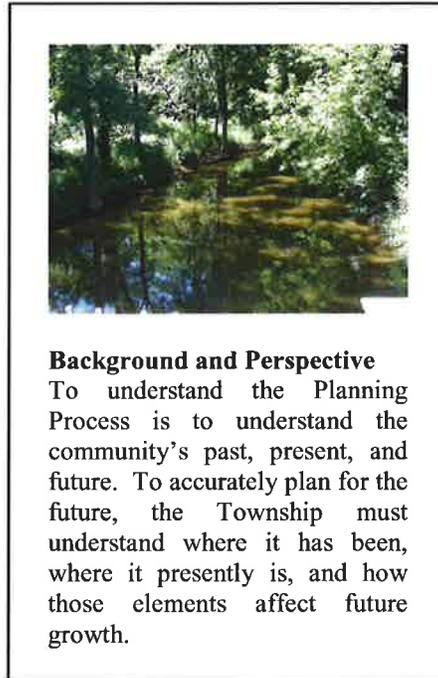
BACKGROUND & PERSPECTIVE

This document is the Master Plan (the “Plan”) for Delhi Charter Township, Michigan. The organization of the document has remained similar since 2002. It was updated in September of 2007, and again in 2013. This document is written in three sections: (1) Profiles, (2) Future Land Use Plan, and (3) Implementation Tools.

The Profile section is broken into the demographic and physical characteristics of the Township. These sections include population, economic, housing, environment, and community facilities.

The second section of this document is the Future Land Use Plan. This section analyzes the proposed Future Land Use Map, how it was derived and how it will change the Township’s growth patterns.

The section on Implementation Tools lists the different methods that may be utilized throughout the process and how they may affect the shaping of Delhi’s future growth and sustainability as a vibrant community. The tools are intended to provide guidance regarding the actions needed to successfully complete the goals identified by the Township. A set of goals, matched to the various sections of this Plan.



Background and Perspective

To understand the Planning Process is to understand the community’s past, present, and future. To accurately plan for the future, the Township must understand where it has been, where it presently is, and how those elements affect future growth.

Township Land Use Planning in Michigan

The Delhi Charter Township Planning Commission was originally established under the authority of P.A. 285 of 1931, and re-established and confirmed pursuant to P.A. 33 of 2008, the Michigan Planning Enabling Act and P.A. 110 of 2006, the Michigan Zoning Enabling Act and Ordinance 120. The Planning Commission is responsible for making and approving a Master Plan as a guide for development within the Township. Further, that the Master Plan include the Planning Commission’s recommendations for the physical development of the Township.

Mission of the Delhi Township Master Plan

Delhi Charter Township is located in the northwestern corner of Ingham County and has historically experienced residential growth pressure. While recent economic conditions have significantly reduced the amount of residential and other development within the community, the Township has continued to see growth. This continued growth is due to the availability of land; the availability of sewer and water service within a limited geographic area; access to the Regional transportation system, robust recreational opportunities, excellent schools, walkability initiatives and other “place making” factors that position Delhi Township as a great location.

The three predominate land uses in Delhi Township are residential land uses comprising over 54% of land area, agricultural land and open space at just over 21%, and industrial and commercial land uses comprising almost 11%. A complete list of land uses categories and associated acreage are listed in the Existing Land Use Acreage table located in the Land Use Profile section of this document.

The 2010 Census revealed that the population was 25,877, an approximate increase of 13% from the 2000 Census. Delhi Township is predominately an owner-occupied housing market with approximately 70% of the housing stock of this type. However, recent trends indicate ownership is declining, with a smaller percentage of owner-occupied units than in the past. From 2000 to 2010, Delhi Township added a total of 1,829 dwelling units, including both owner-occupied and rentals. This represents an approximate growth of 17% for that time period. However, as mentioned above, rental property has grown at a much higher rate, increasing by approximately 44% during the period from 2003 to 2011. This time period represents the available data since the inception of the Township's rental registration requirement.

Delhi Charter Township desires to establish a development policy, which clearly and concisely outlines the location and levels of recommended growth. Toward that end, the Delhi Charter Township Planning Commission has prepared a set of Visions and Goals to be incorporated into the Plan. These Visions and Goals are established for the Economic Profile, Housing Profile, Environment, and Community Facilities.

The Planning Commission has the following overall Mission Statement for this Plan, and will use it when developing and refining the stated Visions and Goals:

It is the Mission of the Delhi Charter Township Planning Commission to create an environmentally and fiscally responsible pattern of land use which contributes positively to the Township's overall sense of place. The Commission's focus shall be the stabilization, enhancement, and development of quality residential neighborhoods and for appropriately planned non-residential land uses (commercial, industrial, wholesale, retail, recreational and open space). The Planning Commission shall provide for a mix of land use sufficient for funding public services, stability of the community and for protection of environmentally sensitive areas. These recommendations shall be based in ensuring that Delhi Township embraces the concepts of placemaking and ensuring that it remains a location where people want to live, work, learn and recreate. The mission shall be accomplished through the adoption of a Master Plan, recommending ordinances and ordinance revisions to the Township Board, recommending zoning changes and special use permits to the Township Board, and approving or denying site plans, all in accordance with state laws and Township ordinances. The Master Plan shall establish a framework for responsible land use decision.

These policy recommendations are contained within suggested geographic areas for future land use, which delineate locations for geographic areas of residential development, primary development, secondary development, community activity center, and rural development character.

THE PLANNING PROCESS IN DELHI CHARTER TOWNSHIP

This section describes land use planning activities within Delhi Charter Township. It is intended as a cumulative perspective which can provide a framework for understanding the land use planning process within the Township and assist in formulating recommendations for future studies, land use regulation decisions, new land use regulations, and plans. A brief review of major planning documents follows.

Major Planning Documents

Comprehensive Development Plan 1967: Prepared by Tri-County Regional Planning Commission, this document was the first in-depth planning effort by Delhi Charter Township. The Township Planning Commission worked with the Tri-County Regional Planning Staff to set forth broad community goals, objectives, and standards to guide physical growth. The plan portrayed major land use relationships to be preserved or established along with general requirements for community facilities and services. A major focus of this first planning effort was the recommendation of a land use pattern, which would prevent urban sprawl and encourage development in efficient service units.

Note: The term “Comprehensive Development Plan” is interchangeable with the term “Master Plan”.

Comprehensive Development Plan 1976: Prepared by Parkins Rogers & Associates, this document was the first update to the 1967 plan and set forth planning goals through the year 1990. The plan was quite comprehensive and included goals, policies and objectives for the categories of residential, commercial, office, industrial, community design and image, public facilities, open space, agriculture and environmental quality. The plan continued to suggest a concentrated residential development area in the northeast corner of the Township, (through Sections 13,14 and 15) while predicting a continuation of population growth. It identified a concern with the quality of the existing housing stock and suggested taking measures to promote more upscale housing developments within the Township. It also identified the need for a new Township hall and library facility during the life of the plan. The plan encouraged the preservation of agricultural activity in the southern part of the Township due to natural limitations on development and also proposed the incorporation of cluster development to preserve open space. The plan supported continued commercial and industrial development along major arterials with appropriate consideration of compatibility with surrounding neighborhoods and adequate infrastructure.

Development Plan 1990: Delhi Charter Township 1990: Prepared by Township staff, this planning effort represented an update from the 1976 document and was a reaction to the substantial residential growth which the Township experienced between 1970 and 1990. This plan also recognized that agricultural land use in the southern part of the Township should be preserved for agricultural or open space uses. It did, however, state that in certain areas agricultural zoning was a "holding category" until such time as infrastructure was available. This plan also recognized the importance of commercial development to the Township in terms of supporting the economic base. It identified the "Triangle" area as a focal point of non-residential land use and recognized the creation of the Town Center Zoning District as an effective implementation tool. This plan also supported the activities of the Delhi Charter Township Downtown Development Authority to promote new industrial development.

Comprehensive Development Plan 1998: Delhi Charter Township 1998 - Prepared by the Township staff and Associated Governmental Service, this was an update of the 1990 Development

Plan. This document was a basic inventory and analysis of the Township and its challenges for the new century. The outcome of this update was a series of Goals, Policies, and Objectives and Future Land Use Patterns to be followed. These Goals, Policies, and Objectives covered a series of issues including residential, commercial, and industrial development, the Community Activity Center, Community Facilities, transportation, and environmental goals.

Comprehensive Development Plan 2002: Delhi Charter Township 2002 – 2020 – Prepared by the Township staff and HNTB Michigan, Inc., this is a review and amendment to the 1998 Comprehensive Development Plan. This review became necessary because of several planning issues that were not fully anticipated by the 1998 Plan, including:

1. The new Holt High School Site, which was unanticipated by the 1998 CDP;
2. The Cedar Street corridor, for which a re-engineering study is currently in progress;
3. Utility expansion due to the new school site;
4. And release of 2000 Census data.

Comprehensive Development Plan 2007: In 2007 Delhi Township updated the Master Plan. The update included very minimal changes, primarily within the Future Land Use section.

Other Planning Documents and Relevant Materials:

Section 2 Sub Area Plan 1995 - The Delhi Charter Township Planning Commission adopted a Sub Area Plan (Smaller Geographic Planning Area) in 1995, which proposed a non-residential land use pattern for that area southwest of the Jolly Road - Pine Tree Road intersection. That plan proposes commercial uses on the Jolly Road frontage, office/warehouse/research uses on the interior of the study area, and appropriate public improvements to support development. That recommended land use plan is available in the Future Land Use Patterns portion of this document.

South Cedar Street Corridor Plan 1995: Undertaken by the Downtown Development Authority in 1994-95, this planning activity had the objective of clarifying a future land use pattern for the frontage properties on the South Cedar Street Corridor and recommending a zoning district pattern to implement the plan. This effort has been successful in guiding new development along the Corridor and assisting the Planning Commission in rezoning the numerous M-1/M-2 Industrial Districts to less intensive zoning categories. An additional part of this planning effort was an Access Management Study, which made numerous recommendations for limiting vehicular access to the Corridor as well as improving safety and efficiency. The recommended land use patterns are also available in the Future Land Use Patterns of this document.

Downtown Development Authority Holloway Plan 1995: Also undertaken by the Downtown Development Authority, this document presented a future land use vision for the so-called Holloway Property (South of Holt Road and East of South Cedar Street). Proposed as a planned unit development, this plan recommended recreational, commercial, residential, and manufacturing land uses, which would be designed as a single entity thereby maximizing the unique physical features of the site. Adopted by the Planning Commission in 1995 as an official part of the Comprehensive Development Plan for Delhi Charter Township. This plan is also available for review in the Future Land Use Patterns of this document.

Delhi Charter Township Sanitary Sewer Master Plan 1996: An update to the 1981 Sewer Master Plan prepared by Wolverine Engineers & Surveyor's, Inc. This updated plan documents the state of the existing sanitary sewer system and provides estimates of sanitary sewer needs over the next twenty years associated with anticipated population and economic expansion. As part of the update, previous hand drawn maps were digitized onto computers. Since the 1981 Master Plan, the Delhi Waste Water Treatment Plant (WWTP) was expanded and upgraded. Among other things, its capacity was increased to 2.5 million gallons per day (mgd) from a previous level of 2.0 mgd. A 1996 study projects that by the year 2016, the Township will need a capacity of 4.05 mgd to meet growing residential, commercial and industrial needs. The Sewer Master Plan identifies long range sewer service areas and serves as a general guide for the associated infrastructure expansion. The Sewer Master Plan also provides a prioritized list of pumping stations most in need of replacement or upgrading.

Regional Growth: Choices for Our Future: This project, which began in 1997, was developed on a regional basis under the leadership of the Tri-County Regional Planning Commission. The study was based on the premise that some growth trends have very negative impacts on the quality of life in our region but with proper planning and management these trends could be modified to minimize impacts. The study has resulted in many off-shoot projects and analysis including "Greening Mid-Michigan" and the "Urban Service Boundary" implementation sub-committee. Recommendations from the study have been incorporated into the regional Transportation Improvement Planning process.

Recreation Master Plan 1996-2001: Known as a "five year plan" and required by the Michigan Department of Natural Resources (MDNR) for grant funding eligibility, the Recreation Master Plan was drafted with the assistance of the Parks and Recreation Department at Michigan State University. It includes an exhaustive inventory of existing parks and recreation facilities in the Township along with community profiles and budget information. Drawing all of the information together, a "five-year" plan is created with goals, policies and actions. The year-by-year outline of action includes estimated project costs and funding sources. Neighborhood parks are a specific plan priority. This plan has been recently updated through 2002 to address the changing trends of the Township. It will continue to be updated as necessary. Additional information on the Recreation can be found in the Community Facilities section of this document.

Community Recreation Plan 2010 – 2015: This plan was adopted as an update to the previous recreation plan and provides up to date information about existing park facilities, as well as goals and objectives to be accomplished within the planning period.

Downtown Development Plan: As a result of the Downtown Development Authority Act (P.A. 197 of 1975), Delhi Township established the Downtown Development Authority (DDA). The DDA is a legal organization with the responsibility of planning economic development and determining the allocation of resources required to implement its objectives. The Downtown Development Plan defines the physical location of the development district and serves as the Development Plan and the Tax Increment Financing Plan. With an overall goal of increasing the tax base of Delhi Charter Township Development Authority's District while maintaining Delhi's desirability as a place to live, it includes eleven specific objectives as well. The plan addresses downtown revitalization, commercial and industrial development, infrastructure needs and recreation for the public. Other areas of interest include transportation corridors, residential areas and environmental issues. An implementation strategy within the document identifies specific projects, anticipated project costs and a time frame for implementation.

Sidewalk Master Plan: The Sidewalk Master Plan was written by Gove & Associates in 1985 and updated in 2000 for Delhi Charter Township. It includes an inventory of the sidewalk system, which was in existence at the time, detailing not only location but condition as well. The plan provides a system through which to prioritize sidewalk projects and develops both short and long term goals for sidewalk development in general terms and a specific list of twelve short-term projects. A five year time line for the first twelve projects and cost estimates are provided as well. Finally, the plan addresses the issue of funding sidewalk projects.

Cedar Street Corridor Plan (2004): The Corridor Plan is designed to support local business investment and provide guidance to Township officials on the most appropriate mix of land uses based on physical and economic market conditions within the Cedar Street area. The Plan was prepared for the Downtown Development Authority by LSL Planning, Inc., The Chesapeake Group with the participation of various Township staff and officials and local property owners and other stakeholders.

Delhi Township Non-Motorized Transportation Plan (2007): In spring of 2007 the Delhi Township Board adopted the first Non-Motorized Transportation Plan. This document provides a comprehensive inventory of exiting non-motorized transportation facilities, including sidewalk, bike lanes and shared use paths. It also provides recommendations for future expansion of the non-motorized system and goals for implementation. The adopted plan is incorporated by reference into this Master Plan and is a key component to the planned future development of the community.

Cedar Heights Neighborhood Infrastructure Study & Improvement Project (2007): In 2007 the Downtown Development Authority engaged a consultant to study and recommend street improvements in the Cedar Heights neighborhood. The purpose of the project was to provide vital and necessary streetscape improvements to bolster a neighborhood that is presently in a state of threatened decline. Physical improvements will include curb and gutter, sidewalks, on-street parking and street tree plantings on Harding, Kate, Schippell, Selma and Beryl Streets. The anticipated outcomes include the encouragement of private improvements, addressing anticipated traffic increases, improvement of drainage issues, enhanced pedestrian safety, the provision of organized parking, improved safety and lighting and enhanced aesthetics.

Community Assessment Survey for Older Adults (2007): This study was conducted for the purpose of analyzing the Township's readiness to accommodate the community's trend toward aging populations. While this age trend is not unique to Delhi Township, as the overall shift towards larger populations in the 55 and older category is a national trend, it is important to understand the needs of our specific older population. This will enable the community to properly identify and plan for their needs. The recommendations of the report specifically point to community design and land use policies that support this population.

Cost of Community Services Study (2008): This analysis was completed in order to attempt to quantify the relationship between specific land uses and the relative cost to provide community services. The findings of this study are relevant in terms of planning for the overall land use mix within the community. Planning for land uses that result in a positive cost to service ratio is important to developing an economically sustainable land use pattern.

Wetland Preservation Ordinance (2010): Delhi Township has adopted a wetland protection ordinance. This ordinance regulates all development within wetlands and seeks to ensure that these important natural resources are not degraded or negatively impacted as a result of development.

Complete Streets Ordinance (2012): Delhi Township has adopted a Complete Streets Ordinance. The purpose of this ordinance is to help ensure that those features associated with complete streets are implemented to the extent possible. Complete streets are those that accommodate all users and lend themselves to walkability and place making.

DEMOGRAPHIC OVERVIEW

A review of current demographics, as summarized in the observations below, indicate the Township remains strong, both in terms of resident retention and economic stability. At the time of this update, the State of Michigan was experiencing one of the largest economic downturns in its history, with unemployment rates rising, income levels falling, and various other indicators following suit. Delhi Township has managed to remain somewhat stable in comparison to the impacts felt at the State level. While growth between 2000 and 2010 was not as significant as it was in prior decades, the Township did experience forward progress rather than reversing its trends. While Township residents have experienced the negative effects of the economy, housing values, income levels, education and employment have not suffered as much when compared to the County or State. Additional discussion of Township demographics is included in Appendix A.

KEY POPULATION OBSERVATIONS:

- Where the State lost residents between 2000 and 2010, Delhi Township and Ingham County continued to experience population growth. The Township population grew 47% since 1970, and 14% in the last 10 years.
- Demographics show residents are increasing in age. The median age increased from 35.9 in 2000 to 37.7 in 2010. On average, residents are slightly older than they were in 2000. The average age of residents in 2010 is 36.7, compared to 35.2 years in 2000.
- Population density in the Township continues to be much lower than that in Ingham County and the State overall. The Township maintains a density of .7 residents per acre, whereas the County and State maintain densities of 1.3 and 6.3, respectively.

Population Trends 1970 to 2010							
	Population					Percent Change	
	1970	1980	1990	2000	2010	1970-2010	2000-2010
Delhi Township	13,795	17,144	19,190	22,569	25,877	46.7%	14.7%
Ingham County	261,039	275,520	281,912	279,320	280,895	7.1%	0.6%
Michigan	8,875,083	9,262,078	9,295,297	9,938,444	9,883,640	10.2%	-0.6%

KEY HOUSING OBSERVATIONS:

- The census shows 840 housing units were built between 2000 and 2010, which represents a smaller percentage of new homes than years past. The greatest percentage of homes was constructed between 1990 and 2000, when Township growth was at a peak.
- Household sizes in the Township are still falling (from 2.76 in 2000 to 2.52 in 2010), whereas those at the County and State level are increasing.
- The mix of housing types has not shifted significantly since 2000. The largest category of housing types is still single-family detached homes, which comprise 67% of all housing units, the same percentage as in 2000. The mix of attached residential units is also similar, but the percentage of mobile homes has reduced from 13% in 2000 to 8% in 2010.
- Between 2000 and 2010, the number of renter-occupied homes rose by 14%, but the number of vacant homes fell from 5% to 4% of all units. This suggests that, while some residents may have shifted from owners to renters, occupancy in general remains high.

- Despite recent decreases in values, median housing values increased by 25% between 2000 (\$124,700) and 2010 (\$155,600). In addition, values in the Township have not dropped as much as those at the State and County since 2007.

Median Housing Value Trends 2000 to 2011								
	2000	2007	Change 00-07	2008	2009	2010	2011	Change 07-11
Delhi Township	\$124,700	\$163,800	31%	\$162,200	\$161,700	\$155,600	\$149,800	-9%
Ingham County	\$98,400	\$145,400	48%	\$141,200	\$125,400	\$122,600	\$119,500	-18%
Michigan	\$115,600	\$153,100	32%	\$151,300	\$132,200	\$123,300	\$118,100	-23%

KEY ECONOMIC OBSERVATIONS:

- Educational attainment is on the rise. Between 2000 and 2010, the percent of residents who have attained a Bachelor's Degree or higher increased from 26% to 30%. The percentage of residents who have attained a High School Diploma or its equivalency also rose from 90% in 2000 to 93% in 2010.
- The largest industry that employed Township residents in 2000 was “Education, Health and Social Services,” but that shifted in 2010. The largest industry is now “Public Administration” which is a part of the service industry group.
- While the industry in which residents work has shifted, the mix of occupations is similar to that from 2000. The largest percentage of residents is still occupied as “Management, Business, Science and Arts Occupations,” and the fewest residents are occupied in the “Natural Resources, Construction and Maintenance Occupations”.
- Median income levels in the Township are higher than that at the County or State level, and are increasing more quickly as well. Between 2000 and 2010, household incomes increased by over 14%, from \$50,922 in 2000 to \$58,094 in 2010.
- Unemployment in the Township increased over the past 10 years, just as those at the County and State have. However, a smaller percentage of Township residents (4.8%) are unemployed, as compared to 5.8% of County residents and 7.3% of State residents overall.

Median Income Comparisons			
	2000	2010	Change 00-10
PER CAPITA			
Delhi Township	\$23,485	\$26,912	14.6%
Ingham County	\$21,079	\$24,451	16.0%
Michigan	\$22,168	\$24,435	10.2%
FAMILY			
Delhi Township	\$61,837	\$64,370	4.1%
Ingham County	\$53,063	\$61,171	15.3%
Michigan	\$53,457	\$58,376	9.2%
HOUSEHOLD			
Delhi Township	\$50,922	\$58,094	14.1%
Ingham County	\$40,774	\$45,808	12.3%
Michigan	\$44,667	\$48,432	8.4%

LAND USE PROFILE

Introduction

The fundamental goal of the completed Delhi Charter Township Plan will be to guide future growth and development of the community. To accomplish this goal it is important to have an accurate picture of what the Township looks like today. The maps and analysis found in this chapter help create that image. After this image is created a build-out scenario is performed and development alternatives produced. It is from these scenarios that the future land use map is established.

Existing Land Use and Zoning

To create a land use analysis and alternatives several factors are taken into consideration. First, an analysis of the existing conditions must be performed. For this project an existing land use map was created and land use was calculated. This map is based upon data from the State of Michigan and was refined in 2000 by the Tri-County Regional Planning Commission. In the Existing Land Use Acreage table below, the existing land use classification is explained and the acreage and Township percentages of each land use are presented. The next step is to compare the land use figures to the Township Zoning Map (Map 3, Zoning Map, and Township Zoning Acreage table) and how the relevant acreage and percentages correlate with the land uses. This correlation is illustrated in the Land Use and Zoning District Comparison table. From this data, the developable land can be selected and based on zoning densities a build-out report can be produced. The following section details this report.

Existing Land Use Acreage - 2012

Land Use Type	Acreage	% of Total
Agriculture/Open Space	3,761	21%
Civic	982	6%
Commercial/Office	1,460	8%
Industrial	442	3%
Low Density Residential	6,379	36%
Medium Density Residential	1,940	11%
High Density Residential	1,260	7%
Tax Exempt	1,402	8%
Total	17,626	100%

Township Zoning Acreage (Approx.) - 2012

Existing Zoning	Total Land (Acres)	% of Total
R1-A: One Family Rural Residential	138	0.79%
R1-B: One Family Low Density Residential	961	5.50%
R1-C: One Family Medium Density Residential	2,291	13.12%
R1-D: One & Two Family High Density Residential	592	3.39%
R1-E: One Family High Density Residential	221	1.27%
RM: Multi-family Residential	224	1.28%
RM-1: Multi-family Residential	301	1.73%
C-1: Low Impact Commercial	41	0.23%
C-2: General Business	454	2.60%
C-3: Highway Service	225	1.29%
TC: Town Center	7	0.04%
IW: Industrial Warehouse	95	0.54%
IR: Industrial Research	14	0.08%
IA: Industrial Assembly	87	0.50%
IM: Industrial Manufacturing	147	0.84%
IP: Industrial Park	413	2.37%
A-1: Agricultural	10,921	62.53%
PP: Public Property	222	1.27%
PD: Planned Development	111	0.64%
Total	17,466	100.00%

Build-out for Existing Future Land Use

In the Existing Zoning/Available Land table, the existing zoning for the Township is analyzed. The total land for each zoning category is separated into developed land and available land. From this portion of vacant land, twenty percent is subtracted for transportation use. Once a final acreage has been reached, it is then multiplied by the density designated in the zoning ordinance. From this equation, a number of new units able to be developed are produced.

Existing Zoning/Available Land – 2012

Existing Zoning	Density Per Acre	Total Land (Acres)	% of Total	Wetlands (acres)	Developed Land (Not-Vacant)	Undeveloped Land (Vacant)	Possible Units (est. only)
R1-A: One Family Rural Residential	1.09	138	0.79%	24	130	8	7
R1-B: One Family Low Density Residential	2.9	961	5.50%	75	788	173	428
R1-C: One Family Medium Density Residential	4.36	2291	13.12%	354	1292	999	3702
R1-D: One & Two Family High Density Residential	6.6	592	3.39%	16	468	124	695
R1-E: One Family High Density Residential	6.6	221	1.27%	11	88	133	747
RM: Multi-family Residential	6	224	1.28%	20	87	137	698
RM-1: Multi-family Residential	6	301	1.73%	10	283	19	95
C-1: Low Impact Commercial	8.71	41	0.23%	1	10	31	229
C-2: General Business	4.36	454	2.60%	11	278	176	653
C-3: Highway Service	4.36	225	1.29%	25	147	78	289
TC: Town Center	8.71	7	0.04%	0	7	0	3
IW: Industrial Warehouse	0.5	95	0.54%	5	41	53	23
IR: Industrial Research	0.5	14	0.08%	0	0	14	6
IA: Industrial Assembly	0.5	87	0.50%	4	70	17	7
IM: Industrial Manufacturing	0.5	147	0.84%	17	141	5	2
IP: Industrial Park	0.03	413	2.37%	60	218	196	5
A-1: Agricultural	1.09	10921	62.53%	1860	5841	5080	4707
PP: Public Property	n/a	222	1.27%	22	222	0	n/a
PD: Planned Development	n/a	111	0.64%	4	33	78	n/a
Total		17466	100%	2521	10144	7321	12295

The table below, Current Future Land Use Status, demonstrates the same process for the future land use information.

Current Future Land Use Status

Category	Total Acres	Vacant Acreage	Developed Acreage (Existing)	Acres within 100yr Floodplain	Acres with Potential Wetlands	Assumed % of Total Acres that are Not Developable (100 yr & Wetland)	Est. of Acres Available for Future Development
Rural Residential	5076	1722	3308	566	662	24%	1306
Low Density Residential	2170	528	1582	182	364	25%	395
Medium Density Residential	4886	1412	3375	687	1021	35%	919
One & Two Family High Density Residential	1266	286	940	50	114	13%	249
Office	214	111	95	21	22	20%	89
Commercial	909	253	608	85	84	19%	206
Industrial	621	187	428	57	95	24%	141
Warehousing	135	34	95	0	2	1%	34
Community Activity Center	105	2	95	0	0	0%	2
Community Facility	846	4	833	35	67	12%	3
Open Space	581	44	530	162	147	53%	21
Planned Development	687	521	161	41	96	20%	417

*The estimated undeveloped acres available for future development is based on the total vacant acres, minus those acres that are anticipated to be wetland or 100 year floodplain based on the calculated %. This is an estimate only.

Conclusion

The comparative analysis between land use and zoning district classifications allows us to evaluate Township land use patterns. The Delhi Township Zoning Map provides a planned outline of how land can best be utilized throughout the Township taking into account such things as natural features and resources, infrastructure and existing development. Analysis may also give perspective on the need to change the Future Land Use Map to accommodate growth pressures and to change the zoning ordinance to more strictly guide development patterns within established zoning districts.

Some areas of the Township are zoned inconsistently with the actual use of the land. While the commercial zoning and land uses seem to be rather indistinguishable, low-density residential development is scattered throughout the Township in areas zoned A-1 Agricultural. Similarly, planned mobile home residential developments are locating in areas zoned as Multiple Family. Although allowed by the zoning ordinance, the result is that areas zoned for very high-density residential development are not being used as such. Areas with adequate infrastructure and other resources, which are able to support high-density residential development, are limited and therefore must be carefully preserved.

Another issue, which becomes clear through this analysis, is that the current zoning ordinance does not distinguish undeveloped land from other land uses. Most of the undeveloped land in the Township is zoned as A-1 Agricultural, which seems to serve as a blanket zoning classification type in many portions of the Township. It is through this analysis and the build-out scenario that the Township must decide a course of action for the inevitable development of these vacant lands. Since a majority of these lands are zoned A-1, low-density sprawl will potentially consume the Township's agricultural land.

It is for this reason that the Township has decided to implement a public infrastructure boundary in the southern portion of the community. This boundary will limit the extension of public services to only the northern side of that line. Any development that takes place on the southern side of this boundary will be without public infrastructure. This boundary can be seen on the Future Land Use Map.

This boundary has been implemented to encourage the growth and redevelopment of the existing urban areas of the Township. Additionally, the boundary will help preserve and protect the prime agricultural farmlands that are located within the Township.

FUTURE LAND USE PATTERNS IN DELHI CHARTER TOWNSHIP

Planning Strategy

The purpose of this section is to describe and clarify Map 4, Future Land Use, proposed as part of this Plan. Future land use is broken down into general planning and development areas and within that, into sub-areas for more specific description.

The Vision & Goal statements as described for Future Land Use have been formulated into a planning strategy for future land use which addresses the following four elements:

Planned Growth Areas

While modest in nature, continued residential population growth is anticipated to continue within the Township. This growth is planned to occur within the residential development areas. Future commercial and industrial growth is anticipated to occur within the primary and secondary growth areas identified below. These planning areas allow for a logical extension from the existing land use pattern and can be reasonably accommodated within the sanitary sewer service area. In addition, the Township Services Boundary defines the southern limit of public water and sewer services.

Regional Perspective

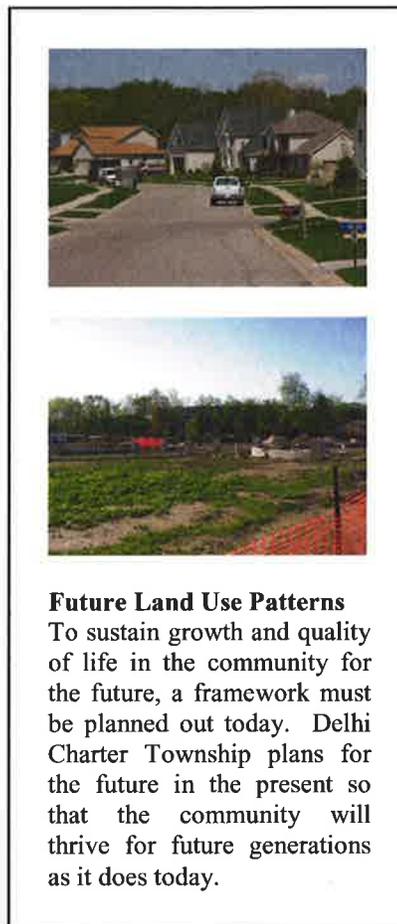
Delhi Charter Township occupies a unique position within the urbanizing area, which surrounds Lansing, the central place city. Delhi Charter Township is adjacent to the southern boundary of the City of Lansing. Delhi also abuts three rural Townships (Windsor, Aurelius, and Alaiedon Townships) along its other borders. The future land use plans of these communities have been reviewed for the purpose of coordinating the future land use proposals of this document adjacent common borders to the extent possible. However, it is important to point out that Alaiedon Township continues to plan for rural residential and agricultural land uses south of Holt Road and east of College Road, adjacent to one of Delhi's existing primary industrial development areas.

Economic Base Diversification

Recognition that the Plan must provide geographic areas which are well planned, relate well to adjacent land uses, and preserve and enhance the non-residential economic base of the Township. The Plan provides opportunity for nodes of non-residential development in locations that provide appropriate infrastructure and, through the opportunity for land use transition, provide protection for planned residential areas.

Environmental Preservation and Enhancement

A commitment toward recognizing and protecting the open space areas and the rural environment of the Township that is the very characteristic, which attracted people to Delhi Charter Township.



Future Land Use Patterns

To sustain growth and quality of life in the community for the future, a framework must be planned out today. Delhi Charter Township plans for the future in the present so that the community will thrive for future generations as it does today.

Planning Areas

This document proposes five broad planning areas as a means of reasonably and appropriately accommodating new development within the Township, as well as protecting the quality and character of existing development. By identifying these five areas, it is envisioned that the Township can clearly support new development, protect existing residential neighborhoods, as well as preserve rural areas.

The five Planning Areas are described as follows;

Residential Development Area

That geographic area where the majority of new residential development will be accommodated. This land area represents the logical progression of residential development while emphasizing logical concentration of compatible land uses, which can be served by the existing infrastructure system.

Primary Development Area

That primary geographic area which includes existing non-residential development and is expected to accommodate the bulk of the new non-residential development. The Primary Development Area is composed of three basic nodes, as follows:

1. Sections 1 & 2, north of I-96 and west of U.S.-127. This area has seen strong non-residential growth due in large part to significant investment in public infrastructure (water, sewers, and roads) by the Township and the Downtown Development Authority. The quality of the retail, office, and other non-residential development in this area has become a model to be emulated in other non-residential portions of the Township. There remains land for office, warehousing, light industrial, and other non-retail development in this area. Because this area has received significant public investment as outlined above, and it is important that the investment be offset by increasing taxable private investment, the development of additional institutional land uses in this area should be reserved where the opportunity for land use transition is appropriate.
2. Parts of Sections 14, 15, and 23 surrounding the Community Activity Center, (the Aurelius, Cedar, and Holt Roads triangle) where existing non-residential development is well established. This node provides the primary entrance into the community from the City of Lansing at the intersection of Cedar Street and Willoughby Road. Because much of this area is already developed, concentration should be on how redevelopment occurs. Redevelopment of nonconforming buildings should ensure that current zoning requirements for sidewalks, greenbelts, and parking lot landscaping are implemented. New development of vacant property should provide appropriate land use transition between commercial districts and established residential neighborhoods. Mixed-use developments should also be considered, along with encouraging high quality building design and construction materials. Serious consideration should be given to access management strategies for specific businesses as well as complete streets and placemaking concepts.
3. Sections 24, 25, and 36 south of Holt Road, adjacent the east and west sides of Cedar Street, and west of College Road. There is a wide variety of development opportunities within this area. While much of the development is expected to be non-residential, it is recognized some residential and mixed-uses may be appropriate in some areas. For this

reason, a significant area is anticipated to develop using the Planned Development concept. Those areas that are currently developed for industrial and commercial uses, or planned for the same, must be protected to ensure viability and operational functionality.

As opportunities arise, existing business establishments must be encouraged to bring site requirements for sidewalks, greenbelts, signage, parking lot landscaping, and other improvements up to current ordinance requirements.

Planned Development Area: southwest corner of Holt Road & College Road

This area is anticipated to develop as a part of a cohesive overall development plan which would likely include commercial and residential development. Residential development is anticipated to be multi-family and/or similar due to the close proximity to expressway and primary road access and surrounding industrial land uses. Building construction and aesthetics will be of high quality and good design. The planned development concept must protect the continued development of industrial users around Holloway Drive.

Secondary Development Area

The Secondary Development Area includes Section 7 west of Gilbert Road and part of Section 18 west of the West Town Drain. Quality infrastructure, in combination with good roadway access from Waverly Road and the M-99 interchange with I-96, will increase opportunities for new non-residential development in this area. The development of this area should include those non-residential users that provide job opportunities for Township residents and higher quality residential development that is a part of a planned development scheme. Commercial, office, and light warehousing development, similar in nature to the development that has occurred in Sections 1 & 2 of the Primary Development Area, should be encouraged. This area also provides an opportunity for neighborhood scale retail development to serve residential development in the western portion of the Township. As opportunities arise, existing business establishments in this area must be encouraged to bring site requirements for sidewalks, greenbelts, signage, parking lot landscaping, and other improvements into compliance with current ordinance requirements.

Planned Development Area: West Town Drain/Waverly Road

This area is anticipated to develop as a part of a cohesive overall development plan which would include a mix of high density residential and commercial development. This would likely occur over time and may include some redevelopment efforts.

Community Activity Center

This is the area within which the Plan envisions a focal point for the community and to provide local governmental, commercial, and retail services to residents. The Community Activity Center should be promoted and enhanced with aesthetic improvements, which create the appearance and feeling of a unique physical space within the community. The development of pedestrian links to community shopping opportunities and local institutions, both religious and government, is a priority for this area.

This is the area where the Town Center zoning district is an appropriate implementation tool for redevelopment of unique buildings. The development standards for the Town Center zoning district need to be re-evaluated to further encourage appropriate development, which give the Community Activity Center its unique character.

Rural and Open Space Emphasis

The purpose of this area is to retain within the southern one-third of the Township an environment, which retains the rural and open space character and is not located within the infrastructure service area. This area is envisioned as preserving the existing agricultural operations, protecting natural features for water retention, ground water recharge, plant and animal habitat, and the aesthetic and scenic value of the open space environment.

The Rural and Open Space development area primarily consists of the southern 1/3 of the Township south of McCue and Harper roads. It also includes property owned by Michigan State University.

Land Use Categories

The following categories describe the various types of land use which have been recommended for Delhi Charter Township. Each category relates to the future land use map and will encompass existing land use or a recommended pattern of land use. This future land use map recognizes existing development trends, addresses the Mission Statement of the Plan, and proposes a logically planned pattern of land use which maximizes the availability of infrastructure and focuses on the preservation of open space and rural areas.

The Land Use Categories can be described as follows:

Residential

The residential category is the land use area, which encompasses the primary housing area for the Township. It is divided into three density ranges: low density (maximum of 2.38 dwelling units per acre), medium density (maximum of 3.45 dwelling units per acre), and high density (maximum of 12 dwelling units per acre). The low density category is primarily implemented by the R-1A and R-1B Zoning Districts, the medium density category will be primarily implemented by the R-1C Zoning District, and the high density area will be implemented by the R-1D, R-1E, and R-M Zoning Districts.

Office/Commercial

The office/commercial category is the land use area, which offers the Township the majority of retail, office, and personal services for the residents of the Township. Typically concentrated along major transportation corridors, these non-residential land uses have been focused in three major areas...the Cedar Street Corridor, eastern Holt Road, and the Waverly Road/I-96 location. This land use category is generally implemented by the C-1, C-2, and C-3 Zoning Districts.

Manufacturing/Warehousing

The manufacturing/warehouse land use category is identified as the primary land use category, which enhances the tax base and promotes employment opportunities. This land use category recognizes the location of existing manufacturing/warehousing sites and encourages appropriate new sites, which minimize potential conflicts with adjacent residential uses. The manufacturing/warehouse category is generally implemented by the IW, IR, IA, IM, and IP Zoning Districts of the Delhi Charter Township Zoning Ordinance. Additionally, the majority of this land use is located within the boundaries of the Downtown Development Authority.

Community Activity Center

An area to provide local governmental, commercial, and retail services to residents of Delhi Charter Township, this land area is intended to recognize and establish a visual and functional focal point for the Township.

The Community Activity Center is intended to be a geographic focal point for a variety of activities, land uses, and public facilities which provides basic services and promotes a sense of community identification and pride.

Parkland and Open Space

An identification of the privately and publicly owned park and open space areas within the Township. These areas represent both developed and undeveloped, active and passive recreational areas, which currently provide, or are intended to provide, recreational opportunities and open space enhancement. This area also includes agricultural land uses, primarily crop farming.

Community Facilities and Publicly Owned Land

A recognition of the land areas currently owned by Delhi Charter Township which currently provide a range of community services. Additionally, this land use category identifies that land area in Section 1 currently owned by Michigan State University.

Planning Goals

The Plan is a statement of visions and goals concerning the future development of the community. Positive actions are required on the part of both public and private interests, acting in concert, to ensure the Plan's proposals are realized. Private actions include investments in agricultural, residential, commercial and industrial land uses, and the care of these investments. Public actions include investments of time, energy, and funds to adopt the Plan and its "Tools" to implement same.

Development of this Master Plan began by assembling the Goals and Objectives, which were previously scattered throughout the document. Then, a set of revised Implementation Tools were established to help achieve the Goals and Objectives. When combined, these two elements create the Master Plan. The Goals and Objectives provide the “what” and the Tools provide the “how,” as shown in the following table.

Land Use					Regulatory					Design					Access			Program			
Future Land Use Guide	Zoning Plan	Tri-County Regional Growth	Public Infrastructure Boundary	Sustainability	Zoning Ordinance	Property Maintenance Code & Rental Registration	Subdivision Regulations	Form-Based Code	Transitional Zoning	Commercial Design Standards	Building Design Guidelines	Mixed Use	Traditional Neighborhood Design	Safescaping	Master Street Plan	Access Management	Non-Motorized Transportation Plan	Capital Improvements Program	Parks and Recreation Master Plan	Wetlands Protection	Farmland Preservation

Economic Vision and Goals

Vision: The Delhi Charter Township Planning Commission shall encourage the stabilization and enhancement of commercial and industrial areas sufficient to provide adequate services to residents and an appropriate share of revenue to support required Township services.																					
<i>Goal 1 - Generally support the implementation of supplemental plans as may be developed, and periodically amended, for various parts of the Township by other Township boards or commissions. These plans may include, but are not necessarily limited to, corridor studies conducted by the Downtown Development Authority and the Parks and Recreation master plan.</i>				X																	
<i>Goal 2 - Encourage the Downtown Development Authority to pursue an economic development strategy, which prioritizes retention and enhancement of existing businesses as well as recruitment of new business.</i>	X	X																			
<i>Goal 3 - Existing non-conforming uses shall be appropriately regulated to provide elimination and/or stabilization where necessary and enhancement/expansion where appropriate.</i>						X		X	X	X						X					
<i>Goal 4 - Identify and provide for the needs for community and regional nonresidential services sufficient to meet the needs of township residents.</i>													X	X		X	X	X			

Housing Visions and Goals

Vision: The Delhi Charter Township Planning Commission will strive to create and maintain quality residential neighborhoods that promote a sense of community for Delhi Charter Township.																					
<i>Goal 1 - Use the Plan as the policy to establish consistent land use patterns and density guidelines for development of the township.</i>	X	X	X	X	X	X	X	X	X	X	X	X	X								
<i>Goal 2 - Continue to augment and refine current planning efforts through additional studies, focus area plans, and detailed analysis.</i>																		X	X		
<i>Goal 3 - Maintain a predominantly single-family residential community that provide high quality, safe and comfortable living environments for Township residents.</i>						X	X	X	X	X			X	X		X	X	X	X	X	X
<i>Goal 4 - Evaluate alternative housing styles and densities in appropriate locations, based upon the principle of Land Use Transition.</i>	X	X		X		X															
<i>Goal 5 - Promote residential design features which emphasize the physical connection and linkage of residential neighborhoods where reasonable and practical.</i>					X	X		X				X	X	X	X		X	X	X		
<i>Goal 6 - Promote the Planned Development Process to protect unique environmental features in residential areas.</i>	X				X	X		X				X								X	X
<i>Goal 7 - Enhance the township's sense-of-community by, among other things, emphasizing walkable neighborhoods, public gathering areas, and access to the township's natural attributes when reviewing residential development proposals.</i>	X					X		X	X	X			X	X	X		X	X	X	X	X

Land Use		Regulatory				Design					Access			Program							
Future Land Use Guide	Zoning Plan	Tri-County Regional Growth	Public Infrastructure Boundary	Sustainability	Zoning Ordinance	Property Maintenance Code & Rental Registration	Subdivision Regulations	Form-Based Code	Transitional Zoning	Commercial Design Standards	Building Design Guidelines	Mixed Use	Traditional Neighborhood Design	Safescaping	Master Street Plan	Access Management	Non-Motorized Transportation Plan	Capital Improvements Program	Parks and Recreation Master Plan	Wetlands Protection	Farmland Preservation

Environment Visions and Goals

Environment Visions and Goals Vision: Delhi Charter Township Planning Commission shall embrace the characteristics of the natural environment by adopting policies, regulations, zoning, and plans that preserve environmental resources from the impacts of development and enhance them to the extent possible.																					
Goal 1 - Protect environmentally sensitive areas within the township.	X	X	X	X	X	X				X	X	X							X	X	X
Goal 2 - Protect the groundwater, surface waters, and shorelines.	X	X		X	X															X	X
Goal 3 - Minimize noise, odor, smoke, vibration, (toxic) emissions, light pollution, dust, and glare.									X	X	X		X								
Goal 4 - Preserve open space.																		X	X	X	X
Goal 5 - Manage development to avoid reducing parcel sizes where infrastructure does not exist to support it, and prevent extending infrastructure until currently available sites for development are utilized.	X	X	X	X	X	X		X													
Goal 6 - Prevent unnatural flooding.					X	X														X	X
Goal 7 - Ensure proper septic system management.					X													X			
Goal 8 - Demonstrate environmental stewardship as a model for all to follow.	X				X					X										X	X

Land Use					Regulatory					Design					Access			Program			
Future Land Use Guide	Zoning Plan	Tri-County Regional Growth	Public Infrastructure Boundary	Sustainability	Zoning Ordinance	Property Maintenance Code & Rental Registration	Subdivision Regulations	Form-Based Code	Transitional Zoning	Commercial Design Standards	Building Design Guidelines	Mixed Use	Traditional Neighborhood Design	Safescaping	Master Street Plan	Access Management	Non-Motorized Transportation Plan	Capital Improvements Program	Parks and Recreation Master Plan	Wetlands Protection	Farmland Preservation

Land Use Visions and Goals

Land Use Visions and Goals	Future Land Use Guide	Zoning Plan	Tri-County Regional Growth	Public Infrastructure Boundary	Sustainability	Zoning Ordinance	Property Maintenance Code & Rental Registration	Subdivision Regulations	Form-Based Code	Transitional Zoning	Commercial Design Standards	Building Design Guidelines	Mixed Use	Traditional Neighborhood Design	Safescaping	Master Street Plan	Access Management	Non-Motorized Transportation Plan	Capital Improvements Program	Parks and Recreation Master Plan	Wetlands Protection	Farmland Preservation
Vision: Delhi Charter Township, through leadership from the Planning Commission, will plan for an appropriate mix of land uses that will serve the personal, business and service needs of the community's changing demographics.																						
Goal 1 –Neither encourage nor discourage population growth, but strive to direct growth in areas where infrastructure will support the population. Maintain the Public Infrastructure Boundary as shown on the Future Land Use Map.	X	X	X	X	X	X				X												
Goal 2 –Encourage developments and site plans to meet the needs of an aging and more diverse population.						X							X	X	X			X		X		
Goal 3 - Plan for the orderly development of non-residential uses to meet the demands of its residents.	X	X			X	X	X		X	X	X	X										
Goal 4 –Ensure compatible adjacent land uses through transitional land use and zoning patterns.						X		X		X	X	X										
Goal 5 –Identify areas where current zoning is inconsistent with the Future Land Use Map and prioritize those areas for changes in zoning.	X	X		X																		
Goal 6 –Review current implementation tools and requirements, then propose appropriate changes to the Township Board needed to implement this Plan.						X		X	X	X								X	X	X	X	X
Goal 7 –Attempt to protect agricultural land for agricultural uses as long as agriculture is a viable industry in the township, particularly south of the Public Infrastructure Boundary.				X		X																X

Land Use					Regulatory				Design					Access			Program				
Future Land Use Guide	Zoning Plan	Tri-County Regional Growth	Public Infrastructure Boundary	Sustainability	Zoning Ordinance	Property Maintenance Code & Rental Registration	Subdivision Regulations	Form-Based Code	Transitional Zoning	Commercial Design Standards	Building Design Guidelines	Mixed Use	Traditional Neighborhood Design	Safescaping	Master Street Plan	Access Management	Non-Motorized Transportation Plan	Capital Improvements Program	Parks and Recreation Master Plan	Wetlands Protection	Farmland Preservation

Community Facilities Visions and Goals

<p>Vision 1: The Delhi Charter Township Planning Commission will identify and establish locations for public facilities and public activities which serve township residents and promotes a sense of community.</p>																					
Goal 1 - Promote the “Triangle” area to contain primary locations for Town Center and Public Property services.					X	X		X		X											
Goal 2 - Identify needs for community facilities and plan appropriate locations as needs develop.																X		X	X	X	
Goal 3 - Promote architectural design standards for the triangle and other community facilities as they develop.									X		X		X	X	X						
<p>Vision 2: The Delhi Charter Township Planning Commission shall appropriately support plans and objectives of governmental departments and agencies that impact planning for community facilities.</p>																					
Goal 1 - Coordinate with the Ingham County Department of Roads & Transportation and Michigan Department of Transportation, as appropriate, to plan for and promote the safe, efficient, and economical movement of people and goods.																X					
Goal 2 - When possible, participate in the development of plans and objectives of other governmental departments and agencies that impact land use planning for community facilities.															X	X	X	X	X	X	
Goal 3 - Recognize and consider other governmental departments and agencies long term approved plans.															X		X	X	X		
Goal 4 - Cooperate with the Delhi Township Parks Commission when identifying future parks and open space opportunities.																	X		X	X	X

Implementation Tools

Following is a brief explanation of major tools utilized to implement the Plan.

Future Land Use Guide

The Future Land Use Map may not look like the zoning map or the existing land use map, and it shouldn't. The Map illustrates the long-range expectations for use, based on discussion, research and public outreach conducted as part of the Master Plan. It is not intended to be implemented immediately, but rather over time. This Plan projects the Township's vision for the next 20 years, and as such, immediate changes in zoning may not be needed. As with any changes in policies and regulations, changes to the zoning map should be logical and incremental (see Zoning Plan below).

- **Be Flexible.** The Planning Commission recognizes that changing circumstances, unanticipated opportunities, and unforeseen problems can require a shift in direction. Such mid-term adjustments to the Plan should be anticipated, but should not be a frequent or an easy occurrence without careful thought and research. While reactionary changes are inevitable, the Planning Commission should strive to act proactively with respect to planning policies, rather than react to individual situations as they arise over time.
- **Keep It Current.** The Michigan Planning Enabling Act requires a review of the Master Plan every five years. However, the Township can review it more frequently.
- **Use it as a Public Improvement Tool.** The Municipal Planning Act suggests public improvements be reviewed by the Planning Commission for conformance to the Master Plan. This can be done through the Capital Improvements Plan process.

Zoning Plan

While there are many programs and activities important to the overall implementation of this plan, zoning is the single most significant mechanism for achieving the desired land use pattern and quality of development advocated in the plan. Because the future land use map is a long range vision of how land uses should evolve over time, it should not be confused with the zoning map, which is a short-term mechanism for regulating development.

Widespread changes to the zoning map are not expected to occur immediately following adoption of the Master Plan. They should occur over time, in consideration of the following:

- **Infrastructure.** There must be sufficient public infrastructure to accommodate the types of development allowed under the requested zoning. This should include sufficient sewer and water capacity, transportation facilities and other infrastructure required to serve the development. Location within the Township's Public Infrastructure Boundary should govern approvals of zoning to an intensity that would require such services.
- **Site Conditions.** Sites proposed for rezoning to accommodate change in land use need to have sufficient width and area to facilitate development that satisfies the requirements of the zoning ordinance, and its physical conditions capable of accommodating the type of development possible under the requested zoning.
- **Market Conditions.** As much as possible, and where it does not compromise other goals of the Township, rezoning should be logical and incremental. Over-supply of vacant land in any one district can lead to reduced overall property values. New areas should not be zoned for certain uses if sufficient land is already zoned for that use.

The table below shows how the Future Land Use Map corresponds to the Township's current zoning districts.

Future Land Use	Density or Intensity	Minimum Lot Size	Zoning District
Rural Residential	1.09 du/ac.	40,000	A-1 District: Agricultural
Low Density Residential	1.09 du/ac.	15,000	R-1A District: One-family rural residential
	2.90 du/ac	12,000	R-1B District: One-family low-density residential
Medium Density Residential	4.36 du/ac	10,000	R-1C District: One-family medium-density residential
High Density Residential	6.60 du/ac	6,600 (detached) 10,000 (duplex)	R-1D District: One- and two-family high-density residential
	6.60 du/ac	6,600 (detached) 10,000 (duplex)	R-1E District: One-family high-density residential
	6.00 du/ac	1 acre	RM District: Multiple-family residential
	<i>The following 2 districts were replaced by the RM District, but were retained for existing developments which were built prior to adoption of the RM District. The RM-1 and RM-2 zonings are no longer available for future development:</i>		
	—	—	RM-1 District: Multiple-family residential
	—	—	R-M2 District: Multiple-family residential
Planned Development	10 du/ac		PD District: Planned development
Community Facility	8 du/ac	10,000	PP District: Public Property
Office	Moderate Intensity	—	C-1 District: Low-impact commercial
Commercial	Moderate Intensity	—	C-2 District: General business
	High Intensity	—	C-3 District: Highway service
Community Activity Center	Moderate Intensity	—	Town Center District (TC)
Warehousing	Moderate Intensity	2 acres	Industrial Warehouse District
Industrial	Moderate Intensity	2 acres	Industrial Research District
	High Intensity	2 acres	Industrial Assembling District
			Industrial Manufacturing District
	Moderate Intensity	30 acres	Industrial Park District

Tri-County Regional Growth “Choices for our Future”

Tri-County Regional Planning Commission has completed a regional growth plan for the Tri-County Area. Map 4, Future Land Use Map, has been reviewed for compatibility with the proposed development plans for the Region and it is expected that the Plan for Delhi Charter Township will be compatible with the major aspects and goals of the Regional Growth Study project. Implementation of this Plan will be in synchronization with regional growth Project expectations.

Public Infrastructure Boundary (A.K.A. Urban Service Boundary)

A public infrastructure boundary is a limit beyond which public services will be extended by the Township. This boundary is provided to limit the amount of development to take place in areas that have been deemed outside of these limits. Any development outside of this boundary must then be served by individual well water and septic systems in compliance with the guidelines set forth by the Ingham County Health Department and Drain Commissioner.

The Township may not support development of residential subdivisions, commercial, mixed-use or other types of development or public improvements outside, or south of, the Township Service Boundary.

Implementation of this public infrastructure boundary will be provided through the Township Zoning Ordinance. The ordinance will provide for adequate development densities to this point and rural residential and agricultural densities beyond it. It will also be provided through the Future Land Use Map which will indicate only rural residential and agricultural lands beyond this boundary. Movement of the Township Services Boundary will require an amendment to the Plan. Managed expansion of the Boundary may be necessary to ensure ideal provision of utility services and cost effective long-term maintenance of the system. Standards for expansion of the boundary will be defined by the following variables:

- The amount and capacity of undeveloped or underdeveloped land currently within the boundary. That land should be used to satisfy the demand for development prior to expanding the boundary.
- The projected population growth in the community and the demand for other lands for commercial or industrial development.
- The availability of the responsible government to extend infrastructure to serve new land areas outside the growth boundary.
- The capacity and condition of the road system to support the new growth areas.
- The ability of the community, county, school districts, and other public agencies to provide the necessary services to the new residents of new growth areas.
- The impact on natural features, agricultural uses, and rural character of increased development resulting from expansion of service areas.
- Consistency with the goals and objectives of the current Master Plan.

Sustainability

Sustainability can mean many things, but in the context of this Plan, sustainability involves a set of policies that results in development in which our consumption of resources does not exceed our ability to harvest or renew them. Sustainability seeks to reduce current demand so our resources do not just serve the current population, but also for generations to come.

Increased development activity has placed a burden on many natural drainage systems. The overtaxing of drainage systems leads to localized flooding, environmental damage and the need for costly storm drainage facilities. By encouraging efficient development patterns, endorsing environmentally conscientious policies to guide municipal behavior, and encourage development that respects the natural environment, our resources can be better protected, while public infrastructure and maintenance costs can be reduced. Sustainability also applies within the larger context of sustainable development and economic conditions, housing stock, access to fresh foods, and opportunity for recreation. It means implementing the non-motorized transportation plan and support of the high quality school districts which are a primary driver for long-term sustainability of the community as a quality place.

The Township encourages the same from its residents and businesses. Use of best practices in sustainability, adherence to LEED principles and other environmentally-friendly practices are strongly encouraged in the Township.

REGULATORY TOOLS

Zoning Ordinance

The Zoning Ordinance is the major tool available to local government to implement the land use element of a Master Plan.

Delhi Charter Township's Plan indicates urban growth areas of different densities and provides locations for commercial and industrial areas. The Plan provides very general land allocations, and on the Zoning Map these general areas are translated into precise land use boundaries through the application of specific land use decisions. The purpose of zoning is to regulate the use of land and buildings to protect areas of uniform development from the adverse effects of disruptive land uses, which would tend to lower economic value, efficient operation, and the physical and social amenities of the surrounding properties. A disruptive land use can be residential, commercial, industrial, or rural land use. The Zoning Ordinance provides the regulatory tool for placing land uses where they are not disruptive.

The Zoning Ordinance should be thought of as being part of the Plan. Obviously, however, they are distinct legal entities with distinct separate functions. Also, the Plan and Zoning Ordinance are distinctly related due to the very essence of what each accomplishes.

- 1) The Plan sets the framework within which the Zoning Ordinance operates, according to the laws of the State of Michigan, and
- 2) The Zoning Ordinance is one of the tools which enables the Plan to be implemented.

The zoning of a specific property may or may not reflect the existing use. The Plan should act as a guide to the actions of the Planning Commission and the Township Board in reviewing and acting on zoning applications and amendments. The elements of the Plan may be thrown out of balance if the Plan and Zoning Ordinance are not carefully coordinated. The Future Land Use Map (FLUM) of the Plan is comprehensive in a way no zoning map can be in that the FLUM relates and coordinates the elements of Township development, permitting a well-planned community.

The Zoning Ordinance is adopted by the Delhi Charter Township Board of Trustees on the recommendation of the Planning Commission, while the Master Plan is adopted only by the Planning Commission and endorsed by the Board of Trustees. Although not required by law, this endorsement of the Plan by the elected officials ensures that there is general agreement on the planning and development policies of the Township.

Rental Housing

The Township has adopted the International Property Maintenance Code and Township Ordinance 102 which help to ensure that all residential properties within the community are well maintained and safe for inhabitants. One very important aspect of these regulations is the requirement that rental properties within the Township be registered and periodically inspected. This program helps to

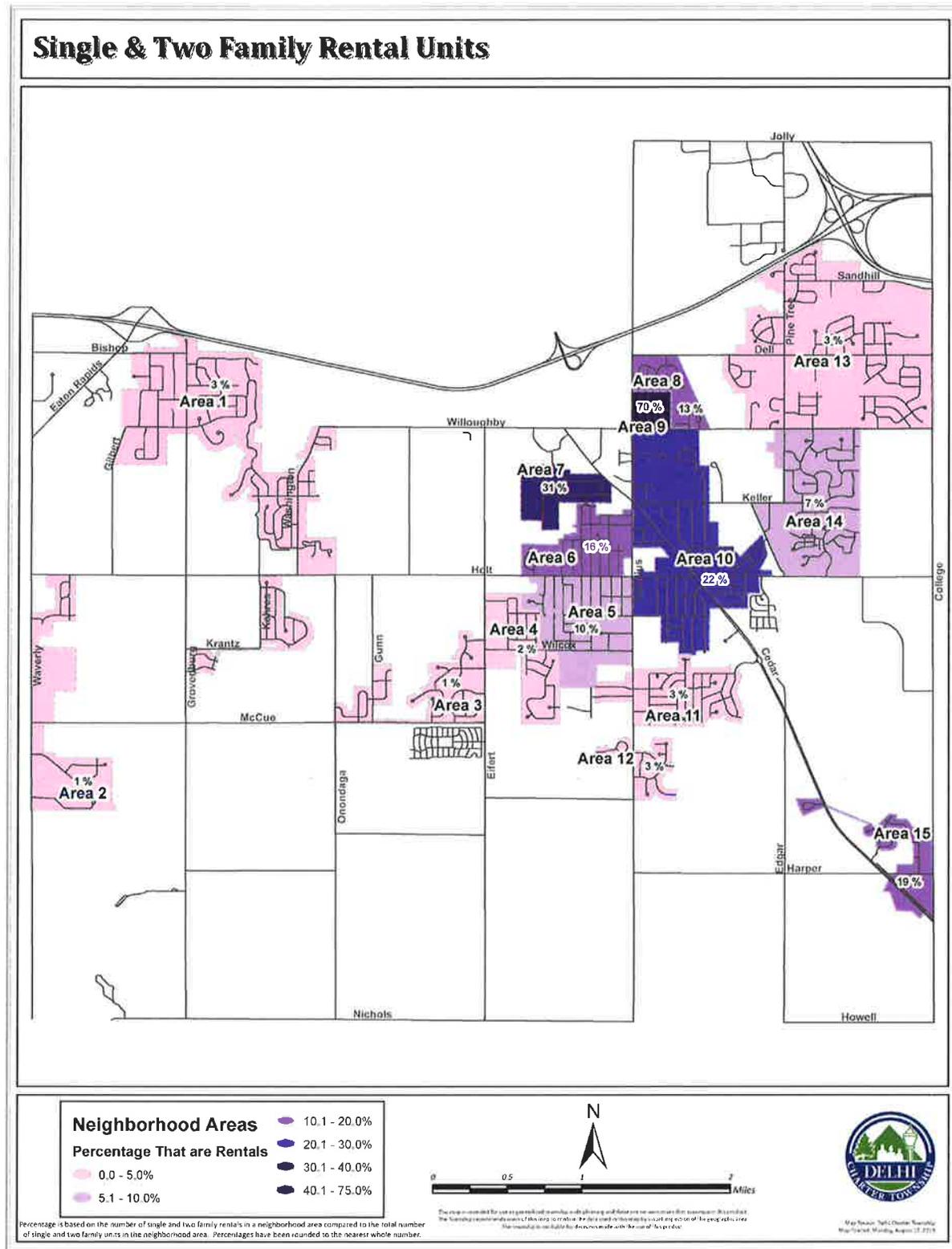
ensure that rental units meet basic minimum standards with regards to repair, maintenance and livability and protects health, safety and welfare within the Township.

For purposes of this Master Plan and ensuring the continued viability of the Delhi community, special attention must be given to ensure that rental units are of high quality and in good repair. Deteriorating property values, a faltering sense of place and diminished community safety have all been statically linked to low home-ownership numbers in communities across the state and country. Low quality rental properties can also contribute to neighborhood blight. On the other hand, high quality rentals and multi-family properties that are properly managed offer important and necessary housing opportunities within the community. Single family rental homes offer an additional housing option and can be a benefit to the community when they are integrated into owner-occupied housing and not concentrated in one area. The map on the following page shows the relative density of single and two-family rental properties within loose neighborhood areas in the Township. For example, within “area 9” over 70% of the one and two-family residential structures are rentals and the surrounding “area 8” has 13% rentals. Areas 7, 9 and 10 have significantly higher percentages of one and two-family rental residences than any other area of the community.

It is important that Delhi Township continue to implement and enforce the Property Maintenance Code and rental registration program. Likely as a result of the foreclosure crisis, previously owner-occupied single family homes are being converted to rentals much more quickly in recent years than in the past. In 2012, a total of 56 new rentals were registered for the first time and all of those were single family homes. The table below shows the number of newly registered rentals since 2008.

Rental Unit Registration

	<u>2008</u>	<u>2009</u>	<u>2010</u>	<u>2011</u>	<u>2012</u>
Total Registered Rental Units	2,480	2,493	2,521	2,579	2,672
Newly Registered Rental Units (1 st time)	33	50	35	67	56



Subdivision Regulations

Another tool used to effectuate the Plan is the Subdivision Control Ordinance (SCO). This regulatory device sets minimum standards for the division of land into parcels for residential properties and other uses. The SCO is designed to insure that economic value of sites is not impaired because of unwise land subdivision design (lots, streets, and open space) and construction of substandard streets and utilities which the community will be required to maintain later at taxpayer's expense. Well planned subdivisions don't just happen. The provision of adequate lot sizes, street widths, utilities, and usable dwelling lots, will increase the value of the entire subdivision over the years, allowing for greater economic benefits for the owners and lower maintenance costs for the community. The character of an area is set for many years to come by the initial design of streets and lots and will be a measure of quality, or its opposite, for a subdivision.

Zoning works in conjunction with the SCO to set minimum lot sizes and setbacks. Also, zoning protects subdivisions from harmful land use encroachments adjacent to and within the subdivision, which would lessen its desirability as a place to live.

Form-Based Code

Areas planned for more infill or traditional development may be more appropriate to regulate through form-based codes rather than conventional zoning regulations. Form-based codes focus more on the building form than the land use and strives to achieve a desired environment and character first, then considers use as a secondary concern. They include specific regulations that consider building placement relative to the street, sidewalk and parking locations, as well as other buildings and public places. Form-based codes may be appropriate in locations where a specific character or building type is desired or is desired to be preserved, such as in furtherance of the development of the triangle area of Holt into a downtown environment.

Transitional Zoning

Transitional zoning is an element, which installs density standards from high density commercial to low density residential land uses. This area is implemented to create an area of transition from the high density to low density. It is used so that hard lines of development are not used throughout the Township. The areas in question will be in places such as the Cedar Street Corridor and other high-density commercial areas.

To implement this the Township will use the Township Zoning Ordinance. Overlay zones will be created to indicate these areas of transition. Future development will be address on a case by case basis to ensure that proper space is given for transition.

BUILDING AND SITE DESIGN TOOLS

Commercial Design Standards

Much like the Subdivision Regulations, Commercial Design Standards regulate building size, shape, and façade. It creates more continuity along commercial corridors to instill a sense of place within a community.

Commercial Design Standards are adopted by the Township and reviewed on a case by case basis. Developers are required to submit design drawing of the development proposed. These design submittals are to adhere to the design standards set forth by the Township. If design standards are not met the submittal will be denied and the developer will be required to make the necessary changes before proceeding to construction.

Only through special permission granted by the Township Planning Commission, the Zoning Board of Appeals, or the Township Board of Trustees will building designs not consistent with the design standards be approved.

Building Design Guidelines

Unlike the site design standards discussed above, evaluating the quality of building design is more subjective and difficult to regulate. The Planning Commission encourages the construction of high quality buildings and structures that use locally-prevalent materials that will last over time, and provides the following guidelines for new buildings:

- Building and roof materials and colors should be consistent with the predominant architecture of the area.
- Long or expansive building walls should include variations in the building wall, varied rooflines, archways or other architectural features.
- Walls near building entrances should include windows, canopies and awnings to attract customers and contribute to a sense of place.
- Rooftop equipment should be completely screened to protect views from the roadway and adjacent uses.
- Rear elevations visible from roadways (both public and internal drives) and/or residential areas should have a finished quality consistent with the front elevation of the building.

Mixed Use/Planned Development

As part of its Cost of Community Services study, the Township discovered that mixed use residential neighborhoods resulted in a more favorable cost-revenue environment, and also may result in high-quality neighborhoods and places. Mixed use developments provide an array of housing types and in some cases, non-residential development, in one neighborhood or development, so that there is not an over-or under-supply of any one type. Such developments may also result in more moderate residential densities and fewer public safety demands. Mixed use buildings are those with upper-story residential or office uses above commercial storefronts.

The township currently allows mixed use in the Town Center zoning district and in Planned Developments, as regulated by the zoning ordinance. While the goals for the Township are not to become a high density urban center, it can emerge as a center of activity in Delhi that provides the sense of place residents and businesses desire.

Traditional Neighborhood Design

Traditional Neighborhood Design (TND) refers to a development pattern designed to emulate the characteristics of small, older communities of the 18th through the early 20th centuries. A central feature of TND is to focus on how private development can shape a sense of place and improve quality of life. TND focus on pedestrian interaction and for this reason, often include narrower lots, higher densities, alleys or secondary service access, narrower streets, shorter front yard setbacks and

various common areas. Traditional patterns are desired because they often result in the following social, physical and economic benefits:

- **Sustainable Densities.** The Township’s Cost of Community Services Study showed that moderately sized lots (between 10,000 and 15,000 square feet) typically associated with traditional neighborhood development, were the most sustainable in the community.
- **Connectivity.** Compact development patterns means homes are located closer to other places, which reduces the cost of infrastructure and drive times.
- **Walkability.** Traditional neighborhoods are founded on the principles of walkability, with continuous sidewalks that provide access to parks for youngsters who cannot drive, families wishing to recreate near home, or those less able to drive.
- **Housing Options.** Neighborhoods containing a mix of single-family and multiple-family uses provide options for residents, and can encourage social organization, and better harmony amongst different socio-economic groups.
- **Community Gathering Places.** TND provides for central gathering places or identifiable neighborhood centers; usually in the form of a park or plaza, which encourages interaction among residents.
- **Public Places.** Neighborhoods with public parks are more desirable to new residents and families. TNDs often include common areas - parks, walking trails, and bike paths - with a focus on connecting these recreational components.

Safescaping

In many communities, concentrated areas of multiple-family housing have raised concerns about safety and other social ills that sometimes arise in high density areas. To ensure development of a safe community, the following should be considered for new and existing developments:

- **Quality building materials and aesthetics** should be used in the building design. This will improve the perceived value, and can provide a safer building in case of fire or natural catastrophe.
- **Attractive landscaping** is needed to create a neighborhood character and to provide useable open spaces throughout multiple-family developments.
- **Internal circulation** should be provided in such a way as to create private recreation areas for residents. It is important that any private areas be design with safety in mind and includes appropriate lighting, landscaping and are easily visible to residents.
- **Where possible, when developing multi-family housing, attached single-family housing** should be provided. These include a limited number of units (i.e. less than 5) per building, each with their own entrance and garage. Attached single-family options provide future ownership opportunities and an environment that is more secure.
- **Appropriate safety measures** must be included in any development. More specifically, the following can provide a safer environment:
 1. Balcony railings should be low in height and should not be solid or obstruct views.
 2. Common building entrances should include self-locking entrances.
 3. No more than four units should use the same entrance; if possible, assign parking spaces or provide attached garages to provide even safer entry.
 4. Where needed, locate stairwells and elevators in a central location where traffic is higher.
 5. Limit building entrance points to two or less, and ensure all entrances are well lit and highly visible.
 6. Require all building facades to include windows.
 7. Ensure proper lighting of all parking and pedestrian areas.
 8. Design landscaping, dumpsters and loading areas to avoid creating blind areas or hiding places.
- The Township should continue to support and strengthen the Rental Registration Program to

ensure that new and existing rental properties are properly maintained and utilized. This program helps to ensure that the preponderance of rental properties does not constitute a hazard or create degradation within neighborhoods.

TRANSPORTATION AND ACCESS TOOLS

Complete Streets

Complete Streets Infrastructure means roadways planned, designed, and constructed to provide appropriate access to all legal users in a manner that promotes safe and efficient movement of people and goods whether by car, truck, transit, assistive device, foot, or bicycle. On July 12, 2012, the Delhi Charter Township Board of Trustees indicated their commitment to Complete Streets by adopting an ordinance which in summary states:

- The Township will take advantages of opportunities to accommodate all users as a part of its daily operations.
- The Township will work with the Ingham County Road Department to facilitate implementation of Complete Streets to the extent feasible.
- The Township will consider how Complete Streets can be incorporated into every road improvement project, except where they are unreasonable or otherwise not feasible.
- The Township will include discussion of Complete Streets in future planning projects.

In keeping with this ordinance, this Master Plan endorses and incorporates the principles of Complete Streets, as follows:

1. Set the vision.
2. Accommodate all legal roadway users.
3. Emphasize interconnected networks.
4. Address all roadways and inter-jurisdictional issues.
5. Integrate into all project types.
6. Define process for exceptions.
7. Integrate best practices.
8. Ensure street designs consider local contexts.
9. Establish performance standards.
10. Develop an implementation plan.

Master Street Plan

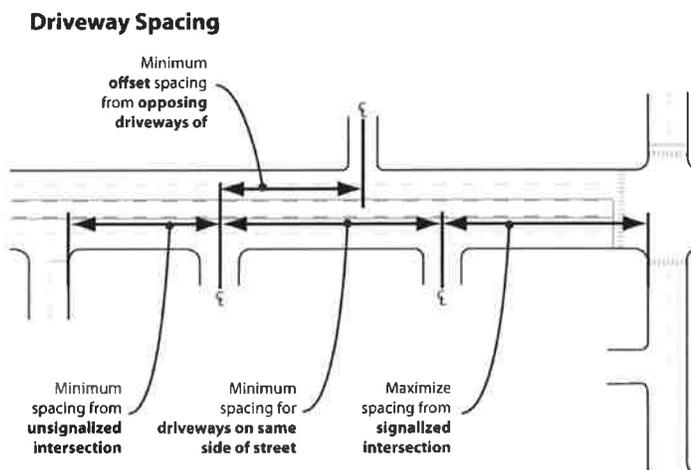
The roads within the Township fall under the jurisdiction of the Ingham County Road Department and the Michigan Department of Transportation. As part of the Michigan Planning Act, communities that plan for improvements or changes to public streets must coordinate with road agencies to ensure appropriate implementation. While the Township already participates in discussions with road agencies, it commits to the following, which is intended to maintain and improve this relationship:

- **Education and Dialogue.** Each party in the transportation planning process must understand and appreciate the goals of the other in order to successfully collaborate. The Township will inform the road agencies of its plans and goals for transportation in the community.
- **Technology.** Use of imperative data and tools will help reduce misconceptions, generally-accepted assumptions, and provide a more refined basis for discussion. The Township supports transportation decisions that are based on actual data, not just perception.
- **Flexibility.** Building more flexibility into project design standards can help ease tensions between opinionated participants. The Township encourages road agencies to adopt procedures and criteria under which flexibility in road design may be applied.

Access Management

A common concern along commercial corridors is traffic safety and congestion. National studies have shown that limiting and managing access (i.e. driveways) to public roads can improve safety and efficiency of travel. As more time passes, access management has also been seen to improve the environment for pedestrians, bicyclists and transit riders. The following access principles should apply where new access is proposed, or where existing access is impacted by expansion of use, site improvements or other factors that contribute additional traffic to the site:

- **Limit the Number of Access Points.** Because the number of driveways affects traffic flow, ease of driving, and crash potential, the number of driveways on major roads should be limited.
- **Maintain Sight Distance.** Proper sight distance needs to be provided at driveways and intersections to ensure a vehicle can see oncoming traffic and pedestrians.
- **Separate Driveways.** Driveways need to be adequately spaced from intersections and other driveways (on both sides of the street) to assist in the reduction of turning movement conflicts.
- **Provide Cross-Access.** Providing connections between parking lots limits the number of turning movements onto the main roadway and reduces the potential for crashes.
- **Be Flexible.** Many developed sites may not meet the recommended spacing. In such cases, the following hierarchy of access principles should be followed:
 1. Maximize spacing from signalized intersections
 2. Directly align driveways, or provide sufficient offset from, access and median crossovers located across the street
 3. Maximize spacing from other driveways on the same side of the street
 4. Where minimum spacing and offsets are not practical, access should be located to maximize the spacing. In some cases, a shared access system should be considered.



2007 Non-Motorized Transportation Plan

Recognizing the need to connect existing and proposed non-motorized routes within the community, the Township adopted a Non-Motorized Transportation Plan in 2007. The Planning Commission will look to the Non-Motorized Transportation Plan for guidance regarding site-specific elements that should be considered during site plan review.

The Plan intends to create connections within the Township and to nearby communities, a connected internal network of sidewalks, shared-use paths and bikeways, and provide links to important destination points. The plan recommends a system of facilities that include the following:

- **Sidewalks** – connect to neighborhoods, schools, parks, and other cultural centers.
- **Bikeways** – bikeways offer the riders a safer alternative than riding on sidewalks because bicyclists are more visible to motorists when riding in a designated portion of the roadway.
- **Shared Use Paths** – provides opportunities for multiple user groups including bikers, walkers, strollers, joggers and wheelchairs.

- Mid-Block Crossings – provide pedestrian refuge islands when major pedestrian ways intersect with roadways necessitating a designated pedestrian crossing.
- Pedestrian Underpasses – provides the opportunity for safe separation between vehicles and pedestrians by providing designated safe crossing routes.
- Road Improvements – when new road construction, reconstruction or restriping projects are reviewed the following should be considered:
 1. Pedestrian-friendly signage.
 2. Add bikeways to the edge of the road.
 3. Four to three lane conversions – converting existing four lane roads to three lanes that under the appropriate conditions provide enhanced vehicular and pedestrian safety.
 4. Intersection improvements, roundabouts, striping, signalization, etc.

2012 Complete Streets Ordinance

The Complete Streets Ordinance was adopted by the Township in order to formalize the collaborative process already in place between the Township and the Ingham County Road Department. This process, and the Ordinance, require that complete streets infrastructure be considered for incorporation into all road improvement projects. There are given instances where installation of such improvements may not be feasible or practical, but the Ordinance requires that when possible these elements be included in projects.

PROGRAM TOOLS

Capital Improvements Program

Public improvements are investments made by the community in facilities, which will benefit the Township. Public capital improvements include schools, libraries, park and recreation areas, fire and police stations, Township offices, public water supply, sanitary and storm sewers, streets and highways, and all of the many physical components which go into a balanced community. As such, the Capital Improvements Program (CIP) is an essential part of the Plan. It is the purpose of the Plan to provide the basis within which the CIP can be properly executed. The CIP:

- 1) Enables the proper relationship and coordination between different capital improvement projects;
- 2) Measures the necessity of individual capital improvement projects; and
- 3) Determines Township's financial capability in any given year to afford these capital improvements.

The CIP establishes a short-range priority schedule of needed public improvements in accordance with budgetary capabilities. This tool should be very exhaustive in scope by assessing future needs and programming public improvements. In projecting the needs of the Township within a CIP, it is necessary to consider the budgetary limitations. The CIP should be planned realistically within budgetary restraints.

The compilation of a Capital Improvements Program is, according to State law, a joint responsibility between the Planning Commission and the elected officials. Specific budgetary actions may become the responsibility of Delhi Township and should be itemized within the CIP document.

The CIP is actually a short-range program, which is utilized to effectuate the Plan in increments of five or six years. It indicates improvements, which will be required and establishes priorities for the most desirable economical sequence to fulfill the Plan objectives; this is the CIP's whole purpose. But, unlike the zoning ordinance and subdivision control ordinance, which are reviewed and updated every five years, the CIP is reviewed and updated every year and projected again for the next five or six year period.

Parks and Recreation Master Plan

Parks and recreation facilities are the gathering places, playgrounds, fitness centers and nature preserves that anchor a community. Ensuring residents have access to adequate parkland and a variety of recreation facilities requires study of several factors:

1. The amount of parkland available to residents.
2. The location, type and function of parks relative to population centers.
3. The amount of recreation facilities (i.e. ball fields, courts, playgrounds, etc.) relative to the number of residents that use them.

The Township's Parks and Recreation Master Plan identifies and addresses unmet recreational needs in the community and supports the continuation of existing and development of new recreational opportunities, as appropriate. The Plan was developed according to the Michigan Department of Natural Resources guidelines so the Township may apply for state grant funding, which can be used for acquisition or improvements to public parks and recreational facilities. The Planning Commission recognizes that recreational factors are among those that most contribute to the sense of place desired by residents and businesses.

Wetlands Protection

Delhi Township has adopted a Wetlands Ordinance. The purpose of this ordinance is to provide for the protection, preservation, replacement, maintenance, restoration and use of certain wetlands in order to prevent and minimize negative impact to them. An official map which inventories wetlands within the Township as well as potential conservation areas and areas that may contribute significantly to aquifer recharge is included in the Wetland Ordinance. Use of this map will provide some of the necessary information during the planning process and eventual development zoning review regarding those areas within the Township that may require special environmental consideration.

Farmland Preservation

Farmland preservation standards will be place in areas of significant agricultural and open space importance. To protect agricultural industry for the Township, specific areas with adequate farming soils will be protected from development. A series of standards will be placed in these designated areas through a combined effort in the Township Zoning Ordinance, Future Land Use Map, and through the Public Infrastructure Boundary.

Other elements of preservation will also be implemented, such as cluster development utilizing the Planned Development (PD) process. This type of development will allow for higher density development in areas to promote the preservation of open space in those same areas. Also, were applicable, the elements of purchase of development rights (PDR) and transfer of development rights

(TDR) will be applied. These elements will assist in the preservation of farmland in areas that have been deemed prime agricultural land.

APPENDIX A:

POPULATION PROFILE

Introduction

The Population Profile compares Delhi Township with the surrounding Tri-County Region and the State of Michigan for overall population, age, race, and education. By understanding the characteristics of the population of Delhi Township in relation to the larger community, it is possible to make observations about the community as well as predictions for the future. Much of the data presented is derived from the U.S. Census. The census tracts are illustrated in Map 13.

State of Michigan

From 1970 to 2010, Michigan gained 1,008,557 residents for an overall total population of 9,883,640. However, the State lost 54,804 residents, representing a 6% loss. Much of this decline is attributed to the economy, which has caused additional migration out-of-state.

**State and Regional Population Trends
1970 - 2010**

	2000	2007	Change 00-07	2008	Change 07-08	2009	Change 08-09	2010	Change 09-10	2011	Change 10-11
Delhi Township	124,700	163,800	31%	162,200	-1%	161,700	0%	155,600	-4%	149,800	-4%
Ingham County	98,400	145,400	48%	141,200	-3%	125,400	-11%	122,600	-2%	119,500	-3%
Michigan	115,600	153,100	32%	151,300	-1%	132,200	-13%	123,300	-7%	118,100	-4%

Lansing Tri-County Area

Although growth has slightly increased across the Region overall, growth is not taking place consistently across the region. Some municipalities, such as the Townships of Bath, Delhi, Delta, Meridian and Watertown, and the City of DeWitt have experienced population growth, while others like Alaiedon Township, East Lansing, and Windsor Township lost residents in the past year. It is apparent that most residents have not left the Region, but have relocated in and around within the Region. Between 2000 and 2010, the nine communities comprising the Lansing metro area collectively experienced a 3% population growth. The table titled "Metro Nine Township Area" illustrates this growth trend.

**Metro Nine Township Area
1970 - 2010**

	1970	2000	2010	Percent Change (rounded)	Percent Change (1970 - 2010)	Percent Change (2000 - 2010)
Alaiedon Township	2,487	3,498	2,894	41%	16%	-17%
Bath Township	4,832	7,541	11,598	56%	140%	54%
City of DeWitt	1,829	4,702	4,507	157%	146%	-4%
City of East Lansing	47,964	46,525	48,579	3%	1%	4%
City of Lansing	130,211	119,128	114,297	9%	-12%	-4%
Delhi Township	13,795	22,569	25,877	64%	88%	15%
Delta Township	17,396	29,682	32,408	71%	86%	9%
DeWitt Township	9,909	12,143	14,321	23%	45%	18%
Meridian Township	23,817	39,116	39,688	64%	67%	1%
Watertown Township	3,146	4,162	4,836	32%	54%	16%
Windsor Township	3,513	7,340	6,838	109%	95%	-7%

Source: U.S. Census Bureau

Delhi Township

The 2010 U.S. Census population for Delhi Township was 25,877 persons. This represents a net gain of 15 percent in population during the past decade. This growth represents a faster growth rate than Ingham County.

Age

A review of the age of persons in the community shows that approximately 25 percent of Delhi's population is under age eighteen. The average for Ingham County was approximately 27 percent. For the first time in many decades, the rate of increase in those under 18 within the Township has declined, while that same rate within the County has increased.

In 1990, the Township had 8.1 percent of the population over 65 years old and by 2000 this percentage had grown to 9.6 percent. In 2010 this population group had grown to represent approximately 10.9% of the total Township population. Delhi is typical of the statewide trend since 1970 where the number of persons over 65 years of age and their percentage of the total population has increased. Figure 1, Age Pyramid 1980, Figure 2, Age Pyramid 1990, Figure 3, Age Pyramid 2000 and Figure 4, Age Pyramid 2010 illustrate this trend.

Fig. 1
Age Pyramid
1980

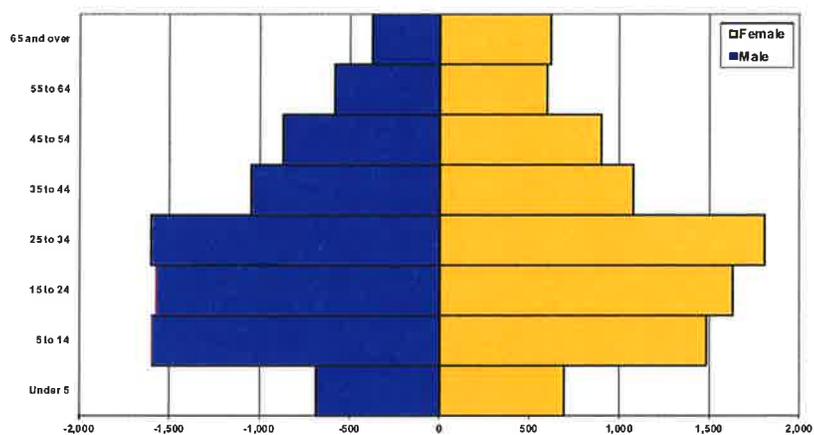
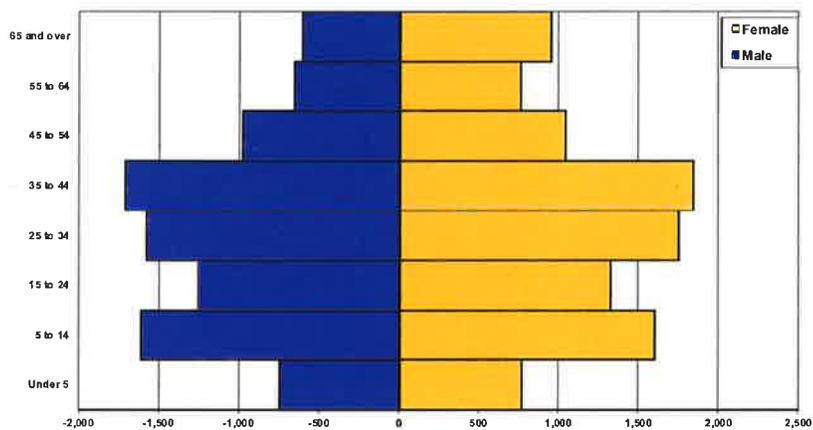


Fig. 2
Age Pyramid
1990



**Fig. 3
Age Pyramid
2000**

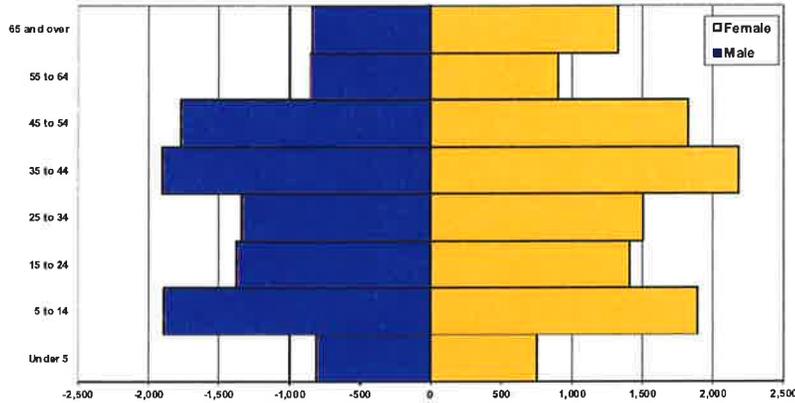
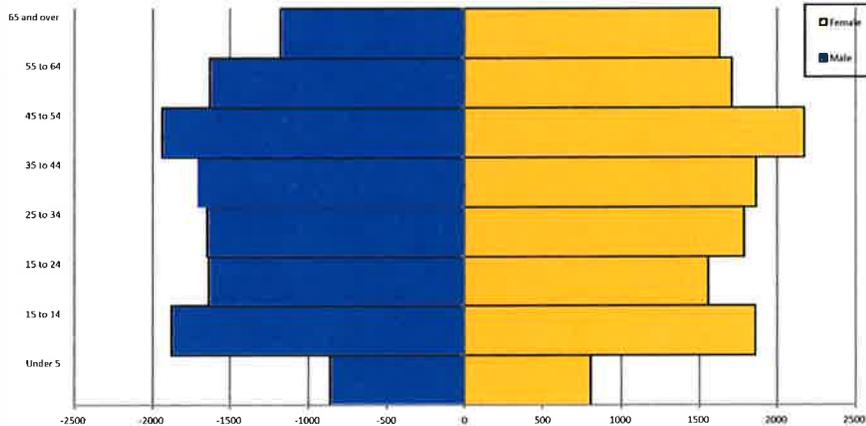


Figure 4 - Age Pyramid 2010



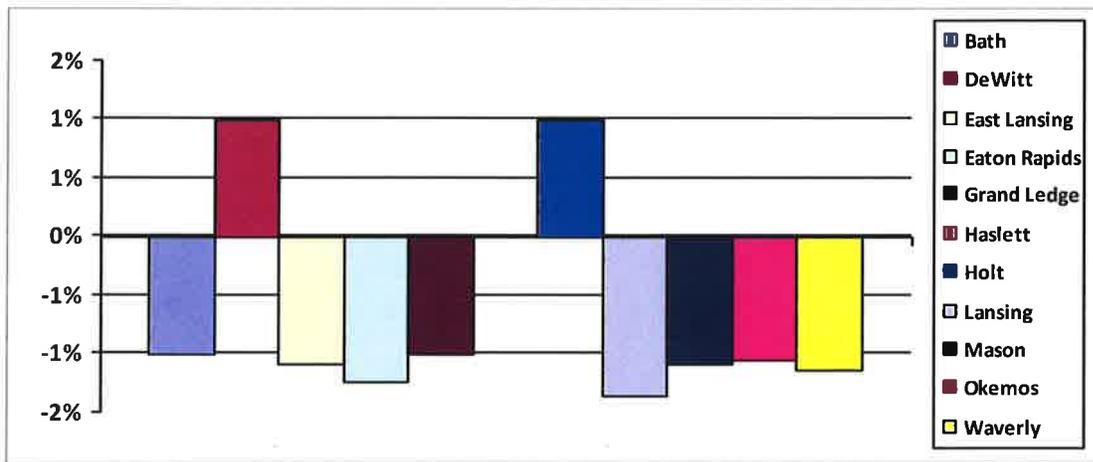
Education

There have been significant changes in the levels of education of residents in Delhi since 1970. In 1970, 36.5 percent of Delhi's residents over 25 years of age had no high school diploma and only 4.4 percent had a college degree. In 1990, 86.4 percent of the population over 25 years had at least a high school diploma and 19.4 percent held a college bachelors degree or higher. In 1990, Ingham County reported a lower percentage of persons with high school diplomas (83.9%) than Delhi Township, but a greater percentage of people who hold a college bachelor's degree (29.9%). The 2009 – 2011 American Community Survey (3 yr. est.) suggests that over 31% of the entire population over the age

of 25 have at least a Bachelor's degree. Notably, those residents between the ages of 25 and 44 years had the highest education, with over 80% having at least a Bachelor's degree.

Delhi Township is serviced by four public school districts. Holt School District services the majority of the student population, but the southern portion of the Township is included inside of the Mason School District and a small portion on the west side is included within the Eaton Rapids School District. Enrollment within the Holt school district has continued to increase during the last decade, but at a significantly slower pace than the 4.5% experienced in the period between 1990 and 2000. Enrollment within the Eaton Rapids and Mason school districts has begun to decline. Grand Ledge and Holt are the only school districts within the region that have experienced any enrollment growth within the period. The table below, Metro Nine Township School District Enrollment, shows the student growth trends for all local school districts.

**Metro Nine Township School District Enrollment
2000 - 2010**



Race

The racial composition of the Township is overwhelmingly Caucasian with only 5.2% percent being Black and 5.3% percent being of Hispanic origin. Interestingly, in 2000 Blacks and Hispanics each represented only 2.4% of the population. This increase in each population group points to increasing racial diversification within the community. The County and Region have both experienced a steady growth in the numbers of minority persons since 1970. The County in 2000 reported a 10.9 percent Black and 5.8 percent Hispanic population, compared to 9.9 percent and 4.2 percent respectively in 1990. However, in 2010 Census results for the County reflected approximately 11.8% Black and 7.3% Hispanic populations, indicating similarly increasing diversification at the County level.

Population Projections

The table below provides interim or provisional population projections for Delhi Township and were prepared by Tri-County Regional Planning Commission. Similar projections have been made for each community within the area and use the assumptions that were built into the socioeconomic projection modeling in the regional 2035 Tri-County Regional Planning Commission's Long Range Plan (LRP). The projections were updated to reflect the Census 2010 actual population counts.

There are two sets of projections provided by Tri-County. One is based on growth trend while the other is based on wise growth principles. Please refer to Chapter 6 “Socioeconomic Projections” in the 2035 LRP for detailed explanation of the difference. A new model will be run for the 2040 LRP at which time the population projections will be updated and adopted. Until then, these population projections are offered for planning purposes as part of the Regional Data Center analysis and should be, when considered in averages, decent estimates of Delhi’s growth.

	2010	2015	2020	2025	2030	2035	2040	2045
Adopted Trend Dataset								
Est. Population	25,877	26,170	26,787	27,458	27,950	28,376	28,783	29,169
Wise Growth Scenario Dataset								
Est. Population	25,877	25,695	25,805	26,108	26,136	26,540	26,929	27,300
<i>Source: Tri-County Regional Planning Commission 2010 Adjusted Base</i>								

Conclusion

Suburban growth has been a trend throughout the Region, State, and Nation for the decades between the 1970’s and early 2000’s. However, while population growth trends continue to show an exodus from the City of Lansing, the City of East Lansing actually posted a population increase during the most recent Census period. Further, the City of Lansing, which during the 2000 Census lost 6% of its population, only lost 4.2% during the next 10 year period. This may begin to show some preference for urbanized living that has been shown to be dependent on a desire by many for a sense of place that is not easily replicated by many suburbs yet is more available in urban cores. That being said, Bath Township, DeWitt Township the City of Mason and Delhi Township all experienced growth at rates higher than those of other similar surrounding communities. In common, these municipalities have worked diligently to maintain quality school districts and identities established through parks, non-motorized pathway systems, shopping and other desired amenities.

Delhi Township’s population is anticipated to continue to grow, but at a much slower rate than some previous projections anticipated. Regardless of which population project model one reflects upon, the growth would appear to be manageable from the perspective of land use and press to expand existing infrastructure. However, since much of the community’s existing services were based upon the older and much more aggressive population projections, the challenge facing the community shifts to focus on maintaining and improving what we have within the limitations posed by much slower growth.

ECONOMIC PROFILE

Introduction

The Economic Profile looks at Delhi Township from two different perspectives. First, it looks at the direct relationship of the local economy to the individual characteristics of the Township's residents and the ability of the households to function within the market. Second, it looks at the business sector of retail, wholesale and service industries and the Township's position within the Region or State economic market. The economic market reflects the numbers and sales that are attributed to the business conducted within the Township. The individual economic characteristics result from the earnings and economic features that are accrued from outside as well as inside the Township. A survey of the economic condition of the Township helps to anticipate the direction and location of

future growth within the community. The Township's economy directly affects the population size and infrastructure needs and has a ripple effect.

Employment Characteristics

In 2010, Delhi Charter Township had a total population of 19,291 persons over the age of 18. As reported by the U.S. Census, 4.8% of Delhi Township residents were unemployed in 2010, as compared to 5.8% and 7.3% unemployed at the County and State levels, respectively. These levels are dramatically higher than those reported for 2000.

**Employment Comparison
2000-2010**

	2000	2010	Change 2000-2010
Delhi Township	2.10%	4.80%	128.6%
Ingham County	3.90%	5.80%	48.7%
Michigan	3.70%	7.30%	97.3%

As of 2012, the top employers in the Township are as follows:

<u>Employer</u>	<u>Product or Service</u>	<u>Employees</u>
Holt Public Schools	Education	830
Dakkota Integrated Interiors	Automotive Supplier	293
RSDC of Michigan, LLC	Steel Processing	200
Orchid Stealth	Metal Fabricator	190
Granger Construction	Commercial Construction	152
Kroger	Retail Grocery	145
Magna Powertrain	Automotive Supplier	135
Holt Sr. Care & Rehab (NexCare)	Long Term Care	123
Lansing Christian School	Education	100
Block Imaging	Medical Equipment	80

Income and Poverty Status

Despite recent economic conditions, Township, County and State incomes continue to increase. The poverty level of Township residents over eighteen years old stood at 5.9 percent in 1990. The 2009-2011 American Community Survey (3 year est.) estimates that approximately 21% of all individuals within Ingham County are living below the poverty level. In Delhi Township only 9% are in the same situation. People who are in families fair better on average. Only 7.9% of the Delhi Township population that are in families had incomes below the poverty level, which is significantly less than the residents of Ingham County as a whole (14.1%).

**Median Income Comparisons
2000 - 2010**

	2000	2010	Change 2000- 2010
Per Capita			
Delhi Township	\$23,485	\$26,912	14.6%
Ingham County	\$21,079	\$24,451	16.0%
Michigan	\$22,168	\$24,435	10.2%
Family			
Delhi Township	\$61,837	\$64,370	4.1%
Ingham County	\$53,063	\$61,171	15.3%
Michigan	\$53,457	\$58,376	9.2%
Household			
Delhi Township	\$50,922	\$58,094	14.1%
Ingham County	\$40,774	\$45,808	12.3%
Michigan	\$44,667	\$48,432	8.4%

Economic Market

The economic market is divided into three primary trade areas for evaluating economic progress or status. These trade areas are wholesale trade, retail trade and service industry. The category of agriculture has been added here as well. Much of the economic information and data sources available is given for the Lansing-Tri-County Region and is undistinguishable from the Township as a separate entity. The 1992 Economic Census provided the first breakout of detailed economic indicators for the Township. It therefore becomes the base year for an economic analysis. Information is presented as a status and no attempt is made to provide an historical trend analysis. Overall, the Township and the Lansing area economic picture has been stable and generally above Regional and State averages.

Market Analysis

Delhi Township has shown significant increases in its economic development opportunities through the past two decades. In this time period, the commercial and industrial districts within the Township have grown to support the rapid residential growth rates. It is essential that these elements of the Township grow to meet the retail and non-retail needs to ensure that Delhi Township does not become a "Bedroom Community".

Two areas in particular have grown to meet these needs. The Cedar Street corridor, site of a future growth study, is one of these areas. Deemed as the commercial center of the Township, this corridor has grown to support nearly all of the retail demand of the Township. Though the growth in this corridor has been inconsistent, it is the location the Township has identified as its town center.

The other area of economic growth is the Delhi Technology Park. Located on the eastern portion of the Township, this industrial park is home to the largest employers in Delhi. This park is one of the fastest growing industrial areas in the Region and is near build-out status.

Looking forward, it appears likely that the next area where significant growth will occur is within and adjacent to the Delhi Technology Park and in the general proximity of the Holt Road and College Road area. There is an abundance of developable property in this area which is served by all

necessary public infrastructures. The majority of the property in this area has been acquired by a few key developers over the past several years.

Manufacturing & Wholesale Trade

According to the 2007 Economic Census, there were 27 manufacturing establishments and 24 wholesale operations within Delhi Township. These businesses employed 1,190 and 274 employees respectively. It is likely that these numbers have decreased since the last Economic Census was taken as a result of general economic conditions throughout the Country during approximately the last 5 years. However, these industry sectors remain an important component of the local economy.

Retail Trade

There were 56 retail establishments in the Township and 705 employees within the retail trade area. Delhi accounted for about 6 percent of the County's total retail establishments and 5 percent of the County's total retail industry employment. In the 2007 Economic Census, Payroll in the retail sector amounted to approximately \$16.7 million, up from \$7,437,000 in 1990.

Service Industry

The service industry is the fastest growing market sector. This is the sector that includes government, healthcare, entertainment, education and others. Delhi has approximately 275 service establishments and approximately 2,361 employees in this sector. Locally and nationally the service sector, especially healthcare and education, continues to outpace other sectors in terms of growth.

Agriculture

In 1996, it was estimated that Delhi Township had 2,790 acres (approximately 12.2 percent) of land that was actively being farmed. The County reported 44.3 percent of total land use as cropland or 168,026 acres of active farmland. In 1992, Delhi Township contained less than 2 percent of the agricultural land in Ingham County. Economic data on agriculture compiled by the USDA for Ingham County shows that in 1992, the agriculture industry reported an income of \$74,534,000. Ingham County ranked 27th out of Michigan's 83 Counties in number of farms, and with one exception ranked in the top twenty in all reported production categories. Nevertheless, from 1982-1992 the average number of farms decreased 24 percent and the acres of land being farmed decreased 13 percent in Ingham County. While current data is not readily available, it is safe to say that due to development during the past decade, agricultural business is less today than it was when this data was originally compiled. There are several very large tracts of land that were previously used for active farming which have been developed for residential and commercial purposes. While development of farmland has certainly slowed in recent years, efforts must continue to promote infill and redevelopment as the first option.

Delhi Charter Township Downtown Development Authority (DDA)

An additional force in the economic market in Delhi Township is the Downtown Development Authority (DDA). The Township Board of Trustees established the DDA on July 21, 1987, pursuant to Michigan Public Act 197 of 1975 and local ordinance 80. Map 5, Downtown Development Authority, illustrates the location of the DDA.

The primary purpose for creating the DDA lies in the promotion of economic growth through business promotion and retention programs and the halting of deteriorating property values within the

central business district. The DDA strives to increase the Township's tax base in the DDA District while maintaining those qualities that make Delhi Township a desirable place to live.

The DDA has engaged in such projects as new infrastructure in areas where growth was desired, improved infrastructure in established areas, streetscapes, rehabilitation of commercial properties, land planning, street and road improvements, regional and national marketing programs and acquisition and recycling of distressed properties. Specific examples include the redevelopment project at the southwest corner of Cedar Street and Holt Road, the commercial façade loan program and the infrastructure improvements within the Cedar Heights neighborhood..

The DDA is an essential element in the growth and success of Delhi Township as a destination spot for the Region. Through its work and acquisition of funds the DDA provides opportunities for local and chain businesses to co-exist and thrive. That being said, the DDA has begun its anticipated reduction in the amount of tax increment revenue captured from the various jurisdictions. This fact, taken together with dips in taxable value within the capture area, have reduced the amount of available funding to implement DDA projects and programs. Planning efforts are currently underway which will result in actions which will enable the DDA to continue providing service within the Township.

Conclusion

Several observations can be made about Delhi's economic market. Similar to trends at the State and National level, manufacturing employment continues to decline and service industry jobs are on the rise. Much of the growth in the service industry can be attributed to healthcare and other professional fields, which tend to result in higher paying positions than others within the sector. Retail growth does not generally result in favorable incomes statistics with regards to individual wealth due to lower average pay for employees. This shift in employment sectors may have long term impacts on Delhi Township's individual and family incomes since manufacturing jobs historically paid quite well. One thing is certain, and it is that populations with higher educational attainment earn higher wages. Therefore, Delhi resident's relatively high rate of degree holders should help to attract the higher skill and higher wage service sector companies.

Growth in the Agricultural sector is not expected. However, agricultural properties south of the Urban Service Boundary do appear to be under less development pressure from large lot residential development now than in the late 90's and early 2000's. That being said, it is important to continue to protect the viability of this important economic sector which is uniquely affected by the physical characteristics of the land and the land uses which are adjacent to it. It is expected that as the Township becomes built-out north of the Urban Service Boundary, the agriculture industry in those areas will continue to decline in terms of land area and economic impact. However, south of that boundary agricultural uses are expected to continue with little or no adverse affects.

Housing Profile

Introduction

The housing profile describes characteristics of the housing stock located in Delhi Township. This chapter also discusses the type, value, and development trends that have taken place in the housing market. Much of the data presented is from the 2010 U.S. Census. Some more recent data on a local level has been included, but only as it is both available and useful for drawing comparisons or trending.

Household Characteristics

In 2010, the total number of households in Delhi Township was approximately 10,191 representing 9.2 percent of all households in Ingham County. This is an increase of approximately 2.4 percent over the number of households in 2000. In the category of female-headed households, the Township rate increased slightly to approximately 13%, up from the 2000 rate of 11.9 percent. This is approximately 0.3 higher than the 2010 rate for Ingham County of 12.7 percent. Also, Township statistics show that families comprise approximately 69.3 percent of the total households, which represents a decrease of approximately 3.9 percent since 2000. However, families still exceed that of Ingham County as a whole by almost 13%. Overall, household size in the Township continues to get smaller. In 2000 the average number of individuals per household was 2.61. In 2010 this had dropped to 2.52 persons per household. Ingham County experienced a similar drop in household size over the same time period.

Housing Type

Although Delhi Township has housing units of all types to offer residents, the majority is made up of single family dwelling units (See Housing Type Table below). The total number of housing units in the Township in 2010 was 10,593, representing an increase of just over 2,000 units in a ten year period. This also represents about 9.5 percent of all of the dwelling units within Ingham County. Single-family dwellings account for 8,526 units or about 72 percent of the total number of units. Mobile homes were included in this category and according to the 2010 Census, they accounted for about 11 percent of the total housing stock at 910 units. This is a decrease of about 3 percent from 1990 figures. Two to four-family dwellings make up 5.2 percent, totaling 551 units. The remaining 9.3 percent of housing units are multiple-family dwellings (1,515 units). As a result of this distribution, Delhi Township is considered a single family residential development community.

**Housing Type
1970-2010**

Housing Type	1970	1980	1990	2000	2010
Total	4,209	6,213	7,189	8,563	10,593
1 Family Units	3,478	4,929	5,903	7,316	8,526
2-4 Family Units	352	429	519	452	551
Multiple Family Units	379	855	767	795	1,515

Occupancy & Vacancy Rates

The 2010 Census reported that 7,539 dwellings units (74 percent) were owner occupied and 2,652 units (26 percent) were renter occupied. This represents a decrease in owner-occupancy of almost 4 percent and an increase in rental units of a little over 3 percent over those same figures in 2000. The balance 542 housing units or 5.1 percent was vacant. In 2010, the vacancy rate for the Township was less than 3 percent for owner occupied housing. The overall vacancy rate for Delhi was 4.2 percent, a slight decrease from 2000. This suggests that despite changes in the housing market after 2008 Delhi has maintained a tight housing market. New housing starts began a quick decline in the middle of the decade. However, early indicators in 2013 seem to point toward a slow recovery going forward as housing sales and new home starts begin to increase.

Delhi Township's housing market shows more rural characteristics when compared to the County and Tri-County Region. In 2010, Delhi represented 9.2 percent of Ingham County's housing stock of

approximately 111,161 units. At the County level, only 59.2 percent of the dwellings are owner occupied and the combined vacancy rate is 5.4 percent. The lower amount of owner occupied housing units is characteristic for central cities like Lansing and East Lansing where rental housing is generally more abundant. However, as previously discussed, Delhi Township has seen an increase in the availability of high quality rental housing within the community. Comparatively in the Tri-County Region, both Clinton and Eaton Counties, which are largely rural, show 78.6 percent and 72.6 percent respectively for ownership of the total housing stock. Clinton County's 2010 figure represents a decrease of approximately 4.4 percent and Eaton County also showed a decrease in ownership of about 1.6 percent. Vacancy rates are similar in all three counties with Ingham being slightly higher.

Low vacancy rates can be linked to many different factors including population stability. In previous years, as many as 53.4 percent of residents indicated they had lived in the same house since 1985 or earlier. However, in 2010 only 38.6 percent of residents indicated that they had lived in the same house since 1999 or before. This represents a significant shift and can likely be attributed to several factors. One such factor is that since 1999 many new housing units were built, creating the opportunity for individual to move into or within the community. Another factor may be that the late 90's and early 2000's saw a period where housing values were rising so quickly that many people moved frequently in order to utilize each homes equity.

Value of Housing

Delhi Township's housing market indicators exceed the County in terms of economic value for both owner occupied units and rental rates. In 1990, the median value of owner occupied housing in the Township was \$70,600, while the County averaged \$61,800. By 2011 the value had risen to \$157,900 within the Township and \$133,000 countywide. Much of this increase simply reflects inflationary factors, but a significant portion is likely attributable to the large volume of new homes which were constructed in the late 90's and early 2000's. In 1990, sixty percent of all housing units in the Township had three or four bedrooms, while today that has increase by almost 9 percent, signaling that homes in the Township are also getting bigger.

Similarly, in 1990 the median rent paid within the Township \$348 per month compared to the County's \$374 per month. Currently, median rent is \$837 within the Township compared to \$737 countywide.

Another traditional indicator of community economic vitality reported in the Census is the number of available vehicles per household. In 1990, only 2.8 percent of the occupied housing units in Delhi reported not having an available vehicle, and sixty-five percent had two or more vehicles at their disposal. Today, approximately 4 percent report not having a vehicle, while about the same amount report having two or more. This may point to a gap in financial resources for the poorest residents or, more likely, an aging population that increasingly does not drive. Between 1990 and 2011, several senior housing and care facilities were built within the Township. The residents of these developments are less likely to drive and own cars.

The Township's State Equalized Value (SEV) value has been increasing for many years. In 1990, the total SEV was \$252,176,950 and by 2000, it had increased to \$408,206,450. By 2010 the Township's total SEV had increased to \$575,966,275, representing an increase of about \$1.7 million.

Growth Trends

While the addition of new housing units experienced a slow down beginning in approximately 2007 due to the general collapse of the housing market nationwide, there has been a significant increase in the total number of units over the past 60 years. In earlier years, the increase in units tended to parallel the increase in population. To lend historical perspective, it is useful to realize that 29% percent of the housing was built prior to 1950, with the remaining 71 percent being built over the past forty-five years. The largest decade of development for new housing was the 1970s when 2,144 new homes. Also supporting the growth in housing units has been the availability of public services. Seventy-five percent of the homes have public water and commercial gas for heating and an even higher percent are accessible to public sewer. Greater detail for this can be found in the Community Facilities section of this plan. The table below provides information about new home construction over approximately the past decade.

New Housing Starts 2001 – 2011

Year	New Single Family Dwellings	New Multi-Family Dwellings
2001	158	0
2003*	243	24
2004	248	34
2006*	133	4
2007	60	6
2008	29	1
2009	23	0
2010	33	8
2011	21	24
2012	15	0

**Data was not collected for the previous year.*

Based upon available data, Delhi Township added an average of approximately 700 new housing units every five years, up until the housing crash that began in 2007. Early indicators in 2013 seem to point towards a slow recovery in new home starts. Additionally, home sale prices have also begun to slowly recover as well. It would appear that cautious optimism is warranted with regards to the housing market, but it is very unlikely that the growth similar to that of the late 90's and early 2000's will be seen any time in the near future.

Household Density

When examining the housing profile for Delhi Township, it is important to note what is happening within the housing units as well as what is happening with the units themselves. The number of persons per rented unit has steadily decreased in a fashion similar to the decline in the number of persons per household discussed as part of the population profile. The Persons per Household table below, illustrates an overall decrease in the number of persons per housing unit between 1970 and 2010. Overall, the number of people per household decreased during the most recent census period between 2000 and 2010. This decrease is approximately .25 persons per household, on average. However, the number of persons per household in owner-occupied units has remained almost flat during the same time period. The most significant change is seen in the renter-occupied housing units

where an approximate .18 person per household decrease has occurred. The fact that the persons per household in rental occupied units has dropped below 2 provides strong evidence that the number of singles has increased. This single-occupancy population likely includes many young professionals, single people who do not have full-time custody of children or older individuals living alone.

**Persons per Household
1970-2010**

	1970	1980	1990	2000	2010
Overall	3.13	2.63	2.72	2.61	2.36
Owner	3.32	2.75	2.83	2.76	2.74
Renter	2.66	2.44	2.38	2.09	1.91

Conclusion

When examining the overall housing profile, Delhi appears to be a stable housing market that will continue to experience proportional growth. Delhi Township has a substantial amount of single-family residential units and a large percentage of home ownership. While the prevalence of owner-occupied housing units brings substantial benefit to the community, it is important to continue to provide quality housing variety.

The vacancy rates are generally low and the cost of housing appears reasonable. Newer housing is upscale and there are good quality rental units available within the community. The number of persons per occupied unit has remained stable with regards to owner occupied units. There is some indication that there is an increasing trend towards smaller household sizes within rental units.

All of these factors suggest that Delhi Township will continue to experience residential growth of all housing types in the foreseeable future, but at a somewhat slower rate than may have been predicted 10 years ago. This development pattern will continue to increase the community's density, which, done appropriately, can contribute to the overall sense of place shared within the community. It will also affect the demand on community facilities, services and infrastructure.

COMMUNITY FACILITIES

Introduction

Community facilities are public services and service systems which serve Delhi Township's 25,877 residents. They include parks, police and fire protection services, schools, libraries, wastewater treatment and the Township's administrative offices. Delhi's community facilities are inventoried and described in both narrative form and through a map. Map 6, Community Facilities Map, illustrates all of the community facilities and their locations within the Township.

An inventory of existing community facilities is important in creating a long-range community plan. Only by knowing what the community has to work with, is it possible to plan for the future. As a charter Township, Delhi is responsible for providing a wide range of services. Also, community services enhance the quality of life for area residents. Good land use planning considers community facilities because they affect public health and safety, environmental health, and the economic stability of the community.

Township Land and Facilities

Community Services Center

In the fall of 1996, a new Community Services Center was built in Delhi Charter Township at 2074 N. Aurelius Road. The new facility replaced the old Township hall, which was built in the 1950's. The Center houses the Township's administrative departments including Accounting, Assessing, Community Development, Clerk, Parks and Recreation, Public Services, Office of the Manager/Supervisor, Office of the Treasurer and a 110 seat public meeting room. In addition, it contains the Township's Fire Station 1 and the Holt Public Library which is the Delhi branch of the Capital Area District Library (CADL). Renovations to the building have been completed to accommodate changing needs. Additionally, several energy efficiency improvements have also been completed which reduce the cost of facility operation.

Library

In addition to the libraries located in each of the district school buildings, Delhi Township is also served by the Capital Area District Library (CADL) now located in the Community Services Center described above. The popularity of the library has resulted in expansions to the original space and other physical upgrades.

The library has an extensive collection of videos, periodicals, and books. It is also linked with several other libraries in the Region through an interlibrary loan service, which further expands its available resources. The library sponsors many programs and events and provides services to many visitors. In 2012, the library had 190,000 visitors and over 5,500 people attended special programs. Further, the library circulated over 307,000 items in 2012, 45% of which were checked out by patrons using self checkout terminals. In addition, e-book downloads increased by 368%.

Public Maintenance Facility

The Delhi Township Public Maintenance Facility is located at 1492 N. Aurelius Road and provides a wide range of maintenance services to the Township. Personnel duties include all maintenance for Township-owned properties; from buildings to cemeteries to lift stations.

Sanitary Sewer Service

A vast majority of the homes and businesses in Delhi Township are served by public sewer. Out of the 10,593 housing units surveyed in the 2010 census, Township records report that 9,338 of them have public sewer service. Homes outside of the existing sewer service district are serviced by private, on-site sewage disposal systems. The Township owns and operates one wastewater treatment facility located at 5961 McCue Road.

Delhi Township's Sanitary Sewer Master Plan (1996), addressing both sewer development and use, was developed and adopted to insure that the demand is met. This plan was created using the latest technology in computer mapping so that it can be constantly updated to reflect new development. Also, whenever a subdivision or other type of development is proposed which will increase the demand for sewer use, a site plan must be submitted to the Township's Community Development Department. As part of the review process, Township engineers evaluate whether the sewer demand of the proposed project can be accommodated.

Undeveloped Township-Owned Properties

Delhi Charter Township also holds the deed to two properties totaling 109.09 acres on the northeast corner of Holt and Eifert Roads. Presently, there are plans to utilize this property for future expansion of the parks system. There are also other vacant properties that are owned by the Township or the Downtown Development Authority that may be developed or made available for future development at some future point in time.

Utilities

Utilities are an instrument for growth in Delhi. The availability of water, electricity, telephone and other utilities is a primary factor in determining the desirability of Delhi Township as a place to live and work. With the exception of sanitary sewer addressed previously, all utility services in the Township are under the authority of other agencies. Map 7, Water – Sewer Locations, provides information about utility locations in the Township.

Public water has been provided by the Lansing Board of Water and Light since 1972. Of households surveyed in the 1990 census, almost 75% of housing units, or 3 in 4, reported public water service. An outline of the existing water service area is provided on the sewer map at the end of this chapter. In the long run, water service extensions are expected to parallel sewer service areas.

Other utility services are provided as follows. Phone service to the vast majority of Township residents is provided by AT&T. Natural gas and electricity utility demands are met by Consumer's Energy and the Board of Water and Light. Cable television service is available in much of the Township.

In order to offer utility services to Delhi Township residents, each of the previously mentioned utility providers own property in Delhi Township. They are shown on Map 6, the Community Facility Maps. They are typically parcels being used for things such as construction offices, cable tower head sites, or power substations. They may also be properties, which have been purchased for future uses such as municipal well sites (see "Water" section). In addition to property ownership, many utility companies have obtained easements on properties. Easements are not indicated on the maps.

Recreational Facilities

Within the boundaries of the Township there are a number of park facilities that provide open and recreational space. In fact parks are such an important part of the Township that the budget for Delhi Parks and Recreation is the second largest item on the Township budget. With a few exceptions, most of the parks in the Township are owned and operated by Delhi's Parks and Recreation Department. Specifically, the Township is responsible for Kiwanis, Valhalla, Jaycee, Deadman's Hill, Sycamore Park, and the Sam Corey Senior Citizens Center. Together these facilities provide tennis courts, playgrounds, swimming areas, fishing areas, pavilions, and nature and fitness trails and baseball fields for public use. Recreation facilities are shown on Map 4, Future Land Use, located at the end of the section addressing Future Land Use Patterns.

In total, Delhi Charter Township has 190 acres of park land in its municipal parks system. This includes the two parcels of land at the northeast corner of Holt and Eifert Roads. All of the Township park land is concentrated around downtown Holt in sections 14, 15, 22 and 23. The table below provides a summary of the facilities which five of the parks have to offer residents. Sycamore Park is

a 1/4 acre park which provides a pedestrian circulation route from the adjacent subdivisions to Sycamore Street.

In addition to the Township parks, Delhi is also home to Burchfield Park and the Riverbend Nature Trail, both located in Section 31, which are owned and operated by the Ingham County Parks Department. During the winter months, existing County facilities offer ski trails and equipment rental, sledding, a toboggan run and rental, a warming house and ice-skating. In the summer, these two parks offer nature trails, grills, swimming and fishing areas, playground equipment, and boat and mountain bike rentals. Other private recreational facilities available within the Township are the El Dorado Golf Course, Chisholm Hills Golf Course, Iron Links Golf Course, a private campground and Spartan Speedway. There is also a small privately owned downtown pocket park located on the corner of Holt Road and Cedar Street. Altogether, Delhi Township's recreation areas total 893 acres.

PARK FACILITIES WITHIN DELHI TOWNSHIP

	Burchfield	Valhalla	Jaycee	Kiwanis	Deadman's Hill
Boating	X				
Concessions	X				
Fishing	X	X			
Fitness Trail		X			
Ice-Skating	X				
Trails/Trail Head	X	X			
Pavilions	X	X		X	X
Playground	X	X	X	X	X
Swimming	X	X			
Cross-country Skiing	X				
Tennis Courts				X	
Toboggan Run	X				

Public Infrastructure Boundary (A.K.A. Urban Service Boundary)

This growth mechanism is designed to limit growth to areas of the Township where public infrastructure is available and planned. Expansion of public infrastructure, which is necessary to support any form of higher intensity land uses, is not planned past the Urban Service Boundary. Any development that is constructed on the agricultural side of the boundary will be responsible for installing wells and septic fields, which are compatible with the Ingham County standards. Based on the future land use plan outlined in this Plan, the Public Infrastructure Boundary will roughly run along Harper Road in the southern portion of the Township.

Recreation Master Plan

The current Delhi Township Recreation Master Plan serves two purposes. First, it ensures that recreational demands for parklands, facilities and programs are met within the Township as it continues to grow. Second, the plan allows the Township to obtain grant funding from the State of

Michigan. Because it is itself a planning document, the Township Planning Commission should take it into account when reviewing residential development proposals.

The function of a Recreation Master Plan is similar to that of a Master Plan. It summarizes previous recreation plans and objectives and gives background information on the entire Township. It includes a complete explanation of the structure of the Delhi Parks and Recreation Commission as well as its budget and responsibilities. It offers an outline of the process used to create the Recreation Master Plan, which explains its necessity and justifies the plan as a public document. The five-year plan section of the Recreation Master Plan includes an outline of estimated project costs and revenue sources. The Recreation Priorities List is included in the appendix of this document.

Public Safety

Police Protection

Police protection is provided in Delhi through a contract with the Ingham County Sheriff. The Township has opted for this arrangement because it provides Delhi with more police resources and support services than if the Township had its own police department. The Delhi Division of the Ingham County Sheriff Department is located in the building on Cedar Street that is owned by the Downtown Development Authority.

The police department in Delhi provides 24 hour 911 service to area residents. On average, the department is able to respond to emergency calls within the Township in three to four minutes.

Fire Protection

The Delhi Charter Township Fire Department has two locations in the Township. Fire Station 1 is in the Community Services Center and Fire Station 2 is located in Section 7 on the corner of Bishop and Gilbert Roads. The Fire Department also provides service to the adjacent Alaiedon Township. Delhi is connected with the 911 emergency response system. The average response time to fires within Delhi Township is between 5 and 7 minutes depending on location.

Emergency and Rescue Services

The Delhi Fire Department also provides the Township with three ambulances to meet the needs of Township citizens that are also linked to the 911 emergency system. The average response time for ambulance calls is between 3 and 5 minutes.

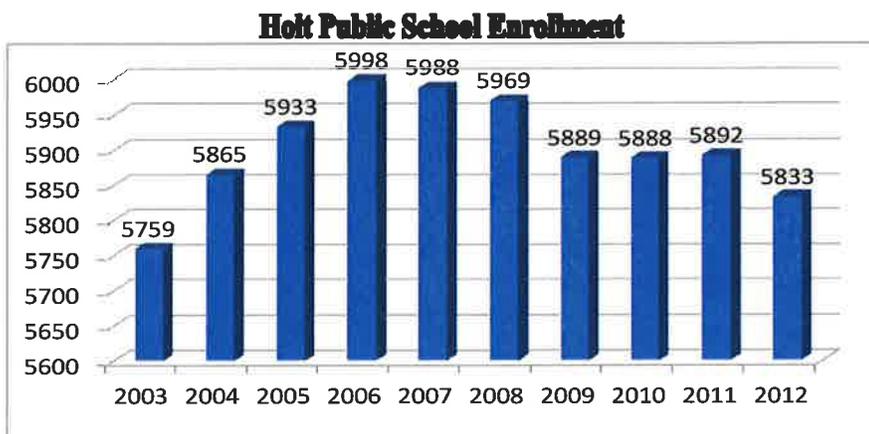
Educational Facilities

Public Schools

Delhi Township is served by four school districts: Holt, Mason, Lansing and Eaton Rapids. Holt Public Schools serve a majority of the Township's population as well as the Village of Dimondale. It covers the largest physical area of the Township and serves the areas with the highest population concentrations. The district is the only one with physical facilities in the Township. The Mason School District includes the southeast corner of the Township (Sections 25, 26, 33, 34, 35, 36 and the south half of Sections 27, 28 and 32. Lansing schools service a few parcels at the north end of the Township and the Eaton Rapids School District serves properties on the west side of the Grand River

in the Township's southwest corner. A map of school district boundaries is included as Map 8: School Districts.

The Holt Public School System is a major attraction for families who want to move into the Township. Holt schools participate in a number of innovative programs such as "year-round" schooling at Horizon Elementary School and Wednesday morning professional



development for teachers within the district. Because of these programs and others, Holt Public Schools have won a number of prestigious state and national awards. The school district is currently in the process of rolling out further innovations which will likely continue to make it one of the premier districts in the region and State. The desirability and achievement of the schools are extremely important relative to land use planning in Delhi Township and will continue to be a primary driver for residential development and existing neighborhoods.

Holt Public School System Buildings within Delhi Township

Facility	Street Address	Grades Served
Administrative Offices	5780 West Holt Road	N/A
Holt Transportation	2125 Delhi NE	N/A
Elliott Elementary School	4200 Bond Street	Grades K-4
Horizon Elementary School	5776 Holt Road	Grades K-4
Midway Elementary School	4552 Spahr	Grades K-4
Sycamore Elementary School	4429 Sycamore	Grades K-4
Wilcox Elementary School	1650 Laurelwood	Grades K-4
Dimondale Elementary School	330 Walnut (in Dimondale)	Grades K-4
Hope Middle School	2020 Park Lane	Grades 5-6
Washington Woods Middle School	2055 South Washington Rd.	Grades 5-6
Holt Junior High	1784 Aurelius Rd	Grades 7-8
Holt High School - 9 th Grade Campus	5780 West Holt Road	Grade 9
Holt Senior High School	5885 Holt Road	Grades 10-12

Private Schools

Delhi Charter Township has three private schools operating within its boundaries. The St. Matthew Lutheran School, located at 2418 N. Aurelius Road, provides a Lutheran-based education for approximately 125 students in pre-kindergarten through the 12th grade. Also, the Capital City Baptist School is located within the Township at 5100 Willoughby Road. This school currently educates 213

students from pre-kindergarten through grade 12. Lansing Christian School (pre-K to 12) is located at 3405 Belle Chase Drive is the largest of the three with a capacity of 650 students. The opportunity for land use transition is also an important consideration.

Adult and Community Education

Through the Holt Public School System, Delhi Township offers adult education, which to work toward high school completion and GED certificates. In addition, the district provides a variety of opportunities and services through the umbrella of community education. The community education program offers courses which include fitness, enrichment, craft skills and financial investment courses to all ages of residents living in Delhi--from infants to seniors.

Vocational Schools

Delhi residents are located within the district served by the Capital Area Career Center (CACC). This building is located at 611 Hagadorn Road in Mason, Michigan. Delhi students who utilize the CACC can learn the skills needed to work in 16 different fields. Among other programs, students who utilize the CACC can prepare for careers in auto body/auto mechanics, business, construction trades, drafting, health occupations, laboratory science, medical office occupations, hospitality (hotel/restaurant) services, cosmetology, marketing, and welding.

Post-Secondary Education

The table below, titled Post-Secondary Institutions near Delhi Township, lists schools, which are primary recipients of Delhi students. Each of these post-secondary institutions is located within a reasonable commuting distance from Delhi Township. In addition to those listed, both Central Michigan University, Ferris State University and Western Michigan University offer courses through learning centers in Lansing.

Post-Secondary Institutions Near Delhi Township

INSTITUTION	LOCATION
Central Michigan University (satellite campus)	2900 W Rd #301, East Lansing
Cornerstone University	6452 Millennium Drive, Lansing
Davenport University	220 E. Kalamazoo Street, Lansing
DeVos Graduate School	2628 Lake Lansing Rd, Lansing
Great Lakes Christian College	6211 W Willow Hwy, Lansing
Lansing Community College	500 N. Washington Square, Lansing
Michigan State University	East Lansing
Northwood University	500 W. Ionia Street, Lansing
Spring Arbor University	4202 Collins Rd, Lansing
Thomas M. Cooley Law School	300 S Capitol Ave, Lansing
Western Michigan University (satellite campus)	210 W Shiawassee St, Lansing
Ferris State University (satellite campus)	@ LCC

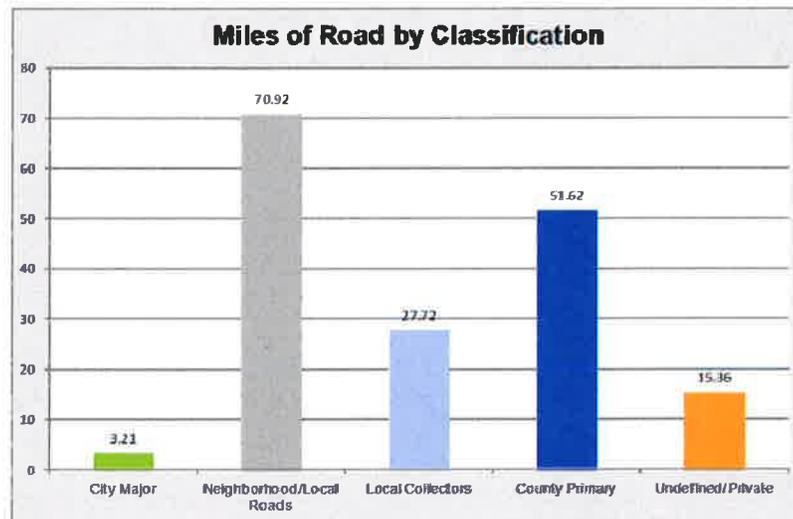
Transportation and Road Systems

Road System

Delhi Township is accessible from two major freeways: I-96 and U.S.127. I-96 connects with Detroit to the southeast and Grand Rapids to the northwest. U.S.127 runs south to Jackson and I-94 and north to U.S 27. Both freeways provide access to I-69 as well. In addition, Eaton Rapids Road (M-99) is a State Highway. This provides a solid transportation link with the metro-Lansing area and beyond for residents and local businesses. The road system is shown on the Delhi Township Road Classifications and Subdivisions map, location map, which is Map 9.

The Ingham County Road Department is responsible for the road system in Delhi Township, except for the freeway system and M-99. These highways are under the jurisdiction of the Michigan Department of Transportation. The County plans for, and provides maintenance and improvements to, roads and bridges, handles traffic issues such as intersection development, the installation and maintenance of traffic signs and signals, and oversees all matters relating to the development of new roads.

County roads are classified as either "primary" roads that are designed to carry traffic cross-county or between major traffic generators, or "local" roads, which carry traffic from home to the primary roads. Subdivision streets are considered local roads. Delhi Township has further broken down the local road classification to define those roads that are "local collectors" and those that are "neighborhood" roads.



There are 51.62 miles of primary and 70.92 miles of neighborhood local roads and 27.72 miles of local collector roads, for a total of 150.26 miles of County roads in Delhi Township. Almost without exception, the roads in Delhi Township are hard surfaced.

The County receives funding from the Federal Highway Administration for road and bridge improvements and from the State of Michigan for maintenance and improvement of its road system. The County pays the total cost to maintain and improve the primary roads. Townships and/or residents pay 50 percent or more to resurface or reconstruct local roads by State statute.

Because resources are extremely limited, project funding is often reactionary, prioritized by the "squeaky wheel" system of addressing only the worst situations. This has been changing in the last few years. Specifically, the Township has identified those local roads which serve as collector streets and serve a larger segment of the population than a neighborhood street. These roads have been prioritized for improvement utilizing the 50/50 cost sharing program between the Township and the County. Neighborhood road improvements are done by special assessment, with the benefitting property owners paying. The problem, of course, is that without additional funding, there is little that

can or will be done in these areas and the funding that is available is not nearly enough even to address the local collector streets. This is a serious problem which warrants future planning consideration.

Regardless of the type of road, improvements are based on data kept by the County and Township utilizing the RoadSoft program. This software program, and the associated road condition rating tool data, are utilized across the State and have resulted in better decision making at most levels. A focus on the “right fix at the right time” has resulted and road agencies are now looking to do smaller preventative maintenance projects to prolong road life rather than always waiting until the road must be rebuilt entirely.

Public Transportation

Delhi Charter Township is included in the service-area of the Capital Area Transportation Authority (CATA). CATA provides a means for Township residents to travel both within the Township and into neighboring communities. Ridership is constantly monitored by CATA to determine optimal routing and service times.

Health Care Facilities

Delhi residents are primarily served by hospitals in Lansing. Specifically, hospital services can be obtained at Sparrow Hospital, and Ingham Regional Medical Center. The Ingham County Human Services facility also provides public health services. In addition, Delhi residents are also served by many local physicians, clinics and dentist offices located either within the Township or in surrounding communities.

Community Facilities

The Community Facility Area Breakdown table provides a statistical report of the area covered by community facilities in Delhi. Currently, community facilities as a whole cover approximately seven percent of the total land area in Delhi Township. Terms used in the table—are defined as follows. Undeveloped Township-owned land is vacant property owned by the Township that is not being used for any particular purpose at this time, but may be utilized in the future. Developed Township-owned land includes the new Community Services Center, the Delhi Charter Township Wastewater Treatment Plant, the Downtown Development Authority, Fire Station 2, cemeteries and the Delhi Township Maintenance Facility. Township-owned parks are all parkland located within Delhi Township, which is under the operational authority of Delhi Parks and Recreation Department. Ingham County Community Facilities include Grand River Park and the Ingham County Road Department Metro Garage. Private utilities are any property in Delhi Township owned by a utility company, which is used or has been purchased for future use, but excluding easements.

Community Facility Area Breakdown (as of 2012)

CATEGORY	ACRES
Undeveloped Township-Owned Land	240
Developed Township-Owned Land	261
Township-Owned Parks(developed)	113
Ingham County Community Facilities	367
Holt School District Properties	355
Private Utilities	75

Conclusion

Based on the assessment and summaries of community facilities provided in the preceding pages, one can see that Delhi has a number of services to offer residents. The Community Services Center provides a central location for the Township's administrative offices and Fire Department as well as offering a large public meeting room and a library location. A Senior Citizen Center, Downtown Development Authority and Delhi Division of the Ingham County Sheriff's Department are housed in nearby buildings. Private utility service is well established throughout the Township. Delhi Parks and Recreation does an excellent job maintaining parkland and offering a variety of facilities within the Township and Ingham County adds two more. The Holt school system is considered to be among the best, not only in Michigan, but in the United States. Delhi's transportation network includes access to major highways, an extensive County road system and the metro-Lansing bus system. Delhi Township is indeed responding to the needs of its growing population.

ENVIRONMENT

Introduction

When making plans for future land use within the community, it is imperative that the natural environment and features of the area be factored into the equation. Nature has a plan of her own, which must be observed and respected in order for planning efforts to be successful. Natural resources are limited and preservation decisions are an integral part of long-range planning. Natural conditions such as prime farmland, eskers, wetlands and floodplains guide land use decisions because they are uniquely suited to agriculture, excavation, natural habitats and flooding respectively. Natural conditions can also pose engineering challenges to development such as the extension of utilities, location of a septic system or development of a new road. The costs to overcome these challenges also serve as a type of guide for development decisions.

The two most significant categories of natural features affecting land use and long-range planning are soils and water. Both of these two elements are observed in detail in the following sections. Initially, brief comments are offered on the area's topography, climate, vegetation and environmentally sensitive areas.

Topography

Overall, the topography of the Township can be described as "very flat" making it suitable for farming as well as development of all types.

Climate

The climate in Ingham County, and therefore Delhi Charter Township, is cool and humid. The average winter temperature is approximately twenty-five (25) degrees Fahrenheit. Inversely, the average summer temperature is close to sixty-nine (69) degrees. The average seasonal snowfall in Ingham County is about forty (40) inches. The average amount of precipitation is nearly thirty (30) inches.

Vegetation

At one time, Ingham County was covered by deciduous forest land. In Delhi Township, trees such as Sugar Maples, Hickory and Oak are found in areas that contain well drained soils like the Marlette soil type. Soft Maple, Elms and Ash trees dominate the landscape in the more poorly drained, lowland soils of the Township.

Environmentally Sensitive Areas

Environmentally sensitive areas are those areas that have been deemed significant environmental lands. They contain or support some element of the environment that is important to plants, or wildlife. These areas include wetlands, water areas, forested lands, connected wildlife corridors, potential conservation areas or simply open space.

Certain areas within the Township have been given this identification of environmental significant. Map 10, Environmentally Sensitive Areas, and the Township Wetland Inventory Map which is a part of the Wetland Ordinance, indicates these areas within the Township. On the map, there are areas indicated as open space or potential conservation areas. These areas, depending on the characteristics, may possess an element that has environmental importance and should be protected.

Environmentally sensitive areas are recognized via the site plan review process authorized by the Delhi Township Zoning Ordinance which includes an environmental checklist that all developments must submit before the site plan is approved.

Soils

Introduction

Good soils are essential not only the agricultural production of a community, but also the growth and development. The lack of good soils can determine areas of growth and the density of growth. Agricultural lands survive on nutrient life sustaining soils. These areas should be identified and preserved for agricultural uses. Crops cannot be supported in all soils, so those areas that can be used should be protected.

Development also takes decent soils to support infrastructure and building structures. It is important to build structures on soils that will support the weight. If inadequate soils are utilized buildings could settle unevenly or water seepage could damage the foundations. So even though the prime farming soils should be preserved, development also needs to take place on soils that will support it.

Wetland and Floodplains also have distinct soils that are only suitable for that of wetlands and floodplains. Typically, these soil types cannot support crops and are too loose to support development. These soils should be left undeveloped because of the role they provide in natural processes such as storm water management and purification, in addition to the high cost to redevelop these soils for urban land use.

For all of these reasons, soils are an important factor in land-use planning. By considering the soil, land use planning decisions can be made to best protect the area's limited natural resources and the public's limited financial resources as well. Policy implications for the Township are significant when considering the Future Land Use Map, future sewer extensions and the location of sanitary

waste facilities. On an individual basis, new residential sites should be carefully selected for suitable underlying soil as well.

Soils Map

Soil formation and patterns are unique to geographic areas. In Ingham County and indeed throughout the State of Michigan, the parent material of all of the soils was deposited by glaciers or melt water from glaciers that covered the County 10,000 to 12,000 years ago. Although all from the same source, the material itself varies greatly. As a result, it is possible to find many different soil types within a very small area. This is not true for other areas of the country where soil types stay constant throughout a square mile section. The frequent change in soil types limits the effectiveness of mapping efforts. It also necessitates on-site investigation for specific soil information. However, it is still possible to look at predominant soil types in an area in order to draw general conclusions.

The soils map located at the end of this section, Map 11, Soils Map, was created by Steve Law in the St. Johns' office of the Natural Resources Conservation Service (NRCS) with input from Bob Hicks in the Mason office. Soil types have been grouped into six different categories from the Soil Survey of Ingham County, Michigan. The descriptions of the different soil types and their limitations were based on writings found within this same source which was created by the USDA Soil Conservation Service. A complete list of soil types included in each category is included in the Appendix. A description of the different categories follows;

The Eskers: An esker is a geologic term used to describe a narrow, winding ridge of stratified gravelly and sandy drift deposited in the past by a stream flowing beneath a glacier. The sand and gravel deposits are commercially desired for construction purposes. Excavation of the esker removes the ridge and often continues below ground level leaving a pit or pond with standing water. Eskers are extremely porous allowing water through at a rapid rate and providing very little filtering. This makes them extremely susceptible to environmental contamination. Delhi Township has a relatively high concentration of eskers including the Mason Esker that runs from the City of Mason, through Holt along Cedar Street and north through Lansing. Other than their geologic origins, eskers are similar to other mineral soils in their physical properties.

Mineral Soils: These soils have good potential for cropland, pasture, woodland and recreational uses with some slight modifications. They have severe limitations as building sites due to wetness and low strength. The water table is shallow on a seasonal basis that causes lots of shrinking and swelling and frost activity causes it to heave. Wetness also causes severe limitations to on-site sanitary facilities.

Muck Soils: These soils have major limitations due to excess water, flooding, poor drainage outlets and unstable soil material. They have limited use as recreation areas, croplands, woodlands and pasture. Some areas have good potential for truck and specialty crops. They have good potential for wetlands and wildlife habitat. Building site development and sanitary facilities are not practical on this soil. The limitations caused by the high water table (which rises to within 6" of the surface in the winter and spring) and flooding are difficult to overcome.

Floodplain Soils: Floodplain soils are found along streams and rivers and have been subject to flooding throughout time. Their potential is fair for cropland and recreational uses when excess water and flooding can be managed or tolerated. The potential is good for pasture when adjustments can be made to avoid compaction of the soil and is good for woodland. Building site development and sanitary facilities are not practical on this soil. The limitations caused by the high water table and flooding are difficult to overcome. Please note that floodplain soils are created by natural forces over

the course of a million years. They are not necessarily the same as floodplain boundaries calculated through the Federal Emergency Management Act (FEMA) in the establishment of a 100-year floodplain (see floodplain details in the Water section).

Severely Limited Soils: As the title indicates, this category of soils has limitations for most uses due to excess water. There is good potential for cropland, pasture and woodlands and fair potential for recreational uses. Wetness also limits the use of this soil for building sites and basements are specifically discouraged. Because of the high water table there are severe limitations for on-site septic service which are described in the Ingham County Soil Survey as "difficult to overcome."

Sandy Soils with Slight to Moderate Limitations: This category has a low water capacity and fairly good permeability. It has fair potential as cropland and recreational uses and good potential for pasture and woodland. A limitation to all four of these uses is drought and a sandy surface layer. The soils in this category are considered suitable for building sites and on-site septic service except in areas with a steep slope. The soil's permeability does raise a concern that septic tank absorption fields can easily cause groundwater contamination.

Observations

Although there are several limitations to presenting soils information in this type of simplified format, general observations can be made. Out of six general categories, only one is described as suitable for building sites and on-site septic service. In fact, information in the Ingham County Soil Survey suggests that 84% of Ingham County Soils are unsuitable for on-site septic systems. If only 16% of the land is suitable for building and septic systems, several development issues are raised. Sewer service is desirable for all areas of concentrated development. Individual building sites should be very carefully selected for both the structure itself and the septic system if sewer service is not available. Design modifications should be made when necessary to overcome physical site limitations. Also, the Township should work closely with the County Health Department when on-site septic permits are required.

Eskers, as noted above, are very porous and sensitive to environmental contamination. The Mason Eskers run generally parallel to Cedar Street and through the district boundary for the D.D.A. an area planned for higher intensity residential, commercial and industrial development. This apparent conflict can be best mitigated through careful application of development regulations designed to prevent contamination through the soil into the groundwater.

As expected, floodplain soils are found adjacent to the Sycamore Creek in the northeast corner of the Township and along the Grand River in the southwest corner. They are also found scattered along several of the County drains including the Cook & Thorburn in Section 24 and the Grovenburg in the northeast corner of Section 29. Floodplain soils are not all found in the federally designated 100-year floodplains suggesting that flooding can be a problem for locations outside of the floodplain. In fact, five of the six soil categories listed restrictions due to wetness and/or a high water table. This again brings out issues of development limitations and the need for careful environmental protection measures.

Important Farmlands

The U.S. Department of Agriculture Natural Resources Conservation Service looks at soils from the perspective of its suitability for agricultural purposes. It groups soils together for identification of Prime Farmland, Unique Farmland and Additional Farmland of Local Importance. Prime Farmland is

defined in part as "...land that has the best combination of physical and chemical characteristics for producing food..." Unique Farmland is "...land other than Prime Farmland that is used for the production of specific high value food and fiber crops..." The category of Additional Farmland is defined as "...nearly prime..." In Delhi Township, there is no area mapped as Unique Farmland. The area around downtown Holt, the mobile home park in Section 28, several areas along Cedar Street and some along I-96 are mapped as urban growth areas. Other than water, floodplain or areas of gravel excavation, the rest of the Township is considered either Prime or Additional Farmland. This does not suggest the need to preserve any one limited or unique location for agriculture although it does indicate that most areas outside of the urban core of the Township could be successfully farmed.

Conclusion

Delhi contains a wide range of soil types, which are scattered in small areas throughout the Township. Due to mapping limitations, it remains extremely important that on-site soil analysis be done in all instances to obtain accurate information. Soil characteristics affect the site whether it is vacant, or used for agriculture, residential, commercial or industrial purposes. It affects the site's interaction with water including drainage (or lack of) and its ability to act as a natural filtering system. It affects a site's suitability for or limitations to development. A great majority of the soils in Delhi Township contain limitations to development, which should be carefully considered during a site-selection process for any use. It also affects a site's productivity in agriculture. Most rural areas of the Township contain soils suitable for agriculture although there is no area designated as "unique farmland."

Water

Introduction

Water is one of the most significant natural features to consider when planning for the physical development of a community. Water works its way through a repetitious cycle of renewal falling as rain or snow, being absorbed into the earth's physical body and then evaporating back into the air. It appears in different areas of the community with a variety of environmental and regulatory significance in each instance. Watershed areas are identified for areas sharing a common drain. Aquifers serve as an underground source of fresh water for a specific Region. Wetlands are areas where water and land meet which offer a combination of environmental and aesthetic benefits to an area. Flood plains are areas adjacent to open water bodies, which are prone to flooding. For each of these areas, there are statutes or guidelines and departments or organizations in place to protect water as a natural resource in its natural condition. This chapter explores these four separate instances where water can be incorporated into land use planning in terms of both its role in the environment and its local significance in relation to Regional, State and Federal regulatory issues.

Watersheds

A watershed is a physical area of land which is drained by a common source a river or river system. Because water naturally flows downhill, watershed boundaries are drawn by connecting the points of highest elevation around a body of water. All of the land found within the "raised" boundary drains to the body of water at the low point of the watershed.

There are two major watersheds in Delhi Township. The Grand River Watershed is located over the western half of Delhi. The other major watershed, Sycamore Creek, directly abuts the Grand River Watershed. The Sycamore Creek Watershed covers the eastern half of Delhi Charter Township.

Because watersheds are formed by physical boundaries, political boundaries have no significance when defining a watershed. Watersheds contain all or parts of many different political jurisdictions. Organizations such as the United States Department of Agricultural (USDA), the Natural Resources Conservation Service and Agricultural Extension Agencies actively sponsor the formation of watershed associations to address issues of water quality because contamination in one area will quickly affect the larger area. Delhi Township is part of the Sycamore Creek Watershed Hydrologic Unit Area. This group actively provides technical and educational assistance to the farm and non-farm community to improve water quality by reducing groundwater pollution due to run off.

The Ingham County Drain Commissioner is also involved in watershed management to protect the quality of surface water runoff. Delhi Charter Township is presently cooperating with the Ingham County Drain Commissioner in preparing a watershed management plan for the protection and development of these lands.

Groundwater

The earth has an overall water supply which remains fairly constant through the centuries and which is recycled repeatedly through a natural filtering system. Less than one percent is usable fresh water, an extremely valuable natural resource. Of all fresh water, 97% is located underground and is known as groundwater.

Water repeatedly travels through a cycle of air, land and water. Water falls to the earth in the form of rain or snow. Some of it goes directly into surface water bodies, some is absorbed by plants and some sinks down into the soil. Water that filters through the soil eventually gets to an aquifer. The top of the aquifer is called the water table and is at the same level as nearby lakes and streams. The aquifer itself, lying just below the water table, is a layer of porous sand or rock in which all of the empty spaces are filled by water. Aquifers hold water like reservoirs and allow it to move from place to place. Water moves slowly in a given direction, quite unlike the underground river it was once imagined to be. To complete the cycle, groundwater returns to the surface either naturally via lakes or springs or it may be pumped to the surface through a man-made well.

Aquifers are our main source of clean freshwater including drinking water. The water is clean because the sand or rock making up the aquifer layer provides an additional filtering system. As a result, both individual and municipal wells take water from the aquifer for household and regional water supplies. A detailed chemical analysis of the quality of the water supply is available through the 1992 Tri-County Regional Water Feasibility Study. In the Tri-County Region, groundwater is the source for over 90% of water used.

Care must be taken above the ground in order to assure a plentiful, clean water supply. Contamination from any one source can enter the aquifer and affect all of the water within it. Also, the rate at which water is removed from the aquifer by wells needs to be balanced with the rate at which the aquifer is replenished so that the water level (and therefore the water supply) remains constant. In the Tri-County Region, the Groundwater Management Board promotes all of these methods of good stewardship.

Delhi Township is one of twelve dues paying members of the Groundwater Management Board (G.M.B.) which was created in 1983 as an ongoing forum for groundwater protection issues. The main focus of the G.M.B. is on education, especially for local officials. By making direct presentations to Boards, Councils and Commissions, staff of the G.M.B. helps to assure that new local officials are well informed on issues related to drinking water resources. In addition to

presentations, the G.M.B. has developed a Groundwater Resource Center as a result of a grant from the Kellogg Foundation, created the mid-Michigan Water Authority, developed a Regional Computer Aquifer Model, and has helped G.M.B. communities to delineate wellhead protection areas for their municipal water wells. By working together, G.M.B. communities have saved time and money while creating strong protection programs, which are unique within the State of Michigan.

To pursue groundwater protection at the Township level, Delhi can pursue several different planning initiatives. Delhi Township has already developed site plan amendments within the zoning ordinance regarding wellheads. This site plan review ensures the protection of these areas from development. A workbook has been developed by the G.M.B. with a "fill in the blank" approach to help with the development of management plans. Classes are offered periodically and staff from the G.M.B. is available to provide assistance. Some Wellhead Protection Areas cross municipal lines into the City of Lansing and Alameda Township, suggesting that protection efforts should be coordinated where possible. Also, Delhi Township can work cooperatively with the Board of Water & Light so that areas already selected for future municipal wells are taken into consideration when making land use decisions. A third initiative available to Delhi Township is to work cooperatively with the Ingham County Health Department to make sure that individual wells are properly abandoned when municipal water becomes available. Because wells provide a direct passage to the aquifer for surface contaminants, abandoned wells that are not properly plugged are a threat to groundwater resources.

The threat of groundwater contamination is a real one for Delhi Township. At this time there are areas of pollution within Delhi Township on record at both the State and County levels. The Environmental Response Division of the Department of Environmental Quality (DEQ) regulates sites defined as "contaminated" by State Statute (Part 201 of P.A. 451 of 1994). Known as "201 Sites", the State currently reports four within Delhi Township including the Gunn Road Landfill. The Underground Storage Tank Division of the DEQ is responsible for keeping track of Leaking Underground Storage Tanks (LUST sites) which are not included as 201 sites. The LUST site list is done by the City, rather than Township, and includes eleven located in Holt. At the County level as part of the Well Permit Program, the Ingham County Health Department keeps track of sites where contamination is known or likely to exist in order to prevent new wells from being located on or near the site. Although some listings may also be considered 201 or LUST site listings, the Health Department lists fifteen sites within Delhi Township and sixty-four throughout the County. Remembering that groundwater contamination does not stop at municipal lines, it is clear that great care must be taken through sound planning practices to assure that Township residents continue to enjoy a plentiful, quality water supply.

Wetlands

Wetlands are those areas where land and water meet. They are areas commonly called swamps, bogs or marshes but can also be low-lying forest or meadowland where water is not visible above the land surface. Wetland areas are identified by the presence of water and by plant species and soil conditions. Typical wetland vegetation includes trees such as cottonwood, red and silver maples and northern white cedar; shrubs such as alder and cranberry and plants like cattails and bulrushes. Wetland soils tend to be dark or dull and moist to the touch and often have a high organic content. There are approximately 5 million acres of wetlands in Michigan, 75% of which is forest area.

Wetlands are an important part of our ecosystem. They provide rich habitat areas for fish and wildlife, sedimentation control, water purification and flood control. They also provide scenic natural environments for recreation and tourism enhancement.

Wetland maps are available from multiple sources. However, Delhi Township has also created a Wetland Inventory Map as a part of the adoption of the Wetland Ordinance. Maps are also available through the U.S. Dept. of Interior and the MDNR. The Department of Interior offers the National Wetland Inventory Maps, which are created by interpretation of aerial photographs for the purpose of identifying wetlands. The MDNR offers the Michigan Resource Information System (MIRIS) which is a digitized computer mapping of land cover types. It has several categories, which pertain to wetlands, but is not specifically intended to locate wetlands. No map alone can be used to delineate wetland areas definitively, but can be a good starting point. Supplementary data from the Ingham County Soil Survey and site specific aerial photos can be used as additional indicators. To obtain specific wetland delineation, an on-site investigation must be performed by a qualified professional.

Wetlands are regulated by state statute (Part 303 of P.A. 451 of 1994) and Delhi Township's Wetland Protection Ordinance which are administered by the MDEQ and the Department of Community Development respectively. Activities, which disturb a wetland such as dredging, filling, draining or development on a wetland, are extremely limited and usually require a permit. Development is restricted within a wetland as a protective measure for environmental concerns and also because wetlands present several serious constraints to construction. Wetland soils are unstable which is costly to overcome from a construction standpoint. Even with specialized designs, cracked walls and foundations are common due to flooding and settling both in and around wetlands.

Flood Plains

Flood plains refer to those areas, which are adjacent to lakes, rivers, streams and ponds that are prone to overflow and flood their banks. Wetlands, and the preservation of wetland areas, play an important role in containing and preventing flooding. Land within the 100-year floodplain statistically has at least a 1 percent chance of flooding in any given year and therefore a 100 percent chance of flooding within a 100 year period. Flood plains differ greatly in size depending upon factors such as the permeability of the soil and the volume of water within the water body.

A floodplain contains three basic components. First, there is the channel, which is the area of normal stream flow. Second, there is the floodway, which is the 100-year flood plain. The third piece of a floodplain is the flood fringe, the land between the floodway and the outer limits of the areas, known to be subject to possible flooding.

According to the maps printed by the Federal Emergency Management Agency (FEMA), there are several regulated flood plains in Delhi Charter Township. The Flood Plain Maps have been incorporated into the Township's Geographic Information System (GIS). For mapping purposes, both FEMA and Delhi Charter Township combine the floodway and channel into a single classification. FEMA produced new Flood Insurance Rate Maps in 2011 which were subsequently adopted by the Township. There are some areas of the Township that have been significantly impacted by the additional floodplain area shown on these revised maps. This difference can also be seen using the GIS system by having both the "old" and the "new" floodplain layer turned on. A copy of this illustration is included as Map 12 in this document.

A flood plain has the natural significance of being an area likely to flood thereby endangering life and property. In 1968, the U.S. Congress passed the National Flood Insurance Act (NFIA) creating the National Flood Insurance Program (NFIP) and gave flood plains a regulatory significance as well. The NFIP shifted the financial burden of funding flood disaster from the government (and therefore the taxpayers as a whole) to those most likely to need the dollars through the establishment of self-funding insurance program. Flood insurance that had not been available before was made available

and was made a requirement of receiving a mortgage from any federally backed lender for structures located in the 100-year flood plain. The program is administered at the local and state levels and imposes strict limitations on any type of development activity within the 100-year flood plain. Communities "participate" by adopting local flood plain management ordinances and must be "participating" in order for residents to be eligible for the insurance. Delhi Township entered the program in July of 1981 and has incorporated flood plain regulations into the Township's Zoning Ordinance and building code.

There are several policy implications at the Township level as a result of the NFIA. Financial incentives are built in to encourage correct administration of the program. The State Department of Environmental Quality (DEQ) has the authority to issue permits for development activities within the regulated flood plain area but it is local administrators who assure that the permits are secured when required. An administrative oversight that allows construction in the flood plain will cost a resident property owner money through flood insurance premiums annually once discovered and will affect property value. Communities, which fail to comply with program requirements, may be suspended from the program eliminating local lending options for residents.

Communities are offered an additional financial incentive for doing more than the minimum required by the NFIP. The NFIP establishes a voluntary community rating system (CRS) scored from 1-10 with non-participating communities being given an automatic score of 10. In communities where a lower rating system is achieved, residents receive reduced insurance rates. Recognized activities within the CRS scoring schedule include public information, mapping, and flood damage reduction. Delhi Township may choose to participate in the CRS program at some time in the future.

Conclusion

Water is a significant natural feature and resource to be considered and protected through the comprehensive planning process. Watershed boundaries tie together a collection of municipalities who share the same drain. Special watershed organizations promote best management practices in order to prevent contamination to the river or river system. Groundwater, and specifically the regional aquifer, is the major source of the area's water supply. Delhi Township participates in the Groundwater Management Board in order to actively protect the area's groundwater resources. Wetlands exist throughout the Township and offer many natural benefits including water purification, flood management and unique habitats. Through coordination with the Michigan Department of Environmental Quality, Delhi Township can continue to protect this natural resource. Flood plains are areas prone to flooding as defined by a series of Federal maps. They exist adjacent to lakes, rivers and drains in the Township and need to be carefully protected both to prevent flood damage and to comply with federal and state regulation. Delhi Township has already taken several steps to protect the water quality and supply of the Region and may choose to increase its efforts through initiatives suggested throughout this chapter.

Solid Waste Management

Introduction

Issues related to solid waste management are regulated at the state level by Part 115 of Act 451 of 1995, amended 1999. The Act requires that each County develop a plan to address issues such as refuse (trash) disposal, identification of landfill disposal sites and recycling or resource recovery efforts.

Refuse Disposal

Within Delhi Township, all refuse disposal is done by private contractors on an individual subscription basis.

Recycling

Recycling within Delhi Township is available at a municipally owned recycling center located on Grovenburg Road south of McCue Road. Completed in early 2007, the recycling center is open to the public approximately 18 hours per day, seven days a week. Recycling of collected materials is via a public-private partnership with Granger. The recycling center is consistently monitored and staffed by Township employees to ensure that the facility is clean, well maintained and inviting for users. The recycling containers are serviced by Granger on an "as needed" basis.

Recycle Center Statistics					
	2008	2009	2010	2011	2012
Boxboard/Cardboard	250,130	498,480	737,120	688,960	627,580
Mixed Paper/Newsprint	444,240	917,720	672,760	655,520	696,440
Clear Glass	69,340	95,160	100,060	107,440	116,200
Brown Glass	12,780	19,800	30,040	31,020	39,820
Tin	40,360	59,460	53,300	60,560	56,400
Plastic	76,960	109,350	127,840	129,300	171,780
Total Pounds	1,054,150	1,396,070	1,721,120	1,672,800	1,708,220
Total Tons	527	698	861	836	854

Additionally, the recycling of yard waste is currently available to Delhi Township residents on a limited basis. In 1997, the Township recognized the need for brush chipping services. A chipper was purchased and a brush "drop off" program has been organized which allows residents to drop off brush at a designated location at different times during the year.

Other opportunities for waste collection have also been realized. The Township has partnered with other agencies to offer pharmaceutical, electronics and battery collection events. The Township has also hosted a "reuse rally" for the past several years which provides residents with the opportunity to get rid of items which they no longer need, but that others may want. The items are typically those that are difficult or expensive to dispose of such as couches, lawn furniture, appliances, mowers, etc. The event has been extremely popular.

Conclusion

There are several policy issues related to solid waste management within Delhi Township. The Township has taken many steps to help address these issues. However, efforts must continue and expand in order to provide options for addressing future conditions.

APPENDIX B: GLOSSARY OF TERMS UTILIZED IN THE PLANNING PROCESS

To assist the reader in utilizing this planning document, the following commonly applied planning terms have been generally defined.

Capital Improvements Program (CIP) - A locally adopted document, which prioritizes public investment for land, infrastructure, equipment, and buildings. This document is considered one of the three major implementing tools (along with the zoning ordinance and the subdivision regulations) of the Plan.

Master Plan (MP) - Also called the Plan, is a document composed of maps and text which describes the present and future residential, business, industrial, community facilities, circulation and physical characteristics of the Township. It sets forth policy guidelines and an agenda for future development and improvement of the community.

Development Objectives - Development objectives are long range statements of specific activities, which must be implemented in order to achieve corresponding policy statements.

Housing Density - A measure of the number of housing units within a specified geographic land area (typically based on acreage).

Goal Statement - Narrower and often specific. Goals are statements of intention, which are more specific than Visions. Goals too may encompass an entire program, a singular area, or multiple areas.

Gross Density - The ratio between a specified number of housing units and an acre of land inclusive of all other land uses including public and private streets. A modified gross density may include all other land uses except public and private streets and unbuildable land areas such as regulated wetlands or unsuitable soils or grades.

Net Density - The ratio between a specified number of housing units and an acre of land which is intended for residential purposes exclusive of public/common parks, public and private roads, and non-residential land uses.

Low Density Housing - An area of Delhi Township having parcels which contain between 15,000 square feet and 39,999 square feet of land area. Maximum density may vary from 1.0 units per acre to 2.9 units per acre, depending on the amount of land area required for public rights-of-way.

Medium Density Housing - An area of Delhi Township having parcels which contain between 10,000 and 14,999 square feet of land area. Maximum density may vary from 3.4 units per acre to 4.3 units per acre, depending on the amount of land area required for public rights-of-way.

High Density Housing - An area of Delhi Township having parcels which contain less than 10,000 square feet of land area. Maximum density may vary from 4.3 units per acre to 8.6 units per acre, depending on the amount of land area required for public rights-of-way and the type of housing units constructed.

Housing Units - A building or portion thereof, designed for occupancy by an individual or family for residential purposes and having kitchen and bathroom facilities.

Multiple Family Housing - A single building or series of buildings with abutting walls containing more than two residential dwelling units.

Neighborhood Design Character - Those features of an area which are unique to it or are particularly identifiable such as architecture, street layouts, landscaping, open space, housing style or other similar characteristics.

Planned Development (PD) - A type of development characterized by comprehensive planning for the project as a whole, clustering of structures, a mixture of housing types and sometimes a variety of non-residential uses as well which is permitted by the Michigan Zoning Enabling Act of 2006 (Act 110 of the Public Acts of 2006), as may be amended.

Platting - The partitioning or dividing of a parcel of land which is recorded, mapped and charted with the County Plat Board in preparation for development. Replatting is a process of changing the boundaries of a recorded plat.

Open Space Option – Designed as a special use overlay option to provide for an environmentally responsible choice for Delhi Township by encouraging creativity and flexibility of residential design, diversity of building types, open space arrangements and environmental preservation pursuant to Public Act 177 of 2001 (the “Open Space Preservation Act”).

State Equalized Valuation (SEV) - This is the value of real property (real estate) as determined by the state of Michigan for all land and development within the local jurisdictions and is the basis for local tax assessment of land value.

Street/Road - A public/private way or right of way used for the movement of people and goods that provides vehicular and pedestrian access to abutting properties.

Subdivision - The division of a parcel of land into five (5) or more lots for purpose of ownership transfer, building development, or dedication of a new street.

Urban Design - The visual and aesthetic appearance or image of the buildings, streets, light fixtures, open spaces and the general environment as perceived by persons living, working or passing through an area of the community. It includes the identity, distinction and personality given to physical features and geographic areas such as historic landmarks, architectural styling, natural foliage and similar aesthetic amenities.

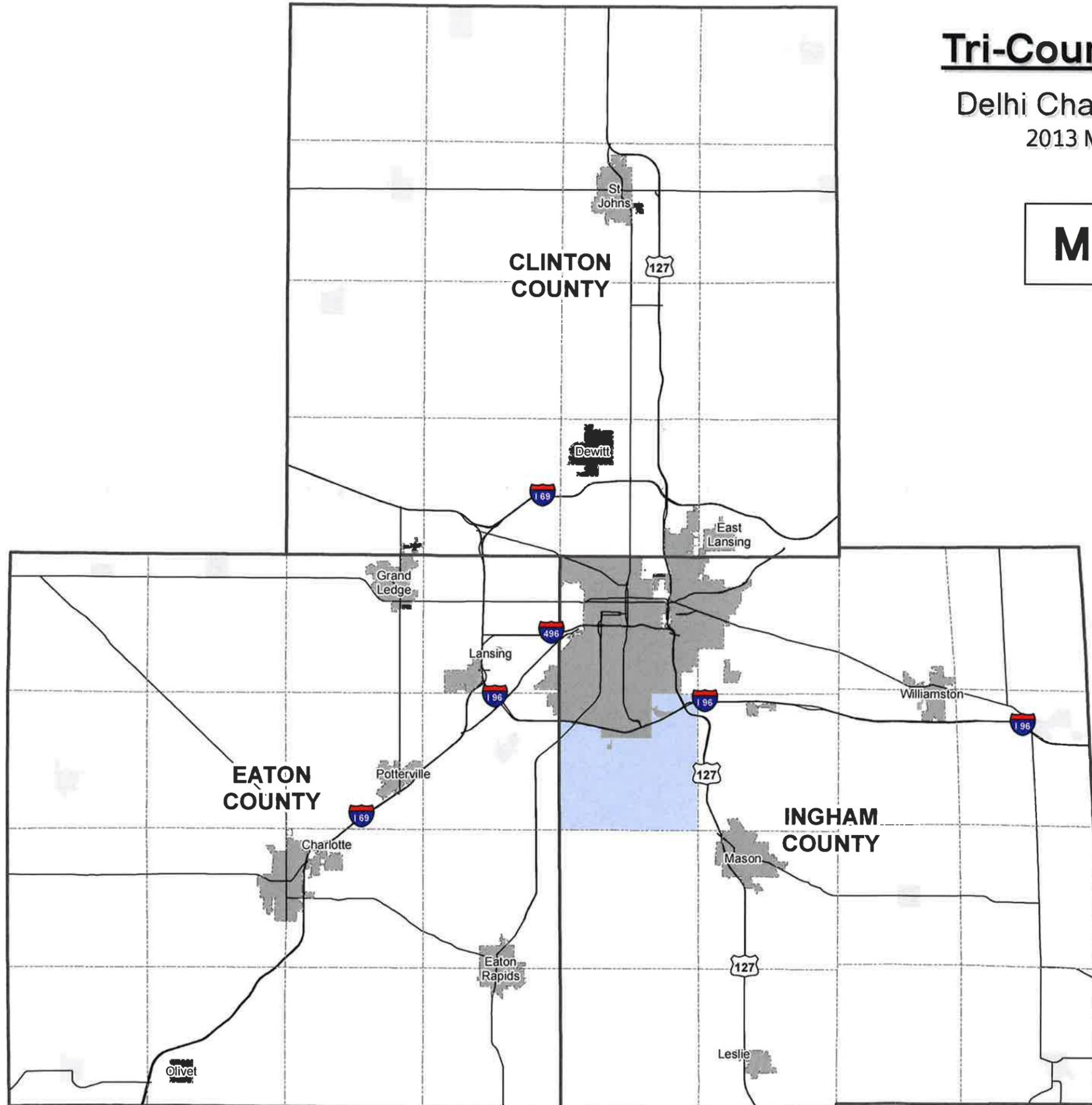
Vision Statement – Refers to the widest level, and are general statements that provide direction or intent to planning action. Visions are usually written in amorphous terms (i.e. encourage, promote, recognize, appreciate, etc.) and are rarely measurable.

Zoning - The division of the community into districts to regulate the use of land and structures create order for the physical development of land, and to minimize potential conflicts.

Tri-County Region

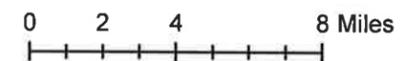
Delhi Charter Township
2013 Master Plan

Map 1



Legend

- Roads
- Cities
- Villages
- Townships
- Delhi Twp



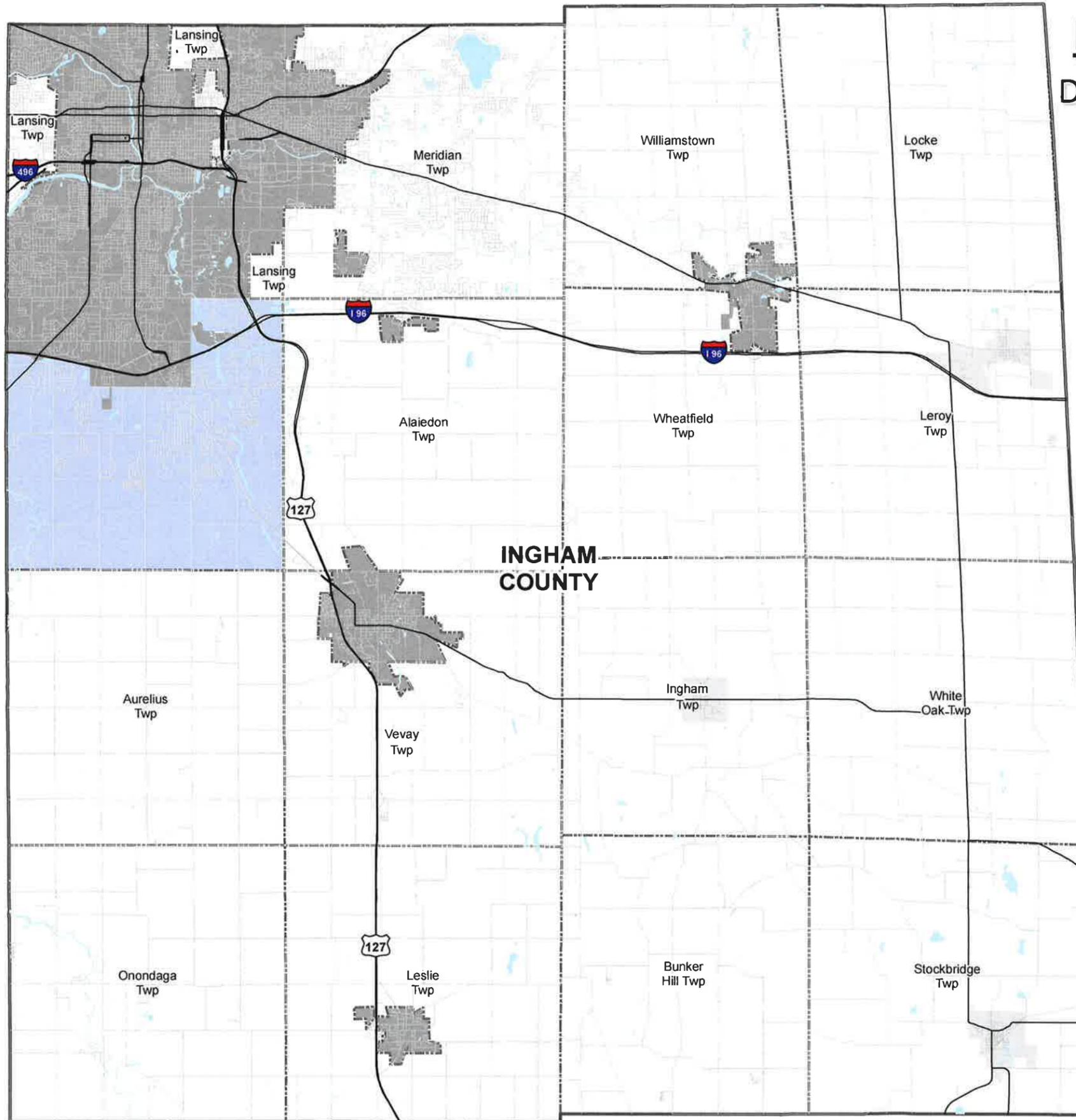
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Map Source: Delhi Charter Township
Map Printed: Tuesday, June 04, 2013

Ingham County

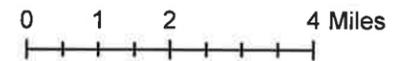
Delhi Charter Township 2013 Master Plan

Map 2



Legend

- Roads
- Water Bodies
- Townships
- Delhi Township



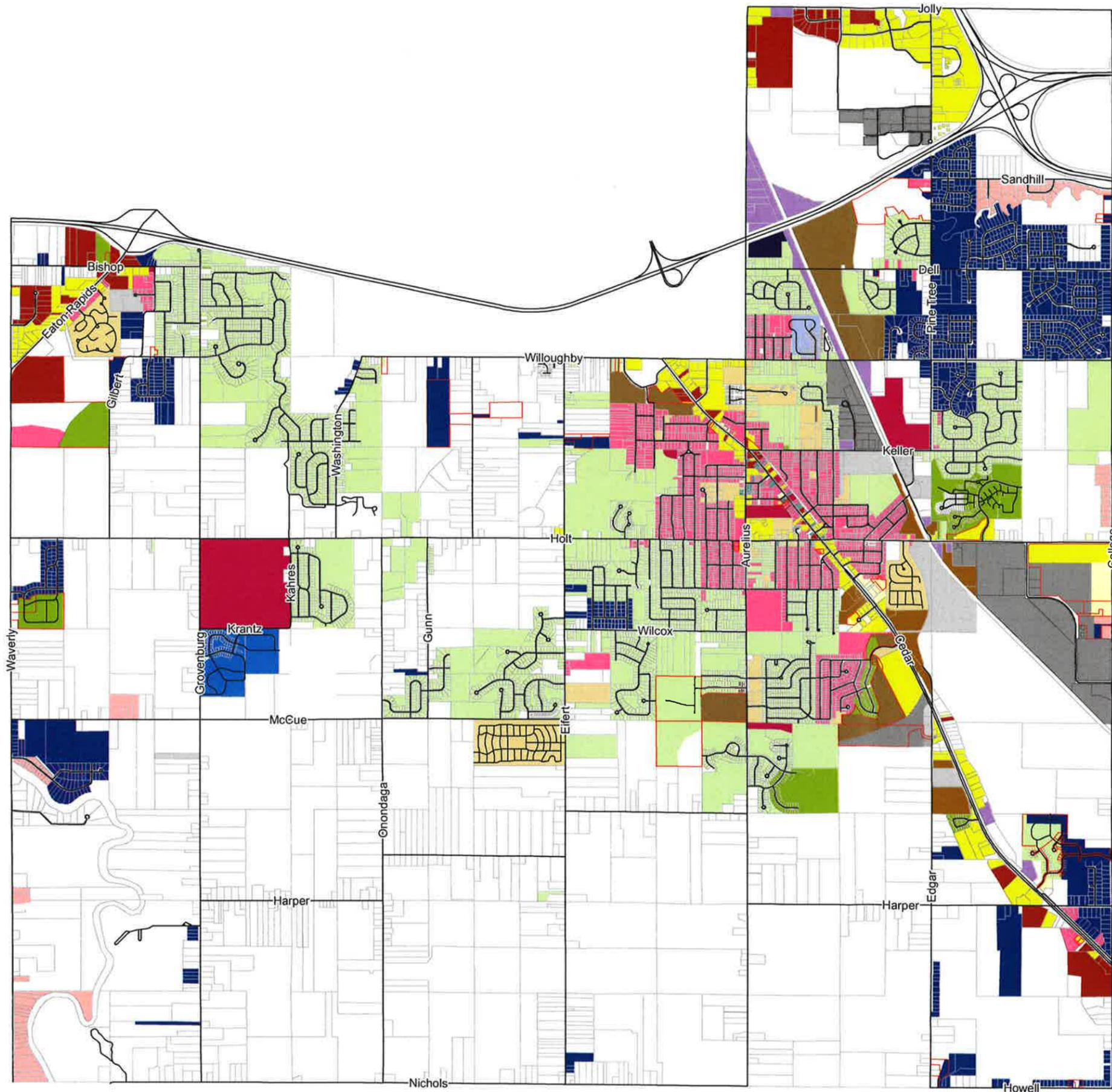
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Map Source: Delhi Charter Township
Map Printed: Tuesday, June 04, 2013

Zoning Map

Delhi Charter Township
2013 Master Plan

Map 3



Legend

Reference	PD
A-1	PD-2
C-1	R-1A
C-2	R-1B
C-3	R-1C
IA	R-1D
IM	R-1E
IP	RM
IR	RM-1
IW	TC
PP	

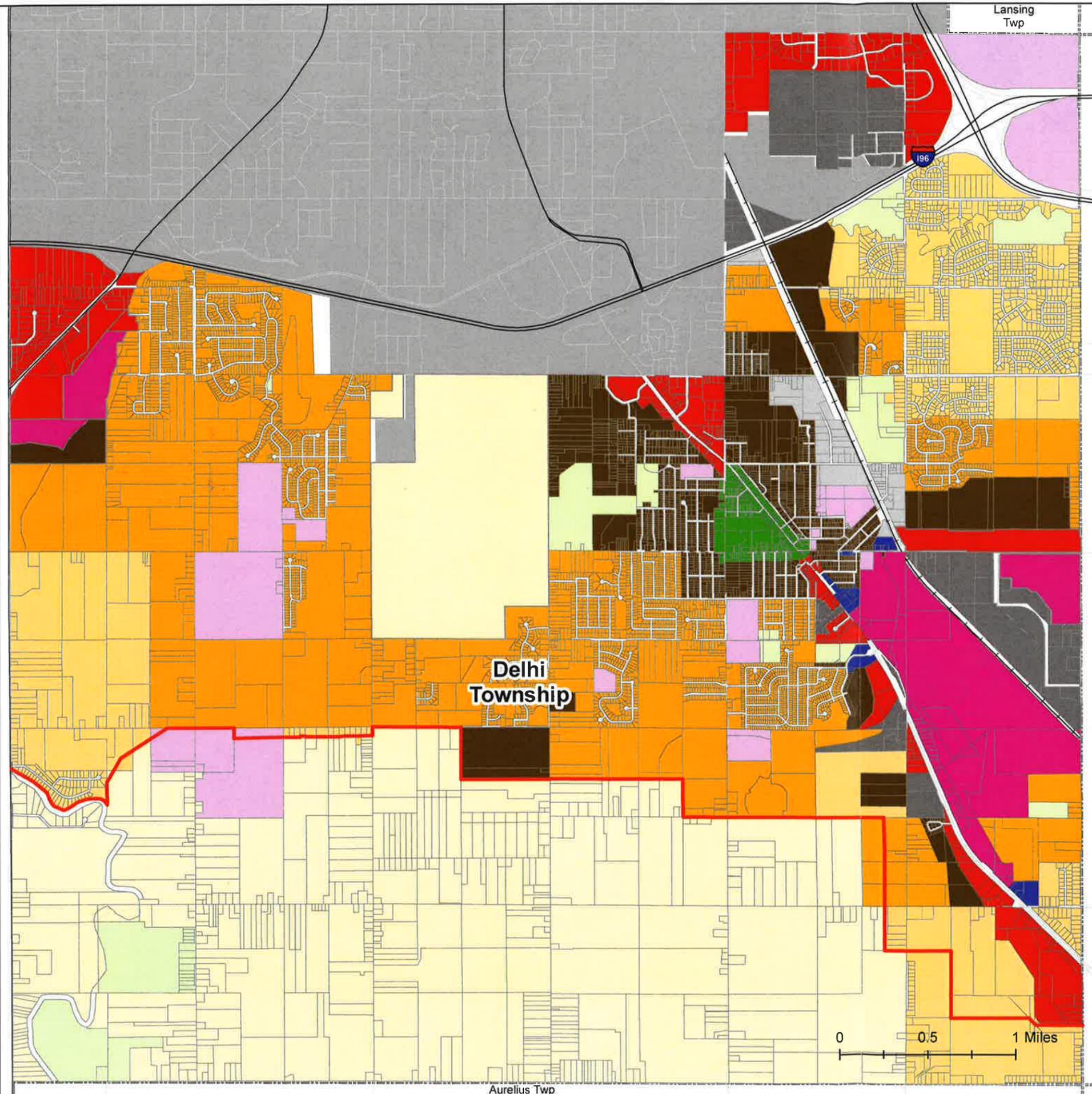


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Map Source: Delhi Charter Township
Map Printed: Tuesday, June 04, 2013



Future Land Use

Delhi Charter Township
2013 Master Plan

Map 4

-  Urban Service Boundary
-  Railroad
-  Roads
-  Commercial
-  Community Activity Center
-  Community Facility
-  High Density Residential
-  Industrial
-  Low Density Residential
-  Medium Density Residential
-  Office
-  Open Space
-  Planned Development
-  Rural Residential
-  Warehousing
-  City of Lansing

This Plan Approved by the Delhi Charter Township
Planning Commission on 10/28/13
Elizabeth Zietlow
Elizabeth Zietlow, Chairperson
Delhi Charter Township Planning Commission
Kenneth O'Hara
Kenneth O'Hara, Secretary
Delhi Charter Township Planning Commission



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Downtown Development Authority

Delhi Charter Township 2013 Master Plan

Map 5

Legend

-  Railroad
-  Roads
-  Water Bodies
-  DDA Boundary
-  City of Lansing

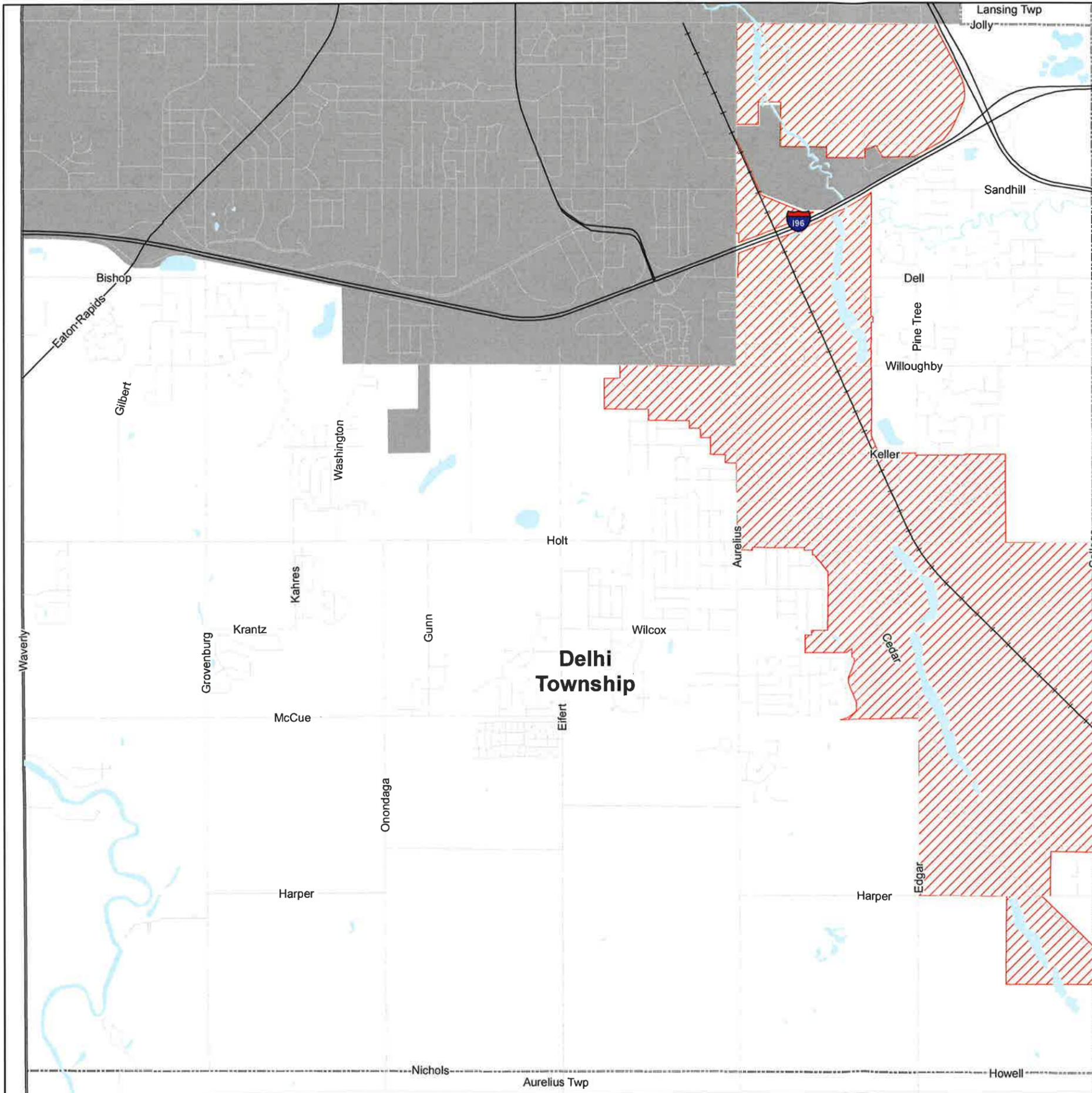


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Map Source: Delhi Charter Township
Map Printed: Tuesday, June 04, 2013



Community Facilities

Delhi Charter Township 2013 Master Plan

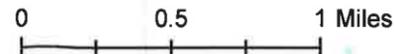
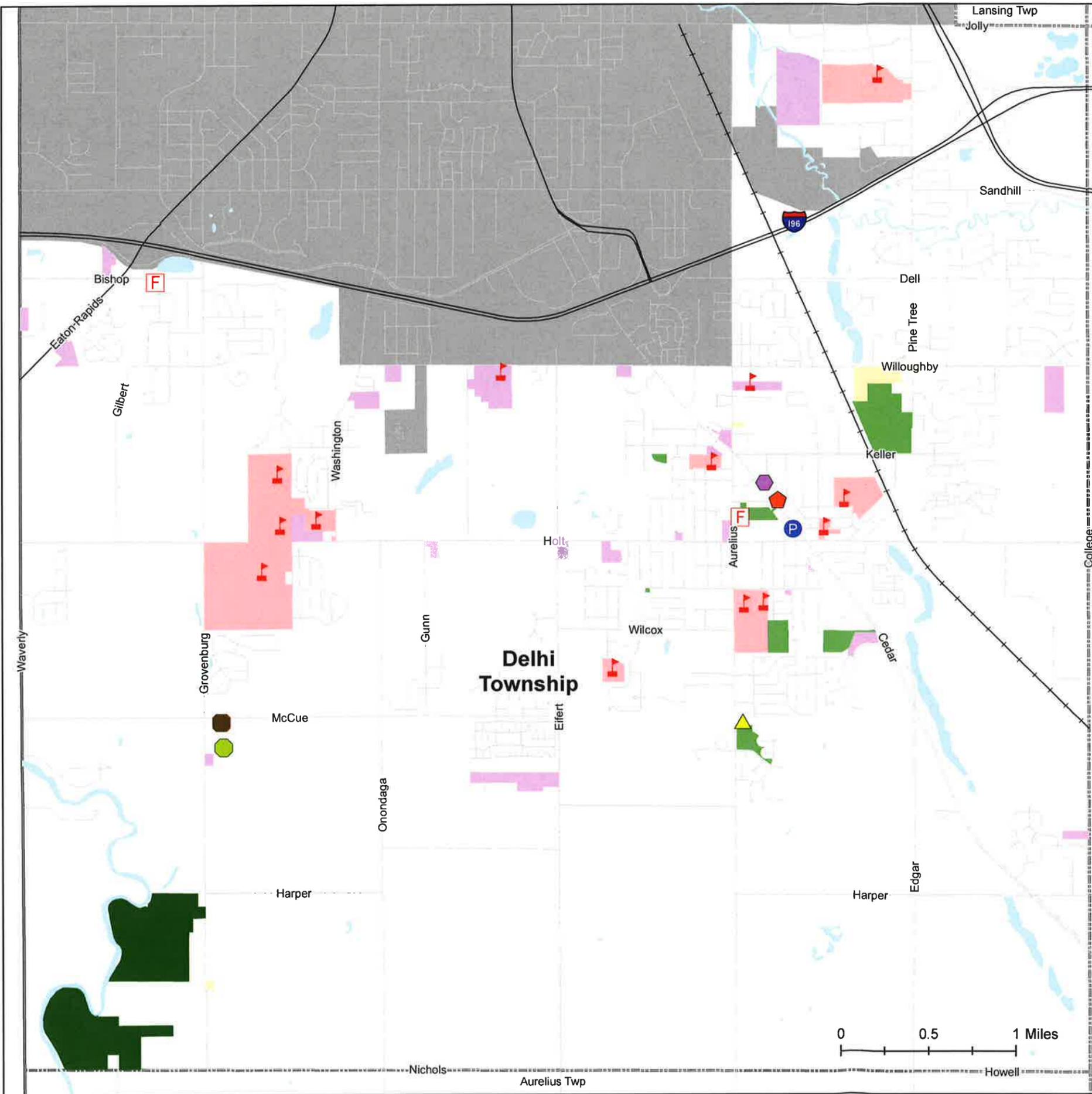
Map 6

-  Schools
-  Dept of Public Services
-  Farmer's Market
-  Fire Department
-  Recycling Center
-  Senior Center
-  Sherriff Dept/DDA Offices
-  Waste Treatment Water Plant
-  Railroad
-  Roads
-  County Parks
-  Religious Properties
-  School Property
-  Delhi Parks
-  Cemeteries
-  Water Bodies
-  City of Lansing



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Map Source: Delhi Charter Township
Map Printed: Tuesday, June 11, 2013



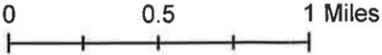
Water & Sewer Locations

Delhi Charter Township
2013 Master Plan

Map 7

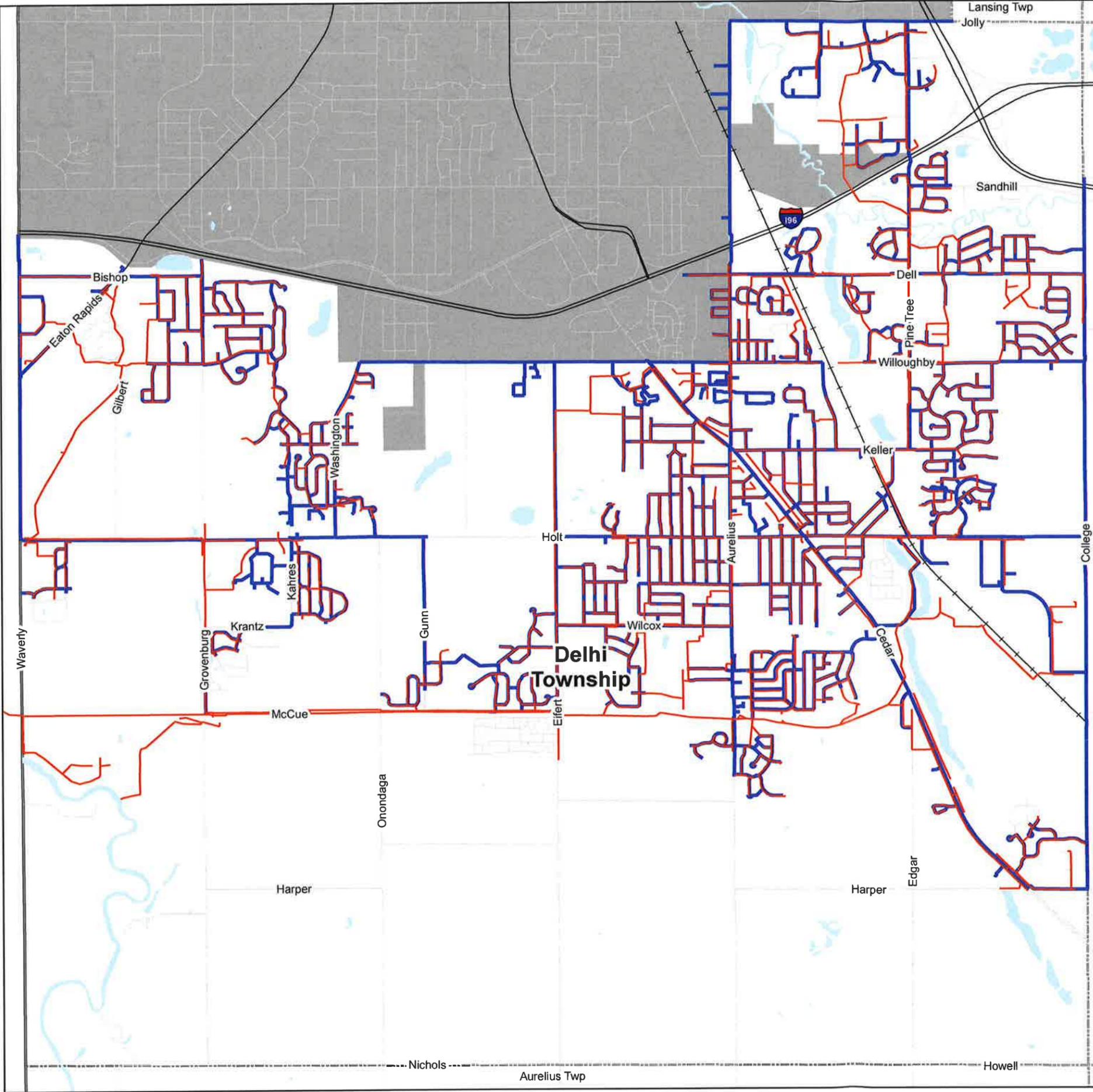
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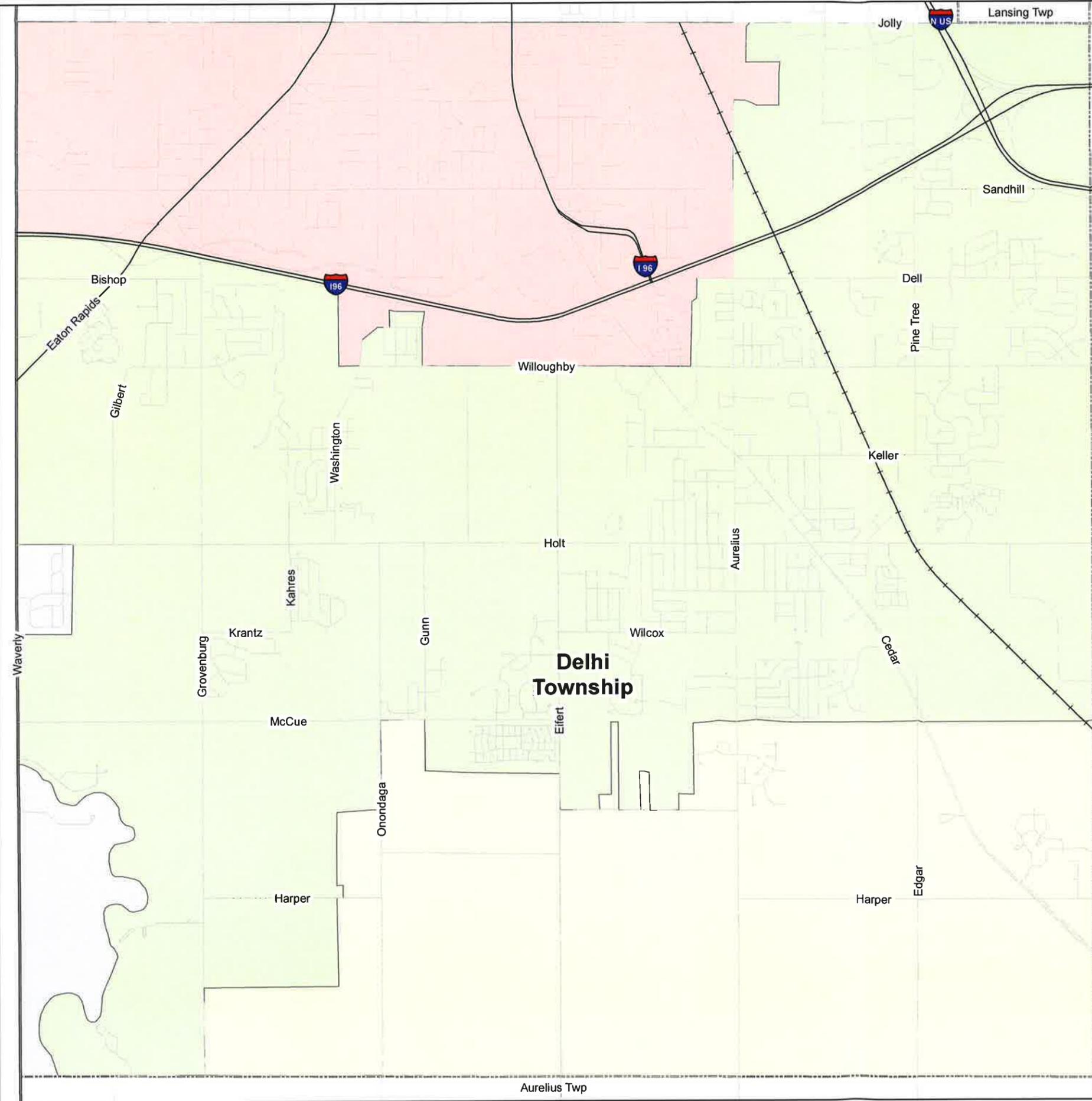
- Sewer
- Water
- Railroad
- Roads
- Water Bodies
- City of Lansing



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Map Printed: Tuesday, June 04, 2013





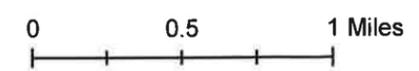
School Districts

Delhi Charter Township
2013 Master Plan

Map 8

Legend

- Railroad
- Roads
- Eaton Rapids Schools
- Holt Schools
- Lansing Schools
- Mason Schools (Ingham)



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Map Source: Delhi Charter Township
Map Printed: Tuesday, June 04, 2013

Road Classifications

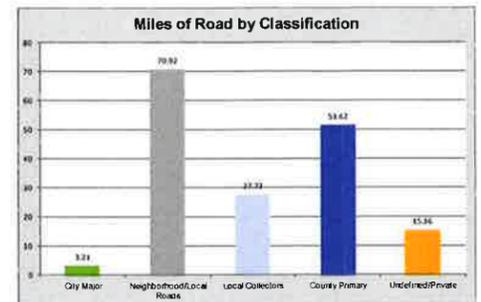
Delhi Charter Township
2013 Master Plan

Map 9

Legend

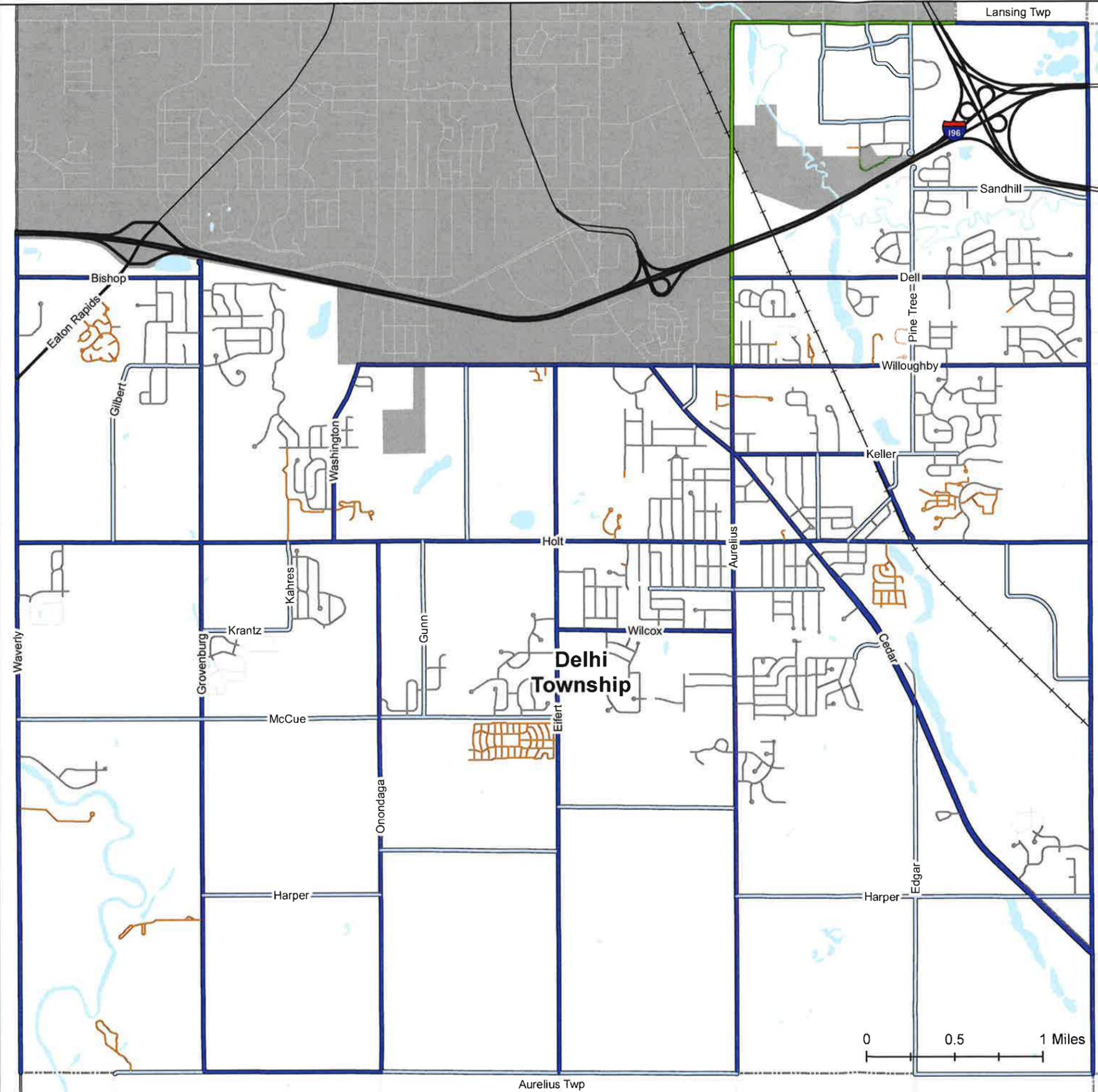
Delhi Road Types

-  State Trunkline
-  City Minor
-  City Major
-  County Local (Minor)
-  County Local (Major)
-  County Primary
-  Undefined/Private
-  Railroad
-  Water Bodies



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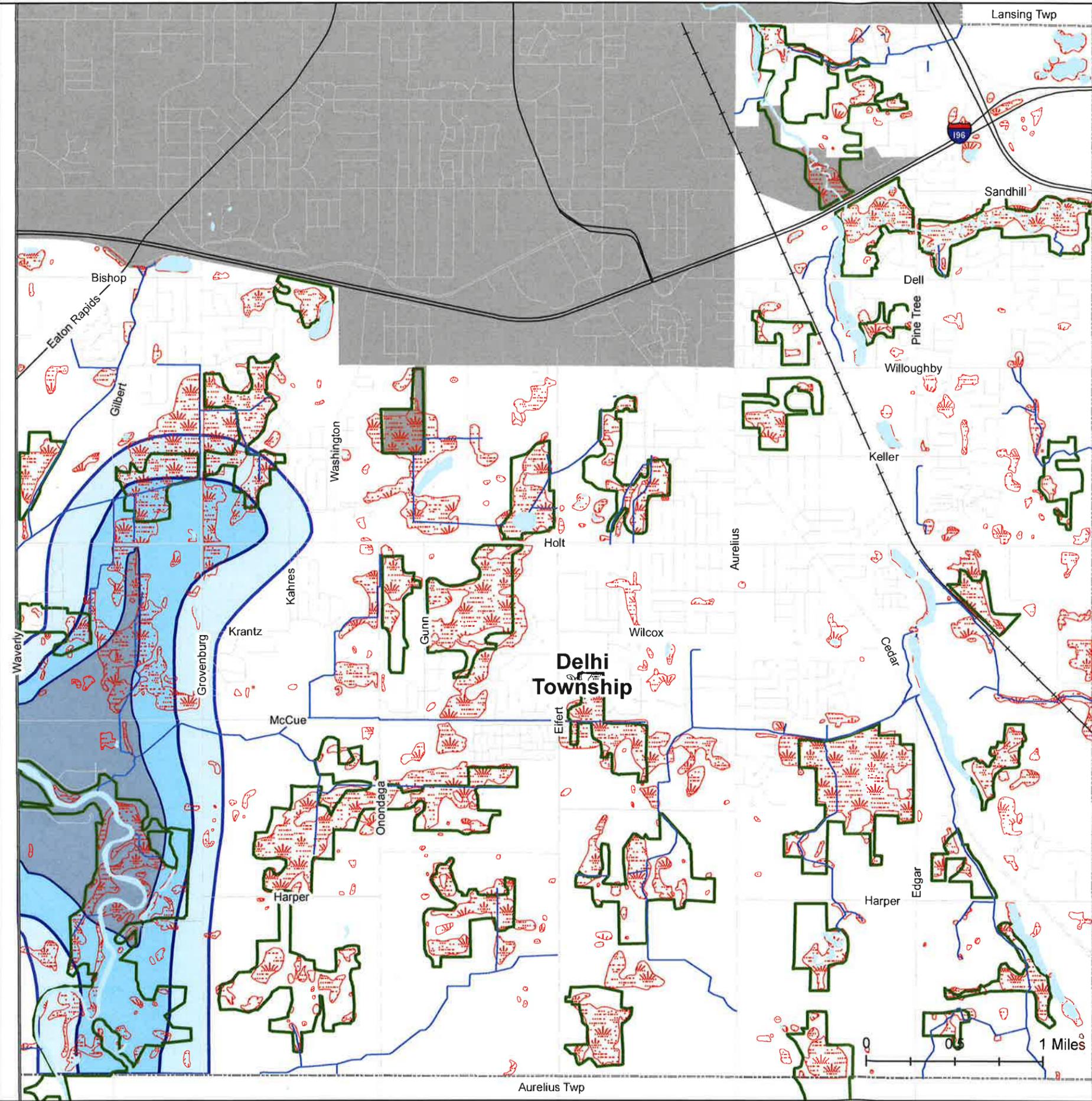
Map Source: Delhi Charter Township
Map Printed: Tuesday, June 11, 2013



Potential Wetlands & Environmentally Sensitive Areas

Delhi Charter Township
2013 Master Plan

Map 10



Legend

- Drains
- Railroad
- Roads
- Wetlands (State Reg)**
- Wetlands (State Reg)
- Water Bodies
- Potential Conservation Areas
- City of Lansing
- Groundwater Recharge Areas**
- Rate/Year In Inches**
- 7.5-10
- 10-12.5
- >12.5



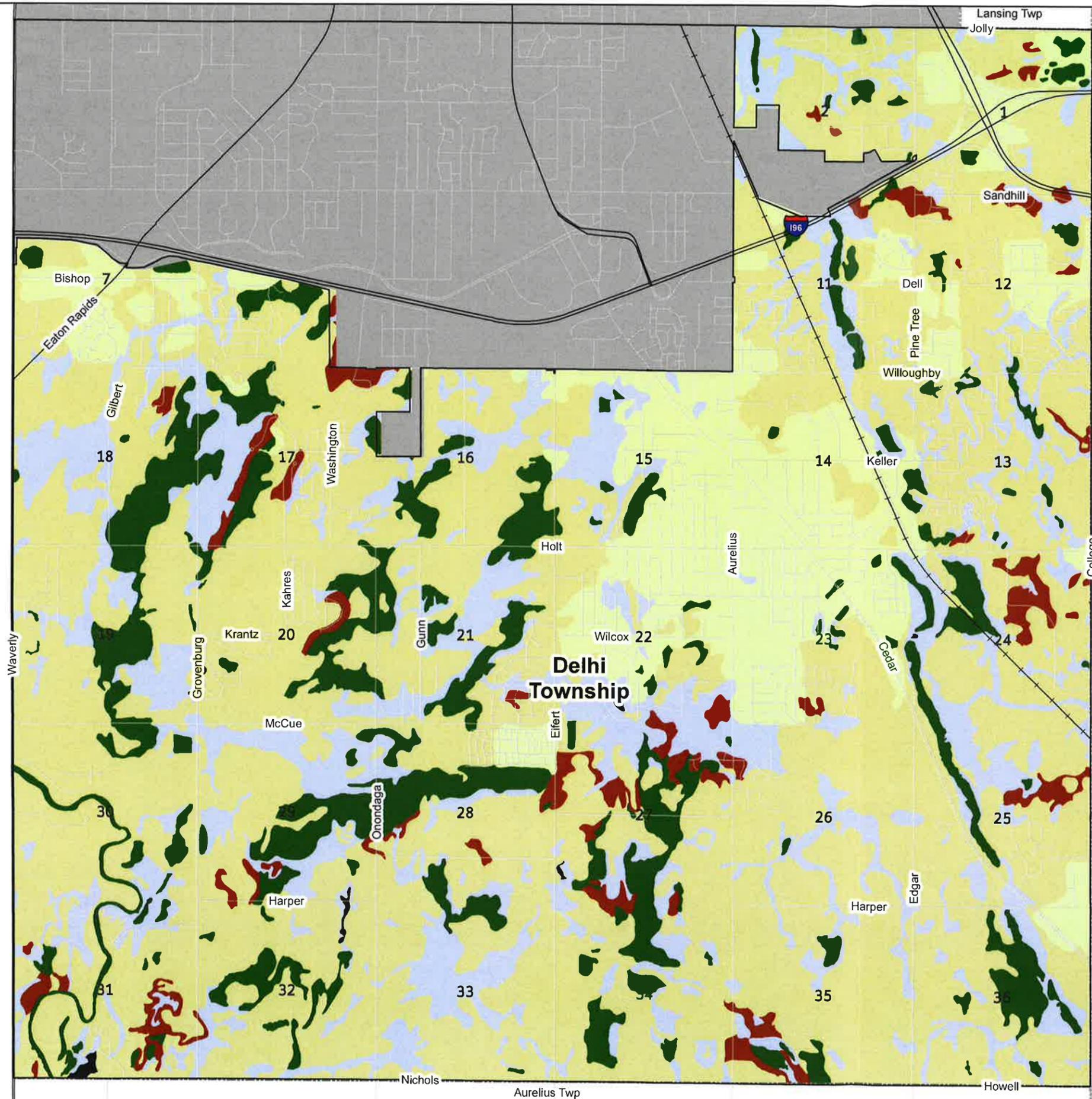
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Map Source: Delhi Charter Township
Map Printed: Wednesday, June 05, 2013

Soils

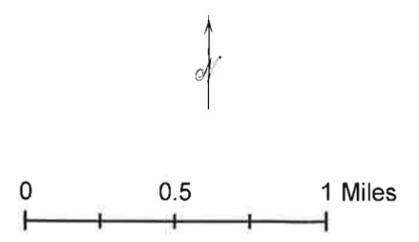
Delhi Charter Township 2013 Master Plan

Map 11



Legend

- Railroad
- Roads
- Cities
- Muck Soils
- Floodplain Soils
- Sandy - Sandy/Loam
- Mineral Soils
- Severe- Limited Soils
- Eskers - Urban Complex



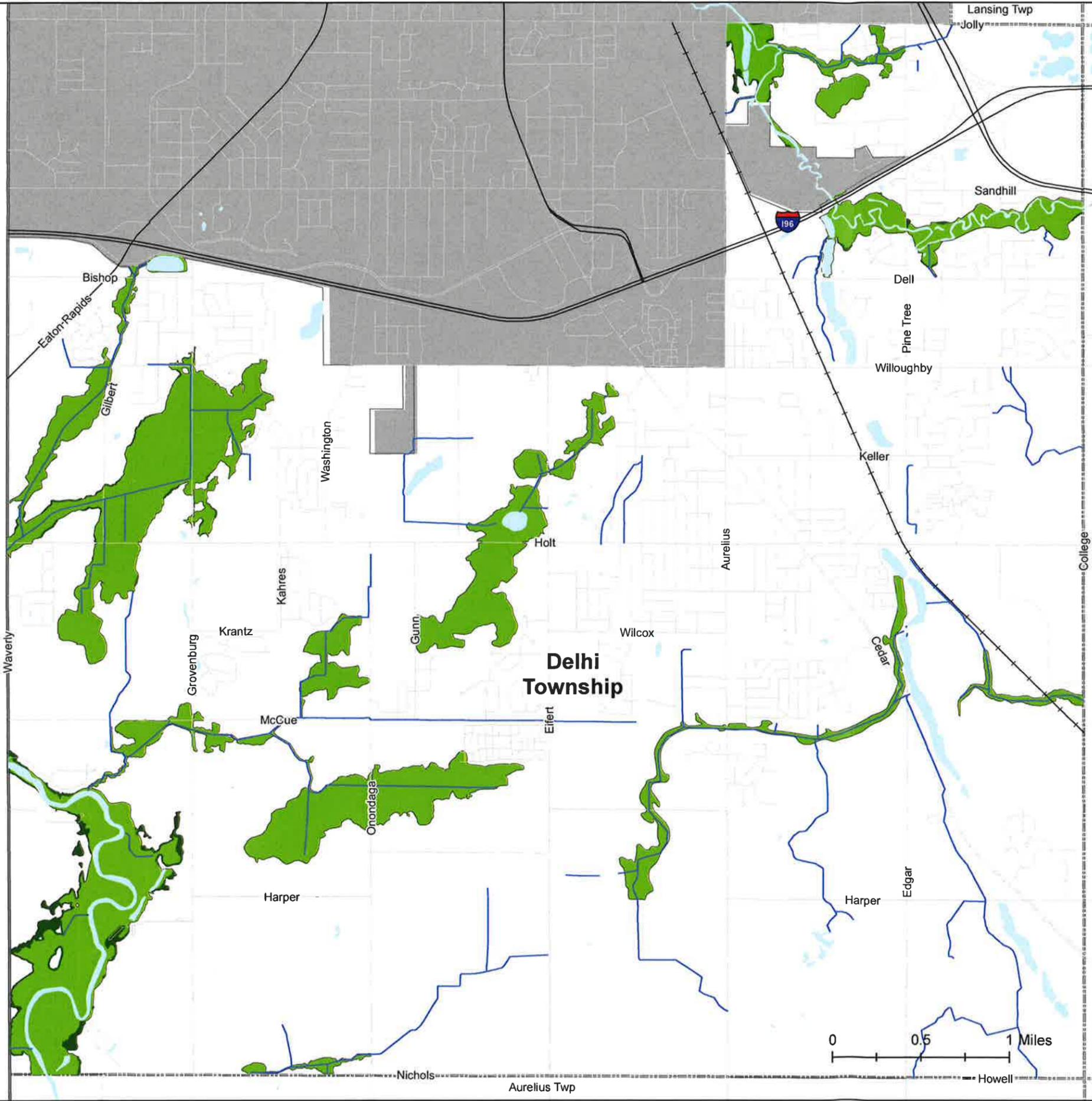
This map is intended for use as generalized township wide planning and there are no warranties that accompany this product. The Township recommends users of this map to confirm the data used in this map by visual inspection of the geographic area. The township is not liable for decisions made with the use of this product.

Map Source: Delhi Charter Township
Map Printed: Tuesday, June 11, 2013

Floodplain

Delhi Charter Township
2013 Master Plan

Map 12



- Drains
- Railroad
- Roads
- Water Bodies
- 500 Year Floodplain
- 100 Year Floodplain
- Minimal Flooding
- City of Lansing

* Floodplains are 2011 FEMA Floodplain data



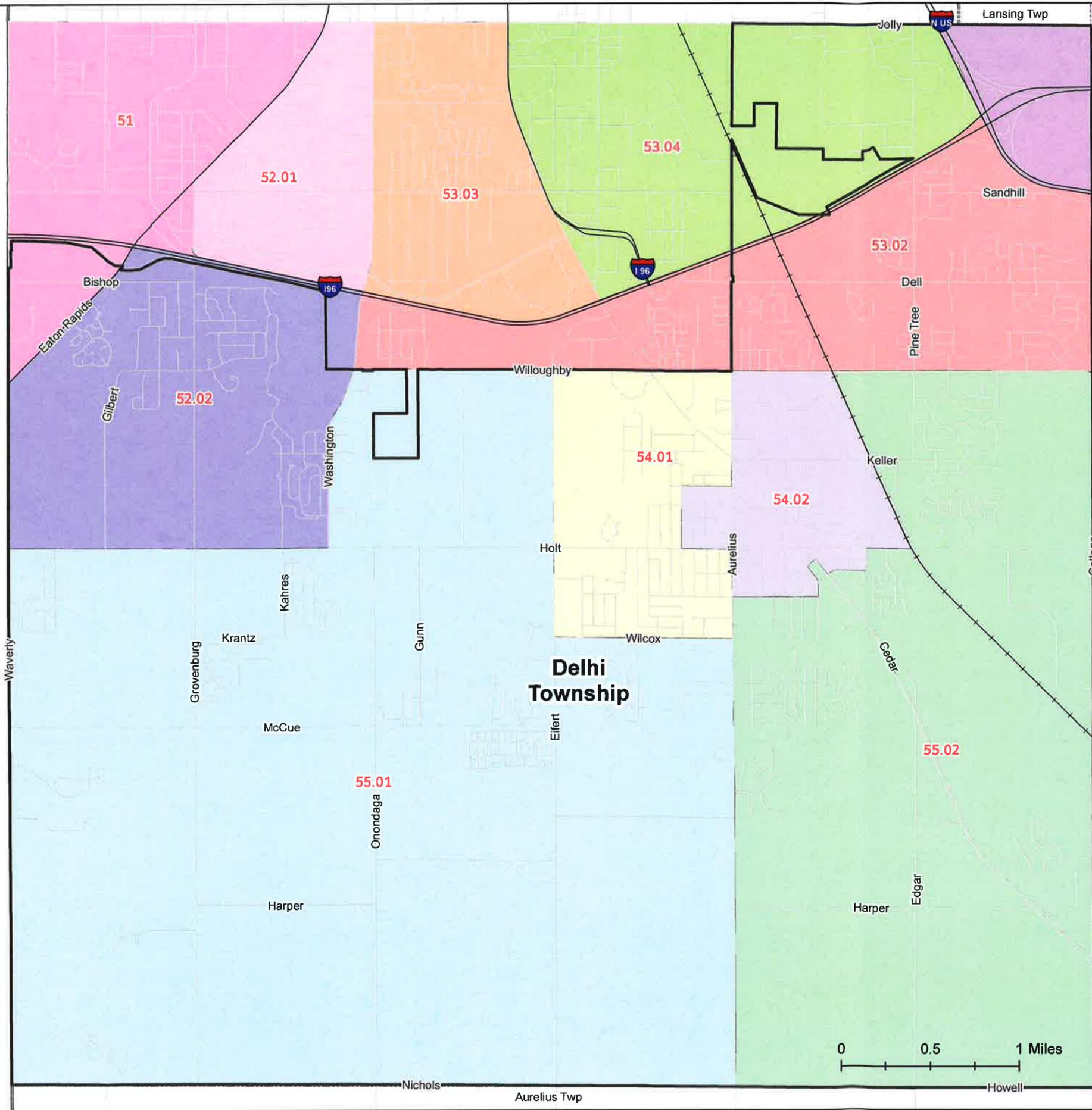
0 0.5 1 Miles

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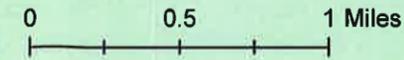
2010 Census Tracts

Delhi Charter Township
2013 Master Plan

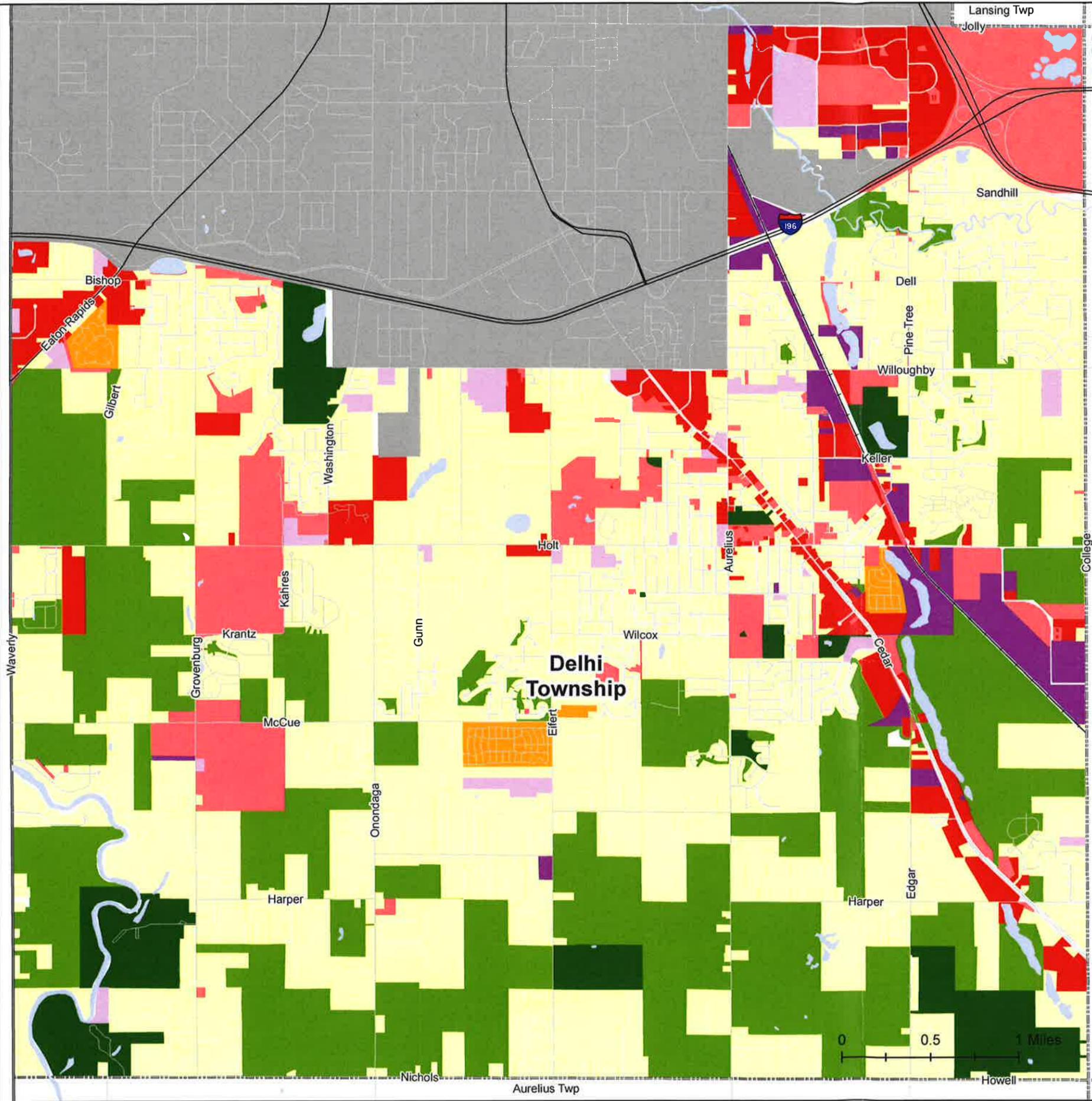
Map 13



Railroad
 Roads
 Delhi Border
2010 Census Tracts
 51
 52.01
 52.02
 53.02
 53.03
 53.04
 54.01
 54.02
 55.01
 55.02
 9800



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Existing Land Use

Delhi Charter Township
2013 Master Plan

Map 14

- Roads
- Water Bodies
- City of Lansing
- Railroad
- Commercial
- Institutional/Tax Exempt
- Industrial
- Residential
- Mobile Home Parks
- Recreational/Parks
- Ag/Open Space
- Religious Centers

Note: Existing land use categories were developed using existing Township assessing property class codes and Township zoning categories.



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