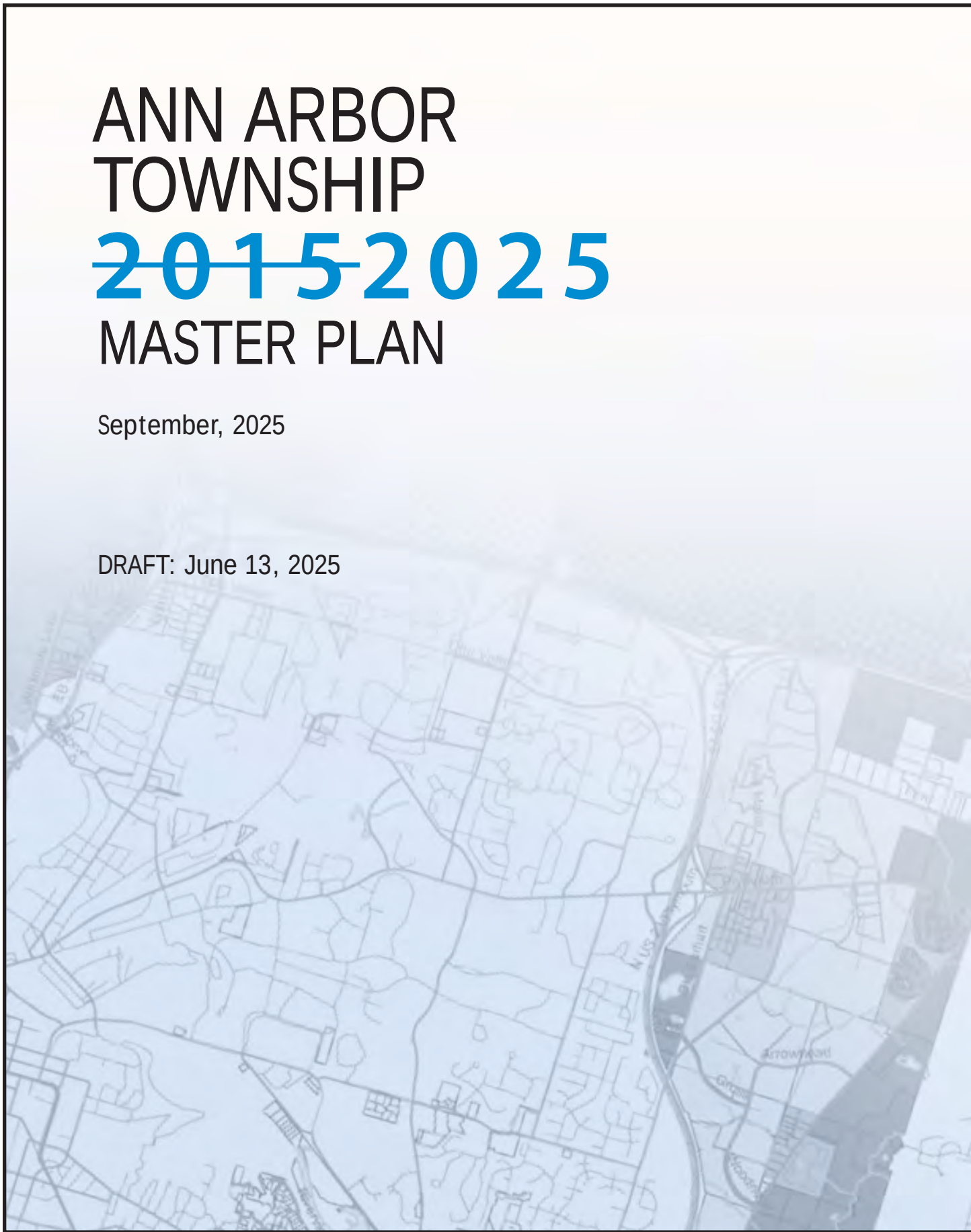


ANN ARBOR TOWNSHIP ~~2015~~2025 MASTER PLAN

September, 2025

DRAFT: June 13, 2025



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Ann Arbor Township Master Plan

Adopted by the Ann Arbor Township Planning Commission on (DATE)

Adopted by the Ann Arbor Township Board of Trustees on (DATE)

ACKNOWLEDGEMENTS

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Ann Arbor Township Master Plan

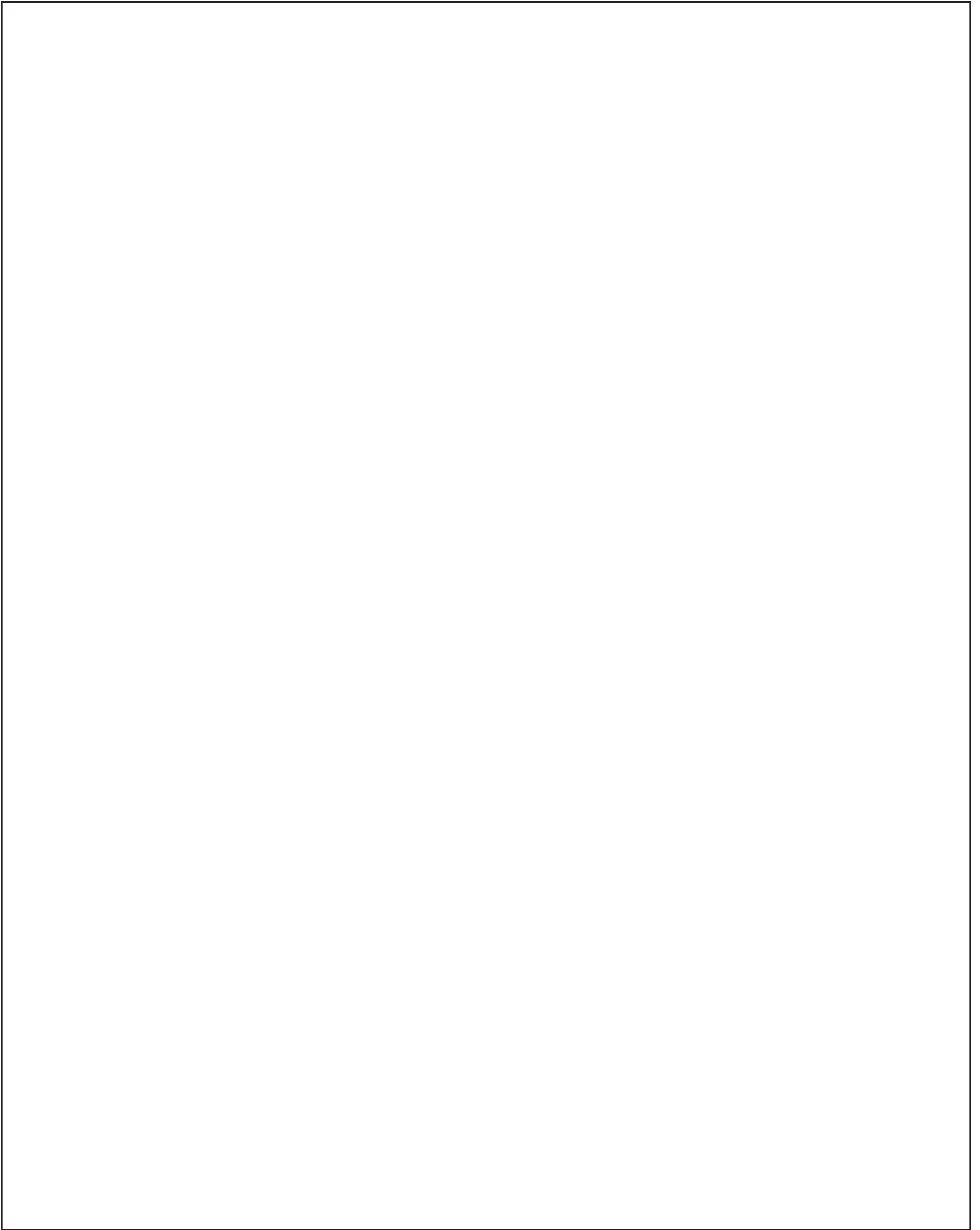


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PART 1: INTRODUCTION

Under the Michigan Planning Act (Act 33 of the Public Acts of 2008), communities are required to review their Master Plan every five years, and update it if needed. The Township's Master Plan was most recently amended in 2015 and map amendments were made in 2018. The 2015 update followed previous revisions in 2008 and 2005, which fully replaced a Plan adopted in 2001.

The “Great Recession” in 2008 significantly slowed the pace of development in the Township. However, the economic recovery over the past fifteen years has seen advances in other areas, such as agricultural preservation. Since conditions affecting the Township have continued to evolve, the Planning Commission has initiated amendments to the Plan to meet the changing needs of the community.

The Township initiated a Master Plan update in 2020, the first year of the COVID-19 global pandemic. During this time, the Planning Commission worked on the plan and met virtually to review and discuss drafts. However, because in-person meetings to gather public input were not possible, the Township decided to delay further work on the document until conditions improved. The Township resumed the update process in 2023, using the most recent information available. This document is the result of that work.

A. PRINCIPAL CHARACTERISTICS OF THE PLAN

The Master Plan describes the goals for the future of Ann Arbor Township and the policies that are intended to implement them. Those goals address the fundamental issues that the Township expects to face in the next 20 years. The Plan is focused on a limited number of issues in order to concentrate on those that can truly make a difference in the Township's future.

Since the Plan concentrates on goals and policies, it is general in nature, focusing on the Township's intended response to various issues. Goals express long-term rather than short-term expectations and are often general in nature.

Policies are specific statements that apply to the achievement of goals. When policies are officially adopted, they commit a jurisdiction to a course of action. The Plan also establishes implementation mechanisms which are specific, targeted courses of action devised to apply a Township policy.

The Plan provides guidelines for making decisions or recommendations in the future. For example, it provides the framework for Planning Commission recommendations on rezoning petitions, for subdivision plats brought to the Township Board, for Zoning Board of Appeals decisions, and for Planning Commission decisions on site plans. Decisions will be made on a case-

by-case basis at the time necessary and within the context of the Plan. The Plan will be amended if analysis generated by required decisions indicates that changes are appropriate.

The Plan recognizes the fact that the future is uncertain and that current perceptions of future conditions might change. The major issues it addresses might also change over time and policies designed to respond to them might have to be modified or replaced with new ones. The Planning Commission intends to periodically review, refine and otherwise modify the Plan as events unfold. Refinement may be in the form of restating, deleting, or adding to the issues, goals, or policies set forth in the following pages. It may also involve the creation of detailed policies for specific areas of the Township. These changes might result from an analysis of a specific development proposal, such as a rezoning petition; a capital improvement proposal by the Township or other government body; or a periodic review of the Plan or a detailed study of a part of the Township by the Planning Commission. This approach can be viewed as a series of ongoing efforts to adapt the Plan to changing conditions as well as to the planning process.

The Plan is an overall guide to decision-making. Continual use of the planning process and not just the Plan itself will assure that decisions regarding land uses and facilities will be better than they would be in the absence of such a process. It is the Planning Commission's intent to continually improve the planning process as well as the Plan.

The Plan was designed to indicate the preferred uses for all parts of the planning area rather than for a projected population or a target year.

The maps in the Plan are intended only to illustrate some of the policies described in the text. They show general locations of uses and facilities. The text of the Plan should be consulted for a description of policies that apply to specific areas or features. **If there is inconsistency between a policy described in the text of the Plan and a policy illustrated on any map in the Plan, the text will control Township Policy.**

B. THE PLANNING AREA

The planning area includes all areas of the Township that are to remain in Ann Arbor Township based on the 1994 Boundary Policy Statement, as amended, with the City of Ann Arbor. The Plan does not designate uses for those areas currently in Ann Arbor Township but that are to be annexed by the City in accordance with the terms of the Boundary Policy Statement. The planning area does not include the Village of Barton Hills.

As of **August, 2023**, Ann Arbor Township contains approximately **14.7** square miles, or about **9,418** acres (Map 1.)

PART 2: HISTORY OF ANN ARBOR TOWNSHIP

A. PHYSIOGRAPHIC HISTORY

The physical setting of the Ann Arbor area was established approximately 12,000 years ago at the end of the last glaciation. The melting glacier created the area's topography and natural drainage systems. Debris was deposited at the front of the melting glacier, creating two ridges, one on the east side of the present City and one on the west. Kettle holes were also formed and became ponds or lakes.

Glacial features play an important role in the settlement and subsequent development of the Ann Arbor area. Glaciers created the existing topography, the Huron River and tributary streams, wetlands, and ponds, which remained in that state until humans began excavating, filling and grading during the 19th and 20th centuries. Many of the results of glacial activity are still visible today. The area's fertile soils supported agricultural production after the area was opened in the early 1800s for European settlement. Sand, gravel and boulders that were deposited by the glacier's melting were used for building materials.

The geologic feature with primary impact on the settlement by Native Americans and European settlers, and later development of the Ann Arbor area by the Europeans was the Huron River and its tributary streams. The river was used as a transportation route from Detroit and Lake Erie west to Rawsonville (also known as Snow's Landing in early years). Since the river was not

navigable west of this point, materials and supplies were shipped by wagon for the remainder of the trip to Ann Arbor. Land shipment was undependable in wet weather because the roads that existed in early years were sometimes impassable. This forced the early settlers to become more self-sufficient, resulting in the establishment of flour, saw, and paper mills on the river and its tributaries.

The natural features of the area encouraged establishment of an agricultural economy from the first days of European settlement. Crops and livestock were raised, leading to the establishment of grain mills and later to tanneries and wool mills.

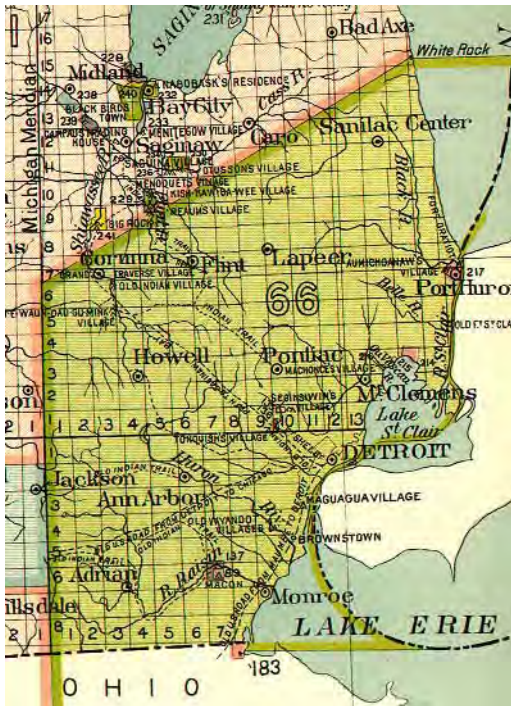
B. NATIVE AMERICANS

Prior to the coming of the European settlers in the early 1800s, the area was inhabited by Native Americans. Washtenaw County occupies the ancestral, traditional, and contemporary lands of the Anishinaabe, including the Odawa, Ojibwe and Potawatomi (also spelled Pottawatomi and Pottawatomie), and Wyandot. Many other Native peoples lived on this land at different times including the Fox, Sauk, Shawnee, Kickapoo, Miami, Musketoon, and Cherokee.

In 1783, Britain ceded Michigan to the United States. This occurred through the Treaty of Paris, which ended the Revolutionary War. However, Federal law recognized that the land that made up Michigan belonged to the native tribes until

it was ceded to the United States by the treaty of Detroit in 1807. An area of land approximating the southeast quarter of the lower peninsula of Michigan was ceded to the United States by the Ottawa, Chippewa, Wyandot, and Potawatomi nations for \$10,000 in money, goods, and domestic animals, as well as hunting rights on U.S. lands.

Land Ceded by Native Peoples - 1807 Treaty of Detroit



Map by Bureau of American Ethnology - Indian Land Cessions in the United States, 1784-1894. [wikimedia.org](https://www.wikimedia.org)

Before the Treaty of Detroit, Indigenous Americans had two village sites close to Ann Arbor Township, but none within it. One of the nearby settlements was located just to the north of the Township, between Pontiac Trail and Joy Road in Section 35 of Northfield Township. The second was located near the intersection of Packard and Stone School Roads in Pittsfield Township. A number of their trails crossed the Township, usually following high ground and waterways, skirting the edges of dense woods and swamps. They intersected on the west side

of the current Ann Arbor central business district.

A map from a Washtenaw County history published in 1881 shows 11 trails in the Township. Many of them became roads in the early European settlement period; these remain to the present day. For example, Plymouth Road, Fuller/Geddes, Geddes/Huron River Drive, Washtenaw Avenue east of Stadium Boulevard, Main Street, Liberty Street, Dexter/Huron Street west of Main Street and Miller Avenue all generally follow the earlier trails. Portions of Joy Road and Pontiac Trail also follow the route of earlier trails. The generalized location of these trails is shown on Map 2.

C. EARLY EUROPEAN SETTLEMENT

The site for the original settlement of Ann Arbor was selected because of its physical features. John Allen and Elisha Rumsey explored Washtenaw County for a possible settlement site and chose the Ann Arbor area because they found here “a natural clearing with fertile soil, a nearby river to furnish water power and transportation and proximity to the growing commercial center of Detroit.”

One Ann Arbor historian described this area’s natural attributes in 1881 as follows:

“The locality has had every advantage; nature made it beautiful, the American pioneer made it useful. The former conferred upon it a rich soil and a great water power; the latter utilized each, transforming the soil into well ordered gardens and turning the waters of the river into channels of industry.”

The history of Ann Arbor Township from the days of initial **European** settlement to the present has been inextricably connected to the history of the City. Whereas the Township of Ann Arbor was created in 1827, five years after Washtenaw County was formed, the City was officially founded as a settlement on February 2, 1824 when Allen and Rumsey registered their claim to 640 acres of land. The new settlement was named “Ann’s Arbor” after the founders’ wives and for the grove-like appearance of the site. Shortly after settlement Ann’s Arbor was designated the county seat.

Ann Arbor Township was created in 1827 when the Legislative Council of the Michigan Territory divided the county into three Townships — Ypsilanti, Dexter, and Ann Arbor. Those Townships were subsequently divided into the 20 that exist today. An 1843 map shows Ann Arbor Township with 36 sections, so its final size was established between 1827 and 1843.

The Township, including the future City of Ann Arbor, grew slowly in the first few years. The area experienced a spurt of growth after the Erie Canal was completed in 1825. The canal linked Detroit and points west with the east coast by connecting Lake Erie with the Hudson River. By 1827 the settlement of Ann Arbor had a population of 150 people and 20 to 30 dwellings. Supplies were procured in Detroit and brought by wagon through Plymouth or by boats pushed upstream on the Huron River to present-day Rawsonville where they were shipped by wagon for the remainder of the trip to Ann Arbor.

On April 23, 1833 the Michigan Legislative Council approved a statute that permitted incorporation of the Village of Ann Arbor. The act made the corporate limits of the new Village the same as the boundaries of the original plat that was laid out and recorded by Allen and Rumsey. In “A History of Washtenaw County,” written in 1881, the population of the Village and remaining Township was listed as 2,900 people. At that time the area had 4 churches, 2 newspapers, 2 banks, 8 mills and factories, numerous stores, 11 lawyers and 9 physicians. In 1837 the state legislature approved the transfer of the University of Michigan from Detroit to the new Village. The university located itself on a tract of land on the east edge of the Village plat.

The railroad from Detroit was opened in 1839, spurring a new round of growth in the Ann Arbor area. Transportation to and from the area was now much easier, not to mention faster.

The earliest good map now available was prepared in 1843. This map, if it is reasonably accurate, shows a number of features that are historically important to the development of the area. First, the routes of most of the area’s current surface roads were already established by 1843. There are, however, some notable differences between then and now. For example, Warren Road (all names are current ones) did not extend west of Pontiac Trail at that time; Dhu Varren Road crossed the entire Township, from what is now Ford Road at Dixboro Road to Maple Road; and Dhu Varren Road had a bridge across the Huron River. Maple Road terminated at Dhu Varren Road and also crossed the river.

The map also shows six roads crossing the river in 1840. They were Maple Road, Dhu Varren Road (across what is now Barton Pond), Beakes Street (as an extension of Plymouth Road), Maiden Lane (between Fuller/Glazier Way and Plymouth/Beakes), Fuller/Glazier Way and Geddes Road. Three of these crossings were within one-half mile of each other in the Village; the others were at the west and east edges of the Township. The river was therefore a physical barrier to movement between the north and south parts of the Township between these widely separated crossing points.

The Village occupied about one square mile of land in 1843, leaving the Township with all but one of its original 36 square miles. The Michigan Central railroad is shown in the Huron River valley but the Ann Arbor railroad is not shown as it had not yet been constructed. A number of mills existed in the area in 1843: a sawmill (Chubb's) and a paper mill in Section 7 (between the railroad and the river in the vicinity of Newport and Bird Roads); a sawmill (Kellogg's) and a flour mill on the east side of the river in Section 17 (west of Whitmore Lake Road); a sawmill (Woodruff) on Mallets Creek in Section 35 (on the south edge of the swamp along Huron River Drive); a sawmill and flour mill (Geddes) between the railroad and river in Section 36) at the intersection of Dixboro and Geddes Roads and two sawmills on Fleming Creek, one south of Geddes Road in Section 25, probably Parker Mill, identified as Pages, and one in Section 24 on the present University of Michigan property. Another sawmill was located on Traver Creek (Traverse) in Section 21, just north of Plymouth Road.

Four schoolhouses were in or close to Ann Arbor Township. One was located south of Joy Road at Whitmore Lake Road. Two were located on the north side of Joy Road, one in Northfield Township at Pontiac Trail and the other in Salem Township at Dixboro Road. A fourth, Popkins School, is located at Plymouth Road and Old Earhart Road. A post office was located in Northfield Township just north of the school at Whitmore Lake Road.

Almost all of the economic and social facilities that had been constructed by 1843 were either in the Village, along the river, or in the portion of the Township north of the river. The map shows nothing south of the river outside the Village, except a furnace just west of the Village in the vicinity of First Street and the aforementioned sawmill in Section 35. This suggests that developments existing by 1843 were either in the Village or north of the river.

Today, two Washtenaw County Local Historic Districts recognize the Township's historic character and serve as elements of the County-wide effort to document the development pattern of Washtenaw County. These districts are McMahon Springs, a 1.4 acre property with an Italianate residence and dairy barn located at 2426 Whitmore Lake Road and the Popkins School, a one-room brick schoolhouse constructed at 2385 Earhart Road in 1870.

D. RAILROADS

Construction of railroad tracks had an impact on the settlement of Ann Arbor Township and the surrounding area in two ways. Because of their ability to move people, produce, products, and equipment with relative ease, the stage was set for economic growth. At the same time, the tracks created a barrier. Road extensions were less frequent than they might have been in the absence of the railroad. With the additional obstacles posed by the Huron River, crossings were difficult and expensive. A current example is the Dixboro Road crossing of the river and railroad.

The Township is crossed by two railroads. The Michigan Central, completed in 1839, crosses it in a northwest-southeast direction, generally following the Huron River. The original route still exists. The second railroad, the Ann Arbor, was constructed during the latter part of the 19th century. A map dated 1895 shows the railroad in its current alignment except for the segment just north of Plymouth Road. The railroad track diverged from its current route to the northeast in the southwest corner of Section 15 in the vicinity of Upland Drive. It then followed a northeasterly course through Section 14 and turned north through Sections 11 and 4 about midway between Nixon and Earhart Roads. The track turned northeast again in Northfield Township to Leland Station at North Territorial and Earhart Roads. At this point it turned to the northwest to Whitmore Lake. The 1895 map shows a proposed “cutoff” route through Ann Arbor Township, which became the present alignment of the track. Since a 1911 map shows the entire railroad in its current alignment through the Township, the cutoff must have been constructed between 1895 and 1911.

E. FREEWAYS

Construction of the freeway system in the Ann Arbor area continued the transportation improvements that attracted economic development. The freeways, especially M-14, improved travel time between the Ann Arbor and Detroit metropolitan areas and made the Ann Arbor area a more functional part of the larger southeast Michigan region. Ann Arbor Township, in particular, became a more accessible place to live. US-23 connects Ann Arbor with Toledo and Flint.

F. AREA GROWTH

The interweaving of the City and Township histories is characterized by a pattern of the City's incorporated area expanding into the Township. Since its founding, the City has expanded into Pittsfield Township to the south and Scio Township to the west. But the largest part of the City by far is located in what was at one time Ann Arbor Township.

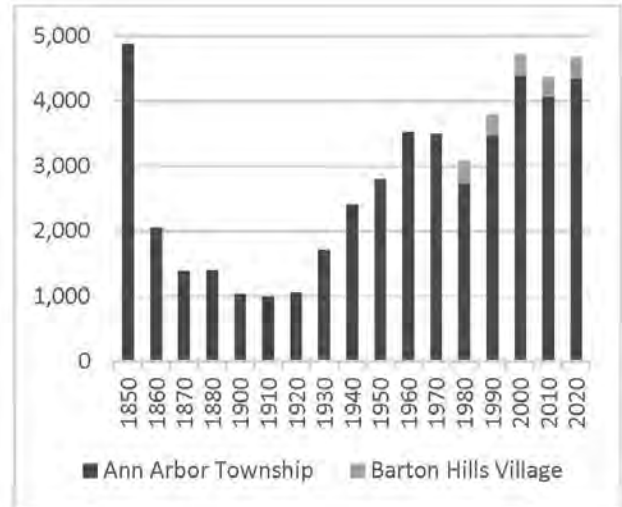
The City's growth as expressed by its corporate limits was quite well balanced in all directions through the 1940s. Major growth occurred to the east and northeast between 1950 and 1970. A smaller amount of growth occurred in the Ann Arbor Township portion of the City from 1970 through the 1990s. This most recent growth consisted primarily of infill of older islands and relatively small accretions of land on the perimeter, particularly in the northeast part of the City.

Since 1843, the Township's land area, as shown in the following table, has decreased by 58 percent:

Year	Area in Sq. Miles
1843	35
1934	29.5
1949	27.5
1970	18
1991	17
2000	16.5
2007	15
2023	14.7

Note: The average figures are estimates and include Barton Hills Village

The Township's population has fluctuated over the years since its founding. The decennial population figures are reflected in the following graph:



2020 Census:

- Ann Arbor Township = 4,357
- Barton Hills Village = 316

G. CONCLUSION

This brief survey of Ann Arbor Township's past shows that the area's potential for growth was established early by several factors that would influence its character and the opportunities it offered. First, its natural setting was created after the glacier melted and left the area with a scenic beauty, good soil for agriculture to support early settlers, and ample water supplies.

Second, human settlements provided the foundation for development. Native Americans traversed the area with trails that established the pattern for most of the current road system. European settlers who came later founded the City of Ann Arbor and Ann Arbor Township. The City gradually became the dominant social and economic force in the life of the Township and continues to be a magnet for urban growth, a consumer of Township land to support that growth, and a provider of commercial and service land uses.

The third factor contributing to the area's growth potential was the major improvements made to the transportation system tying the area to much larger economic regions. The railroads created the first dependable and efficient economic connection between the Ann Arbor and Detroit areas and provided a north-south connection to the rest of Michigan and to Toledo. More recently, the freeway system repeated the railroads' century-earlier impact on the area, but on a scale many times greater. The primary freeway orientation was east-west, particularly to the southeast Michigan region. A north-south orientation was created with construction of the I-75/US-23 freeway system from the Canadian border at Sault Ste. Marie to southern Florida.

While US-23 has had a significant impact on the development pattern of Ann Arbor Township, that impact varies greatly from one area of the community to the next. Given that two exits to US-23 exist within the east portion of the Township, on the east side of the City of Ann Arbor, most of the recent development within the community has occurred near Geddes Road or Plymouth Road. This phenomenon reinforces the generally east-west development pattern in this area of Washtenaw County, situated along Plymouth Road and Washtenaw Avenue, just south of the Township. In contrast, no US-23 exits are present within the Township north of the City of Ann Arbor, leaving the area mostly residential, agricultural, or open space.

Fourth, throughout this period of development the steady and sometimes rapid growth of the City took place primarily at the expense of Ann Arbor Township territory. Much of the original Township area, about 60 percent, has been absorbed by the City to support its growth.

Fifth, large public institutional uses within the Ann Arbor area are located in Ann Arbor Township. The North Campus of the University of Michigan is just within the City limit, and the University satellite medical campus is located at Earhart Road and Plymouth Road in the Township. Washtenaw Community College is also within the Township, and St. Joseph Medical Center lies just outside the Township boundary to the east. All these uses have influenced the somewhat more intensive land use patterns in the eastern part of the Township.

The remaining Township territory still has the natural character that made the area attractive for initial settlement. The attractiveness of these features is amplified many times by the fast, easy access to millions of people and thousands of businesses provided by the freeway system. It is with these historical forces, including natural beauty for a living and working environment, readily accessibility to a larger region and the attraction of a major city on its doorstep, that Ann Arbor Township moved from the final years of the 20th century into the 21st.

PART 3: PLANNING CONTEXT

A number of existing and anticipated conditions are expected to affect Ann Arbor Township in the future. These conditions are the framework for developing goals and policies for planning in the next 20 years. These are the issues that the Master Plan is designed to meet.

A. TOWNSHIP LOCATION AND PLANNING CONTEXT

Ann Arbor Township is located in a major development corridor. The southeast Michigan metropolitan area is growing westward along the I-96 freeway, 16 miles to the north, and west in the M-14 and I-94 corridors to the Ann Arbor area and beyond. Convergence of the M-14/I-94 freeways at the west edge of the City of Ann Arbor increases the strategic position of Ann Arbor Township in terms of development pressure. The force is augmented by the northeastward expansion of the City to the M-14/US-23 boundary.

North-south growth in the US-23 corridor between Ann Arbor and Brighton has been significant over past years and is expected to continue into the future. Development interests have been particularly intense in the northeast end of the corridor in Brighton and Green Oak Township. As a result of planning policy, the south end of the corridor has developed much less intensely. It is reasonable to expect that development pressure will continue in this corridor and the intensity of its impact is expected to

increase in the northwest and north parts of the planning area.

The Township is also affected by a general trend toward patterns of low-density, large-lot development that requires longer commuting time to places of employment, schools, shopping, and recreation. At the same time, advances in technology allow more people to work from their houses. As a result, more people will be able to live where they want without the constraint of commuting time. *Many people made the transition to telecommuting during the COVID-19 pandemic.* These factors, together with the attraction of the Ann Arbor area as a place to live and work, will add pressure to develop Ann Arbor Township.

At the same time, a counter trend has been occurring in recent years in the City of Ann Arbor, where the City has taken measures to permit development at higher densities and building heights than ever before. New residential projects in the city center, including new construction and adaptive use of former industrial buildings has created a new supply of urban, high-density living environments. Many of these new residential projects appear successful and have empowered Ann Arbor to retain more of its residents and accept new residents, while placing less demand on outlying areas than would have been necessary under previous regulations. Therefore, while it can be said that decentralization has and continues to occur across Southeast Michigan, the City of Ann

Arbor has taken proactive steps to combat this phenomenon locally within Washtenaw County. Much of the recently developed and currently undeveloped land that will be developed at these higher densities within the eventual city boundaries (US-23/M-14 freeway ring) has been or will be annexed from Ann Arbor Township to the City in accordance with the 1994 Boundary Policy Statement. (See Map 1.)

Ann Arbor Township is an integral part of the Ann Arbor area. While the Township does not have a single developed focal point, such as a central business district, it does have characteristics that establish the unique character of the Township:

1. The Township has the character of a sparsely developed, generally rural land use pattern in the north and northwest areas. These areas, outside Barton Hills Village, have farming operations and scattered large residential parcels of land.
2. The three very low density urban land use areas (Domino's Farms, the U of M East Medical Campus, and the Ann Arbor Technology Park) together represent a unique part of the entire Ann Arbor area. These are located in the north part of the east area and provide a distinct low-density contrast to the more intensely developed City to the west.
3. The east edge of the planning area, north of the Huron River, is for the most part in permanent open space and consequently creates a greenbelt along the northeast edge of the Ann Arbor urban area. This open space consists of the Radrick Farms/Botanical Gardens/Fleming Creek corridor, **Goodrich Preserve**, Marshall Park and Horner McLaughlin Woods.

4. Ann Arbor Township is a geographically narrow community, forming a band of area around the north and east side of the City of Ann Arbor. Annexation into the City of portions of the Township have resulted in Ann Arbor Township's unusual configuration. This configuration plays a key role in land use policy. Because Ann Arbor Township is not a conventionally shaped community allowing for a central "downtown" or commercial center of its own, it exists symbiotically with the City of Ann Arbor. The City serves as the central urban hub of Washtenaw County and Ann Arbor Township plays an important role as the first "band" of rural area outside the City. This relationship reinforces the Township's regional role as a predominantly rural community working in tandem with the City of Ann Arbor to form a graduated, logical transition from the most intense center of Washtenaw County, Downtown Ann Arbor, to the most rural outer areas of the County.

Thus, except for the higher urban density represented by The Haven apartments, the Fleming Creek subdivision, **All Seasons of Ann Arbor senior living**, and the Arbors, Ann Arbor Township is a very low density contrast and boundary to the north and northeast edges of the City of Ann Arbor. Its proximity to the City helps emphasize the character of Ann Arbor Township.

The annexation issue between Ann Arbor Township and the City of Ann Arbor was resolved in 1994 when the City and Township adopted a mutual policy statement which recognized an orderly annexation of Township properties within a set boundary. The boundary generally follows the freeway around Ann Arbor formed by M-14 and US-23. Vacant land within that boundary has

developed at higher densities that require public water and sewer. Land beyond this boundary within the Township will not be annexed to the City. This transfer of density to the City has resulted in a situation in which a number of high density zoning categories are now accommodated within the City boundary, and are therefore no longer required within Ann Arbor Township.

At least half of the Township's planning area has a relatively fixed land use pattern because of existing development, lot sizes and location. Parts of this area are either fully developed or the existing land use pattern sets the stage for the future as in the case of Domino's Farms Office Park and the U of M East Campus, (although future uses at the University Medical Campus cannot be predicted presently, as only four medical buildings and the basic street and open space patterns exist).

In 2003, the Township Board of Trustees appointed a Farmland Preservation Board, which developed a Purchase of Development Rights (PDR) Ordinance that was approved later that year by the Township Board. The Farmland Preservation Board oversees applications for farmland owners who want to sell the development rights on their farmland. In November 2003, Ann Arbor Township voters approved a 0.7 mill tax to protect farmland and open spaces in the Township permanently. In parallel with this millage, the City of Ann Arbor also passed a Greenbelt millage with similar aims as the Ann Arbor Township PDR initiative. The goal of the Township program is to preserve over 2,000 acres of farmland in Ann Arbor Township, by leveraging Township funds with the City program, Federal and State PDR programs and private funds. This should strengthen the agricultural policies of the

Master Plan. Map 4 shows lands protected by PDR and other methods.

B. LAND USE POLICIES OF NEIGHBORING COMMUNITIES

The future character of Ann Arbor Township will be affected by the development activities and planning policies of neighboring communities and the University of Michigan, which is a significant landowner in the Township. Ann Arbor Township shares its borders with seven communities, three of which touch the Township only at its corners. Understanding the existing conditions in these areas is essential to establishing policies for Ann Arbor Township.

- The University of Michigan. The University of Michigan has significant land holdings in and near Ann Arbor Township. The University owns 345 acres in the Ann Arbor Technology Park and additional acreage elsewhere in the Township. An office complex and a medical facility at the corner of Plymouth and Earhart Roads are currently the only existing University developments in the Township. However, the University is expected to develop the East Campus in coming years. The *2005 East Medical Campus Master Plan* envisions using the natural features of this unique site for many active, outdoor spaces that balance the Health System's mission with the best practices of land stewardship. Outpatient clinical care, including associated clinical research and medical education, will occur at this site. Development will continue to be clustered to minimize impact on the natural environment, and scaling will be modest to respect the surroundings.

Such development will have significant impacts on Township water and sewer capacity, traffic and natural features.

The University of Michigan sold a portion of their land in the Technology Park to a research and development company in 2019. KLA built an office and research facility on this heavily wooded lot, implementing a number of techniques to preserve as much of the woodland as possible. The office portion of the building is six-stories tall, with a single-story research annex that sports a green roof. The entire building is 230,764 square feet in size, and is served by a three-level parking deck which helps to minimize the footprint of development on this site. KLA occupies the building, which will accommodate up to 600 employees when fully operational.

- City of Ann Arbor. The City's ability to annex Ann Arbor Township properties is limited to those areas agreed upon in the 1994 Boundary Policy Statement. In 2011, City staff summarized major issues regarding annexation of township islands within the overall City of Ann Arbor service area. The summary concluded with a recommended procedure to accomplish annexation of these remaining township parcels. To assist with this effort, the City developed a prioritization model to help determine an effective approach to annexing clusters of Township parcels. The Prioritization Tools ranks each parcel using 11 evaluation criteria. The results of the evaluation gives each parcel a score. The higher the score, the higher annexation priority. Example criteria include presence of sanitary sewer and/or water main, fire safety capability, access and road infrastructure, natural

features and other criteria. Council approved this process, and the City has moved forward to incrementally annex township islands into the City's jurisdiction.

Development in areas of the City bordering the Township also affects land uses within the Township. For example, the City's Northeast Area Plan (From the 2009 *City of Ann Arbor Master Plan - Land Use Element*) encourages strategic development of high-density residential in clustered areas with a strong connection to mass transit opportunities. Additional density could have spillover effects on future land use in the adjoining parts of Ann Arbor Township. A cooperative planning relationship with the City is important so that planning policies of both municipalities in border areas will be compatible with each other.

- Northfield Township. Northfield Township borders Ann Arbor Township to the north along Joy Road. Northfield Township adopted an update to the Township Master Plan in 2019, the strong focus of which is the containment and appropriate management of increasing development pressure along the US-23 Corridor, specifically at the intersection of US-23 and North Territorial Road. The Development Strategies and Design Guidelines for the southern area of the Township bordering Ann Arbor Township are focused on preservation of open spaces and agricultural operations, as well as maintaining scenic views and wildlife corridors. When residential development is permitted, clustered developments are strongly suggested.

- **Pittsfield Township.** The northeast part of Pittsfield Township (Section 1) borders Ann Arbor Township along Clark Road. Pittsfield conducted its most recent Master Plan Update in 2022 which includes a Preservation Plan as an addendum. The most recent *Future Land Use Map* shows business, multi-family residential, and public land uses along the border with Ann Arbor Township. Existing apartment and office complexes are located adjacent to the Township, and are consistent with this vision. The Washtenaw County Service Center property (public land) abuts Ann Arbor Township at the intersection of Clark and Hogback Roads. The north part of the service center property is open for further development for County government functions.

Pittsfield Township's Master Plan has identified a focus development area just south of Clark Road along Washtenaw Avenue. The Township is planning for redevelopment of this area into a higher density, mixed use commercial and residential area with live-work units and townhouses. Transit service is also being planned as a component of this mixed-use area.

- **Salem Township.** Salem Township's southwest corner touches the northeast corner of Ann Arbor Township at the intersection of Joy and Dixboro Roads. Salem's 2019 Master Plan calls for clustered, low-density residential uses in this area (two-acre minimum lot sizes). Additionally, this portion of the Township is identified as a potential preservation area.

- **Scio Township.** Scio Township abuts the western border of Ann Arbor Township at Maple Road. The 2021 Master Plan designates "Open space, Agricultural and Rural Residential (1 du/2.5 ac)" in the area extending to the Township's north boundary along Maple Road. Directly adjacent to the Huron River, the Master Plan recommends a greenbelt of recreation/conservation land uses which is shown as extending north toward North Maple Road. Just north of the Huron River and south of the recreation/conservation greenbelt, the plan recommends low-density residential development at one dwelling unit per one to 2.5 acres.

Additionally, the portion of this area that is designated for open space, agricultural and rural residential, and recreation/conservation is situated under an Agricultural Preservation Overlay. This overlay is designed to prioritize these areas for preservation as opportunities arise. Similar to Ann Arbor Township, Scio Township has a Purchase of Development Rights (PDR) millage in place to preserve farmland and natural areas.

The latest Master Plan also identifies a "Huron River Sub Area" along the border with Ann Arbor Township. The sub area describes specific development strategies to help maintain the rural character and natural features. It calls for using "clustering" for future residential development and preservation of open space, woodlots, and natural features with conservation easements. It also calls for preservation of the remaining active farming and open space, in particular within areas continuous with Webster and Ann Arbor townships.

- Superior Township. The western border of Superior Township is adjacent to Ann Arbor Township. The Township updated its Master Plan in 2024, and highlights strong neighborhoods, land preservation, sensible economic development, and environmental preservation to ensure a livable, sustainable community for all residents. Extensive preservation of farmland and open space has occurred in the central portion of Superior Township.

The 2024 Master Plan includes specific direction for the future of four sub-areas that abut Ann Arbor Township:

- University of Michigan property (Matthaei Botanical Gardens and Radrick Farms) forms a buffer between the two Townships from Plymouth Road south to Geddes Road for a length of approximately 2½ miles. This buffer area is adjacent to one of Superior Township's sub-areas (called Gale Road Sub-Area).
- The Rural Plymouth Road/M-14 Sub-Area is located north of the Dixboro community, where agricultural and rural residential uses predominate on one to five acre lots.
- Near the community of Dixboro (the Dixboro Sub-Area), a suburban residential pattern with one acre and larger lots is generally established by existing development (as in the Tanglewood subdivision), although the older part of Dixboro has smaller lots. The general thrust of this sub-area is to preserve the water quality and natural character of Fleming Creek, preserve the historic character of Dixboro, and implement traffic

calming on Plymouth Road as it passes through Dixboro.

- The southern areas of Superior Township, which have access to public water and sewer, support relatively low-density residential development (two-acre lot minimums) in the southeast and the St. Joseph Mercy Health System. St. Joseph abuts land in Ann Arbor Township and is designated as the Hospital Sub-Area. Future uses planned in this urban area include small commercial developments that would serve staff and visitors of St. Joseph Hospital.
- Webster Township. Webster Township touches the northwest corner of Ann Arbor Township at Maple and Joy Roads. Webster Township's 2022 Master Plan directs residential development toward the existing settlement of Loch Alpine and the Village of Dexter. The southeast corner of Webster Township is designated for low density residential use with lot sizes of one acre and agricultural uses. Like Ann Arbor Township and Scio Township, Webster Township has a PDR millage in place. Over 2,300 acres of farmland has been preserved via the Township's Purchase of Development Rights program, and township residents expressed continued support for farmland preservation in a 2019 survey.
- Ypsilanti Township. The northwest corner of Ypsilanti Township touches the southeast corner of Ann Arbor Township at the intersection of Golfside and Clark Roads. The 2040 Master Plan (adopted in March, 2020) designates this area to reflect current uses, including multi-family residential land uses and office facilities.

C. ENVIRONMENTAL CONDITIONS

The gently rolling landscape of Ann Arbor Township is dominated by agricultural lands, woodlands, wetlands, the Huron River and three major stream corridors - Traver Creek, Fleming Creek and Swift Run Drain. These features help define the rural character of the area and distinguish it from the urban character of the City. The existence of sensitive natural features throughout the Township puts limits on the development potential of land and has resulted in Township policies and ordinances to preserve agriculture, open space and natural features. Natural features also add amenities and value to existing residential development. A description of the primary natural features that constitute the Township's environment follows; Map 3 indicates in a general manner where these features are located.

These natural features have also been identified by a number of studies, including the 2007 bioreserve project conducted by the Huron River Watershed Council. The Bioreserve project used a computer model to rank each natural area based on fifteen different measurements of its ecological value. These included the size of the area, whether wetlands, streams, or lakes are on the site, the diversity of the landscape on the site, the potential for the site to be a groundwater recharge area, the potential for the site to be connected to other natural areas, and how much native vegetation the site potentially still harbors. The resulting map shows over 1,700 sites, totaling about 237,000 acres of natural lands across the watershed.

In 2014, the Huron River Watershed Council conducted another valuable exercise with the Township's Planning Commission that resulted in the Green Infrastructure Map (Map 5). The exercise identified the Township's important natural areas and how they are connected. Large natural areas (hubs) and smaller natural areas (sites) are linked by linear features, such as tree rows or rivers and streams. The resulting network of hubs, sites, and links provide wildlife with access to various food sources, and nesting and rearing sites. By preserving the links as well as the hubs and sites, the Township will minimize the habitat fragmentation present in developed landscapes, and preserve the variety of habitats that local wildlife use to fulfill their life-cycle.

Watersheds and Watercourses.

Ann Arbor Township lies within the Huron River Watershed. The Huron River at Barton Pond serves as a drinking water source and the river and its tributaries provide wildlife habitat, recreation opportunities and scenic beauty.

While the three primary watercourses in the Township are Fleming Creek and its tributaries, Swift Run Drain, and Traver Creek, portions of the Township are also located within other primary sub-watersheds, including the Middle Huron River, Boyden Creek, and Mallett's Creek. These waterways discharge into the Huron River. Recognizing these watershed units is useful for planning purposes and for monitoring the cumulative impact of development within each watershed.

Fleming Creek traverses several residential developments and the eastern side of U of M East Campus and Ann Arbor Technology Park. Swift Run Drain flows through wooded residential and developing areas on its way to the Huron River. Traver Creek flows through alternating agricultural and suburban residential areas.

Fleming Creek is one of the highest quality tributaries in the Huron River watershed. Fleming Creek has an active advisory council that formed in 1994. By Township Board resolution, the Fleming Creek Advisory Council is invited to review all development proposals within the Fleming Creek Watershed. The Fleming Creek Management Plan (FCMP) developed by the Fleming Creek Advisory Council proposes strategies aimed at protecting water quality and preserving the rural character of the stream. The FCMP recommends strict control of stormwater and erosion to preserve and improve the creek's water quality. FCMP addresses future development and recommends that construction in the creekshed is located away from streams, wetlands, steep slopes and groundwater recharge areas. In addition to the FCMP, the Washtenaw County Water Resources Commissioner's Office has stormwater standards to require stormwater controls and runoff mitigation techniques. However, most of the watershed's acreage is located outside of Ann Arbor Township and Ann Arbor Township's policies will affect only a portion of the watershed. Political units that share the watershed should develop common policies designed to protect water quality.

Impervious Surface Capacity.

The percent of impervious surfaces within a stream's watershed is a commonly used indicator of its quality and health. Research indicates that at levels of imperviousness of 8 to 10 percent, stream quality begins to deteriorate (Huron River Watershed Council, 2003). This level is reached at about 1 dwelling unit per 2.5 acres. Between 10 and 25 percent impervious surface, stream quality enters a level known as "impacted." Once a stream's watershed passes the 25 percent impervious threshold, research indicates it will no longer be able to support most kinds of aquatic life.

A study of the watersheds in Ann Arbor Township shows both the current (as of 2010) and the future (according to the Master Plan) impervious surfaces (see Maps 6 and 7). As of 2010, Traver, Boyden, and the Fleming Creek headwaters, all located in the northern part of the Township, are considered able to support "sensitive" species of aquatic life. However, the downstream portion of Fleming Creek, as well as Swift Run and the main stem of the Huron River, have fallen into the "impacted" category (between 10 and 25 percent impervious surface).

A buildout analysis conducted by the Huron River Watershed Council based on the 2008 Master Plan shows that all subwatersheds will increase in percent impervious surface. Fleming headwaters and Boyden, while doubling or tripling their impervious surfaces, will remain in the "sensitive" category, if land is built the way the 2008 Master Plan envisions it. Traver will increase its impervious surface by two-and-one-half times, pushing it into the "impacted" category. The downstream portion of Fleming will also be in the

“impacted” category. Swift Run will become “nonsupporting” of aquatic life with 35% impervious surface.

The buildout analysis shows that in the northern reaches of the Township, where the Master Plan calls for agriculture and less intense residential land uses, creeks will be able to continue to support aquatic life and provide clean water for recreation, drinking water, and other ecosystem services. In the southern areas, where the Master Plan calls for more intensive land uses and where the Township provides public water and sewer, impervious surfaces will continue to increase.

According to the Huron River Watershed Council, as development becomes more spread out, impervious surfaces increase in order to accommodate the longer and wider roads, driveways, parking areas, and additional commercial uses that must also be built to provide for everyday needs and services. The net result is an actual increase in imperviousness to accommodate less dense households on a regional or watershed scale. In fact, research from the Huron River Watershed Council shows that subdivisions designed in a typical pattern, where one single family residence is located on its own lot, increase imperviousness by 10 - 50 percent compared to developments that group the same number of households into smaller areas.

To address this issue, the Township has adopted stormwater standards that require mitigation for developments with imperviousness over 20%. It is described in greater detail on pages 67-69.

(HRWC: Watershed planning: Determining impervious surface capacity to BETTER Manage Growth at the Rural/Urban Fringe).

Wetlands.

Wetlands occur throughout the Township as either isolated pockets of saturated soil or swales filled with water only in wet months, as year-round ponds, or as complex systems of swales and ponds connected by streams and draining into larger water courses. Wetlands are often referred to as fens, bogs, or swamps. These wet areas serve as valuable wildlife habitat for fish, amphibians and migratory birds, provide flood control and groundwater recharge, help irrigate the landscape and drain rainwater from the soil. Because of the integral part they play in the landscape, wetlands are very sensitive to damage by polluted run-off, sedimentation from erosion and outright destruction by development. The size, quality, and connectivity of wetland systems are all important factors considered in Township planning. Many wetlands are protected under state law; others are protected by the Township’s Wetland and Watercourse Protection Ordinance and zoning regulations.

Groundwater Resources.

The only portion of the Township that has a municipal water system is the eastern portion of the Township (See Map 13). The rest of the community depends on private wells that obtain water from groundwater aquifers. Drinking water wells are permitted by the Washtenaw County Health Department. At this time, comprehensive mapping of groundwater resources is not available. The state established the Michigan Geological Survey (MGS) in 1837, which is now housed at Western Michigan University. However, lack of consistent funding to map Michigan’s subsurface geology, including groundwater aquifers, has limited understanding of the state’s complex

Stream Quality Categories

(excerpted from How Much Development is Too Much? A Guidebook on using Impervious Surface and Gravel Road Capacity Analysis to Manage Growth in Rural and Suburban Communities. Huron River Watershed Council and Planning and Zoning Center, August 2003):

- Sensitive streams are under 10% imperviousness in the watershed and typically have good water quality, good habitat structure, and biological communities if riparian zones are intact and other stresses are absent. Sensitive streams will typically be in rural areas that have not seen a great deal of development and may contain significant natural areas. In these areas, the community would set goals to maintain existing watershed hydrology by keeping impervious surface levels in the watershed below 10%.
- Impacted streams have 10 to 25% imperviousness in the watershed and show clear signs of degradation and only fair instream biological diversity. Impacted streams have already seen some measure of development. The community's main goal in these watersheds would be mitigation of the impacts of that and any new development through site design that minimizes imperviousness, stormwater BMP's and restoration of natural areas.
- Non-supporting streams have more than 25% imperviousness in the watershed, a highly unstable channel and poor biological condition supporting only pollutant-tolerant fish and insects. The community's goal for these watersheds is restoration and pollution reduction. The Center for Watershed Protection and many other planners recommend that these watersheds be target areas for urban infill development

If the goal of the community is to preserve water quality in a watershed around a sensitive stream, it needs to keep imperviousness under 10%.

If there are watersheds in the community where imperviousness is already over 25%, and urban services are available, concentrating new development there is better than allowing it to occur in another watershed classified as sensitive.

subsurface glacial geology and available groundwater. However, with the 2022-2023 budget, the state granted annual funding to map the subsurface of Michigan. The purpose of the mapping is to enhance the economic development of the state, and ensure that the vital resources are analyzed, protected and used wisely. When this information will be available for Ann Arbor Township is unknown.

Groundwater is maintained via recharge areas. Groundwater recharge areas are areas where water infiltrates into the soil, eventually reaching an aquifer. These areas are often found in floodplains or associated with wetlands but usually their boundaries are imprecise. Pavement in groundwater recharge areas reduces absorption area. Developing in these areas can also result in discharge of pollution into the soil and possible percolation into aquifers that supply well water. Groundwater recharge areas play an important part in the overall environmental health of the Township. These areas can also be important to maintaining water levels in wetlands and stream/river flows.

Concerns over the quality and quantity of groundwater in the Ann Arbor area have been an issue for over 30 years.

One major concern is the Gelman plume. Gelman Sciences Inc., a former medical filter manufacturer near Ann Arbor, left contamination stemming from years of unregulated waste handling on its facility grounds. A plume of 1,4-dioxane (a likely carcinogen) has spread through the groundwater in the City of Ann Arbor and Scio Township.

Gelman Site (2021 EGLE Map)



Red Boundary = Prohibition Zone. No well water use permitted; all users in this zone are connected to the City of Ann Arbor municipal water system.

In 1992, a county circuit court ordered Gelman to address the plume. A number of monitoring wells are installed in the City to monitor movement of the plume, and whether it is migrating toward the Huron River, the City's main drinking water source. The Michigan Department of Environment, Great Lakes and Energy (EGLE) is the enforcement lead for Gelman site and oversees remediation of the plume. However, in 2021, the Director of EGLE requested that this site be put on the Environmental Protection Agency's (EPA) National Priorities List (as a "Superfund" site), supported by resolutions from the County, Ann Arbor and Scio townships, and the City of Ann Arbor.

Another concern regarding groundwater in the Township is the increased use of the aquifers. As mentioned above, accurate mapping of aquifers regarding location and potential yield are not currently available. However, it is believed that aquifers serving Ann Arbor Township also are used by nearby communities, such as Barton Hills Village

and Northfield Township. The Township is also occupied by commercial and residential uses that make large water withdrawals, some of which have negatively impacted the water levels in nearby residential wells. While the Township's vision for groundwater-dependent properties is predominately agricultural, rural residential, and natural feature protection, with lower-density development planned, development in surrounding communities and other land uses within the Township have generated concerns for current groundwater users.

Floodplains.

Floodplains are low lying areas adjacent to lakes, streams, rivers, or ponds that receive excess water from flooding. They protect downstream areas from flooding and control erosion, silting and contamination of water features by storing excess water during flood periods. Floodplains also serve as wildlife corridors and habitat for plant and animal species. Some floodplains have development restrictions imposed by the Federal Emergency Management Agency (FEMA). Township development regulations should limit development in these areas. Delineated flood plains in Ann Arbor Township are relatively narrow bands of land adjacent to the Huron River and certain streams.

Woodlands and Other Flora.

Once forested over most of its territory, the Township now has only fragments of native mixed hardwood forests and cultivated pine plantations. These stands of trees provide wildlife habitat, shade and scenic amenities to the Township, stabilize soil, and encourage infiltration. Woodlands are often along watercourses and floodplains, on wet soils, or in wetlands.

Trees in wet areas include willow, red and black maple and elms. The Township also has some dry, upland forests, located on well-drained soils and often interspersed with residential development. These woodlands include remnants of beech/maple and oak/hickory forests. The Township is host to a number of threatened plant species, including the white lady-slipper, taprooted valerian, ginseng, American burnet, goldenseal, Jacob's ladder and Virginia snakeroot. A comprehensive inventory of botanical species in Ann Arbor Township is provided in the 1994 report, "Environmentally Significant Areas of Ann Arbor Charter Township" by Ellen Weatherbee.

Fauna.

The Township is home to at least two state-protected species, the redbreasted dace (an endangered fish species) and the Massasauga rattlesnake (a reptile **that is listed as Federally Threatened and of State Special Concern**). Common mammal species include deer, **coyotes**, raccoons, opossums, skunks, rabbits, groundhogs and a variety of squirrels and smaller rodents. Red foxes are occasionally seen. Commonly found bird species include a variety of hawks, turkey vultures, **wild turkeys**, American crows, pheasant, blue jays, Mallards and wood ducks, great blue heron, great egrets, Canada geese, woodpeckers and a variety of songbirds. The wetlands and watercourses of the Township are home to a variety of amphibian and fish species.

Soils.

Soil is the lifeblood of agriculture as well as the nourishment for many species of vegetation, and is an important resource for the Township. Much of the Ann Arbor

area is composed of glacially deposited sandy and loamy soils and gravel, which are well drained. However, a significant amount of the Township is covered by wet soils, which are often associated with wetlands, woodlands or groundwater recharge areas. Wet or hydric soil is defined in the Natural Resources Conservation Soil Survey of Washtenaw County as having a slow infiltration rate and/or a high water table (depth to water one foot or less). Wet soils provide for vegetation important to wildlife and the aesthetic beauty of a green landscape. They are also an impediment to development. Soil type is therefore an important consideration in the Township's land use policies. Heavy, wet soils with high clay content limit residential development due to poor drainage and an inability to support septic systems. Wet soil areas are sometimes interspersed with pockets of well-drained soils.

The northwest area includes some soils that are not suitable for septic tanks and drain fields, based on the County Soil Survey. Those soils constitute an estimated 25 percent of the area. Other significant areas of hydric soils are found in the north area. In areas with wet soils, large lots may be needed to find an area appropriate for a drain field on each lot.

D. CLIMATE CHANGE

The Township has formed a Climate Resilience Committee, who are working to understand and address the impact of climate change on the local environment, and also address policy initiatives and data that could be developed locally to address local impacts. The committee has developed the Township's [First Climate Report](#), which was accepted by the Township Board in October, 2024.

The Township's Report provides a community profile of Ann Arbor Township, a description of the impacts of a changing climate in Southeast Michigan, outlines the services provided to the Township (and region) by preserved ecological systems, and a greenhouse gas emissions inventory of the Township. The following summarizes each of these chapters:

- [Community Profile](#). This chapter briefly describes the overall character of the community, including population, households, housing type, utilities, etc. While much of this information is also provided in this Master Plan, the Climate Report has more detailed information on transportation and vehicle miles traveled, which impact and are impacted by land use decisions. Significant points made in the Report regarding roads and vehicle miles traveled include the following:
 - The Township is flanked by regionally significant roads (M-14, US-23), and also contains arterial roads (Plymouth Rd., Whitmore Lake Rd., Pontiac Trail, Nixon Rd., Dixboro Rd.) These roads are heavily traveled by commuter pass-through trips, and by Township residents.
 - The Township is home to a number of large employers. Many of their employees do not live in the Township. The emissions from these commuters are included in the Township's greenhouse gas emission estimates, but are adjusted to establish a "daytime population," versus the "resident population."

- Township residents are primarily car-dependent. Seventy-seven percent of residents drive a car, truck, or van to work by themselves. Only 10% carpool, and 8% work from home.
- Fifty percent of Township residents spend between 10-25 minutes driving to work. Eighty-eight percent of work-related trips are taken by automobile.
- The 48105 Zip Code (which encompasses most of the Township, as well as the northeast quadrant of the City of Ann Arbor) has a "Walk Score" of 2 (out of 100), which is considered car-dependent and almost all errands require a car. This Zip Code has a "Bike Score" of 33 (out of 100), which is considered somewhat bikeable.
- Impacts of a Changing Climate. The Report summarizes the main changes to the climate experienced in Southeast Michigan. Modeling predicts increased precipitation, more extreme storms, and more extreme temperatures (both high heat and intense cold events). Vulnerabilities of climate change in the Township include the following
 - **Community Vulnerability.** While the Township's population is fairly affluent, and is more likely to have the resources to adjust to these changes, some households are financially vulnerable. The Report recommends following up with a community vulnerability assessment to identify community members most vulnerable based on exposure to climate impacts and their adaptability to handle those changes.
 - **Infrastructure Vulnerability.** The Report describes how roads, electrical distribution systems, water and sanitary systems (both public and private), and stormwater systems are vulnerable to high precipitation events and extreme temperatures.
 - **Groundwater Availability and Water Quality Vulnerability.** As in this Master Plan, the Report states that many Township residents get their drinking water from private wells. It describes how changes in precipitation patterns could reduce available groundwater. It calls for mapping and monitoring available groundwater resources, and develop standards to protect groundwater recharge areas. It also calls for minimizing impervious surfaces.
 - **Agriculture Vulnerability.** More chaotic weather patterns will impact agricultural operations and their success. Extended drought could increase irrigation use, and more demands on groundwater resources.
- **Community Vulnerability.** While the Township's population is fairly affluent, and is more likely to have the resources to adjust to these changes, some households are financially vulnerable. The Report recommends following up with a community vulnerability assessment to identify community members
- Ecosystem Services of Township Natural Lands. The efforts the Township has made to preserve existing natural features, undeveloped open space, and agricultural lands has resulted in many ecosystem services for human wellbeing. Related to climate change, these preserved and working agricultural fields also sequester carbon, transforming it

into biomass through photosynthesis. The Report uses "land cover" as a proxy for ecosystem services. Only 9.2% of the Township is covered with impervious surface; the remaining 90.8% contributes to stormwater infiltration and cools the atmosphere.

- Greenhouse Gas Emissions Inventory. The Report provides an inventory of emission sources, and the associated emissions quantified using standardized methods. The land uses that emit the most greenhouse gas emissions (as of 2019) include the following:
 1. Community-wide transportation (43%)*
 2. Industrial buildings (29%)
 3. Commercial buildings (16%)
 4. Residential buildings (10%)

Possible land-use related topics the Township could study further to address emissions generated include:

- Availability of electric vehicle charging stations.
- Lane miles of bicycle and pedestrian facilities (including bicycle lanes, sidewalks, shared-use pathways, natural beauty roads).
- Incentives for energy efficient commercial and residential buildings.

*M-14, US-23 and Plymouth Road serve tens of thousands of commuters and commercial vehicles daily. This activity is not directly reflected in the Ann Arbor Township transportation emissions estimate, but it certainly has an impact on regional air emissions and noise (Pg. 23 of Report).

E. AGRICULTURE

Ann Arbor Township is a desirable place to live, work and visit in large part because of its rural character, which is anchored by farming within the Township. Agriculture is a valuable natural, economic and aesthetic resource and should be protected. Class II soils, the highest quality soil in Washtenaw County for farming, cover much of the northwestern and north central portions of the Township. While not "natural" elements of the landscape, agricultural lands play an important role in defining the environmental conditions of the Township.

The climate, variety of soils and terrain make Ann Arbor Township well suited to the production of a great number of row crops, specialty crops and livestock. These resources include an estimated 2,800 acres of tillable land, approximately 2,600 of which are currently in agricultural production. These agricultural lands serve to link farm operations north, east and west of the City of Ann Arbor and as such play a critical role in stabilizing farming in the northeastern region of Washtenaw County. Such lands provide unique aesthetic and economic benefits to the citizens of Ann Arbor Township and Washtenaw County and are an important part of the natural and agricultural heritage of the Township and county. Since the 1800s farming has significantly reshaped natural features in the area. Most of the remaining open spaces in the Township's landscape are agricultural lands and these areas are subject to increasing pressure from residential development. Residential growth must be balanced with maintaining and preserving good quality agricultural land.

In 1999, the Township sponsored a Farmland Analysis (Cost of Services) study conducted by the Washtenaw-Potawatomi Land Trust. The central conclusion of this study was that the preservation of agricultural land through purchasing development rights would cost less than if those acres were developed for residential uses. This analysis also included a survey of the attitudes of residents which indicated that over 73 percent agreed it was important to maintain farmland in the Township.

The agricultural industry in Ann Arbor Township provides the opportunity to harvest locally grown fruits and vegetables to sell at roadside stands, farmers markets, the local food hub and retail food stores and other local outlets in the County. Land suitable for farming is an irreplaceable natural resource with soil and topographic characteristics that have been enhanced by generations of agricultural use. When such land is converted to residential or other more developed uses that do not require those special characteristics, a critical community resource is permanently lost to the citizens of Ann Arbor Township and Washtenaw County.

Agriculture in Ann Arbor Township produces a notable array of crops and livestock including corn, soybeans, wheat, vegetables and fruit; as well as beef cattle. While agricultural census data are not available for Ann Arbor Township, they do exist for Washtenaw County and reflect the general situation for Ann Arbor Township. Of the County's nearly 460,000 acres, the 2022 United States Department of Agriculture National Agricultural Statistics Service (N.A.S.S.) states that 177,064 acres are involved in agricultural production,

located on 1,255 farms. These farms produce \$141,322,000 in direct sales of all agricultural products sold annually.

Generally, farmlands that are close to urban centers have a greater market value for future residential development than their market value for farming. Prime farmland has many of the same features that are components of desirable residential areas, such as favorable soil characteristics. This fact encourages the speculative purchase of these lands at high prices for future residential development, regardless of the current zoning of such lands.

County, State, and Federal Farmland Preservation

It is the policy of the State of Michigan and Washtenaw County to protect, preserve and enhance farmlands. Support for farmland preservation is established by the State of Michigan in The Michigan Land Use Leadership Council 2003 Report, "Michigan's Land, Michigan's Future" (a special task force initiated by Governor Granholm and legislative leaders), and the Natural Resources Environmental Protection Act (P.A. 451 of 1994, MCLA 324.101-324.90106), the Conservation and Historic Preservation Easement Act (P.A. 197 of 1980, MCLA 399.251), and other statutes and policies. Washtenaw County supports farmland preservation in its 2004 Master Plan entitled "A Comprehensive Plan for Washtenaw County, A Sense of Place, A Sustainable Future," which includes an in-depth analysis and inventory of active agricultural lands and identifies new market areas for Washtenaw County agriculture. It emphasizes the importance of finding new markets for Washtenaw County agricultural products and suggests that communities

review their zoning provisions to ensure that supporting agribusiness is permitted and encouraged. The Plan also includes extensive language describing other funding mechanisms that are currently in place or are being contemplated to preserve agricultural lands. The primary goal of the agriculture chapter of the County Plan is to encourage and support programs that maintain the viability of the County's agricultural sector.

Washtenaw County voters approved a ten-year renewal of the natural areas preservation millage in 2020, whose funding will continue through 2031. County policy now provides that 25% of funds generated are available to purchase development rights on farmland. That component is now operational, with \$800,000 available annually for direct purchases or in support of projects in other jurisdictions.

State farmland preservation efforts are most prominently carried out in the use of Farmland Development Rights Agreements (FDRAs), which are temporary restrictions on the land in exchange for state income tax benefits and exemptions from certain special assessments. The state Purchase of Development Rights (PDR) program has suffered from funding constraints and has not been active for some time.

The Federal Government's Farm and Ranchlands Protection Program (FRPP), administered by the Department of Agriculture and the Commodity Credit Corporation was consolidated with the Wetlands Reserve Program and Grassland Reserve Program into a new program, the Agricultural Conservation Easement Program (ACEP) as part of the 2014 Farm Bill. This program provides grant funds to

assist local governments, Native American Tribes, and non-profit organizations with the purchase of agricultural land easements on high-quality farmland. ACEP is funded by Congress through the Farm Bill, which allocates funds to every state. Michigan was allocated about \$1.9 million in 2022.

These measures by themselves, however, have not effectively provided long-term protection of agricultural areas from the pressure of increasing residential and commercial development.

Township Farmland Preservation

First in Washtenaw County, and second in the state, Ann Arbor Township established a Purchase of Development Rights (PDR) program in 2003 with 80% voter approval of a 20-year dedicated millage, expected to generate \$8 million over its duration. In 2024, the millage was renewed for an additional 5 years with a 77% voter approval. The program seeks to preserve 2,000 acres of farmland near developing urban areas and provide permanent protection for the public interests served by farmland in Ann Arbor Township. Properties, or portions thereof, on which development rights are purchased, will remain substantially undeveloped in order to promote their agricultural character. The Federal Agricultural Conservation Easement Program (ACEP), Washtenaw County Natural Area Preservation Program (NAPP) and the City of Ann Arbor Greenbelt program play an essential supporting role to the Township PDR Program.

As of 2023, 1,702 acres of lands in the agricultural preservation area north of the freeways have been permanently protected in the Township, with 1,284 of those acres

being preserved through the Township's dedicated land preservation millage. About 26% of these lands are in woodlands, wetlands and ponds. The Township millage has expended about \$4 million and has attracted over \$8.6 million of matching funds from the Greenbelt, ACEP, the Washtenaw County Natural Area Preservation Program and discounts on the sale price by landowners, at better than a 2:1 match. Moreover, several landowners who sold development rights have used the proceeds to invest in their operations, thereby overcoming the "impermanence syndrome" that often afflicts urban fringe agriculture.

Small Farms

In addition to commodity grain and livestock on large acreage farms, there is growing local and nationwide interest in small farms as a source of food for local markets, an attractive way of life, and a community asset. Small farms can prosper in proximity to urban areas such as Ann Arbor where farming is well established and where there is a strong network of markets for farm goods, significant individual and institutional interest in fresh produce, engagement in community farming, and appreciation for organic produce. Michigan's climate and soils support an agriculture more diverse than any state except California, which makes these small farm activities particularly appropriate. Ann Arbor Township has important advantages in all these respects, and there are many properties between 10 and 50 acres in size that would be appropriate for such farm operations. In 2007, the Township Farmland and Open Space Preservation Board (FPB) established a Small Farm Initiative to encourage and develop small farm operations within Ann Arbor Township.

The Township is home to several small farming operations including: Garden Works, Green Things Farm Collective, Seeley Farm, and Slow Farm. These farms provide produce for sale to area residents and food establishments. In addition, the Washtenaw Food Hub was established in 2011, which provides a venue for processing of locally grown foods thus increasing their value.

In 2006, the Township took title to 153 acres of land on Pontiac Trail that features 110 acres of tillable land and another 43 acres of woodland and wetland. The Township invested funds for repairs to the barn on the property that was built in the late 1800s. In 2011, 35 acres of the property were made available for the development of a small-farm incubator program. This program lasted approximately 8 years under the management of three non-profits (Tilian Farm Development Center, Food System Economic Partnership, and Michigan Food and Farming Systems). Two businesses that graduated from the incubator program have gone on to purchase and preserve land in the Township through the Purchase of Development Rights (PDR) program. Due to the inability of non-profit organizations to secure funding for personnel who could provide oversight of the property, in 2020 the Township began leasing the land directly to small farm operators.

F. HOUSING AND DEMOGRAPHICS

The housing stock in Ann Arbor Township prior to 1987 consisted almost entirely of single-family detached dwellings. With the subsequent construction of the Fleming Creek subdivision, Village Green apartments (now *The Haven apartments*), the Arbors and Laurel Gardens condominium complexes, the Township's housing stock (as of 2021) is now approximately:

- 60 percent single-family and
- 40 percent multiple-family, including single-family attached units.
- A 280-unit senior living facility (*All Seasons*) has been established.
- Sixty-two percent of all units are owner occupied.

Between 2006 and 2012, new residential development remained fairly low. But as of 2015, development increased in Ann Arbor Township. The following table demonstrates the number of building permits issued each year from 2015 until the present.

Year	Single Family	Multiple Family	Total
2015	9	0	9
2016	14	0	14
2017	16	0	16
2018	10	167	177
2019	10	33	43
2020	15	0	15
2021	10	0	10
2022	7	0	7

The number of single-family homes in the township (excluding Barton Hills Village) is 1,333 units, and are located on the following lot sizes:

Acres	Number of Lots
Less than 1 acre	699
One acre to 1.99 acres	341
Two acres to 2.99 acres	133
3 acres or greater	155

The median single-family housing value in 2021 in the Township was \$498,500 (down 5.5% from 2010), while the median rent was \$1,636 in the township (up 7.9% from 2010). Sixty-two percent of township residences are owner-occupied, 33% renter-occupied, and 5% vacant. Eighty-six percent of residents lived in the same residence one year before. The graphic below distributes the value of existing single-family residences in the Township (excluding Barton Hills Village) into ten equal categories (deciles), by SEV (State Equalized Value), which is half the market value:



According to the Southeast Michigan Council of Governments (SEMCOG) Population and Household Estimates, the Township's **population** in July of 2022 was 4,527 people. This figure represents a total increase of approximately 11 percent since 2010. The Township experienced a similar increase in population in comparison to other growing Michigan communities. This is most likely due, at least in part, to the proximity of the Township to a major job center (City of Ann Arbor), and the availability of land.

Census data, SEMCOG estimates, and the American Community Survey for 2000, 2010, and 2021 show the following information:

Age Range	2000	2010	2021	% Change 2000 - 2021
0-19	972	903	1,009	+4%
20-64	2,769	2,491	2,310	-16%
65+	644	673	992	+54%

The number of people **age 65 and older** increased by 54 percent between 2000 and 2021 and comprised 23 percent of the 2021 population (versus 16.5 percent in 2010). It is reasonable to expect this aging trend to continue.

The median Township household income in 2021 was \$126,881, increasing by 2% since 2010. The per capita income in 2021 decreased by 4% from 2010 to \$71,336.

G. TRANSPORTATION ISSUES

Roads

The road network in Ann Arbor Township consists of a combination of rural **roads**, arterial roads, more prominent collector roads, and several major arterials, all maintained by the Washtenaw County Road Commission. A considerable number of roads in the Township are gravel roads in various stages of disrepair. While road maintenance is the responsibility of the Washtenaw County Road Commission, the Township contributes funds for periodic grading and graveling of gravel roads in the community.

In 1994, the Michigan Legislature approved an update to the Natural Beauty Road Act (Act 451 of the Public Acts of 1994). Under this Act, road commissions can designate county local roads having "unusual or outstanding natural beauty" as Natural Beauty Roads. The Township currently has two designated Natural Beauty Road segments: Stein Road between Maple and Whitmore Lake Rd. (1.69 miles) and Warren Road between Nixon Road and Dixboro Road (2.35 miles). These segments connect to other Natural Beauty Road segments outside of the Township that include Tubbs Road between Huron River Dr. and Stein Road (1.2 miles) and Warren Road between Dixboro and Curtis (2.25 miles). These designations create a near continuous corridor across the Township that provides access to recreation, scenic beauty, and key connections to other non-motorized facilities like the Border to Border (B2B) Trail.

The following characteristics of transportation in Ann Arbor Township may influence planning policy moving forward and will help to inform the goals and policies of this Master Plan.

There is limited access to the northwest area. Road access to the northwest part of the Township is restricted by the Huron River, railroad tracks, and freeways. The area has only two access points from the City: Maple Road and Barton Drive. Maple Road is limited in capacity by the one-lane Foster Bridge and the at-grade rail crossing just south of the bridge. The Barton Drive exit on M-14 connects Barton Drive and Whitmore Lake Road to North Main Street, but traffic must merge with freeway traffic over a short distance on the bridge.

MDOT is currently proposing to temporarily close the east entrance and exit ramps to the M-14 interchange until the agency decides the fate of this connection. The Township has consistently opposed closure of the exit. The most recent 2009 Ann Arbor Transportation Plan Update supports keeping the access open. However, it goes on to say that while many of the recommendations in the Northeast Area Transportation Plan were incorporated into the Update, there are some differences and the two plans should be viewed separately.

Foster Bridge. The bridge was built in 1880 and is designated an historical structure by the State of Michigan. The bridge provides access to Barton Hills and the northwest part of Ann Arbor Township, as well as the neighboring parts of Scio, Webster, and Northfield Townships. Although the WATS Plan Update called for the replacement of the bridge, the Township helped save this historical bridge from replacement,

while addressing its major limitations for access because of its single lane and weight limits. Foster Bridge was restored and updated in summer 2003 and reopened in the fall of that year. The upgraded bridge accommodates a heavier load limit allowing use by school buses, fire trucks and other emergency vehicles.

US-23/Plymouth Road interchange. From Plymouth Road to Clark Road, US-23 serves as the boundary between Ann Arbor Township and the City; west side exit and entrance ramps at US-23 are in the City, while east side ramps are in the Township. The Plymouth Road/US-23 interchange was improved in 2004.

Geddes Road/US-23 interchange. This intersection and the two-lane bridge were a source of significant traffic congestion within Ann Arbor Township. However, in late 2010, the Michigan Department of Transportation completed a road improvement project that added roundabouts at the Geddes Road entrance/exit ramps, and at Earhart Road in the City of Ann Arbor. Other improvements along the corridor included concrete sidewalks and a new non-motorized multi-use asphalt path along the south side of Geddes Road that connects to a new non-motorized pedestrian bridge spanning US-23.

Non-Motorized Transportation

The Michigan Planning Enabling Act requires local communities to plan for a "...system of transportation to lessen congestion on streets and provide for safe and efficient movement of people and goods by motor vehicles, bicycles, pedestrians, and other legal users." This is known as planning for "Complete Streets," which considers transportation by all methods, and by all people of all ages and abilities.

Existing non-motorized facilities within the Township consist mostly of on-road paved shoulders along major roadways. The shoulders are between two and five feet wide. Most are the narrower dimension, making these facilities seem dangerous to pedestrians and cyclists. Paved shoulders are found on Maple Road, Whitmore Lake Road, Nixon Road, Plymouth Road, Dixboro Road, Earhart Road (south of M-14), Goss Road, Woodridge Ave., and Clark Road. There are also small segments of off-road shared-use paths near the City/Township boundary (such as the Border-to-Border Trail). These are shown on Map A in the Appendix.

Washtenaw County agencies and organizations have developed non-motorized plans that include proposed facilities within Ann Arbor Township, as well as connections within the County and the region. The proposed facilities in Ann Arbor Township are shown on Map B and Map C in the Appendix, illustrating proposals from the following plans:

- Washtenaw Area Transportation Study (WATS) 2012 Complete Streets Plan
- 2014 SEMCOG Nonmotorized Plan for Southeast Michigan
- WATS 2018 Non-Motorized Plan
- 2006 Regional Trails & Greenways Vision

Townships don't have jurisdiction over the public roadway system. However, Ann Arbor Township developed a non-motorized plan (Map 11 - Appendix) to illustrate its priorities for future non-motorized facilities, which could include bike lanes, shared-use

paths, bike routes, sidewalks, etc., along both roadways (under the jurisdiction of the Washtenaw County Road Commission - WCRC) and on lands controlled by the University of Michigan. One purpose of this plan is to communicate to the WCRC the Township's desires for non-motorized facilities within the right-of-way of major roads. The Township intends to work with the WCRC to implement these facilities as a part of roadway projects.

The non-motorized plan illustrates a pathway along Dixboro Road, north of the main entrance to the Matthaei Botanical Gardens. The Township worked with Matthaei to secure funding for this pathway. The Township then worked with the WCRC to secure an easement from the University of Michigan, develop construction plans for the Dixboro Shared-Use Path Extension within this road corridor, and build the pathway. The Township will continue to work with these partners, as well as adjoining communities, Washtenaw County Parks and Recreation, and others, to realize this vision for trails in the Township.

Other off-road, non-motorized transportation facilities are also part of the Township's vision, which would coordinate with on-road facilities to create a looped system of non-motorized trails to allow for recreation, pedestrian and bicycle transportation throughout the Township, and to important local destinations. Separate paths should be at least ten feet in width and paved when located adjacent to major roadways.

Ann Arbor Township Non-Motorized Plan

To address Complete Streets in the Township, and provide for an integrated network of non-motorized transportation facilities, the Township developed a plan identifying the priority corridors for new non-motorized facilities and trails (Map 11 - Appendix). The following describes the process used to develop this plan:

Maps were created to show the existing non-motorized facilities in the Township (Map A - Appendix), and future facilities planned by County and regional organizations (Map B and Map C - Appendix). Using this information, a draft priorities map was created, showing the Township's priority locations for future non-motorized facilities. Priorities were established by the number of other groups planning facilities for a particular corridor, potential connections with existing or planned non-motorized facilities, and accessibility to desirable destinations.

The original plan was developed with public input gathered through an on-line survey and public meeting in 2014. The current plan was updated using public input gathered through an on-line survey during December of 2019 and a public meeting, on December 5, 2019. (Detailed survey and meeting results are included in the Appendix.) The input collected was then integrated into the draft map to create the Township's updated vision for non-motorized transportation.

Key components of this vision include:

- Partnering with the Washtenaw County Road Commission to extend the connection with the Border-to-Border trail that traverses Dixboro Road. This segment would provide access between Parker Mill County Park to the south, and the natural areas (Marshall Nature Area) and Plymouth Road to the north.
- Creating better non-motorized facilities along Plymouth Road (Dixboro Road to US-23), connecting residents with shopping amenities in the City of Ann Arbor.
- Studying existing conditions along Whitmore Lake Road to ensure the existing facilities meet Township resident's needs. This corridor is also identified by WATS (2018), and SEMCOG's regional non-motorized vision. Heading north, this segment could also eventually connect with the Huron Valley Regional Trail in Livingston County.
- Creating a connection to the Border-to-Border trail on the west side of the Township, and to Skyline High School along Maple Road.

Rail

High Speed Rail for Detroit/Chicago. Federal and participating state governments have conducted a study of a proposed Midwest High Speed Rail Network, which includes St. Louis, Chicago, Milwaukee and Detroit. A segment linking Chicago and Detroit would have a state-of-the-art train control system, which enables higher speeds and greater passenger safety. The Detroit to Chicago line would run through Ann Arbor Township on the Conrail (formerly NYC) system. Any road improvements which involve railroad right-of-way should acknowledge that the high-speed railroad might become a reality. Existing legislation provides support for this strategy.

Ann Arbor North/South Commuter Rail. Since 2006, a coalition of local units of government, the Great Lakes Central Railroad, the Michigan Department of Transportation, the Ann Arbor Area Transportation Authority, local advocacy groups, and other parties have been working on a potential plan for a Howell to Ann Arbor commuter rail service line dubbed “Wally,” for “The Washtenaw and Livingston Line.” Organized along an existing 28 mile segment of rail, the plan would provide regular commuter service between the City of Ann Arbor and the outlying areas to the north, and would travel through Ann Arbor Township. In 2012, AATA received a federal grant to study rail station locations and design along the route.

Detroit/Ann Arbor/Jackson Commuter Rail. In the City of Ann Arbor Northeast Area Transportation Plan, and the 2009 Transportation Plan Update, the City supports the establishment of commuter

rail service between Ann Arbor and Detroit. The 2009 Update Plan also supports expansion of this line to Dexter, Chelsea, and Jackson. The Plan outlines the City’s vision for a commuter train station near the U of M Medical Campus at the Fuller Road/Maiden Lane intersection. The new station would also support multi-modal connections.

H. PUBLIC SERVICES AND FACILITIES

Ann Arbor Township contracts with the City of Ann Arbor to provide public water and sanitary sewer service in part of the Township. Please refer to Maps 12 and 13. The Township may purchase approximately 1.2 million gallons of water per day (MGD) from the City. The Township may discharge 1.65 MGD of wastewater flow into the Ann Arbor Waste Water Treatment Plant. This capacity is divided between two utilities service areas, discussed below. The Township owns and maintains the water mains, sanitary sewers and appurtenances that are located in Ann Arbor Township.

The Township has two sanitary sewer and water service areas. These areas were originally designated by the 1976 Facilities Plan of the Ann Arbor Waste Water Treatment Plant. Area 3A was included in the service area in order to provide sanitary sewer service to Barton Hills in the event of septic system failures in the Village. Area 5A was designated due to its development as a research and technology center with public utility needs. Both districts 3A and 5A are served by public sanitary sewer and water.

The remainder of the Township is outside the designated service area and will be served by private wells, on-site septic systems, and, in certain limited circumstances, private wastewater systems as allowed by environmental conditions and by the County Environmental Health Department and other applicable governmental authorities, including the Township. As discussed on page 21, the Gelman plume groundwater contamination has been a significant concern for private drinking water wells.

The Township has received requests to allocate excess wastewater treatment capacity from areas 3A or 5A to other areas of the Township. In order to respond to these requests, the Ann Arbor Township Board adopted a Utilities Service Policy in 1996. The Utilities Service Policy basically restricts services to the designated service area. The unknown future sewer service needs by the University in district 5A is a major concern.

The Township's administrative offices and meeting hall are sufficient to meet the public needs in the foreseeable future. The facility underwent an update in 2006, which included improvements to the office and meeting facility. In 2010, the Township received a \$50,000 Energy Efficiency and Conservation Block Grant to conduct an energy audit on the Township Hall/Fire Station building, and install heating, insulation and lighting improvements.

The Township has two fire stations, and these provide adequate coverage to all parts of the planning area. No additional fire stations are expected to be needed through 2040.

The entire area is in the Ann Arbor public school district. All existing public schools that serve the planning area are located in the City and there are no plans to construct public schools in the planning area.

I. BROADBAND/INTERNET AND CELL PHONE ACCESS

Reliable and fast access to the internet is necessary in today's digital economy. It is also becoming more necessary in providing educational opportunities, health care, and many other services that are important to everyday health and safety. This has been emphasized by the pandemic, which required many to work or attend school from home, and participate via the internet.

But unlike "utilities" that are highly regulated by federal or state governments, internet access is provided by private companies, and lightly regulated by the FCC as an information service. Internet companies are not required to provide their services to all households, like the electric company for example. This means that some scarcely populated areas may not have sufficient or reliable internet service.

Some residents have informed the Township of their poor internet connections. To bridge this digital divide during the pandemic, the Township participated in an initiative to install a public Wi-Fi hot spot at the Township Hall. This allowed anyone to access the internet from outside the building, while sitting in their car or on foot.

While the FCC regulates telecommunications (or cell phones), the level of access each customer has is dependent on many factors, including location, device, natural and artificial physical features, and other issues that could impact reception. Common carriers (Verizon, AT&T, T-Mobile, Sprint) provide coverage maps that show the Township is fully covered by their service, with some parts of the Township more fully covered than others.

J. COMMERCIAL SERVICES

All existing and likely future residential areas in the Township planning area are located within two or three miles of major commercial centers on Plymouth Road, Washtenaw Avenue, Carpenter Road and Maple Road. In addition, downtown Ann Arbor, the Briarwood Mall, and the Oak Valley Shopping Center/Meijer area provide complete coverage of the existing and potential market in the planning area and are more than sufficient in terms of location, retail floor area and range of goods and services offered to meet existing and future needs of Township residents. Consequently, this plan does not anticipate a need to locate commercial services in Ann Arbor Township.

Motels, restaurants, gas stations and other highway commercial services are fully developed at the Washtenaw Avenue and Plymouth Road interchanges on US-23. These service areas are only three miles apart and meet the needs of motorists on US-23. Additional highway commercial services are not needed in the Geddes Road/US-23 and Plymouth Road/US-23 interchange areas.

K. INDUSTRIAL, OFFICE, AND RESEARCH DEVELOPMENT

Ann Arbor Township has had a significant potential acreage of research and industrial development land removed from its tax base. Of the 600 acres of land originally intended to be part of the Ann Arbor Technology Park, fewer than 200 acres have been developed into research and light industrial uses. The University of Michigan owns 390 acres of the remaining land in the technology park as well as an 11-acre site north of Plymouth Road that is zoned for office use. The University has established the East Medical Campus at Earhart and Plymouth Roads. The University appears to be relocating many of its clinical practices to this area. Elsewhere in the Township opportunities for new research and development activities are limited to approximately 35 acres at the interchange of US-23 and Plymouth Road. There are 21 acres of industrial-zoned land in the Township that are partially developed. There are approximately 250 acres of office and office park zoned land in the Township, most of which is part of the Dominos Farms office park.

PART 4: GOALS

Goals are broad, fundamental statements a community has identified to accomplish a desired future. Goals express long-term rather than short-term expectations and are often expressed in such general terms that it is difficult to measure the degree to which they have been attained. However, goals establish the overall framework and basis for more specific elements of the Plan.

The following goals are categorized by topic heading. The listing order does not reflect or imply relative importance.

A. CLIMATE RESILIENCE

A.1 Support Land Use Practices and Techniques that are Environmentally Sustainable and Resilient

Natural feature preservation is important in responding to climate change. Nature-based solutions are a fundamental pillar of fighting the climate crisis, in addition to reducing greenhouse gas emissions, deploying renewable energy, and increasing energy efficiency. Natural solutions can reduce emissions, remove carbon from the atmosphere and lock it away, make ecosystems more resilient, and lower climate change risks for people. The Township's environmental goals (Pg. 40) have the added benefit of addressing climate change.

Where and how land is developed can work with or against natural features -- and their ability to provide ecological and climate benefits -- on and around a

site. The extent, location, and design of new development should work to preserve natural features on the developing property, and, where possible, the surrounding area and the ecological benefits the preserved features provide.

The Township should also play its part in supporting renewable energy generation, non-motorized transportation, and clean and energy-efficient buildings, among other techniques that support the goals and policies of the Township's Climate Action Report.

Increase in the volume of stormwater runoff is one result of climate change that is directly linked to the development of land. The Township will implement ordinances, techniques, and practices to increase sequestration, infiltration, and management of stormwater runoff in new development.

B. AGRICULTURE AND RURAL LIFE

B.1 Preserve the Township's Rural Character

The Township's predominant character is rural. The rural character is created by lands still in agricultural use, very low density residences, large areas of publicly owned open space and an abundance of natural features—primarily stream corridors, wetlands and wood lots. **These characteristics also create an environment with a desirable low level of noise and artificial lighting.**

The Township wishes to retain a largely rural character when it is fully developed while accommodating a diversity of residential, office, research and recreational uses. The overall low population density associated with this vision would not require costly amenities. Large green belt areas, either devoted to agriculture or rural residences, will provide habitat for animal and plant life that cannot survive in an urban setting, even in parks. The continuing presence of a tranquil, rural setting close to the center of a large urban area will improve the quality of life for both Township residents and residents of the City and neighboring townships.

B.2 Preserve Farmland and Encourage and Enhance Farming Operations

Preservation of farmland and enhancing farming operations are Township priorities.

Doing so:

- Protects valuable and irreplaceable agricultural land,
- Protects an important economic contributor to the area's agricultural economy,
- Maintains the rural character of the Township,
- Protects the local tax base,
- Retains the natural character of the Township, and
- Discourages unplanned growth.

The Township believes that farming, including smaller scale farming operations, is feasible and should be supported and enhanced. Such operations serve an important market need in the nearby urban area and provide a useful balance and contrast to the more intensely developed urban area. Farming provides important economic support for the goal of preserving the Township's rural character and is a facet of the goal of preserving open land.

C. COMMUNITY IDENTITY AND RELATIONSHIPS

C.1 Preserve and Enhance the Township's Identity

The Township cannot achieve its other goals unless it preserves itself as a viable political entity. Many elements comprise the character of a municipality and create its identity. In Ann Arbor Township's case, the rural character is a major element; the physical shape or the "L" shaped land that wraps around the north and northeast sides of the City is another major element. The freeways and the Huron River provide a distinct, physical separation between the relatively low density of the Township and the higher density of the City. The contrast helps define the Township's identity. The **Township Boundary Policy Statement** between the City of Ann Arbor and Ann Arbor Township will ensure orderly annexation of properties to the City and protect the remainder of the Township from annexation, so as to preserve the integrity of Ann Arbor Township and maintain the urban edge of Ann Arbor.

Another major element of the Township's identity is the Ann Arbor Technology Park, located east of US-23, south of Plymouth Road. This area is home to a number of large employers, such as the Toyota Tech Center and Design Center, KLA-Tencor, NSK Corporation, NSF International, and University of Michigan, among others. These businesses offer job opportunities to Township and City residents alike.

C.2 Maintain Cooperative Relationships with Neighboring Municipalities

Achieving each of the preceding goals will require cooperation with neighbors. **Many land-based features don't respect political boundaries -- such as traffic, streams and development pressures to name a few.** An on-going planning and working relationship with its neighbors is essential if Ann Arbor Township is to have a reasonable chance at achieving its other goals. The City and Township Boundary Policy Statement **that ensures orderly annexation of properties** provides a significant example of cooperative community planning.

D. ENVIRONMENT

Natural features are often thought of as independent landscape features. However, they work together and function as an interrelated environmental system. Ann Arbor Township has goals for individual natural features, as well as for broad environmental systems.

D.1 Protect, Preserve, and Restore Natural Features

Existing natural features, such as woodlands, fence rows, wetlands, stream corridors, and groundwater should be protected and preserved as both unique landscape features and as components of larger, interrelated environmental systems. They should be respected in farming activities, in daily living in rural residential areas, and in development planning and construction. Natural features that have been degraded due to historical land use should be restored to the greatest extent practicable, so that they provide their unique ecological services to the community.

These features are also important as visual amenities, are critical elements in sustaining the rural character of the Township, and are essential in protecting water quality, wildlife habitat and wildlife corridors. Most communities, especially townships, have natural features but the patterns and relationships between various natural features that they collectively create are usually unique to each community. So it is with Ann Arbor Township. Its natural features play a vital part in establishing the Township's character and identity.

D.2 Preserve and Protect Groundwater

Groundwater plays an important role in the Township, as many of its residents rely on individual drinking water wells. Groundwater is also the source for all agricultural irrigation. Groundwater is interconnected with all natural features on the ground's surface, providing a constant flow of clean, cold water to streams and lakes. Both the quality and quantity of aquifer resources should be protected and preserved.

D.3 Protect the Natural Conditions of Watersheds

Watersheds, or the drainage sub-basins in the Huron River drainage basin, are important systems on which to focus for protecting the Township's natural features, especially wetlands and stream corridors. The Fleming Creek and Traver Creek watersheds are the two largest in the Township.

A watershed is a hydrologic unit that can also serve as a unit for land use planning. By focusing on watersheds as units for planning, many policies relating to preservation of natural features can be realized. If not carefully planned, land use activities and development practices within an area can have a very detrimental effect on a watershed. The watersheds in Ann Arbor Township face the specter of continued degradation due to increasing impervious surfaces from the roads, parking lots, and rooftops accompanying growth. The Township will work to minimize impervious surface Township-wide, and keep the imperviousness in sensitive stream sub-basins under 10% (See *Stream Quality Categories* on page 20 for more information).

The protection of elements within a watershed, such as steep slopes, woodlands, wetlands, and grasslands, is essential to maintaining stream flow, restricting stormwater runoff, and preserving surface water quality. Stream flow, runoff prevention, and overall surface water quality have a direct correlation to the long-term health of the local and regional community. The safe recharge of groundwater resources, preservation of prime soils, and conservation of habitat for flora and fauna are all benefits of strong watershed protection.

D.4 Preserve Open Space

Open spaces are an important part of the Township's rural character. Preservation of open spaces supports all the other goals — **addressing climate change**, preservation of rural character, preservation of the Township's identity, encouragement of farming operations, protection of natural resources, protection of the natural conditions of watersheds, protection of existing residential areas, and maintaining a cooperative relationship with neighboring government entities.

E. TRANSPORTATION

E.1 Coordinate Transportation Improvements to Support Land Uses

Future road improvements should be compatible with and supportive of the Township's land use policies. Too often land use policies must be adjusted to fit road improvement plans. Planning for traffic flows and necessary road improvements should be consistent with transportation policies of the Ann Arbor/Ypsilanti urban area. Road improvements should respect natural features, especially trees and brush, and the natural character of road corridors. Existing residential areas should be protected from road widening and realignments.

E.2 Support County Transportation Agencies in Developing Non-Motorized Facilities Along Township Roadways

All modes of transportation should be considered integral elements of the entire transportation system, and all improvements to this system should be considered opportunities to improve safety, access, and mobility for all travelers within the Township and throughout the region. To this end, future road improvements should include non-motorized transportation facilities to accommodate the needs of residents for walking, biking and public transportation riders of all ages and abilities.

E.3 Develop Off-Road Non-Motorized Trails

Where feasible, the Township should partner with other entities, such as the Washtenaw County Road Commission, Washtenaw Area Transportation Study (WATS), adjacent communities, the University of Michigan, and others to plan, design, and implement off-road, non-motorized transportation facilities. The locations of potential facilities are illustrated on Map 11 in the Appendix. These facilities would coordinate with on-road facilities to create a looped system of non-motorized trails to allow for recreation, pedestrian and bicycle transportation throughout the Township, and to important local destinations.

F. NEIGHBORHOODS AND HOUSING

F.1 Protect Existing Residential Areas

Existing residential areas should be protected from potentially adverse impacts of incompatible development, **such as unreasonable increases in traffic, activity, or excessive noise and light**. Where higher density residential development or non-residential development is close to existing residences, land use policies should be designed to create a secure and stable environment for those residences.

F.2 Maintain a Diverse Mix of Housing

The presence of a wide variety of housing options in Ann Arbor Township encourages a vibrant community. The current mix with regard to density, unit size, location, and other features allows Ann Arbor Township to foster an inclusive sense of community and should be maintained.

PART 5: POLICIES

A. INTRODUCTION

Policies define courses of action for the Township. While goals tend to be general in nature and provide a vision of the community, policies establish definite positions on particular topics. Policies are often quantifiable and are directly associated with a goal. When policies are officially adopted, they commit a jurisdiction to courses of action. Those courses of action are carried out through implementation plans, which define the actions the Township plans to take, such as an amendment to the Zoning Ordinance or the establishment of a new agricultural preservation program. Implementation recommendations are included in Part 6 of this Plan. The following are the policies established for the Township.

B. LAND USE PATTERN POLICIES

These policies relate to all potential land uses and address the relationship between rural and urban densities, regardless of the land use.

1. A clear separation of rural and urban land uses will be encouraged by dividing the two with physical elements where possible.

The M-14 freeway and the Huron River west of the M-14 river crossing (*as shown on Map 1, Planning Area*) will be generally considered the transition area between urban uses to the south and much lower density uses to the north. The area north of this boundary will be rural residential and agricultural in use, except the existing suburban residential use in the area between Whitmore Lake Road and US-23 and in the Warren Road/ Pontiac Trail intersection area. The area south of this line will be primarily urban or suburban in use. The Ford Road residential area, which is south of M-14, is an exception because it is an established large-lot, low-density, rural residential area with significant natural features.

Part of the urban development east of US-23 and south of M-14 has a low-density character to it. Domino's Farms is a large office building surrounded by crop and pasture lands. The Ann Arbor Technology Park was planned as a low-density research park with large areas of open space and preservation of existing natural features. Now that the

University of Michigan owns almost all of the undeveloped land in the former park, the Township will encourage U of M to continue that concept as it develops its plans and facilities. The Village Green, the Arbors, Laurel Gardens, and Fleming Creek residential developments are exceptions to this character, but the higher density of these areas is somewhat mitigated by the presence of nearby large open spaces.

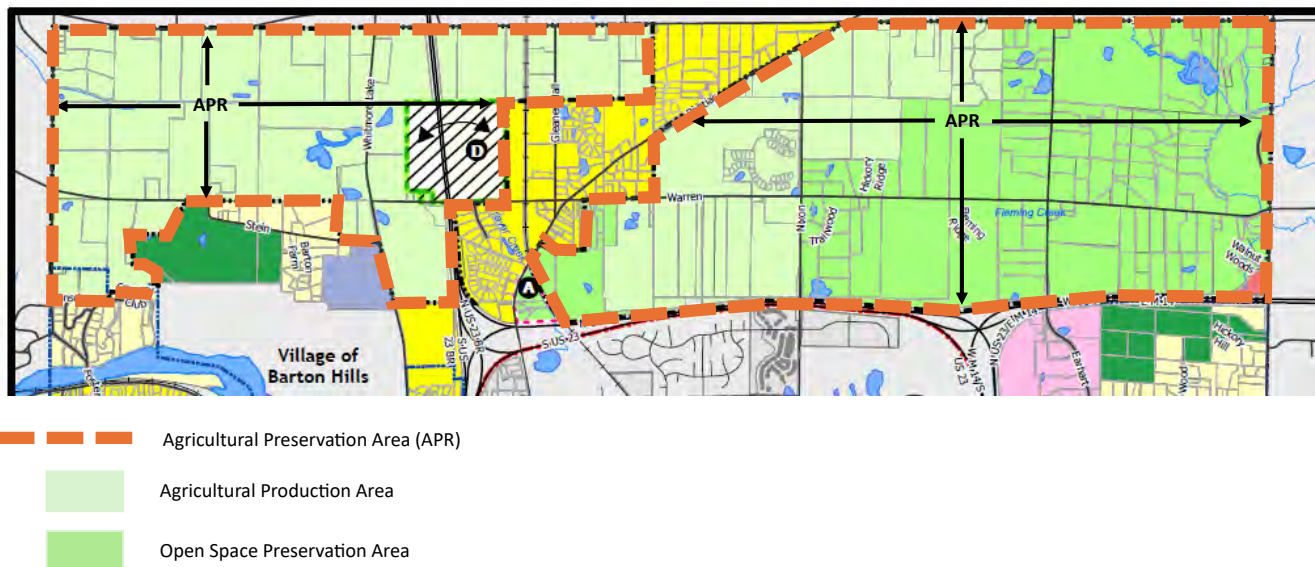
2. Ann Arbor Township is home to important historic and prehistoric resources. There are cultural and environmental benefits inherent in preserving archeological sites and material cultural resources of an historic nature, such as existing buildings and structures. Ann Arbor Township considers the preservation of these facilities a critical element in preserving the overall character of the Township.

3. Public water and sanitary sewer services will be used to support the distinction between urban and rural areas, and to protect the designated rural area from intrusion by urban development.

These services will be provided only in the designated service areas. They will not be extended north of the M-14 freeway and Huron River line except in the designated areas shown on Maps 12 and 13.

Areas outside the designated public water and sanitary sewer service area will remain in agricultural use, or be served by on-site wells and septic tanks/drainfields as approved by the Washtenaw County Environmental Health Department, and under certain limited circumstances, private community wastewater systems.

Ann Arbor Township Future Land Use Map Showing Agricultural Preservation Overlay District and Sub-Areas (Agricultural Production Area and Open Space Preservation Area)



C. AGRICULTURAL AND OPEN SPACE POLICIES

The Township has areas that are actively and successfully farmed. Agriculture is under intense pressure in areas that are close to the City of Ann Arbor. The land in the northern tier of Ann Arbor Township is identified as an "Agricultural Preservation Overlay District," except for the land along Pontiac Trail designated for single-family residential uses (yellow), and light industrial uses (purple). See the illustration on the previous page that outlines the Agricultural Preservation Area in orange dashed lines, and labeled "APR."

The Agricultural Preservation Overlay District is itself divided into two categories, which are also illustrated in the map on the previous page:

1. Agricultural Production Area (lighter green)
2. Open Space Preservation Area (medium green).

The Master Plan has overall policies that apply to the broader Agricultural Preservation area. It also has more refined policies for each of the subcategories within the Agricultural Preservation Area. These policies follow.

The priority of each area is listed below:

- **Agricultural Preservation Overlay District** = This represents the "umbrella" area that is made up of both the Agricultural Production Area and the Open Space Preservation Area (described below). Preserving

agricultural land uses and natural areas is the intent of the overlay district.

- **Agricultural Production Area** = Preservation of farmland core representing long-term agricultural land uses.
- **Open Space Preservation Area** = Preservation of mixed farmland, open space, and natural features, with integrated residential land uses.

Agricultural Preservation Area Policies

Ann Arbor Township has a large area of actively farmed land located in the north section of the Township. However, the Township's farmland is under increasingly intense pressure for residential development. Intrusion of residences on scattered lots would quickly destroy the sustainability of this area for farming operations. Within this area, agricultural preservation is a priority. The Agricultural Preservation Overlay area is overlaid onto this section of the Township, but concentrated in two separate planning areas: an Agricultural Production Area and an Open Space Preservation Area. This region was selected because of suitable soils and the following farmland characteristics, which are necessary for long-term agricultural production:

- Soils are generally rated by the USDA Natural Resource Conservation Service as Class II, which are the highest ranking soils for crop production in Washtenaw County.
- The parcels of land within the preservation area would allow for preservation of large contiguous areas.

- Most parcels in the area are zoned A-1; with much of the remainder zoned R-C. Other actively farmed parcels are zoned for residential uses because of their proximity to major road corridors or the Village of Barton Hills.
- Most of the tillable land is currently farmed.

The policies are:

1. Existing agricultural lands in the Agricultural Production and Open Space Preservation Areas identified on Map 8 will be preserved. At the request of the property owner, this policy could also be applied to currently farmed lands in the Agricultural Preservation area even if the parcels are planned for uses other than agricultural uses.
2. Small-scale agricultural operations will be encouraged in this area. These will include cultivation of fruits and vegetables, specialty farming such as tree nuts, dried fruits, herbs, spices, flowers, and nursery stock, farm stands, Community Supported Agriculture (CSA) U-Pick operations marketing directly to the consumer, and non-intensive raising of livestock and fowl grazing and pasturing.
3. Township ordinances will be updated to support the economic viability of agricultural operations, including topics such as farm market signage, affordable agricultural labor housing, and agricultural tourism opportunities.
4. The designated agricultural area will not be served by public water and sanitary sewer service. The designated area is outside the Township's adopted

water and sanitary sewer service area. In addition, such services would be incompatible with agricultural activities. Individual septic tanks/drainfields and water supply wells will be encouraged to serve residences on individual lots in this area, and under certain limited circumstances, private community wastewater systems may be used.

5. Natural features in the area will be preserved. Such features, including woodlands and woodlots, wetlands, stream corridors, steep slopes, groundwater recharge areas, landmark trees, and fence rows should not be modified or removed.
6. The amount of land in the designated area that is to be available for agricultural use should be maximized and the remaining farming parcels should be contiguous.
7. The Township will coordinate planning efforts with adjacent Townships along the common boundaries to preserve agricultural land in the adjoining areas.
8. Land for agriculture and open space preservation in this area is eligible for purchase of development rights (PDR) under the Township PDR Program.
9. Specialized zoning districts for clustering residences will be established in the Agricultural Preservation Area. In such districts density bonuses will be allowed on properties in which land is permanently protected under a suitable conservation easement.

Subarea 1: Agricultural Production Area Policies

The Agricultural Production Area is a core area of farmland located in the northwest and north central sections of the planning area (see Map 8). It has an area of approximately 5 square miles and is designated in the Plan for agricultural production. These lands have all the characteristics deemed necessary for long term agricultural production, namely:

- Soils are generally rated by the USDA Natural Resource Conservation Service as Class II, which are the highest ranking soils for crop production in Washtenaw County.
- Each parcel in the designated area, with one or two exceptions, is at least 20 acres in size.
- The parcels of land within the core area are contiguous within each of two large blocks.
- Most parcels in the area are zoned A-1; the remainder are zoned R-C.
- Most of the land is farmed.
- Most of the designated area does not have significant areas of natural features.

The policies are:

1. Find opportunities to increase renewable energy generation on non-prime agricultural soils to enhance economic viability of farms without undue impact on prime agricultural soils.

	Sub class	Density - Dwelling Units per Acre or Minimum Lot Size	Public Water	Public Sewer
Rural	Rural	0.2-0.5 du/ac or 2 to 5-ac. lots	N/Y	N/Y
Suburban		0.5-1.0 du/ac or 1 to 2-ac. lots	N/Y	N/Y
Urban	Low Density I	1.0-2.0 du/ac or 0.5 to 1-ac. lots	Y	Y
	Low Density II	2.0-4.0 du/ac or 0.25 to 0.5-ac. lots	Y	Y
	Medium Density	4.0-6.0 du/ac or 0.25 to 0.17-ac. lots	Y	Y
	High Density	6.0 du/ac or 0.17-ac. lots	Y	Y

2. The minimum lot area for farming operations with a farm residence will remain at 10 acres.
3. Residences will be permitted in the designated agricultural production area under specific conditions designed to enhance the agricultural character of the area and preserve productive agricultural lands in the Township.
4. Clustering residences will be strongly encouraged and will be allowed in the Agricultural Production Area under these conditions:
 - The lots will be located in areas that will have minimum interference with and from farming operations.
 - The locations and sizes of lots will minimize loss of the most productive

farmland. To this end the clustered residences will be located on the smallest possible lots, and the maximum lot area will be one acre, unless a larger lot is required by Washtenaw County for an on-site well and septic tank/drainfield. In that situation the maximum lot area will be the smallest area that is required to meet the county's requirements.

- The maximum number of residences that will be permitted will be based on a density of 0.10 DU/acre. The acreage will be based on the gross area of the lot, less the area in existing and planned road rights of way, regulated wetlands and 100-year floodways.
- Density bonus up to a maximum of 0.14 DU/acre may be permitted when:
 - a. Residences are clustered and the entire development is rezoned using a special Agricultural Preservation Residential District (APD). The APD will be the only zoning mechanism in which this density bonus will be allowed.
 - b. In such a district at least 80 percent of the predevelopment tillable farmland will be permanently protected via a Conservation Easement with the Township (or an entity approved by the Township) and the post-development farmland will be owned by the Township or a person or entity whose principal occupation or purpose is focused on farming or preserving farmland.

And when some or all of the following are achieved:

- a. Projects that limit traffic generation and minimize parking needs.
- b. Projects that contain "green" building components, site components, or technologies, in an effort to minimize the project's carbon footprint.
- c. Projects that offer "more affordable" residential units. Specifically, 10% of the total number of units are more affordable units where the housing cost is 40% or less of the Area Median Income (AMI), or 20% of the total number of units are more affordable units where the housing cost is 60% or less of the AMI.

Subarea 2: Open Space Preservation Area Policies

This area of mixed farmland and natural areas is located in the northeast and north central sections of the planning area. These areas are identified on Map 8. It has an area of approximately 5 square miles and is designated in the Plan for open space preservation, residential and agricultural use.

- 1. Increase opportunities to use renewable energy generation without negatively impacting natural features and the functions they perform.
- 2. Clustering of residences will be strongly encouraged in the parts of designated

rural residential areas that are intended for open space preservation. Clustering will maintain relatively large tracts of undivided and undeveloped land for possible small-scale agricultural uses, general open spaces and preservation of natural features. Small scale farming operations will be encouraged on larger lots in this area.

3. Residences will be permitted in the designated open space preservation area under conditions designed to enhance the rural character of the area and preserve quality open space in the Township.

4. Clustered residences will be permitted in the designated open space preservation area under the following conditions:

- The lots will be located in areas that will have minimum interference with and from farming operations or natural features.
- The locations and sizes of lots will minimize loss of the most productive farmland or preserve natural features. To this end the clustered residences will be located on the smallest possible lots, and the maximum lot area will be one acre, unless a larger lot is required by Washtenaw County for an on-site well and septic system. In that situation the maximum lot area will be the smallest area that is required to meet the county's requirements.
- The maximum number of residences that will be permitted will be based on a density of 0.10 DU/acre. The acreage will be based on the gross area of the lot, less the area in

existing and planned road rights of way, regulated wetlands, and 100 year floodways.

- A density **bonus of** up to 0.2 DU/acre is permitted when:
 - a. Residences are clustered and the entire development is rezoned using a special Open Space Preservation Residential District (OSPRD).
 - b. In such a district, at least 60 percent of the open space or farmland will be permanently protected via a Conservation Easement with the Township (or an entity approved by the Township) as the easement holder. The OSPRD is the only zoning mechanism in which this density bonus is allowable. Agriculture is a permitted use in an OSPRD.

And when some or all of the following are achieved:

- a. Projects that limit traffic generation and minimize parking needs.
- b. Projects that contain “green” building components, site components, or technologies, in an effort to minimize the project’s carbon footprint.
- c. Projects that offer “more affordable” residential units. Specifically, 10% of the total number of units are more affordable units where the housing cost is 40% or less of the Area

Median Income (AMI), or 20% of the total number of units are more affordable units where the housing cost is 60% or less of the AMI.

- Additional residential policies for this area are included in Section 5.D.

D. RESIDENTIAL AREA POLICIES

The Master Plan is designed for a population capacity that is consistent with existing conditions and the objectives for the future Township. The Plan is therefore not designed for a specific time period or projected population. The following policies prescribe the location and character of future housing development and are intended to protect and enhance existing residential areas in the Township.

The residential area policies are divided into "Density Policies," and "Design Policies." The first subcategory - density - relates to the number of residential dwelling units that occupy an acre of land. These policies relate to the principal dwelling, and not any Accessory Dwelling Unit (ADU) that may be incorporated into the principal dwelling, or in an accessory structure. See the end of the "Density Policies" section for a discussion of ADUs.

Residential Density Policies

- 1. Density Classes:** The Plan designates three density classes of residential areas: rural, suburban, and urban.

Rural Residential

The rural (0.2-0.5 DUs/acre) class is the least dense category for residential development. This area is made up of

large lot, estate residences situated near areas that are primarily reserved for open space and agricultural use.

Suburban Residential

The suburban (0.5 to 1.0 DUs/acre) class is a transitional category between rural and urban residential areas, as far as density hierarchy is concerned, but not necessarily in a geographic sense. Lots in this class are considered to be too small for agricultural activities. The suburban residential areas outside the water and sanitary services areas will not be served by public water or sanitary sewer services.

Urban Residential

The urban residential classes require central water and sanitary sewer services and are located in areas in which these services will be provided. The urban category is further divided by density.

- The **1 to 2** and **2 to 4** DUs/acre classes are both located in primarily single-family detached areas, although single-family attached dwelling units are possible in 2 to 4 DUs/acre areas as well. These classes are located in areas in which dwellings at similar densities currently exist.
- The 4 to 6 DUs/acre class is for medium density residences, such as single-family attached dwellings, mobile home parks, townhouses and low-density multiple-family dwellings.
- The 6 DU/acre class is the most dense residential category in the Township

and is reserved for limited areas where the impact of high density residential development can best be mitigated and will have the least impact on less dense areas of the Township. The high-density class is intended primarily for multiple-family type dwelling units.

- 2. Dwelling Unit Type:** Residential areas will be designated in terms of density, rather than type of residential building (i.e., single-family detached or attached, multiple-family dwelling, etc.).

Density ranges do relate to certain types of dwelling units; for example, the rural residential classes are primarily single-family detached dwellings and the high-density class is primarily multiple-family dwellings. Density transfer might create a net density on a parcel of land within a density class that will be high enough to result in a change in dwelling unit type. An example is a concentration of density on one part of a site that is designated for rural residential use such that attached, rather than detached, single-family dwellings would be necessary to achieve the permitted number of dwelling units. See the discussion of density transfer in part 6, section G.

- 3. Dwelling Variety:** A variety of dwelling units, in terms of types, sizes and cost ranges, will be encouraged in Ann Arbor Township to maintain a diverse mix of housing options and assure a choice of dwelling unit types and prices and a socioeconomic mix of the population.
- 4. Public Utility Service Area:** Public water and sanitary sewer will not be extended into the rural residential areas that are

outside the existing water and sanitary service areas. These areas are intended for residences and certain agricultural activities that may be compatible with residences at a low density, such as small-scale farming and non-intensive raising of livestock. The residential areas are located in areas of similar existing lot sizes.

- 5. Dwelling Consistency:** Development of existing undeveloped low-density and rural residential areas will be consistent with existing densities and character; densities and uses on such lands will not be permitted to adversely affect existing residential areas.

6. Accessory Dwelling Units (ADUs):

- Accessory Dwelling Units (or ADUs) are additional living quarters, independent of the primary dwelling unit, that offer space for extended family members, or renters, as an accessory use of the single-family residential dwelling. The ADU can be attached to the primary dwelling, detached from the primary dwelling in an accessory structure, or integrated into the primary dwelling. ADUs are known as accessory apartments, garden apartments, granny flats, and mother-in-law suites, among other names.
- To assist residents with housing affordability, The Township will permit ADUs only on residential parcels of three acres or more to provide a greater mix of housing choices that are more affordable relative to existing housing stock in the Township. Affordability applies

to those occupying the ADU as well as the property owner receiving rental income, making the primary dwelling unit more affordable.

- The intent of ADUs is to support housing affordability, make efficient use of existing housing stock, and respond to changing family needs and increasing housing costs.
- ADUs are not intended to be used for short-term rentals, such as Air B&Bs. ADUs are also not a Bed & Breakfast business operated out of the principal dwelling.

7. Short-Term Rentals: To protect the Township's housing stock for long-term residential use, the Township shall not permit renting residential units for less than a consecutive 30-day period.

Residential Design Policies

1. Natural features will be preserved in residential areas to the maximum extent feasible.
2. New residential development will be compatible with existing residences, in terms of density and building types. Existing sound and stable residential areas will be protected. In areas in which a change in land use or density is planned or that are adjacent to an established residential area, density gradation, buffer uses or areas and natural features will be used to create a gradual transition. Design practices will protect existing residential areas from noise and light impacts of new developments.
3. In rural areas, residential lots or dwelling units will be clustered to protect natural features, open space and agricultural land. In rural areas, each lot in a cluster should have at least one lot line abutting open space. Clustering of residential lots or dwelling units will also be encouraged in suburban and urban residential areas within overall density limits established in the Master Plan. Private wastewater treatment plants will be carefully considered and will only be approved if it can be demonstrated that they are being used to allow for clustered developments to occur in areas outside the sewer district. Private wastewater treatment plants will not be used to support a net density that is greater than suburban residential. Residential areas will be organized to preserve the existing character of Township roadways. Site and building plans will minimize the impact of noise and light from new development on existing uses and on adjoining natural areas.
4. Residential areas will be interconnected by local streets and pedestrian/ bicycle paths or sidewalks, where such interconnections will not adversely affect adjacent residential areas. This policy is intended to promote a physically integrated community. Future street and pedestrian path connections will be provided as required to create an integrated circulation system.
5. Accessory structures on residential parcels shall be limited in an effort to minimize impacts to the character of the surrounding properties and general vicinity. The maximum size of accessory structure(s) shall be based on the zoning district and the size of the lot/parcel,

as well as the existing size of the ground floor of the dwelling unit.

6. Home occupations in residential dwellings have become more prevalent in the Township due to people working from home during the pandemic. Home occupations are permitted in residential areas of the Township, within the following parameters:

- Ensure that home occupations always remain an accessory use that is subordinate to the principal residential use of the premises.
- Automatically authorize telecommuting and related invisible and no-impact uses without any application, review or permit approval in all dwelling units.
- Ensure that home occupations are conducted so as to maintain the residential character and viability of the dwelling, not result in incompatibility with nor undue disturbance to surrounding residential properties, or constitute a detriment to the character and livability of the surrounding neighborhood.
- Prevent unreasonable noise, dust, odor, light, glare, ground vibration or other impacts that if not prevented, could undermine the pleasant use and enjoyment of residential districts for dwelling purposes.

E. SPECIFIC AREA POLICIES & SPECIAL STUDY AREAS:

The following policies are directed toward specific areas of the Township to recognize the unique characteristics of distinct areas within the community. The following areas, A-F, are designated on Map 9.

Area A:

This area has one acre or larger lots with on-site wells and septic tanks/drain fields. This is a residential neighborhood and will continue as such. The area is designated for suburban residential use at a density of 0.5 to 1 DU/acre (1 to 2 acre lots) to reflect existing conditions.

Area B

This area is designated for a density of 0.5 to 1 DU/acre, similar to the density of the existing residential area along Dhu Varren Road. The area to the west, south of the line of Dhu Varren extended, is designated for a density of 0.2 to 0.5 DU/acre (2-5 acre lots), to be consistent with the existing lot sizes and residences in the area to the north of Dhu Varren Road.

Area C

This area is designated for a mix of uses and densities. The central and northwest parts of this area are designated for agricultural use. The east part is designated for open space preservation/rural residential at a density of not more than 0.1 DU/acre (10 acre lots). Clustering of dwellings on the larger tracts of land in this area is intended. The area along Pontiac Trail, and north and south of Warren Road, is designated for suburban residential use at a density

of 0.5 - 1.0 DU/acre (1-2 acre lots). A rural residential area exists just to the north of the Village of Barton Hills, at a density of 0.2 - 0.5 DU/acre (2-5 acre lots). It is the intention of the Township to support preservation of agriculture on these parcels if the property owner so desires.

In Area C, Ann Arbor Township recently purchased approximately 140 acres on the north side of Warren Road, straddling US-23. The land is currently zoned A-1, General Agriculture and R-2, Single-Family Suburban Residential, which requires a minimum 1-acre lot size for residential dwellings. The Township will develop plans in the future to determine the preferred land uses on this site that are compatible with the area.

Area D

These areas are in the Boundary Policy Statement area. The Boundary Policy Statement between the City and Ann Arbor Township permits the City to annex parcels of land in this area after 2007 without legal protest from Ann Arbor Township. Individual parcels may be released for annexation if public water and sanitary sewer services are needed. The Township will continue land use and zoning policies that will protect the existing character of the area in the interim period prior to annexation.

Area E

The residential density pattern in the area east of US-23 and south of M-14 is largely established by two factors-existing residential development and availability of public water and sanitary sewer services in most of the area.

1. The area north of Ford Road is designated for rural residential use at a density of 0.2 to 0.5 DU/acre (2-5 acre lots). The area is mostly developed in this density range. Public water and sanitary sewer services are not intended for this area.
2. The Ayrshire subdivision, located south of Plymouth Road between the old and new Earhart Roads, is an existing residential neighborhood of single-family detached dwellings. It is almost completely developed with lots approximately one acre in size and is designated for suburban residential use at a density of 0.5 to 1 DU/acre. This is a stable residential neighborhood that will be preserved. Preservation will require buffer uses or landscape screening along its boundaries on neighboring properties to protect it from existing and future non-residential uses to the south and east. Sanitary sewer services are intended for this area.
3. Not including the 40 acres already developed in this area, the remaining area between Old Earhart Road, US-23, and Plymouth Road (approximately 30 acres) is designated for urban residential use at a density of 2 to 4 DUs/acre. The low area will be retained as open space; residences should be clustered in the higher ground. The low land is subject to water ponding by off-site surface water run-off. Development of this area will be preceded or accompanied by improvements that will remove the drainage problem. Access to the area will be limited to Earhart Road. This area is largely served by existing water and sewer.

4. Two areas on the east side of Dixboro Road are designated for low-density urban residential uses. The north area, partially developed with single-family attached dwellings at a density of 3 DUs/acre, is in the 2 to 4 DUs/acre density class. The south area is mostly undeveloped and is designated for low-density urban residential use at a density of 1 to 2 DUs/acre. In both areas the layout of residential complexes will respect the adjacent open space owned by the University of Michigan. The area north of Geddes Road between US-23, Dixboro Road and the south end of the Technology Park is developed with multiple-family dwelling units and attached single-family dwellings at a density over 6 DUs/acre. Therefore, the area is designated for high-density urban residential use. This area is largely served by existing water and sewer.
5. There are two residential areas between Geddes Road and the Huron River, both designated for rural and suburban residential use. The area west of Dixboro Road south of Geddes is designated for 2 to 5 acre lots. The area east of Dixboro Road has been developed into a senior independent and assisted living campus. This relatively new development is consistent with the 2008 subarea study entitled *Geddes Road/Dixboro Road Subarea Study*. The study focused on the area surrounding the Dixboro Road and Geddes Road intersection and concluded that the parcels at the Southeast corner of the intersection may be suitable for senior housing developed as a planned unit development with a density of up to 9 dwelling units per acre under certain circumstances, including reduced traffic impact, substantial environmental

mitigation, significant limitations on impervious surfaces to help protect existing groundwater recharge areas, wetlands and watersheds, and other protections of natural features. The All Seasons senior facility is within the density envisioned for this land, and preserves open space (landscaped with native vegetation), and wooded areas.

6. This subarea also includes the Ann Arbor Technology Park, which is a specific area in the Township designated for research and technology. The Township intends to preserve this area as a hub for employment and provide an opportunity for corporations and institutions to engage in cutting-edge research and technology development. See the "Research and Industrial Area Policies" on page 59.

Area F

These areas are mostly developed with single-family detached dwellings. Therefore, the density and lot size patterns are generally established. Fill-in of undeveloped parcels will be consistent with these established patterns. The area is designated for suburban residential use at a density of 0.5 to 1 DU/acre (1-2 acre lots) to reflect existing conditions. Wetlands and woodlands adjacent to Washtenaw Community College lands will be retained as open space.

Special Study Areas

The Planning Commission members participated in three design exercises to help establish a desirable density for vacant land or land with obsolescent uses that no longer coordinate with uses that have grown

up around them. Special study areas A, B, and C are located on Map 8, Future Land Use. All three special study areas lie along or very close to the Township's boundaries with either the City of Ann Arbor or Pittsfield Township and thus serve as gateways to the Township. Commission members prioritized the future uses of these areas to visibly and functionally distinguish the Township from these neighboring municipalities, rather than allowing similar uses to expand over the border. The following describe the vision for each special study area:

- **Special Study Area A - Pontiac Trail.**

This area encompasses the properties that are currently zoned Limited Industrial, and have developed over the years into light-industrial and contractor business sites. The surroundings consist of single-family residential properties, agricultural uses, and existing natural features. The industrial character of these properties no longer plays well with the surroundings, and the Township's other goals for agricultural and open space preservation. The planned future land uses for the land in this special study area is Open Space Preservation, as illustrated on the Future Land Use map, and as described in Subarea 2, Pg. 48.

- **Special Study Area B - Plymouth Road.**

The land in this study area is a combination of vacant parcels, and large-lot residential properties that were built 50-60 years ago. The extent of traffic and activity along Plymouth Road did not coordinate with the required 2-acre minimum lot size. During the exercise, the Commissioners tested a variety of other minimum lot sizes (from 1-acre to 7,200 s.f.), and determined that the density created by the R-3A zoning

district (0.5-acre minimum lot size, or 2-lots per acre) is the best density for this site, given its location, existing natural features, and limited number of vehicle trips generated by this density.

Specific concepts regarding development and design of this site are listed below. These concepts reflect the Planning Commission's concerns regarding the following issues:

- Extensive traffic currently using Plymouth Road, particularly at the US-23 interchange, and the desire that any future development of this property will not make this situation worse.
- The fact that this property is located at one of the main entries into the Township. The development of this site should reflect the Township's own unique character, and its values of natural feature preservation.
- Maintaining a relatively low-density area to better coordinate with and support the existing residential development on the south side of Plymouth Road.

For Planned Unit Development projects, offering up to a 25% density bonus (or a maximum of 44 units) on this site may also be desirable for projects that accomplish the following goals:

- Clustered development that preserves the site's natural features.

- b. Projects that contain “green” building components, site components, or technologies, in an effort to minimize the project’s carbon footprint.
- c. Projects that limit traffic generation and minimize parking needs.
- d. Projects that offer “more affordable” residential units. Specifically, 10% of the total number of units are more affordable units where the housing cost is 40% or less of the Area Median Income (AMI), or 20% of the total number of units are more affordable units where the housing cost is 60% or less of the AMI.

Development of Special Study Area B should be consistent with following concepts:

- 1. Provide for a “mix” of unit types in one project, including single-family attached units, such as townhouses, 4-plex buildings, or “cottage court” arrangements. Age-restricted senior housing of the desired density, and designed using the concepts described for this Special Study Area, could also address the goal of reduced traffic generation.
- 2. Clustering single-family units is desired and encouraged to preserve existing natural features, and their functioning. Preserving ecological functioning could include, but not be limited to, larger-than-required water feature buffers, and preservation of woodlands in a large cohesive area vs. fragmented areas, for example.

- 3. Site design should include a significant, vegetated buffer along Earhart Road to the east, and Plymouth Road to the south. The purpose of the buffer is to screen the road activity, noise and light from the residences.
- 4. Smaller homes (less than 2,000 s.f.) should be considered by the Developer, which will provide a greater variety of housing options and price points for Township residents.
- 5. The Planning Commission could consider reduced parking requirements (such as one-space per unit) to encourage other modes of transportation.
- 6. Pedestrian facilities including a sidewalk that accommodates non-motorized transportation should be installed along Earhart Road to the east, and Plymouth Road to the south.

- **Special Study Area C - Hogback Road.** This vacant land was considered for special study due to the development pressures seemingly generated by the much higher density development in adjacent Pittsfield Township (on the south side of Clark Road) in comparison with the low-density residential development in Ann Arbor Township (on the north side of Clark Road). The Planning Commission identified preservation of existing natural features on this site as a goal of any future development of this property.

After testing the minimum lot sizes of five zoning districts, the Commissioners

determined that retaining the current density reflected in the Master Plan (or 1-2 acre lots) is best for this site, and the surroundings.

For Planned Unit Development projects, offering up to a 50% density bonus on this site may also be desirable for projects that accomplish the following goals:

- a. Clustered development that preserves the site's natural features.
- b. Projects that contain "green" building components, site components, or technologies, in an effort to minimize the project's carbon footprint.
- c. Projects that limit traffic generation and minimize parking needs.
- d. Projects that offer "more affordable" residential units. Specifically, 10% of the total number of units are more affordable units where the housing cost is 40% or less of the Area Median Income (AMI), or 20% of the total number of units are more affordable units where the housing cost is 60% or less of the AMI.

Development of this property should be consistent with the following concepts:

1. Provide for a "mix" of unit types in one project, including single-family attached units, such as townhouses, 4-plex buildings, or "cottage court" arrangements. Age-restricted senior housing of the desired density, and

designed using the concepts described for this Special Study Area, could also address the goal of reduced traffic generation.

2. Clustering residential units is desired and encouraged to preserve existing natural features, and their functioning. Preserving ecological functioning could include, but not be limited to, larger-than-required water feature buffers, and preservation of woodlands in a large cohesive area vs. fragmented areas, for example.
3. Smaller homes (less than 2,000 s.f.) should be considered by the Developer, which will provide a greater variety of housing options and price points for Township residents.
4. The Planning Commission could consider reduced parking requirements (such as one-space per unit) to encourage other modes of transportation.
5. Pedestrian facilities should be incorporated throughout the project including a minimum 5-foot-wide sidewalk. An easement along Hogback Road that can accommodate a minimum 8-foot wide safety path should also be included in any site design.

F. NON-RESIDENTIAL AREA POLICIES

Commercial Area Policies

No new commercial areas will be designated in Ann Arbor Township. A vast range of commercial services is readily available in the City of Ann Arbor and Pittsfield, Scio, and Superior Townships. These developed commercial centers are all within a three-mile radius of all parts of Ann Arbor Township. Many of the predominant commercial areas now within the City of Ann Arbor were formerly within Ann Arbor Township and have been gradually annexed into the City over time. These existing areas are more than sufficient to serve the commercial and service needs of all existing and future residences, businesses and institutions in the Township.

Office Area Policies

Domino's Farms office park will continue to be developed according to policies approved for the office park zoning district. The original approval would allow for one long low building, a single high rise building west of the low building and a large open space and operating farm surrounding the office complex. However, only 183,000 square feet of buildable area remains within the maximum established in the original approval, which would likely be insufficient to accommodate the high-rise without demolishing an existing building. Uses in the office park include the headquarters facilities of the Domino Pizza, Incorporated; professional and administrative offices; supporting uses for offices in the park; a limited floor area of retail and personal services for employees, visitors, and incidental use by the general public; farming operations and activities; and certain special events.

A second office area, designated for a corporate headquarters, is located south of Plymouth and west of Old Earhart. The uses of this property are defined by a PUD Agreement with Ann Arbor Township.

Research and Industrial Area Policies

Industrial areas in Ann Arbor Township consist primarily of research operations. One area is designated for light industrial uses.

1. The area between Pontiac Trail, M-14 and the Ann Arbor Railroad track **was developed in the past** for light industrial uses, such as those permitted in the I-1 zoning district. **This Master Plan includes a Subarea Plan for this site on Page 56.**
2. Ann Arbor Technology Park (RRA):
 - a. The park will be developed according to an overall plan with a unified landscape scheme as provided in the approved RRA zoning district for the park property.
 - b. Uses in the park will not create dangerous, injurious, noxious, or otherwise objectionable conditions, either within the park or on neighboring properties.
 - c. Where the park abuts residential properties, a buffer will be provided to protect the residences. The buffer may consist of topography, trees, shrubs and distance. Existing natural features will be used as buffers where possible.
 - d. The steep slope areas, drainage corridors, wooded areas and fence rows should be preserved and made

a part of the overall landscape of the park in accordance with the design standards included in the approved RRA zoning district.

- e. The internal roadway system in the Technology Park includes paved shoulders on either side of the vehicle travel lanes. These shoulders should be incorporated into a non-motorized transportation system.

G. STREET AND TRANSPORTATION POLICIES

Mobility is changing as rapidly as the economy. Movement of and access to goods, services, recreation and employment are critical to the community's quality of life. Companies have more freedom than ever to choose their location, telecommuting is rising as a popular way to work, and e-commerce is taking a share of the conventional retail market, all of which have a dramatic effect on transportation needs. Rising fuel prices have changed the way consumers choose their homes or even plan their daily errands. Non-motorized transportation is becoming a viable option in many communities, especially when integrated with other forms of transportation to create a true multi-modal system. In the 21st Century, transportation demands of changing age groups and the desire for a regionally prominent non-motorized transportation network will play a significant role in land development.

Ann Arbor Township encourages Context Sensitive Solutions (CSS) when considering transportation changes proposed within the Township. Context Sensitive planning is an approach introduced by the United States Department of Transportation which "...fits

its physical setting and preserves scenic, aesthetic, historic and environmental resources, while maintaining safety and mobility. CSS is an approach that considers the total context within which a transportation improvement project will exist." In other words, CSS demands that a project must specifically respond to the surroundings in which it is located, and not be predetermined by regular universal design standards.

The street categories contained in this Master Plan parallel the National Functional Classification system. The following establish roadway and alternative transportation policies for the Township.

General Street Policies

1. Streets should be designed and constructed in accordance with the following functional classification system.
 - a. Regional Arterials/**Freeways**: Provide for regional traffic flows between cities in the region and between cities and major activity areas, such as employment centers, major airports, etc. In the Ann Arbor area they are all freeways (and are classified as freeways on Map 10).
 - b. Minor Arterials (generally 120' ROW): Serve traffic movement within the Ann Arbor Township area, primarily between major arterials and collector or local streets, and between major parts of the area such as neighborhoods, employment centers, shopping centers, etc.
 - c. Collector Streets (66' ROW): Collect and distribute traffic between origins

and destinations and the arterial parts of the street system. While the National Functional Classification differentiates between two types of collector, for the purposes of this Master Plan, they have been combined into a single category on Map 10.

2. Plans for new development will provide for extension of streets to connect with existing or future streets. Connections will occur at common boundaries where such extension is determined to be necessary for continuity in the public street system or to provide vehicular access to interior lands.
3. Traffic will be routed around, rather than through, neighborhoods and other land use areas. Local and through traffic will be separated by the design of the street system.
4. The number of driveway openings on arterial streets will be minimized. Strong access management will reduce the need for additional lanes and will improve the safety of traffic flow. The number of driveway openings on collector streets might also be limited in certain areas where necessary to obtain the same objectives.
5. The Township will be flexible with regard to roadways and roadway widths to ensure that critical resources can be protected. Variations in road standards, including increases in rights of way and decreases in paved width, will be considered by Ann Arbor Township where existing developments, trees or other vegetation, topography, or other conditions justify a change in standards.

Specific Street Policies

1. The Barton Drive/M-14 on-ramp and off-ramp should **be maintained, and additional measures implemented to improve traffic flow and safety.**
2. Expansion of the freeways will not be considered a basis for changing use policies for lands in Ann Arbor Township that abut the freeways.
3. The Michigan Department of Transportation (MDOT) owns the right-of-way for an interchange on M-14 at Dixboro Road, but has no plans to construct one. Ann Arbor Township opposes construction of an interchange at this location.
4. The Geddes/Dixboro/Huron River Drive route will be maintained as a minor arterial between US-23 and the major traffic generators to the east, such as Washtenaw Community College, **Trinity** Health System and Eastern Michigan University. Access to the south side of Geddes Road between US-23 and Dixboro Road will be prohibited.
5. Plymouth Road, a minor arterial, was widened in 1991 to four lanes plus turning lanes. The widened road is expected to be sufficient for the foreseeable future.
6. Dixboro Road will be maintained as a collector between Plymouth and Joy Roads. It will function as a minor arterial between the Plymouth and Geddes/Huron River Drive corridors.

The road will have a right-of-way of 86 to 120 feet, with two driving lanes and additional turning lanes at major intersections. The number of access points will be minimized. Where necessary, access points will be combined in order to limit the number of lanes needed on the road. Access points will be located at least 500 feet from the intersections with Plymouth and Geddes Roads.

7. The portion of the existing Earhart Road between the overpass and the intersection with Old Earhart Road will not have any driveway openings; access will be provided north of the intersection. Earhart south of US-23 to Geddes Road within the City of Ann Arbor should be developed as a major arterial to divert traffic from Dixboro Rd. between Plymouth and Geddes.
8. Old Earhart Road south of Plymouth Road will be maintained as a local road with a right-of-way of 66 feet and two driving lanes. Design of and access to the existing road will have as one objective the protection of the existing residential area to the east, Ayrshire Subdivision, from traffic impacts. Major non-residential traffic will be required to use the “new,” relocated Earhart Road for access to Plymouth Road. Turning controls might be necessary at the existing road’s intersection with Plymouth Road for reasons of traffic safety and to maintain maximum traffic flow capacity on Plymouth Road.
9. Hogback Road is a minor arterial. The right-of-way should be 86 feet with two driving lanes and additional turning lanes at major intersections.

The primary function of this section of the road will be to collect traffic from the adjacent areas and Huron River Drive west of the road. Access points will be limited to the minimum number necessary to serve the adjacent properties.

10. Clark Road is a minor arterial between Hogback and Golfside roads. Its principal functions will be to provide access to Washtenaw Community College, office and apartment complexes and other adjacent properties and to serve as a feeder route for the major east-west arterials. Ann Arbor Township does not support any extension of Clark Road west over US-23 to Huron parkway because this extension would not divert enough traffic from Washtenaw Avenue or other east-west arterials to justify the cost of construction.
11. Nixon Road is a collector between Plymouth Road and Pontiac Trail. The road connects Pontiac Trail, Dhu Varren/ Green Road and Plymouth Road; serves as an extension of Huron Parkway; and serves as a connecting route between the central area of the City and the outlying areas in Ann Arbor and Northfield Townships. Right-of-way will be 120 feet. An interchange should not be constructed on Nixon Road at M-14.
12. Pontiac Trail is considered a minor arterial from beyond Joy Road to Beakes Street in the central area of Ann Arbor. The principal functions of this road will be to provide access to the north part of Ann Arbor Township and the north and central parts of the City from M-14 via Barton Drive, provide access to the north part of the Township and City from

areas north and east of the Township and provide access to properties in the general vicinity.

The road will have a right-of-way of 120 feet in the Township area. Two driving lanes with turning lanes at principal intersections will be sufficient in the Township to carry projected traffic.

13. Whitmore Lake Road is a minor arterial from Barton Drive north. Its principal functions will be to interconnect major east-west roads in Ann Arbor and Northfield Townships; serve as a feeder route for the Barton Drive interchange at US-23; provide a connecting link between Barton Hills Village, other residential areas, and the central area of Ann Arbor; and provide access to properties in the general vicinity. The right-of-way will be 120 feet. Two driving lanes will be sufficient in this area.
14. Maple Road is considered a minor arterial between West Huron River Drive and M-14. The street's principal functions will be to provide access to the northwest part of Ann Arbor Township, Barton Hills Village and the developing residential areas in the northeast part of Scio Township, as well as to adjacent properties, including Skyline high school. The right-of-way will be 86 feet, unless additional width will be needed for drainage purposes. Open drainage will be provided, and existing right-of-way trees and brush will be preserved in Ann Arbor Township to maintain the road's character.

15. Huron River Drive west of Hogback Road is classified as a minor arterial. It provides a secondary, alternate route between central Ann Arbor and the east-side residential areas and important points further east, such as Washtenaw Community College and the St. Joseph Mercy Health System. It will continue to function in this manner, but Ann Arbor Township opposes the upgrading of this corridor to accommodate more traffic. Huron River Drive should not be widened or otherwise improved or changed to carry additional traffic. The existing streetscape and corridor characteristics will be preserved, particularly the wetland south of the road and the river basin area on the north side.
16. Joy, Warren, Ford, Stein, Maple north of Huron River Drive and Gleaner Hall Roads will remain as rural, local roads, whose principal function will be to provide access for adjacent properties. Open drainage will be provided and existing trees in the right-of-way and adjacent frontages will be preserved.

Policies for Public Transportation

The Township encourages innovative application of mass transit options in Washtenaw County and will participate in regional studies and programs to cooperatively plan for alternative transportation.

1. Express bus service should be provided on Plymouth Road between Dixboro Road and the central area of the City, and in the Fuller/Geddes corridor between US-23 and the City's central area.

2. Ann Arbor Township, through the Planning Commission and Board, should be a full and active participant in decisions regarding public transportation in the Township. The planning process for public transportation should be a joint effort involving the Township, the City, the Washtenaw Area Transportation Study (WATS), Washtenaw County, and the Ann Arbor Area Transportation Authority (AATA).

development projects, and multi-purpose paths connecting neighborhoods with other community focal points and adjacent community trails.

4. Non-motorized paths separated from vehicle travel lanes should be at least eight feet in width and paved when located adjacent to major roadways.

Policies for Non-Motorized Transportation

The Township supports development of an integrated system of non-motorized transportation facilities in both the Township and throughout Washtenaw County. See Map 11, *Priority Non-Motorized Corridors*, which illustrates a vision for new non-motorized facilities in coordination with existing facilities. It will participate in county programs and projects, as well as partner with other communities and organizations to implement non-motorized facilities within its jurisdiction and connecting to other communities. These activities include the following:

1. Partner with the University of Michigan and Matthaei Botanical Gardens to complete the off-road trail planned on the east side of Dixboro Road for the 1,500-feet of the Dixboro Trail gap.
2. Pursue grants and other funding sources to contribute to design and implementation of non-motorized projects.
3. Evaluate zoning changes that require installation of sidewalks or other non-motorized transportation facilities in new residential and non-residential

H. PUBLIC FACILITIES POLICIES

Sanitary Sewer Service Policies

Ann Arbor Township contracts with the City of Ann Arbor under the 2005 City - Township Wastewater Treatment Capacity and Services Agreement for a specified maximum volume of sewage treatment capacity reserved by the City for use by the Township. By Township policy portions of the contractually available capacities must be reserved for current and reasonably anticipated future demands. There are two service areas identified as Service Area 3A and Service Area 5A. A total capacity of 1.65 million gallons per annual average day is allocated to the Township by the 2005 Agreement.

The 2005 City - Township Wastewater Treatment Capacity and Services Agreement allocates 0.13 MGD for Service Area 3A, which includes the Newport Road Area, Barton Hills Village, Whitmore Lake Road Area, and the Windshadow/Hawthorne Hills Area as a reserve against a future time when central wastewater treatment might be needed. Thus Service Area 5A has a capacity of 1.51 MGD. Estimated current sewage flow for Ann Arbor Township is 0.39 MGD, based on 2006 usage. (Note that Ann Arbor Township is amending the Service Agreement in 2025.)

The following are policies for sanitary sewer service.

- a. The 2005 Wastewater Treatment Capacity and Services Agreement is recognized as the basis for providing sanitary sewer service for Ann Arbor Township. Under the Agreement and for purposes of this Master Plan, the sewer service area is defined in Map 12.
- b. Sanitary sewer service from the Ann Arbor Area Wastewater Treatment Plant will not be extended outside the service area boundary established in the 2005 City - Township Wastewater Treatment Capacity and Services Agreement.
- c. The Township's contract with the City of Ann Arbor specifies maximum volumes of sewage treatment capacities reserved for use by the Township. By Township policy portions of contractually available capacities must be reserved for current and reasonable anticipated future demands. Because there is no guarantee that contractually available capacities can be increased or shifted at some time in the future, it is important to balance future demands with the contracted capacities. Capacity reservations should be made in the following order of priority:
 - i. Within Service Area 5A, properties that were included in the original special assessment districts in 1982 and 1984 to fund construction of the sewer and water infrastructure in the 5A area.
 - ii. In-fill lots within the 5A area, north of the Huron River, whether or not within the original special assessment district.
 - iii. The area south of the Huron River and east of US-23 that was added to the 5A service area by the 1994 Boundary Policy Statement between the Township and the City.
 - iv. Within Service Area 3A, Barton Hills Village, as contemplated in the 1976 agreements to expand capacity of the Ann Arbor Wastewater Treatment Plant and the original sewer/water contracts between the Township and City. This area was considered because of the potential for failure of existing septic systems.
 - v. The area south of the Huron River that was added to the 3A Service Area by the 1994 Boundary Policy Statement between the Township and City, which includes existing residential areas and in-fill of vacant lots in the Newport Road area. These include the platted of subdivisions Huron River Heights, Barton Plateau, Village of Newport and Chubb's Alterations.
 - vi. Existing residential developments in the 3A area, north of the Huron River, and south of Country Club and Landsdowne Roads, including Hawthorne Hills and Windshadow developments and in-fill of currently vacant lots within these developments.

vii. Other properties within the 3A Service Area.

- d. If necessary to service properties in Service Area 5A the Township might attempt to negotiate increases in the contractually specified water and sewage treatment capacities.
- e. The Township will not attempt to negotiate capacity increases to serve properties outside the established service area.
- f. Lateral sewers and appurtenances will be installed at developers' expense.
- g. On-site septic tanks and drain fields may be permitted on properties in an area designated for public sewer service, but only on a temporary basis, pending availability of public sewer service.
- h. Development in the sewer service area will be limited to uses and densities that are within the capacity limits of the 2005 Wastewater Treatment Capacity and Service Agreement. Major water-using industries are not consistent with this policy because of adverse impact on sewage treatment capacity and will not be permitted.
- i. As described above, the Township provides public wastewater disposal services within designated sewer service areas under a contract with the City of Ann Arbor. Those areas outside the public sewer service area are either designated as agricultural preservation areas, open space

preservation areas or rural residential areas. These areas are generally to be served by individual septic systems, and in certain limited circumstances, privately owned and operated community wastewater disposal systems.

Water Service Policies

Ann Arbor Township contracts with the City of Ann Arbor for a specified maximum quantity of water. By Township policy portions of the contractually available capacities must be reserved for current and reasonably anticipated future demands. The Township will continue to analyze and maintain its storage capacity to ensure that it will have sufficient volume to meet peak demands of customers and fire demands, especially as the East Medical Campus continues to develop. There are two (2) service areas identified as Water Service Area 3A and Water Service Area 5A. The maximum quantity of water which the Township may take shall not exceed 1.5 million gallons per day (MGD) and shall not exceed an instantaneous rate equivalent to 3.0 MGD.

The 2005 City – Township Water Supply Agreement allocates 0.12 MGD for Water Service Area 3A and 1.38 MGD for Water Service Area 5A.

The following are policies for water service.

- a. The 2005 Water Supply Agreement is recognized as the basis for providing water service for Ann Arbor Township. For purposes of this Master Plan the Water Service Area is defined in Map 13.

- b. The Water Service Area will not be extended outside the service area boundary established in the 2005 Water Supply Agreement.
- c. Transmission and distribution lines will be looped to assure adequate system pressure and continuity of water service.
- d. Water transmission and distribution lines and appurtenances will be constructed at developer expense.
- e. Each dwelling unit will connect to a public water line when service becomes available.

Groundwater Protection Policies

Another major source of drinking water in the Township is from private wells and the groundwater aquifers that supply those wells. The Groundwater Recharge Area Policies (Page 73) discuss ways of protecting the *quality* of groundwater resources. This section discusses ways to protect the *quantity* of groundwater so that it continues to be a dependable source of potable water to Township residents and property owners who are located outside of the Water Service Area and Sanitary Sewer Service Area. Policies include the following:

- Activities that lower the groundwater elevation in any part of the Township shall be prohibited, unless specifically allowed by statute for a particular purpose.
- Groundwater monitoring systems, such as monitoring wells or other techniques, shall be implemented to measure groundwater levels before

any permitted groundwater withdrawal is conducted, except for those withdrawals made by individual wells serving single-family homes.

Storm Drainage and Impervious Surface Policies:

The entire planning area is in the Huron River drainage basin. All stormwater run-off either drains directly into the Huron River by permanent or intermittent drainage courses, or indirectly through major tributary streams, such as Fleming and Traver Creeks, and the Swift Run Drain and Mallett's Creek. Some areas drain into wetlands that have no regular outlets. The stormwater drainage system consists of both natural drainage features as well as those constructed as part of farming operations or land development projects. These drainage facilities are important parts of the Township's utility systems, even though most are not publicly owned or maintained. They are also important landscape features and elements in the ecosystem.

The following are policies for storm drainage in the planning area:

- a. Storm drainage will have equal importance with water and sanitary sewer services in determining the suitability of land for development and proper density and layout of uses, buildings and other improvements.
- b. On-site drainage, stormwater detention, retention and infiltration facilities will be designed to properly manage increased intensity, volume and duration of precipitation events related to climate change.

- c. On-site drainage facilities will be adequate to deliver surface water run-off to established drainage courses.
- d. Drainage systems will be located and designed to prevent sediment and pollutants carried by surface run-off from entering watercourses and groundwater aquifers.
- e. Suitable mechanisms will be established as part of each development to assure proper long-term maintenance of drainage facilities.
- f. Open and natural drainage courses will be used where possible as part of the drainage system. Open drainage courses that are constructed will be graded and landscaped so as to appear a part of the natural landscape.
- g. Stormwater retention will be provided as part of site development or as part of area-wide drainage systems. Retention basins will be used to control the volume, quality, and rate of stormwater run-off and discharge and to recharge the groundwater supply. Retention basins will be designed in accordance with the current standards of the Washtenaw County Water Resources Commissioner. Area-wide retention facilities serving two or more lots are encouraged in place of an individual retention basin on each lot. Such area-wide facilities will generally be required to be established as county drainage districts with the WCWRC.
- h. Stormwater run-off from any development should not exceed that which existed under undeveloped, natural conditions in terms of volume and velocity. Run-off under existing undeveloped conditions that causes problems will be altered to acceptable rates and volumes by drainage improvements.
- i. Natural water areas within the Township will be preserved in their natural form and condition. Each storage area as well as its fringe area will be protected from encroachment by development. The quality of run-off water that might drain into such areas will be properly maintained.
- j. Impervious area, such as pavement, will be minimized in order to reduce the quantity of stormwater run-off and permit groundwater recharge. The Township has adopted an ordinance that requires developments with impervious surface greater than 20% to establish special mitigation procedures such as retention basins, infiltration systems, permeable pavement and green roofs. Developments with impervious surface greater than 20% are required to retain on site or by infiltration, cumulative water volumes and rates in excess of that produced by 20% impervious surface.
- k. Wetlands may be used as stormwater retention facilities provided the condition and character of the wetland will not be adversely affected. Direct discharge into the wetland is prohibited. Township and MDEQ approval will be required

for use of a regulated wetland as a retention facility.

- l. Drainage swales and courses and retention facilities will be designed, constructed and maintained to appear and function as natural features in the landscape.
- m. The design and location of stormwater retention facilities will consider the potential for groundwater contamination.
- n. Each developing site will provide for accommodation of flow of upstream drainage. Costs associated with accommodating off-site flow will be the responsibility of the developer.
- o. Construction sites will be regulated to prevent discharge of soil, debris and other material onto streets or adjacent properties or into drainage courses or wetlands.

Cable Utility Policies

Electricity, telephone and similar lines will be placed underground in new developments.

The Planning Commission will evaluate overhead lines and their routes for proper alignment, effect on the appearance and character of existing and future development and effect on trees and other natural features before construction. Overhead lines and easements or rights of way for overhead and underground lines will be located to avoid disruption of stands of trees, specimen trees, or significant fence rows, and to avoid arbitrary or unwise division of land use or ownership parcels.

Surface equipment to serve underground lines will be judiciously placed as part of landscape design and will be screened from view.

Substations and similar buildings will be designed and landscaped to be compatible with the character of the area in which they are located.

Wireless Communication Facilities Policies

Wireless communication facilities will be permitted in Ann Arbor Township in accordance with the following policies.

- a. The number of facilities permitted will be the minimum necessary to provide a reasonable level of service to the public.
- b. Locations will be limited to existing and future non-residential areas as designated in this plan.
- c. Location and design of facilities will respect the character and property values of the area of impact.
- d. Co-location of antennas will be required to concentrate facilities in the fewest number of locations.
- e. Facilities will be designed and located to minimize intrusion on existing and future residential areas and the Township's natural landscape.
- f. Facilities will be designed to provide for the safety of adjacent properties and people.

- g. Removal will be required if a facility becomes obsolete, inoperable, or unused.

I. NATURAL FEATURES POLICIES

Ann Arbor Township has many areas with natural features. As "green infrastructure," natural features perform many interconnected functions. Disruption of one can have adverse effects on others and can subtract from the quality of life in both the Township and neighboring communities.

These features will be preserved and will be used to maintain and, where necessary, create a connected system of open space. These features, together with large open areas and very low density uses, give the Township its unique character. They are important to the Plan in that they provide a visual and physical structure to the Township. Most importantly, they are respected for their integral role in maintaining balance in the environment.

The Plan focuses on watersheds that are tributary to the Huron River as critical planning areas within the larger Township planning area. The Township will strive to limit development within each watershed to the capacity of that watershed and impervious areas will be monitored and controlled to protect water quality.

The Township will also work to coordinate policies with neighboring municipalities, especially with regard to the watersheds tributary to the Huron River.

It is also the intent of this Plan to preserve continuity of natural features and so create systems of open space. This will be

accomplished by using proximity as well as contiguity of natural features. An open space system may be any combination of natural features.

The natural features described in the Plan are intended only to illustrate the concept of natural systems and the general location of such features. These areas are not intended to be specific for any site. The actual location, extent, and relationship to existing or proposed development will be determined at the time of development review when detailed information will be available. The policies in this part of the Plan are generalized and are based on existing information, such as USGS maps, County soil maps, aerial photographs and studies made by Washtenaw County and the Huron River Watershed Council

General Policies

1. Streams, water bodies and wetlands will be used as part of the drainage system of the Township. To the maximum feasible extent, their character and ecological health should be maintained or improved.

These features will be protected from disturbance by construction and from pollutants and sediment that might be carried by surface water run-off, or higher stormwater runoff by big storm events attributable to climate change.

2. Natural features will be used, where feasible, to create boundaries between use areas or to separate development areas from agricultural areas.

These features can help create a meaningful physical structure for

developing areas and the Township as a whole.

3. The following lands are generally considered to be unsuitable for development:
 - a. Lands that cannot be developed in their natural state, such as flood plains and wetlands.
 - b. Lands that are essential to the continuity and preservation of natural systems.
 - c. Lands on which development would result in environmental destruction of a larger natural system or create hazards to the environment or the public.
4. The Township will enhance and protect wildlife corridors to minimize impact on animal habitats.
5. The Township will enhance its green infrastructure by protecting natural areas and establishing connecting corridors between natural areas.
6. The Township will encourage and/or implement ecological restoration activities on Township-owned property and in new development projects, where feasible.

Stream Corridor Policies

The unique flora and fauna of stream corridors require special attention for adequate preservation.

1. Detailed information about stream corridors will be required at the time of development review to determine the nature and extent of the stream corridor and the specific area that should be protected or preserved.

The width of a stream corridor will vary, depending upon the configuration of the stream course, the types of soil on adjacent lands, the nature of the filtration of surface water into the ground, the types and amounts of vegetative cover and the slope of land adjacent to the watercourse.

2. There will be no disturbance to stream hydrology or alignment by topographic alteration within the corridor unless such alteration will improve existing conditions or remove a hazard or threat to the community.

Filling or removal of material; construction of buildings, culverts, bridges, or other structures; removal of vegetative cover and the location of wells, septic tanks, and drain fields within stream corridors will be regulated and reviewed by appropriate agencies.

3. Development projects will be reviewed not only in the context of the stream corridor, but also in relation to the corridor's watershed. A stream corridor and its watershed comprise an ecological unit. Protection of slopes, woodlands, and wetlands, as well as proper management of land use development in that watershed is essential to maintaining the quality and quantity of stream flow within the corridor.

4. A protective buffer strip will be provided in new developments along stream corridors.

Watershed Policies

The Township is dedicated to the preservation of the Huron River Watershed and has identified a series of specific policies in this regard.

1. The rate of surface water run-off will not exceed that which occurs under undeveloped conditions. This policy will prevent overloading of streams receiving run-off and will help prevent long-term erosion created by uncontrolled, high velocity discharges.
2. Erosion control methods and drainage plans will recognize soil types and land slopes of a construction site.
3. Not more than 15 percent of a watershed's land area should be in impervious surfaces. *Land area in sensitive stream sub-basins should be less than 10 percent impervious surfaces.*
4. The Township will protect subwatersheds that are at the sensitive level. In these subwatersheds new development shall not result in increasing the total percentage of impervious surface to the point it pushes the subwatershed to further significant degradation. Conversely, the Township has determined certain subwatersheds to be the preferred location for most new dense development provided that infrastructure shall be adequate to ensure that existing water quality is not degraded further, and where possible is improved.
5. To protect subwatersheds listed as sensitive as of 2010, the Township has designated Boyden, Traver, and the upper reaches of Fleming Creeks as open space and agricultural protection areas.
6. To prevent further degradation of subwatersheds listed as impacted or nonsupporting as of 2010, Ann Arbor Township will require stormwater management and impervious surface limits to reduce the frequency of post-development bankfull and subbankfull flooding, maintain or improve channel stability, and provide maximum removal of designated pollutants of concern. *(Note: Downstream Fleming Creek, Millers Creek, Swift Run Drain, and segments of the Huron River are considered "impacted," and Mallets Creek is considered "nonsupporting" of aquatic life.)*
7. In order to reduce the impacts of impervious surface and stormwater runoff the Township will require stormwater management and site design that reduces impervious surfaces, and the protection of natural features such as stream buffers, wetlands, and steep slopes.
8. The Township will explore policies and public education that result in the reduction of use of phosphorus fertilizers, increased use of native landscaping, and awareness about watersheds.
9. In order to minimize impervious surface on a watershed and regional scale, the Township will work to encourage compact, transit-oriented development in areas where infrastructure already

exists; to preserve large, contiguous areas of natural areas and farmland; and to protect critical ecological areas, such as wetlands, floodplains, and riparian corridors.

Wetland Policies

Wetlands consist of low areas with poor drainage and either temporary or permanent standing water. They also include areas with a high water table and hydric soils.

1. Wetlands will be protected in order to preserve water quality, stabilize surface water run-off, and provide wildlife habitats. They will be retained as possible wild areas but, where feasible, will be incorporated into surface water drainage systems, provided that inflow of sediment, pollutants and nutrients will not damage their viability.
2. Wetlands will be used as ground water recharge areas where possible and as areas to stabilize run-off during periods of heavy precipitation.
3. Actual boundaries and significance of specific wetlands will be determined at the time of development review. Current information about the location, extent and type of wetlands in Ann Arbor Township is generalized.
4. Uses permitted in or adjacent to wetlands will be compatible with the purposes and functions of wetlands.
5. Wetlands and the remainder of the watershed that drains into the wetland beyond the fringe area will be recognized in reviewing proposed developments

within or in the vicinity of wetlands and in conducting future studies to develop detailed policies and regulations for wetlands.

6. A protective buffer strip will be provided in new development along the edge of a wetland.

Ground Water Recharge Area Policies

Ground water recharge areas collect and hold precipitation and surface run-off for percolation into aquifers. They are vital elements in the hydrologic cycle because they restore water tables and supply water to lakes, streams and wetlands. (Also see discussion on Groundwater Protection Policies on Page 67.)

1. The location, nature, and extent of recharge areas will be identified during development review. Detailed information will allow the Township to work with developers to ensure that the site design observes the highest level of respect for specific ground water recharge areas.
2. Development in a recharge area will be controlled to retain as much of the permeable surface as possible. Land grading will be controlled to retain the water holding characteristics of the land. Vegetation essential to the water holding characteristics will be preserved or, where necessary, enhanced as part of a development program. The balance and integrity of the hydrologic system will be maintained in a proposed development.
3. Recharge areas will be protected from pollution by regulating the uses permitted within such areas and by

controlling the quality of surface water run-off from tributary areas.

4. Areas classified in the county soil survey as having soils with water tables at or near the surface will also be protected from pollutant entry. Pollutants on such soils quickly and easily enter the underground water system.

Woodland Policies

The high-quality woodlands in Ann Arbor Township are critical to the environmental health, aesthetic beauty, and character of the community.

1. Woodlands will be preserved **or improved** in order to protect water and soil quality, buffer air and noise pollution, moderate local climate and storm severity, preserve wildlife habitats and preserve aesthetic values and community beauty. Associated flora and fauna will also be preserved or **improved**. Development that is permitted in or adjacent to wooded areas or significant specimen trees will be planned, constructed and maintained so that existing healthy trees and vegetation are preserved to the maximum feasible extent. Native trees that are healthy will be preserved rather than removed and replaced with young stock. Diversity of woodlands will be protected to improve their long-term stability.
2. The location, species, and quality of wooded areas or individual trees will be considered during review of developments to determine preservation requirements.

3. The type and density of uses permitted in and adjacent to wooded areas will be compatible with the objective of preserving woodlands.
4. Clustering will be encouraged to preserve woodlands.
5. Specimen and landmark trees that must be removed for permitted development will be replaced based on an equivalency measure.
6. Fence rows will be identified on development plans and will be preserved if evaluation shows they are performing one or more of these important functions: providing habitat and paths of travel for birds and animals; serving as natural snow fences and windbreaks; providing visual relief in otherwise open areas; serving as connecting links between larger areas of natural features, such as woodlands and wetlands.

Steep Slope Policies

Steep slopes associated with watersheds are sensitive in that threats to steep slopes can impact water quality. Slopes also foster local biodiversity and contribute to the community's aesthetic character. Slopes will be considered in terms of soil types as well as steepness. Steep slopes are those that are 12 percent or greater.

1. Areas of steeper slopes, such as more than 12 percent, will be protected. Protection of steep slopes will reduce erosion potential, maintain slope and soil stability, control amounts and velocities of surface water run-off and protect an

aesthetic resource.

2. Development that is permitted on steep slopes will maintain or enhance the natural contours, vegetation and drainage patterns. Existing land form will be a major factor in the land use and site planning processes. The primary objective will be preservation of natural contours rather than alteration by mass grading.

Climate Resilience Policies

The Township has been considering actions to reduce, mitigate, and adapt to the changing climate since 2021. In that year, the Township Board passed a resolution, declaring the Township policies to mitigate climate change. One part of that action was development of a First Climate Report (dated October 21, 2024).

The Report includes "climate actions," many of which are already included in this Master Plan, but categorized under other topics, such as "Agricultural and Open Space Policies" and "Natural Feature Policies." These policies that describe multiple techniques to preserve agricultural lands, open space, and natural features will provide climate resilience for the community. Community-wide actions in the Appendix of the Report that relate to land use planning include:

- Encourage energy-efficient building design
- Update Stormwater Regulations
- Natural Area Preservation
- Farmland Preservation
- Expand Rain Garden Program

- Expand Electric Mobility Options
- Maintain and Expand Township Tree Canopy
- Incentivize Local Food Production
- Expand the Active [Non-Motorized] Transportation Network

Support for renewable energy generation is currently provided via the Township's Solar Energy Systems ordinance, which simplifies installation of solar panels for homeowners, and outlines the process and parameters for utility-scale systems. In 2023, the State passed a package of new laws regarding development of utility-scale wind, solar, and energy storage projects that allows for local or state regulations for new projects. The Township supports renewable energy generation, consistent with its goals and policies.

Goals	Related Policies							
	Land Use Pattern Policies (Pg. 43-44)	Agricultural and Open Space Policies (Pg. 45-49)	Residential Area Policies (Pg. 50-53)	Specific Area Policies & Special Study Areas (Pg. 53-58)	Non-Residential Area Policies (Pg. 59-60)	Street and Transportation Policies (Pg. 60-64)	Public Facilities Policies (Pg. 64-70)	Natural Features Policies (Pg. 70-75)
A. Climate Resilience								
A.1 Support Land Use Practices and Techniques that are Environmentally Sustainable and Resilient				√	√			√
B. Agriculture and Rural Life								
B.1 Preserve Township's Rural Character	√		√	√			√	
B.2 Preserve Farmland and encourage and Enhance Farming Operations		√		√				
C. Community Identity and Relationships								
C.1 Preserve and Enhance the Township's Identity	√	√		√	√		√	
C.2 Maintain Cooperative Relationships with Neighboring Municipalities				√		√		
D. Environment								
D.1 Protect, Preserve, and Restore Natural Features		√		√				√
D.2 Preserve and Protect Groundwater				√			√	√
D.3 Protect the Natural Condition of Watersheds				√			√	√
D.4 Preserve Open Space		√		√				√
E. Transportation								
E.1 Coordinate Transportation Improvements to Support Land Uses						√		
E.2 Support County Transportation Agencies in Developing Non-Motorized Facilities along Township Roadways.						√		
E.3 Develop Off-Road Non-Motorized Trails						√		
F. Neighborhoods and Housing								
F.1 Protect Existing Residential Areas			√	√	√		√	
F.2 Maintain a Diverse Mix of Housing			√	√				

PART 6: IMPLEMENTATION

A. INTRODUCTION

Policies in this Master Plan must be implemented, for the most part, by the Township's administration, Planning Commission, Zoning Board of Appeals, and Board of Trustees. To be effective, the Plan must be a key consideration in daily decision-making. Used in this manner, the Plan will provide advance notice to landowners and prospective developers and assurance of stability to property owners and residents. The Plan can be a forum for modifying certain policies, with all affected parties involved, when conditions underlying the Plan change or new opportunities arise. Thus, in terms of policy implementation, the Plan is for communication and for reference.

The following will establish implementation mechanisms, or strategies, which are specific, targeted courses of action devised to apply the Township policies established in Part 5.

B. ZONING REGULATIONS

The principal means of implementing Master Plan policies is the Zoning Ordinance. Zoning will be used in any one or more of the ways listed below.

1. Zoning Districts: Land will be zoned in a manner consistent with uses and densities designated in the Plan. For example, land currently used for residences on one-acre lots will be zoned R-2; land used for residences on lots less than one acre in area will be zoned R-3, and so on. The table on

the following page illustrates how the existing zoning designations relate to the land use designations in this Plan.

2. Special Districts: A special zoning district is created using an area plan, a form of a site plan sufficient to describe the essential features of the proposed development, and a specific list of uses that will be permitted on the site. Future use of the property must be in accordance with the approved area plan. Major changes in site layout or uses may only be permitted by a zoning amendment which would create a new version of the special district, if approved by the Township Board. Special zoning districts will be used for the following purposes:
 - a. To create a compatible mixture of uses on a site where such a mixture is desirable and consistent with adopted policies,
 - b. To fit a proposed use into an existing developed area in a compatible manner,
 - c. To permit density transfer within a site,
 - d. To assure that a site will be developed in a manner consistent with the Master Plan and in the manner promised by the petitioner.

Future Land Use Designation	Corresponding Zoning District
Agricultural Production	A-1 General Agriculture
Residential 0.2-0.5 DU/acre (2 to 5-ac. lots)	A-R Agriculture-Rural Residential
	R-1 Single-Family Rural Residential
Residential 0.5-1.0 DU/acre (1 to 2-ac. lots)	R-1A Single-Family Rural Residential
	R-2 Single-Family Suburban Residential
Residential 1-2 DU/acre (0.5 to 1-ac. lots)	R-3A Single-Family Urban Residential
Residential 2-4 DU/acre (0.25 to 0.5-ac. lots)	R-3 Single-Family Urban Residential
	R-4 Single-Family Urban Residential
Residential 4-6 DU/acre (0.25 to 0.17-ac. lots)	R-5 Single-Family Urban Residential
	R-6 Mobile Home Park Residential
Residential 6 DU/acre (0.17-ac. lots)	R-7 Low Density Multiple-Family Residential
	R-8 Moderate Density Multiple-Family Residential
	R-9 High Density Urban Residential
Open Space Preservation	Open Space Preservation Residential
	Open Space Preservation Community
Recreation	RC - Recreation Conservation
Public Institutions	PL - Public Lands
Senior Home	
	C-1 Convenience Commercial
Office	O - Office
	OP - Office Park
Research	R-D Research and Development
	RRA - Research and Research Applications
Industry	I-1 - Limited Industrial

The Township's current Zoning Ordinance has five special districts, although additional special districts might be created in the future:

- a. Planned Unit Development (PUD).
- b. Research and Research Applications (RRA), intended for research parks, such as Ann Arbor Technology Park.
- c. Office Park (OP), intended for office parks, such as Domino's Farms.
- d. Open Space Preservation Residential District (OSPRD), intended to preserve natural areas and fragmented farmland and allowable only in the Open Space Preservation Area.
- e. Agricultural Preservation Residential District, intended to preserve farmland in the Agricultural Production Area and Open Space Preservation Area designated by this Plan.

The Township should also review and potentially reconsider the methods used to calculate density with regard to wetlands and other features in all circumstances throughout the community.

3. Overlay Zones: Overlay zones can be used to regulate the use of a specific part of a parcel of land. The regulations of the overlay district are in addition to the regulations of the underlying basic zoning district. Overlay districts could be used to protect stream corridors, wetlands, woodlands, or other features.

4. **Site Plan Review:** Site plan review is a means of assuring that proposed developments will meet certain established standards of the Township, including applicable policies in the Master Plan. The review process will be a mechanism for the property owner or developer and Township officials to tailor a proposed development to the specific site and immediate neighborhood, and to the policies in the Master Plan, particularly those concerned with protecting valuable natural features. The Township's site plan review requirements in the Zoning Ordinance ensure that the process is efficient while providing the Planning Commission and Township Board with all necessary information to make informed decisions which reflect the policies of the Township as reflected in this Plan. Completion of all improvements shown on an approved site plan should be assured by appropriate financial guarantees.
5. **Changes in Regulations:** The Planning Commission and Township Board will consider changes to the Zoning Ordinance to implement policies in the Plan. This could include the elimination of categories that are no longer relevant due to annexation and other factors. Other **amendments could include**, but not necessarily be limited to, **the ordinance amendments listed in the table on the next page.**

Ann Arbor Township Master Plan

	Ordinance Amendment	Timeframe	Associated Goal
1.	Short-Term Rentals. Address Short-Term Rentals in Zoning Ordinance.	Short-Term	Existing Residential Areas
2.	Renewable Energy. Revise Solar Ordinance to address issues arising from implementation of current ordinance language; simplify language where possible to encourage small-scale residential solar projects.	Short-Term	Climate Resilience
3.	Farming. Update all current ordinances related to “farming operations,” including among others the Sign Ordinance, and Farm Market Ordinance. Create Agricultural Tourism Ordinances (i.e., event barns, farm stays, festivals, etc.) to encourage entrepreneurship & improve farm sustainability/profitability.	Short-Term	Farmland & Farming
4.	Residential Clustering. Revise Clustering Ordinance to accommodate new policy objectives identified in the Master Plan.	Short-Term	Farmland & Farming; Mix of Housing
5.	Stormwater Management. Improve stormwater management measures (e.g., water retention, detention, infiltration) to account for increased stormwater runoff (ordinance & Land Development Standards).	Short-Term	Climate Resilience
6.	Accessory Dwelling Units. Create Accessory Dwelling Unit ordinance to enable lower-cost housing.	Medium-Term	Farmland & Farming; Mix of Housing
7.	Groundwater. Draft Groundwater Protection Ordinance.	Medium-Term	Groundwater
8.	Bicycles. Add ordinance requirement for bicycle parking facilities as a part of any new multiple-family residential, office, and/or commercial development project which abuts or is located within 500 feet of an existing or planned non-motorized pathway or paved shoulder designed for use as an on-road bicycle lane.	Medium-Term	Transportation Improvements
9.	Trees/Woodlands. Update Tree/Woodland Ordinance to incentivize ecological restoration, revise tree species lists.	Medium-Term	Natural Features
10.	Signs. Update Sign Ordinance to comply with Reed v. Gilbert decision; address temporary signs, farm-business signs, and sign lighting.	Medium-Term	Cooperative Relations with Neighbors
11.	Non-Motorized Transportation. Require non-motorized transportation facilities, such as sidewalks or paved shoulders in new residential subdivisions/site condominiums or non-residential developments. Require “public walkway/trail” easements along roadway frontages of new developments.	Medium-Term	Transportation Improvements
12.	Green Development. Add incentives to use “green” building techniques in residential projects; combine Residential Clustering Ordinance with incentives to use “green” building techniques.	Long-Term	Climate Resilience; Mix of Housing
13.	Lighting/Noise. Better control light/noise pollution via new Dark Skies Ordinance; revise noise ordinance; ordinances to be specific and enforceable.	Long-Term	Rural Character; Existing Residential Areas
Short-Term = completed 12-24 months of plan adoption; Medium-Term = completed 24-36 months of plan adoption; Long-Term = completed more than 36 months of plan adoption.			

C. INFRASTRUCTURE

Roads: All roads in Ann Arbor Township except state highways and private roads are under the jurisdiction of the Washtenaw County Road Commission (WCRC). State highways such as US-23 and M-14 are under the jurisdiction of MDOT. Costs of road construction and maintenance are the responsibility of the County Road Commission or MDOT. New developments will provide internal roads at developer expense. The developer will also be strongly encouraged to pay a reasonable share of any improvements to existing roads that might be needed to adequately and safely serve a new development. The developer will work out that share with the agency holding jurisdiction and all agreements will be in place before the Township grants final development approval.

Public Utilities: The Township's water and sanitary sewer systems were constructed by special assessment districts and major extensions of these systems will be financed in the same manner. System maintenance is financed by user fees. Developers will be required to construct, at their expense, lines and appurtenances from the existing or future trunk sewers or water mains needed to serve their properties and dedicate them to the Township, which will maintain them. The Township's policy is that general fund money will not be used to support the water and sanitary sewer systems.

Stormwater Drainage: On-site retention of stormwater is required of all new developments. Large-scale retention areas serving several properties, in place of a retention area on each property, are required and are also required to be established as County drainage districts. Drainage courses, retention areas and

outlets will be constructed at developer expense and will be maintained at the expense of properties served by the facilities. Proper long-term maintenance of all parts of a drainage system will be established in an acceptable manner before the Township gives final development approval.

Non-Motorized Transportation Facilities: The plan entitled *Priority Corridors for Non-Motorized Transportation* (Map 11 in Appendix) should be **updated, especially in rural areas to support rural character. Non-motorized facilities along priority corridors should be** implemented through roadway improvements (via the WCRC), and development of off-road facilities. Partnerships with WATS, adjacent communities, and other entities, such as the University of Michigan, should be pursued to develop off-road facilities that connect to important destinations in and outside of the Township.

Financing opportunities should be pursued to address non-motorized facility deficiencies. Possible sources include:

1. Transportation Alternatives Program
2. Safe Routes to School
3. Highway Safety Improvement Program
4. Recreational Trails Program
5. Michigan Transportation Fund (Act 51)
6. Michigan Natural Resources Trust Fund
7. Land and Water Conservation Fund

8. Michigan Passport Grant Program
9. Local Rail/Highway Crossings
10. Bikes Belong Community Partnership Grants
11. National Trails Fund of the American Hiking Society
12. DALMAC Fund
13. Millage, Special Assessment, or General Funds

D. LAND DEVELOPMENT STANDARDS

The Ann Arbor Township Land Development Standards are designed to implement policies of this Plan by complementing regulations in adopted ordinances. They are also designed to clarify development regulations, standards and procedures for applicants, Township officials and the interested public. The Planning Commission and Township Board will continue to integrate certain portions of the Land Development Standards within the Zoning Code whenever possible by adopting Ordinance amendments which formally codify those standards. Standards specifically relating to site engineering and provision of utilities are intended to remain in the Land Development Standards.

E. NATURAL FEATURES PROTECTION

The Township will continue to investigate new ways to protect natural features through the adoption of specific natural features protection ordinances or amendments to the Zoning Code, such as

updates to the Wetland and Watercourse Protection Ordinance of the Zoning Ordinance, and a new Groundwater Protection Ordinance that directs development away from groundwater recharge areas. Ann Arbor Township will participate in the Washtenaw Metro Alliance “Green Places: Open Spaces - A Plan for Coordinated Parkland and Open Space.”

As a basis for a new Groundwater Protection Ordinance, the Township should map groundwater resources and groundwater recharge areas.

F. PURCHASE OF DEVELOPMENT RIGHTS

Ann Arbor Township will continue to actively pursue opportunities to use its adopted PDR Ordinance. The Ordinance was adopted for the purpose of preserving agricultural lands and open space in areas designated within the Master Plan as the Agricultural Preservation (Overlay) area (APR).

In 2003, Ann Arbor Township voters approved a land preservation millage expected to generate \$8 million over 20 years. In 2024, the millage was renewed for an additional 5 years. The Township will partner with the City of Ann Arbor and the County to secure matching funds from additional sources.

Ann Arbor Township will also pursue other partners, such as the Federal Government and State of Michigan, to secure matching grants and other support for PDR programs.

G. DENSITY TRANSFER

This concept applies only when a development site spans two or more areas with different density classifications within Ann Arbor Township. It involves moving (transferring) proposed development (density) from one part of the site (with one density classification) to another part of the site (with a different density classification) that is more suitable for development. The process results in a portion of the site remaining undeveloped and the developed part having a higher net density (although the overall density of the site will not be increased).

The Township will encourage the practice of density transfer to preserve farmland and natural features (such as open fields, woodlands or stream corridors), while permitting a reasonable use of the entire property. This method is applicable to larger sites and requires use of a special zoning district, such as a PUD district. Note that the same result can be obtained on a site with a single density classification through density concentration or clustering, where appropriate.

Transfer of density should meet certain standards set forth in this Plan as determined by the Planning Commission, and may result in a concentration of dwelling units that would require housing types different than those suggested by the gross density designation. This may be acceptable as long as open space or agricultural lands are preserved through a suitable preservation easement or other suitable mechanism, the overall density limit is not exceeded, and the resulting residential development is compatible with existing neighboring residential areas.

A property owner may transfer density allocated to one part of the owner's land holdings to another part, provided:

1. All lands are located in Ann Arbor Township, are contiguous and the owner has fee simple title to the lands.
2. The total number of dwelling units allocated to the owner's total land area involved will not be exceeded.
3. The transfer is made as a part of a PUD or similar special zoning district that includes all land involved in the transfer.
4. If public water and sewer services will be provided within the area from which density will be transferred, then that area, after the transfer, will have sufficient remaining density to support municipal water and sanitary sewer services.
5. The parcel of land receiving the transferred density will, with the additional dwelling units, be compatible with the existing or planned use of the surrounding area.
6. The density transfer shall incorporate some or all of the following:
 - a. Projects that limit traffic generation and minimize parking needs.
 - b. Projects that contain "green" building components, site components, or technologies, in an effort to minimize the project's carbon footprint.

- c. Projects that offer “more affordable” residential units. Specifically, 10% of the total number of units are more affordable units where the housing cost is 40% or less of the Area Median Income (AMI), or 20% of the total number of units are more affordable units where the housing cost is 60% or less of the AMI.

H. RESIDENTIAL DEVELOPMENT AND DENSITY IN THE DESIGNATED AGRICULTURAL PRODUCTION AREA AND OPEN SPACE PRESERVATION AREA.

The Township will review residential development proposals within the Agricultural Production and Open Space Preservation Areas with respect for a heightened sensitivity towards potential impacts. In that spirit, the Township will strongly encourage the use of agricultural preservation techniques, and ensure that residential development is located in an area that will have minimum interference with and from farming operations, natural features, or open space.

In these areas, residences should be clustered and located on the smallest possible lots to minimize loss of the most productive farmland and most sensitive or desirable open space or natural features. To this end, lots in these areas should not exceed one acre, unless a larger lot is required by Washtenaw County for an on-site well and septic tank/drainfield. In that situation the maximum lot area should be the smallest area that is required to meet the County’s requirements.

Ann Arbor Township will encourage clustering through policies which grant density bonuses for projects in which residences are clustered. Such incentives may be offered through special zoning districts designed to permanently protect a substantial portion of the predevelopment tillable farmland or open space via a conservation easement with the Township (or an entity approved by the Township). The primary objective of this technique will be to preserve farmland or open space for an owner whose principal occupation or purpose is focused on farming or preserving farmland or open space.

I. WARREN ROAD - SPECIAL STUDY AREA "D"

The Township Planning Commission will conduct an evaluation of the area identified on Map 8, *Future Land Use*, as Future Special Study Area "D" (located on the north side of Warren Road between Pontiac Trail and Whitmore Lake Road). The evaluation will consider the unique existing conditions of the property, existing surrounding land uses, the goals and policies of this plan, and other topics to determine the desired future land use(s) and any design or other criteria to guide future uses or development of the property.

J. CREEKSLED PLANNING

The Township Planning Commission will work closely with the Fleming Creek Advisory Council and the Huron River Watershed Council to prepare and update management plans for each creekshed in the Township. The plans may be adopted as special area plans in the Master Plan.

K. IMPERVIOUS SURFACE

The Township Planning Commission, working with the Huron River Watershed Council and the Washtenaw County Water Resources Commissioner's office, will prepare policies, standards and ordinances for limiting impervious area in new developments in the Township to the minimum that will be consistent with reasonable use of the land.

L. STORMWATER MANAGEMENT

The Township Planning Commission will use studies made by various agencies to prepare policies, standards and ordinances for managing stormwater run-off in the Township **to address increased stormwater runoff due to climate change**. These policies, standards and ordinances will be consistent with regulations for wetlands, natural features and management plans for creeksheds.

The Planning Commission will create programs or methods so that development doesn't exceed 10% impervious cover overall, and in particular in "sensitive" stream sub-basins.

M. ENHANCE AGRICULTURAL VALUE AND PROFITABILITY

The Township will work with other agencies (Washtenaw County MSU Extension) to develop local markets for local produce.

The Township will encourage legislation to improve tax policy for land in PDR and agricultural production, and will support property tax abatements to encourage land to remain in agricultural use.

The Township will explore other mechanisms to improve value and profitability of agricultural operations in the Township. Such mechanisms may include preservation of agricultural drain tiles; buffering between agricultural uses and residential uses; and assisting in regional efforts to promote food hub development, local markets, value-added agricultural operations, recreational agriculture, agri-tourism, and local farm awareness.

Ann Arbor Township supports the development of a regional agricultural production and preservation plan with adjacent townships.

Ann Arbor Township will study innovative zoning techniques for agricultural production and preservation.

N. PLAN MONITORING PROGRAM

The planning process, in order to be effective, must be continuous. The Master Plan must have a character that encourages its regular use in the planning process, as it represents the Township's policies for the future. If the Plan is to perform its proper function in a continuous planning process and serve as the official reference for discussions and decisions on many different matters it must be kept up-to-date. This program for revision of the Master Plan is therefore necessary.

In addition to keeping the Master Plan up to date, a regular monitoring program has several other benefits. First, such a program broadens the area of community agreement on development policies over time. The process invites open reconsideration of alternatives to major decisions and

encourages exploration of new issues and secondary questions.

Review of the Plan at regular intervals will broaden and deepen the Planning Commission's and Township Board's knowledge of the Plan, and help to identify its shortcomings. Along with the Plan's use in day-to-day decision making, a regular review process will assure that the Plan will be a living document. The Plan's policies, while firm and definite, must not be frozen in time.

Regular review will avoid delays that might otherwise be caused by calls for more study on certain issues before the Plan updates are adopted. A regular review program assures that issues requiring further examination will be studied at proper levels of detail at appropriate times and that policy changes resulting from such studies can be made swiftly.

The program will have two objectives:

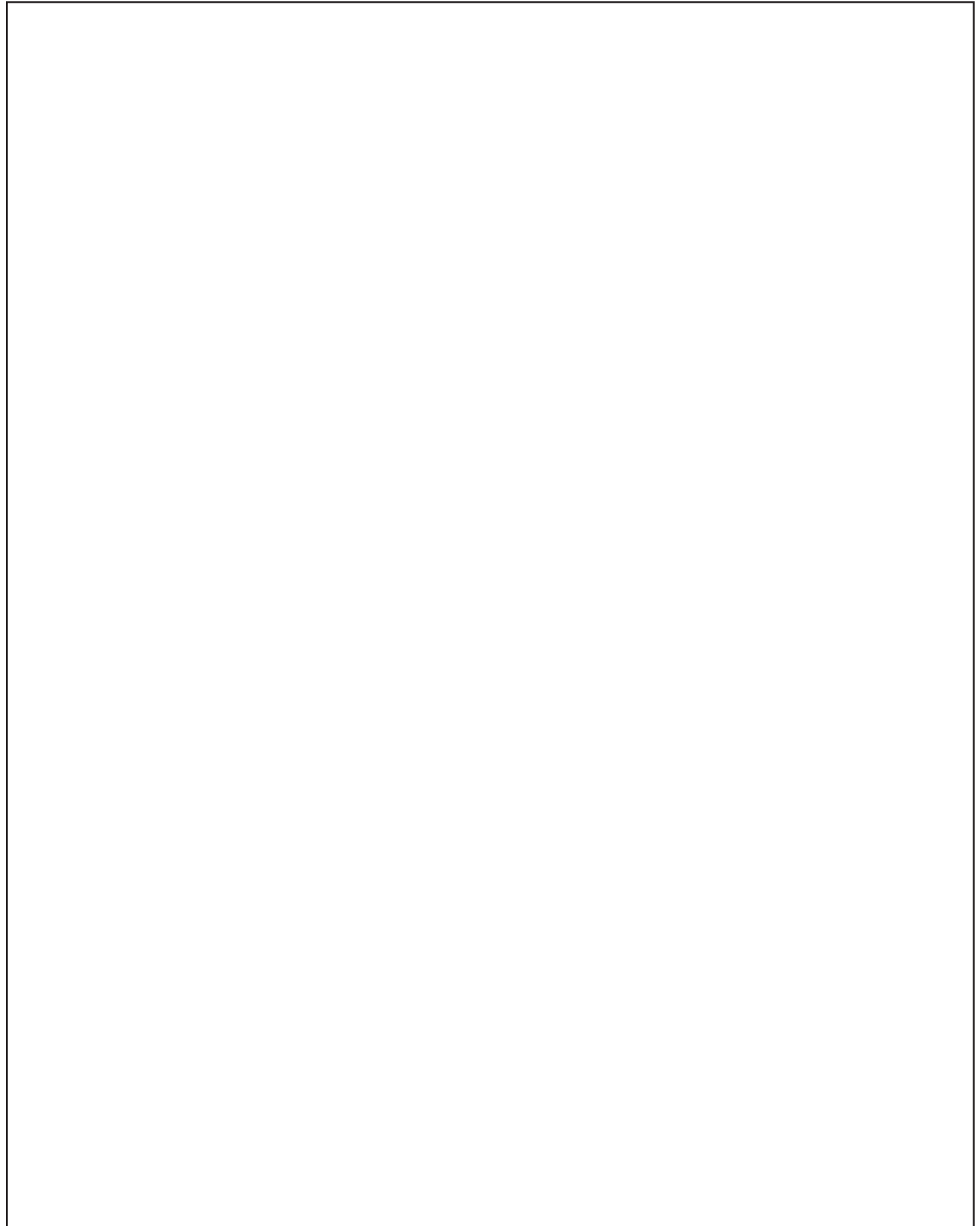
- Determine the extent to which the Township is actually implementing the policies of the Master Plan.
- Determine whether the Plan's policies are still desirable and appropriate in light of changing circumstances.

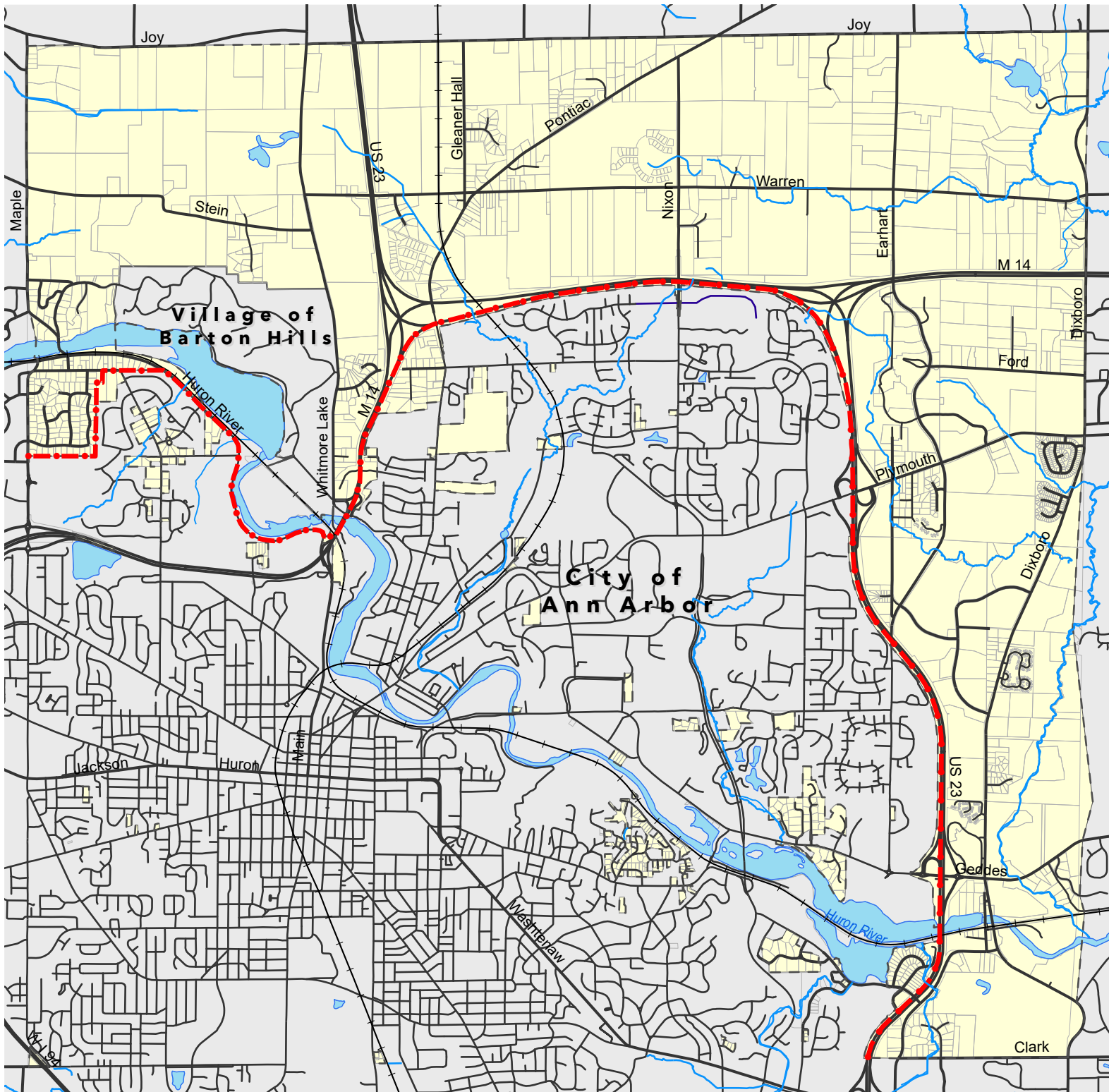
The program will consist of an annual review by the Planning Commission; the results of which will be transmitted to the Township Board in a report. Such review might result in a recommendation to change a portion of the Plan. A more comprehensive review of the Master Plan should be made at intervals no longer than five years to comply with State of Michigan

enabling legislation. This practice will also enable the Planning Commission and Township Board to see the implications of accumulated annual revisions in perspective and to make proper adjustments. Annual reviews may indicate the need for a major review in less than five years.

KEY CONCEPTS INDEX

Topic	Pages
Agricultural Production and Farmland Preservation	13, 25-28, 38, 43-49, 50, 53-54, 82-83
Annexation and Boundary Policy Statement	2, 12-14, 39, 54, 59, 65, 79
Climate Resilience	23-25, 37, 75
Commercial and industrial development in the greater area	8, 12, 36, 59-60
Groundwater	17, 18, 19-22, 23, 24, 35, 40, 41, 46, 55, 67, 68-69, 73, 82
Impervious surface	18-19, 24-25, 40, 55, 67-69, 70, 72, 84, 85
Open space preservation	12, 28, 38-41, 45-48, 50, 53-54, 70, 78, 82-84
Public uses	9, 13, 39
Research and technology	36, 39, 59, 78
Sewer and water service capacity and planning	13-14, 16, 34-35, 44, 46-47, 50-51, 52, 54 64-67, 81, 83
Stormwater management	18-19, 41, 67-69, 70, 72, 81, 84
Watershed and subwatershed preservation	17-19, 40-41, 55, 70-74, 84





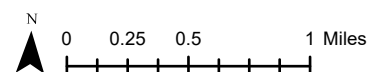
Map 1

PLANNING AREA

Ann Arbor Township Master Plan Update

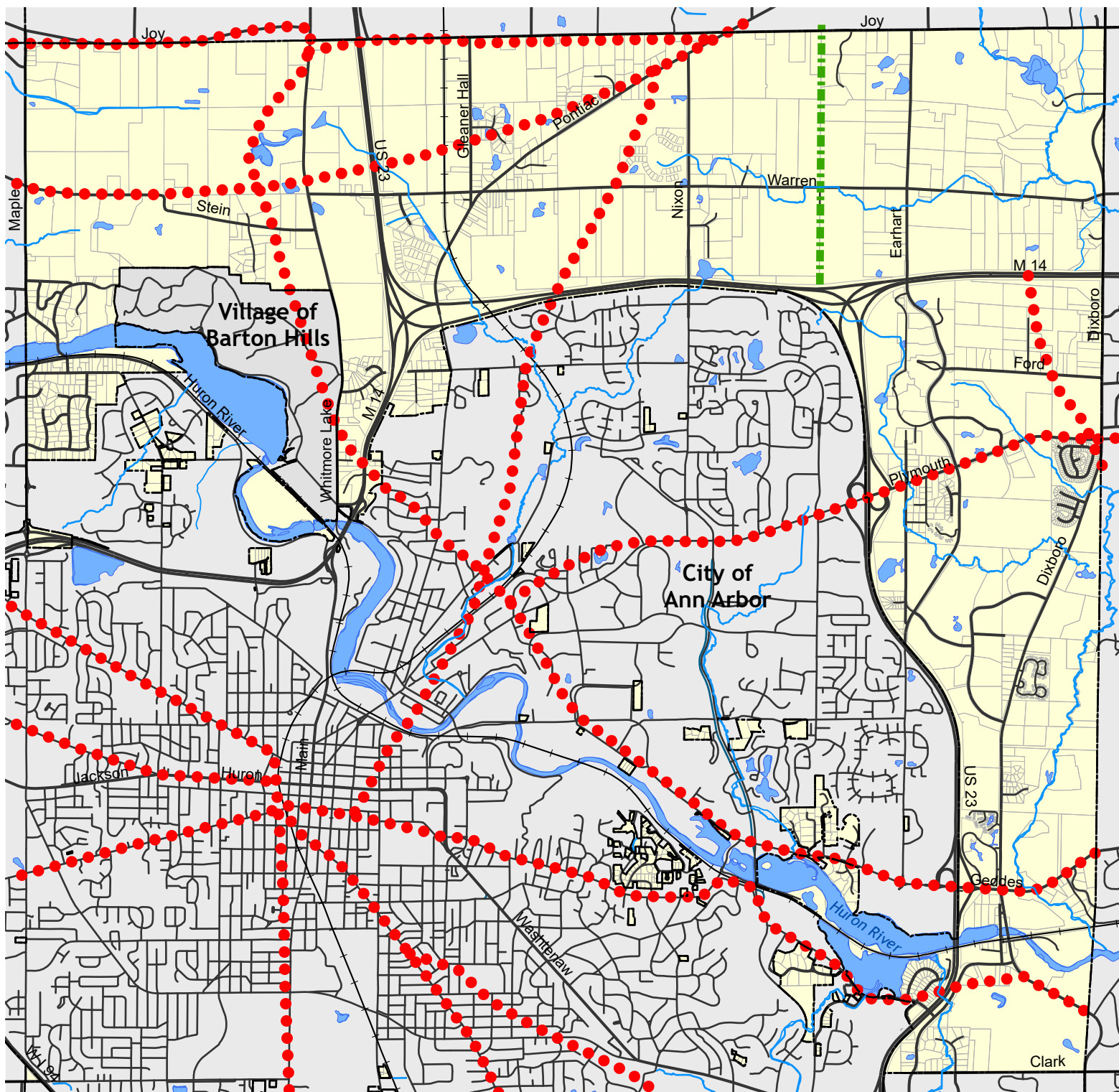
Legend

- Ann Arbor Township
- Annexation Policy Statement Boundary



Source: Ann Arbor Twp & Washtenaw County GIS
Carlisle/Wortman Associates
May 2025





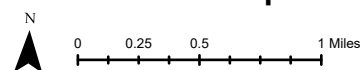
Map 2

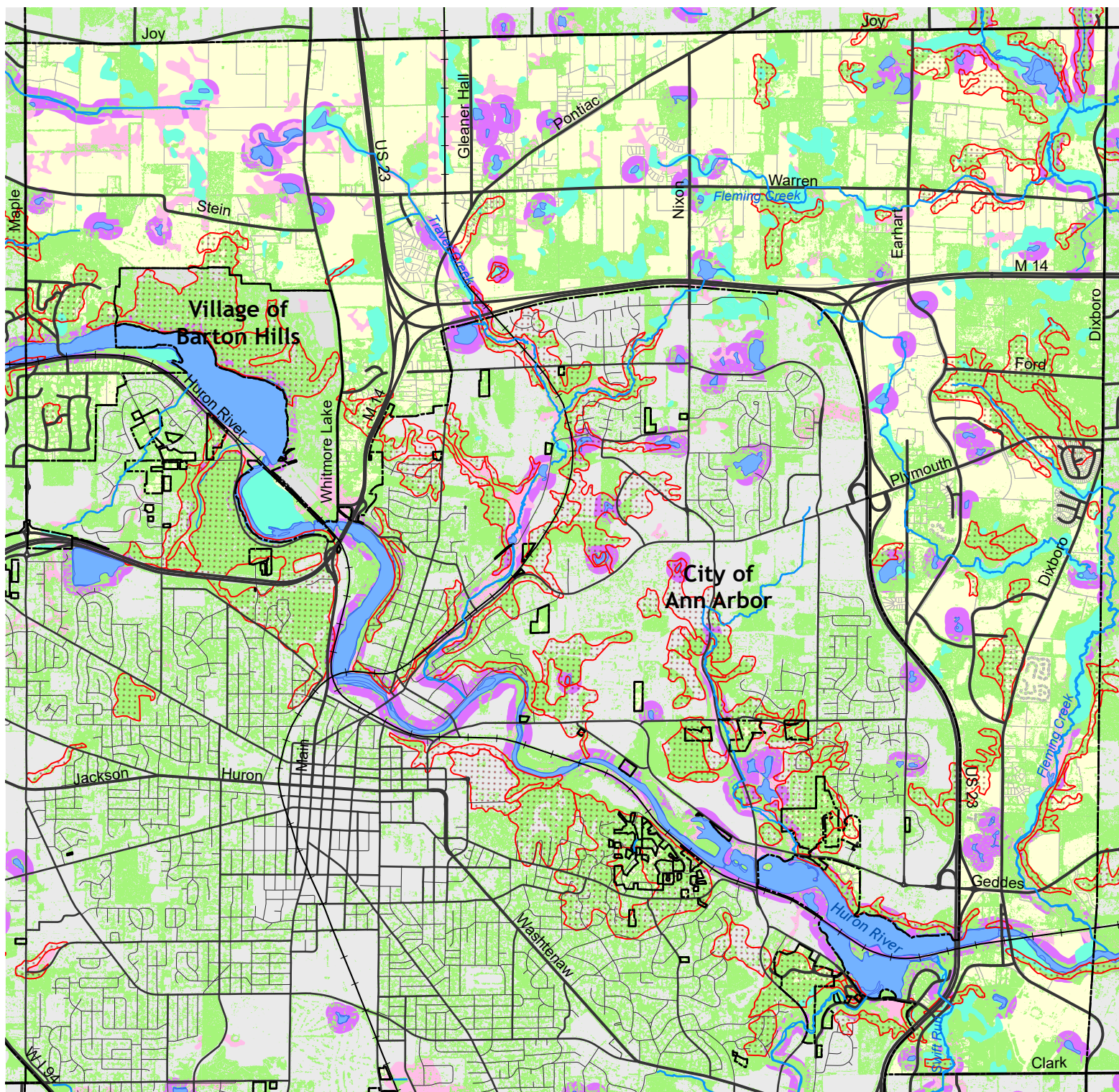
EARLY TRAILS

Ann Arbor Township
Master Plan Update

Legend

- Ann Arbor Township
- ● ● ● Early Trails
- - - - Ann Arbor to Whitmore Lake Railway in Ann Arbor Township (approximate)





Map 3

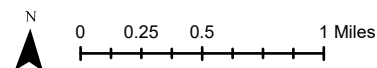
NATURAL FEATURES

Ann Arbor Township Master Plan Update

Legend

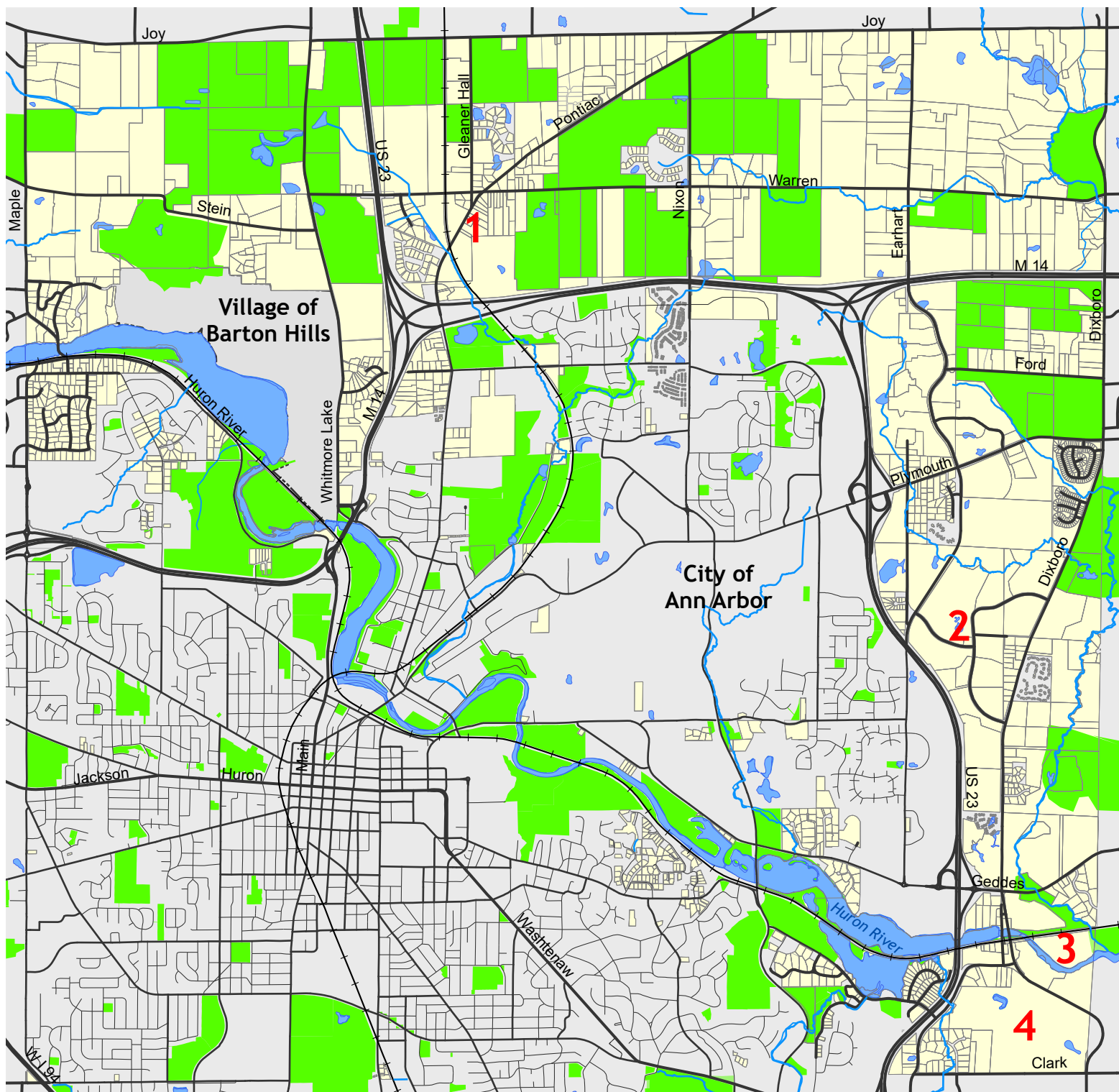
	Steep Slopes (>12%)		Riparian Corridor*
	Upland Forests		Lakes
	Wetlands		Streams
	Hydric Soils		Ann Arbor Township

* Riparian corridors consist of a 300 foot buffer and floodplain boundary from surface waters.



Source: Ann Arbor Twp &
Washtenaw County GIS
Carlisle/Wortman Associates
May 2025





Map 4 PROTECTED LANDS & PUBLIC FACILITIES

Legend

- Protected Lands*
- Ann Arbor Township

- 1 Township Hall & Fire Station
- 2 Township Fire Station
- 3 City of Ann Arbor Waste Water Treatment Plant
- 4 Washtenaw County Community College

* Protected lands and greenways consist of County Parks, Local Parks, Washtenaw Land Trust, Washtenaw County Conservation and Recreational Lands, Public and Quasi-Public Lands, Township Conservation Easements, and properties protected by PDR programs.

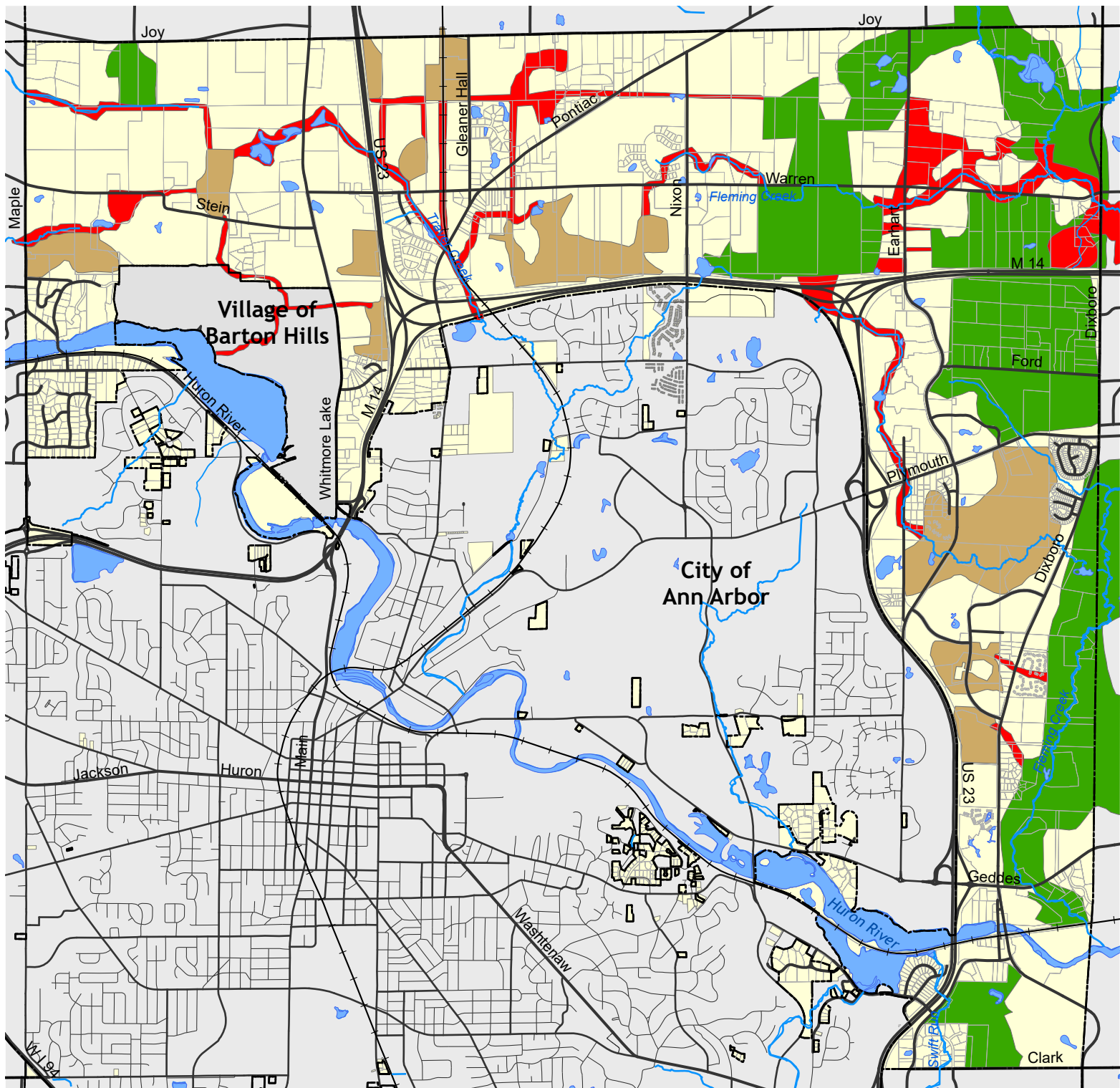


0 0.25 0.5 1 Miles

Ann Arbor Township
Master Plan Update

Source: Ann Arbor Twp &
Washtenaw County GIS
Carlisle/Wortman Associates
May 2025



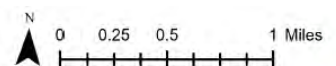


Map 5 GREEN INFRASTRUCTURE

Ann Arbor Township
Master Plan Update

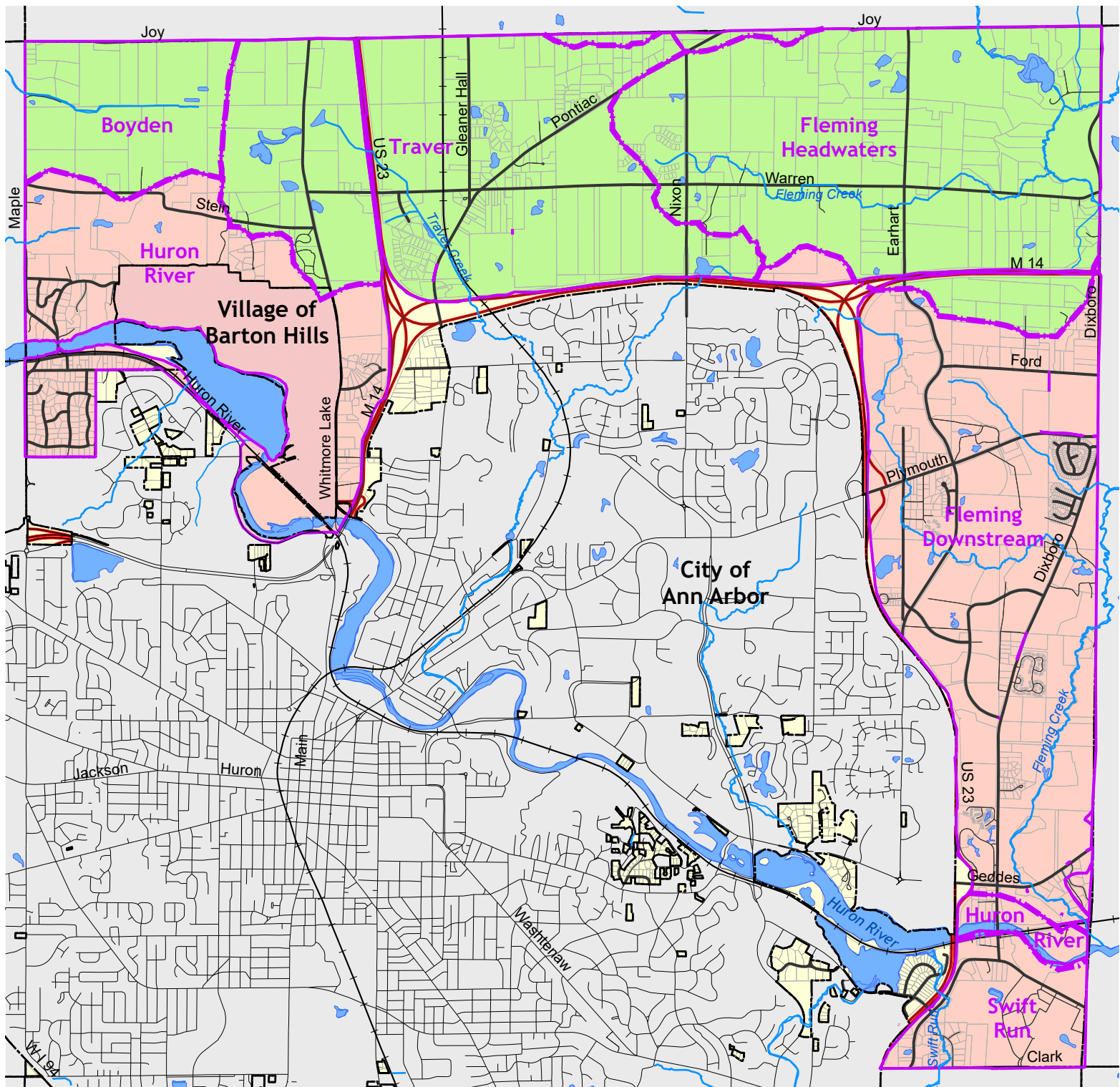
Legend

- Hub
- Link
- Site
- Ann Arbor Township



Source: Ann Arbor Twp & Washtenaw County GIS
Carlisle/Wortman Associates
May 2025



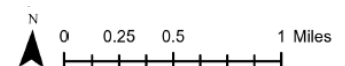


Map 6 2010 IMPERVIOUS SURFACES

Ann Arbor Township
Master Plan Update

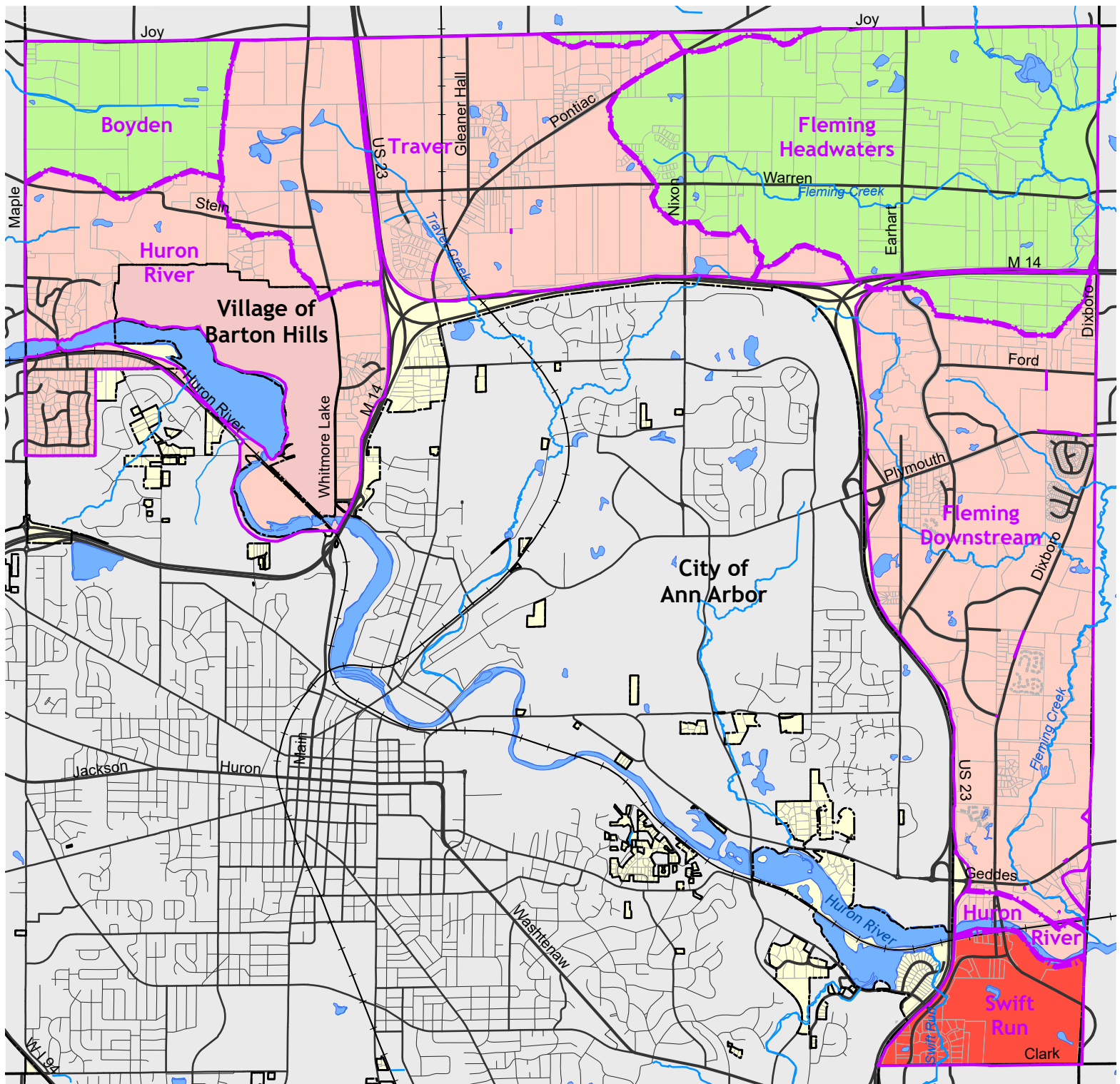
Legend

- 0 - 10% Imperviousness
- 10 - 25% Imperviousness
- County
- Major Creeksheds



Source: Ann Arbor Twp & Washtenaw County GIS
Carlisle/Wortman Associates
May 2025





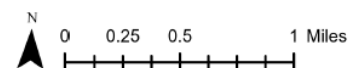
Map 7

FUTURE IMPERVIOUS SURFACES

Legend

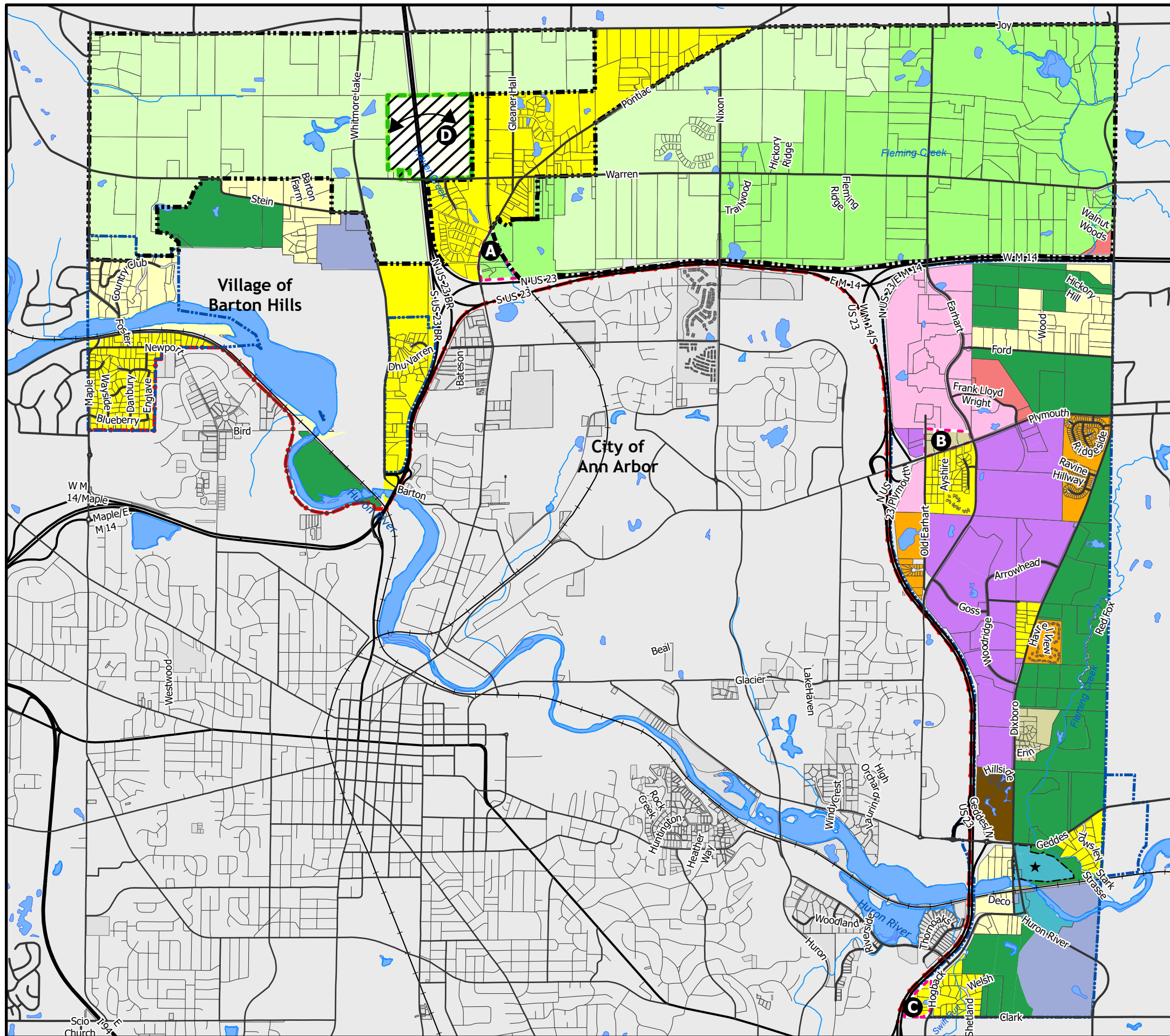
- 0 - 10% Imperviousness
- 10 - 25% Imperviousness
- 26 - 35% Imperviousness
- Major Creeksheds

Ann Arbor Township
Master Plan Update



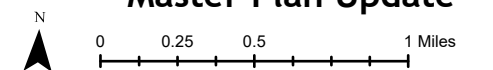
Source: Ann Arbor Twp & Washtenaw County GIS
Carlisle/Wortman Associates
May 2025

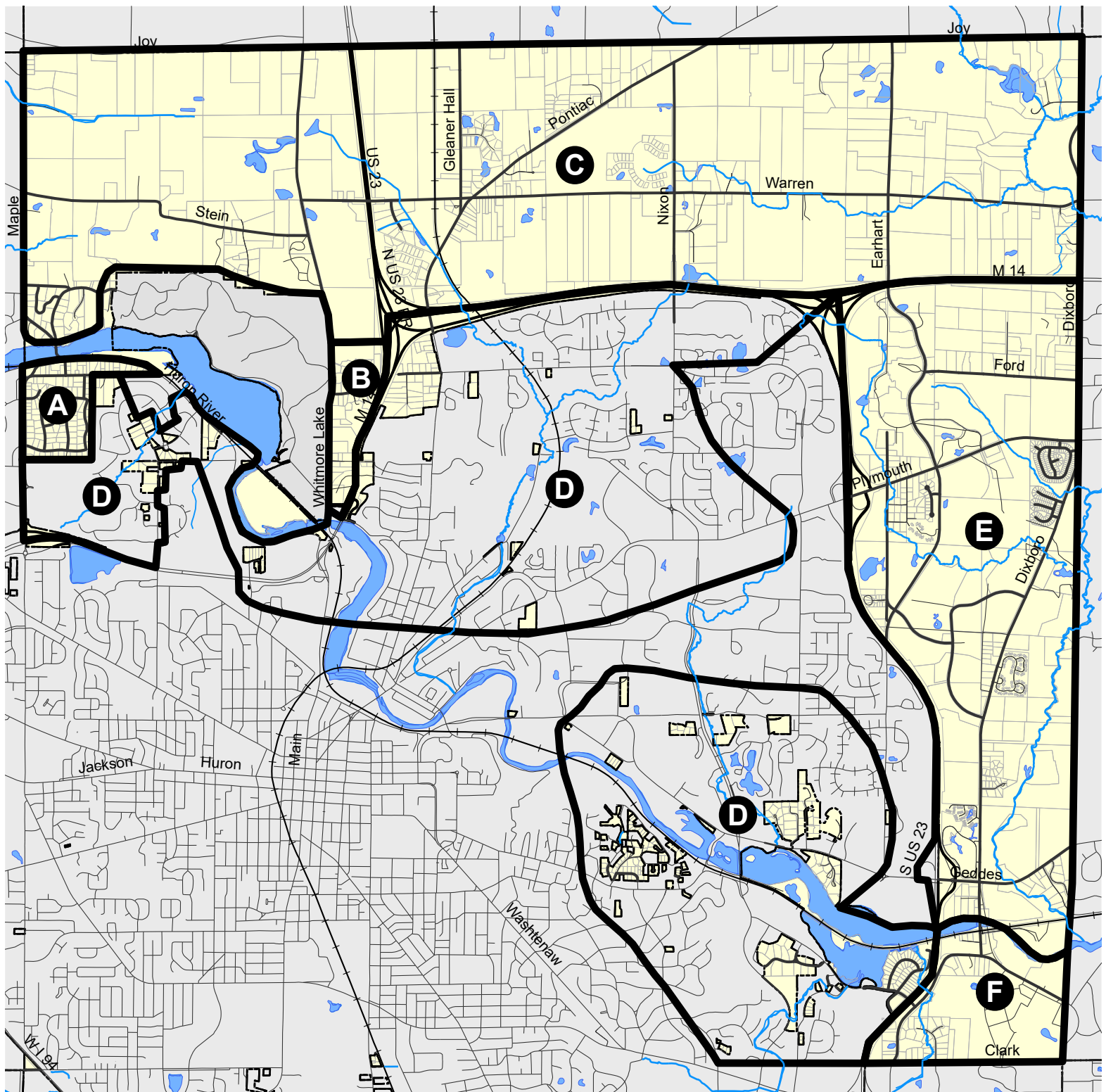




- Agricultural Production Area
- Residential 0.2-0.5 D.U./acre
- Residential 0.5-1.0 D.U./acre
- Residential 1-2 D.U./acre
- Residential 2-4 D.U./acre
- Residential 4-6 D.U./acre
- Residential 6 or more D.U./acre
- Open Space Preservation Area
- Recreation
- Institution
- Private Educational/Religious
- Senior Housing
- Office
- Research
- Industry
- Future City Annexation
- Annexation Policy Statement Boundary
- Agricultural Preservation Overlay District
- Water Service Areas
- Special Study Areas
 - A. Pontiac Trail
 - B. Plymouth Road
 - C. Hogback Road
- Future Study Area
 - D. Warren Road

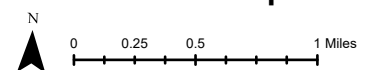
Map 8
FUTURE LAND USE
Ann Arbor Township
Master Plan Update





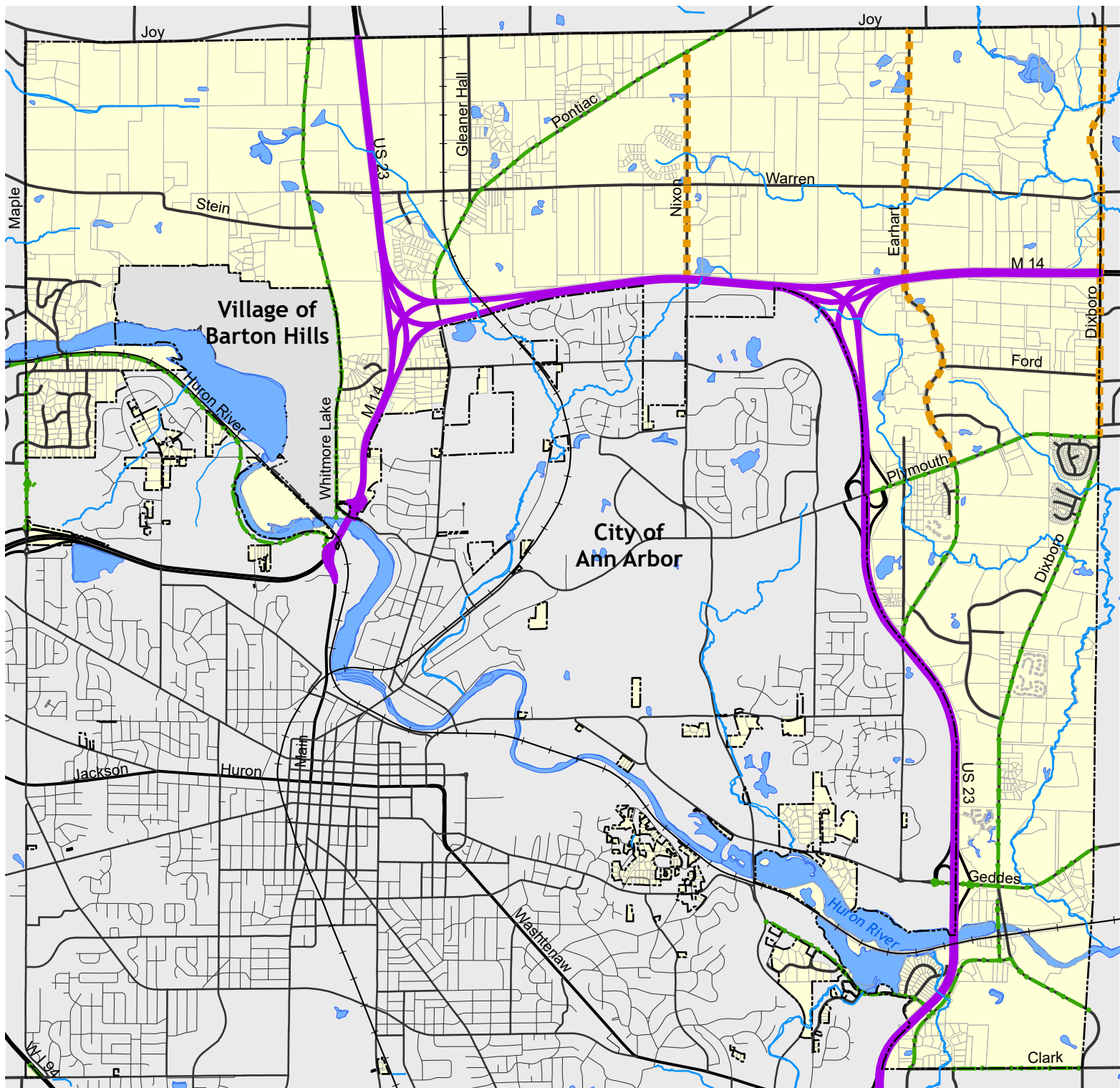
Map 9 SPECIFIC STUDY AREAS

Ann Arbor Township Master Plan Update



Source: Ann Arbor Twp &
Washtenaw County GIS
Carlisle/Wortman Associates
May 2025





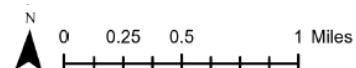
Map 10

STREET PLAN

Ann Arbor Township
Master Plan Update

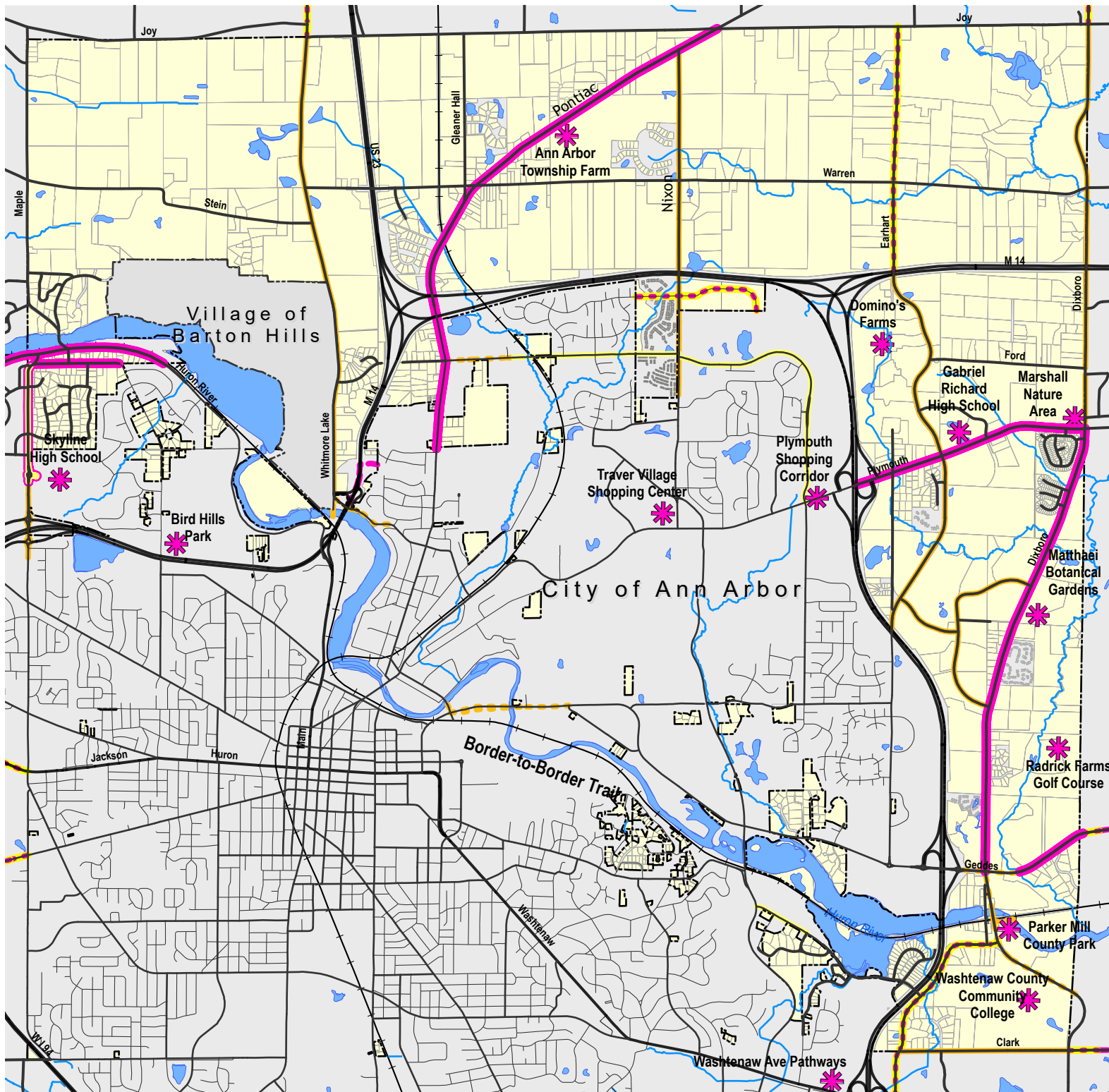
Legend

- Collector
- Minor Arterial
- Freeway



Source: Ann Arbor Twp & Washtenaw County GIS
Carlisle/Wortman Associates
May 2025





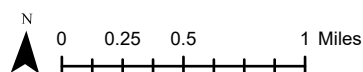
Map 11

PRIORITY NON-MOTORIZED CORRIDORS

Legend

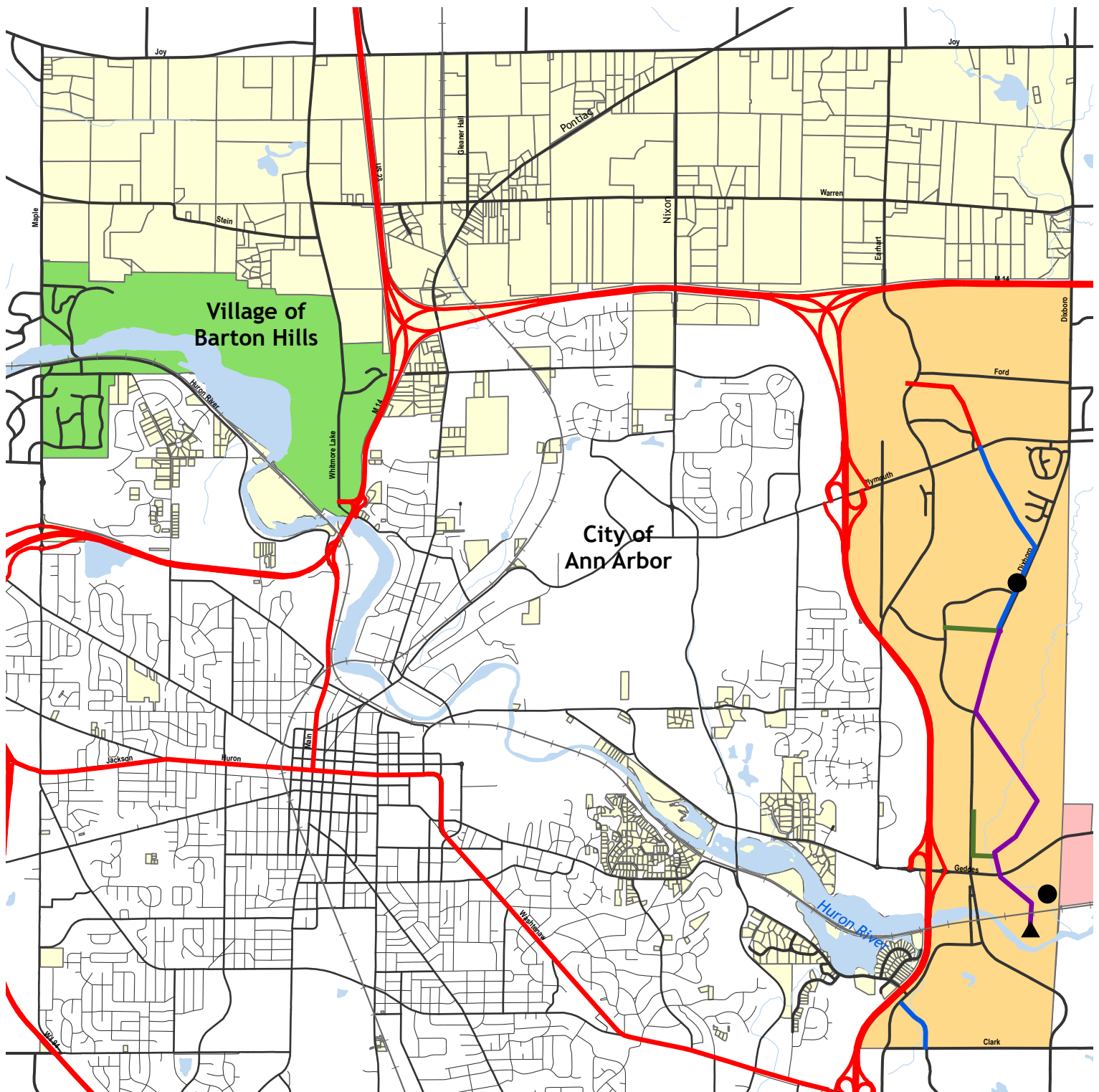
- Border-To-Border Trail
- Priority Corridors
- * Destinations
- Potential Future On/Off-Road Routes
- Existing On-Road Unmarked Paved Shoulders
- Existing Off-Road Shared Use Paths
- Existing On-Road Bike Lanes/Marked Paved Shoulders

Ann Arbor Township Master Plan Update



Source: Ann Arbor Twp & Washtenaw County GIS
(Ann Arbor Township Parks, Recreation, and Open Space Plan, 2020;
WATS, 2006 & 2012; SEMCOG, 2008; & SE MI Foundation, 2006)
Carlisle/Wortman Associates
May 2025



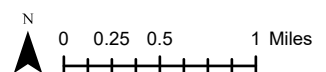


Legend

- | | |
|---------------------|---------------------|
| ● Lift Station Area | Service Areas |
| ▲ WWTP | 3-A |
| 10 Inch | 5-A |
| 12 Inch | 5-A (Superior Twp.) |
| 15 Inch | |
| 18 Inch | |

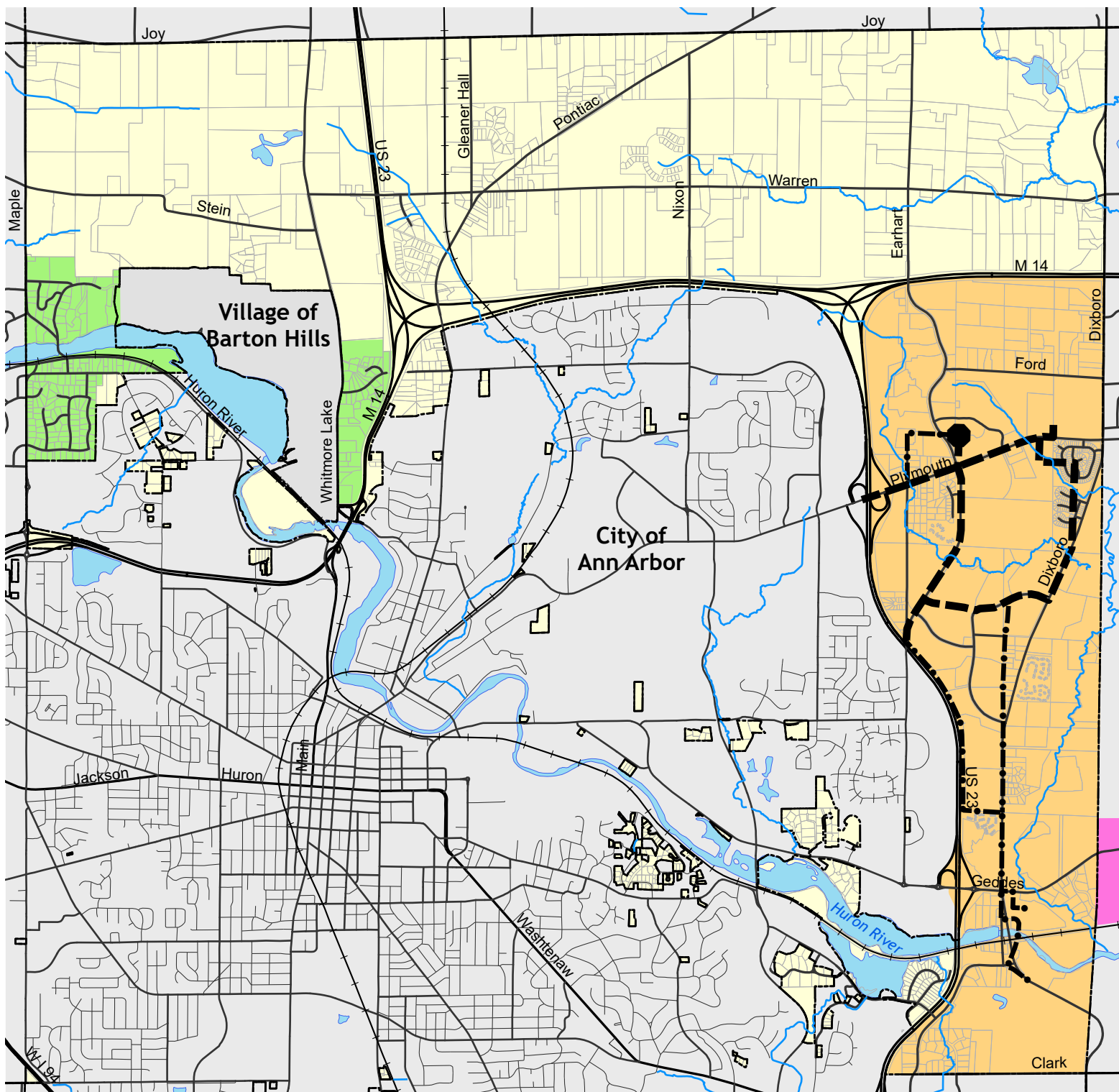
Map 12 SANITARY SEWER SERVICE

Ann Arbor Township Master Plan Update



Source: Ann Arbor Twp & Washtenaw County GIS
Carlisle/Wortman Associates
May 2025





Map 13

WATER SERVICE

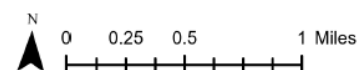
Ann Arbor Township
Master Plan Update

Legend

-  Pump Station / Storage Tank
-  12 Inch
-  16 Inch

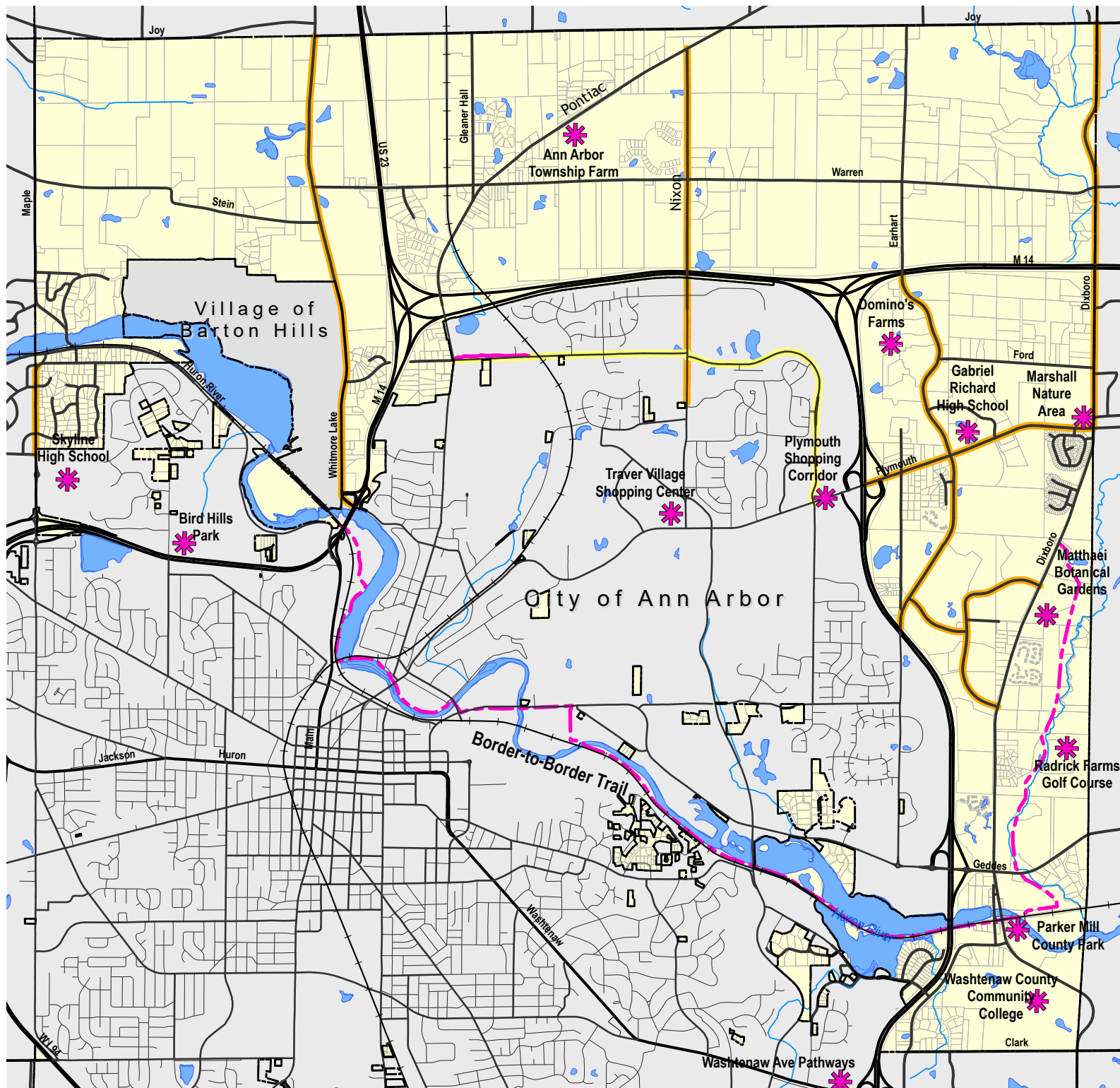
Service Areas

-  3-A
-  5-A
-  5-A (Superior Twp.)



Source: Ann Arbor Twp & Washtenaw County GIS
Carlisle/Wortman Associates
May 2025





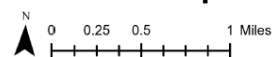
Map A

EXISTING NON-MOTORIZED FACILITIES & DESTINATIONS

Legend

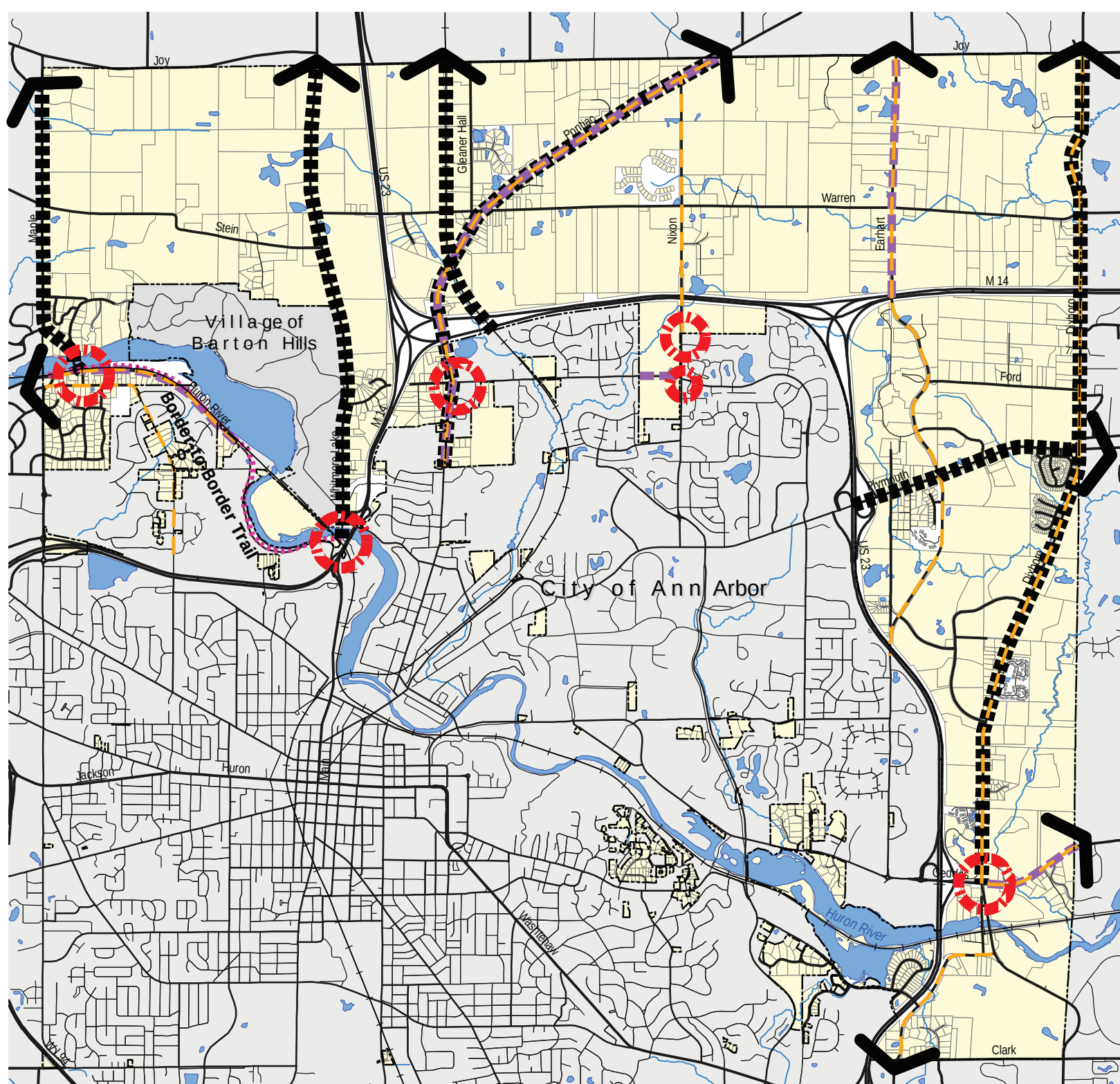
-  Destinations
-  On-Road Unmarked Paved Shoulders (about 2-3' wide)
-  On-Road Bike Lanes/Marked Paved Shoulders (4-5 ft. wide min.)
-  Off-Road Shared-Use Paths (8-10' wide, asphalt)

Ann Arbor Township Master Plan Update



Source: Ann Arbor Twp & Washtenaw County GIS
Carlisle/Wortman Associates
May 2025





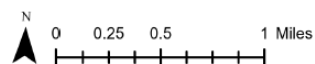
Map B

BASIS FOR NON-MOTORIZED PRIORITIES

Legend

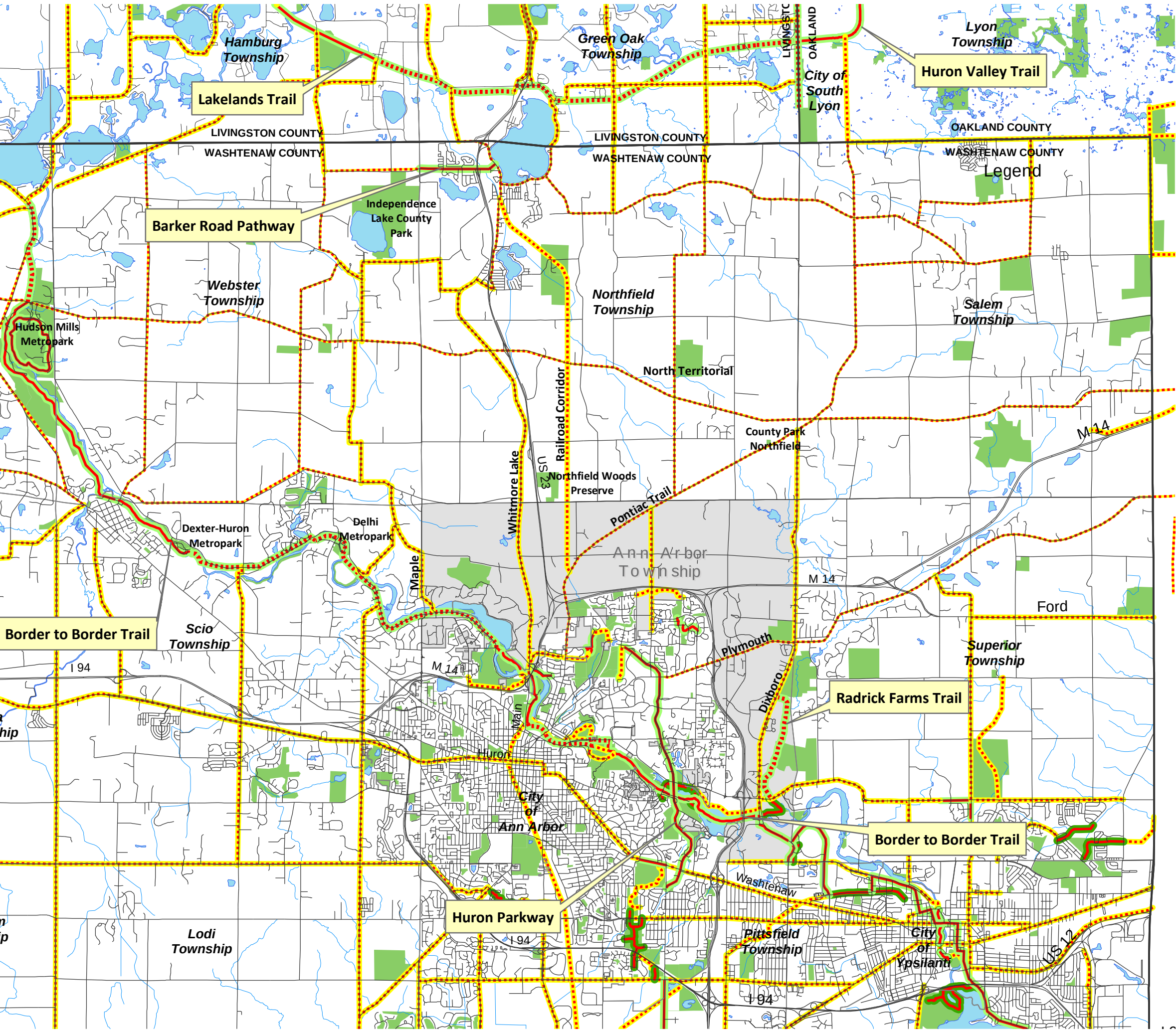
- — — WATS 2012 Complete Streets Plan
- — — WATS 2006 Non-Motorized Plan
- — — — Regional Trails & Greenways Vision 2006
- Future Border-to-Border Trail
- ↗ Connections with Adjacent Townships
- ⊗ Connections with City of Ann Arbor

Ann Arbor Township Master Plan Update



Source: Ann Arbor Twp & Washtenaw County GIS
Carlisle/Wortman Associates
May 2025





Source: WATS Complete Streets Plan (2012) and Non-Motorized Plan (2006), SEMCOG Greenways Data (2008), and Regional Greenways Initiative (2006)

Map C
EXISTING & PLANNED
REGIONAL NON-MOTORIZED
ROUTES

Ann Arbor Township
Master Plan Update

N
0 2,000 4,000 6,000 8,000 10,000 Feet

Base Map: Ann Arbor Township and Washtenaw County

5-9-2018
Carlisle/Wortman Associate, Inc.
Community Planners & Landscape Architects

APPENDIX - PRIORITY CORRIDORS FOR NON- MOTORIZED TRANSPORTATION

A. ON-LINE SURVEY RESULTS

A short questionnaire was posted to the Township's website asking residents to provide their ideas regarding trails in the Township. The survey was also advertised in a post-card mailed to all Township addresses, and on flyers for a public trails meeting.

Sixty-one people took the survey, 38 of which were Township residents. Respondents were mostly between the ages of 18 and 55 years (41), with the remainder being seniors (19). Respondents provided the following opinions:

1. Eighty-one percent ride a bike in the Township.
2. Of those, almost all ride for fitness/recreation, and about half are adults that use a bike to commute to work.
3. Eighty-three percent have ridden their bike to downtown Ann Arbor in the past 18 months; 70% to the Border-to-Border Trail; and more than 60% to both U. of M.'s north and central campuses.
4. The five roadways that were ranked highest to receive new bike lanes/trails include (in order of priority):
 - a. Plymouth Road
 - b. Huron River Drive
 - c. Geddes Road
 - d. Dixboro Road
 - e. Maple Road
5. Eighty-nine percent reported that they walk/run for exercise or recreation in the Township.
6. Seventy-eight of them stated that they walk/run on trails in existing parks.
7. Ninety-eight percent reported that they do not feel safe when walking/running along the shoulder of a major Township road.
8. Of these, 71% thought a wider shoulder or a separate path along the road would help them feel safer.
9. Sixty-seven percent stated that they walk/run along Huron River Drive; 45% along Pontiac Trail, and 43% along Dixboro Road. Twenty-four percent stated that they also walk/run along Plymouth Road.
10. Most respondents (51%) usually walk/run three to five miles.

B. PUBLIC TRAILS MEETING RESULTS

A public meeting was conducted on March 10, 2014 at the Township Hall's meeting room. Over sixty people attended, most of whom were Township residents. After introductions, a background presentation was made describing the Planning Commission's efforts to date. The presentation also reviewed the draft Priority Corridors for Non-Motorized Transportation Map.

The attendees were divided into six small groups of approximately eight people each for a planning exercise. Each group was given a large aerial map of the Township, and marking pens of various colors. They were asked to identify important bike/walk destinations and the corridors to each these destinations, and then prioritize the destinations/corridors. Priorities were determined by each person placing "sticky dots" next to destinations/corridors they thought most important. The table on the next page identifies the total number of votes (or sticky dots) each destination or corridor received.

The small group maps also illustrated some additional ideas:

1. Prioritize routes/corridors that create loops. For example, create a loop with Pontiac Trail and Dixboro Road (Note that these roads connect in Northfield Township)
2. Coordinate non-motorized lanes/trails with existing bus stops. Bus stops identified include:
 - a. Pontiac Trail at Dhu Varren

b. Dhu Varren at Nixon Road

c. Geddes Road at Dixboro Road

4. Plymouth Road needs wider shoulders and improvements for non-motorized access into the City.
5. Two destinations north of Ann Arbor Township were identified: German Park and Alexander's Farm Market.
6. Don't improve Maple Road or the CSX Railroad tracks for trails.

Table 2: Results of Public Trail Meeting - Votes with Sticky Dots

Priority Routes/Corridors	Number of Sticky Dots Received							% of Total
	Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Total	
U. of M./Matthaei/Township Trail (east of Dixboro Rd.) / Dixboro Rd.	4	27	10	15	5	3	64	30%
Pontiac Trail	5		30	10	5	2	52	25%
Plymouth Road (west of Dixboro Rd.)				10	8	3	21	10%
Future Border-to-Border Trail	2		1		10	4	17	8%
N. Pontiac Trail (to Earhart & Dixboro Rd. in Northfield Twp.)	6			3		2	11	5%
Huron River Drive		9	1				10	5%
Ex. Pedestrian Trail under M-14 (Pontiac Trail to Barton Drive)	4				2		6	3%
Earhart Rd. (north of M-14)	3				2	1	6	3%
Connection to Gallup Park		6					6	3%
Connecting U. of M./Matthaei/Township Trail with Parker Mill path	1					4	5	2%
Dixboro Road (connecting Matthaei with Woodridge Ave.)	3						3	1%
Warren Road (west of CSX tracks; coordinate with ex. bus stop)				3			3	1%
Whitmore Lake Road					2		2	1%
Earhart Road (south of M-14)/Woodridge Ave.						2	2	1%
Stein Road				1			1	.5%
Dhu Varren Road (City of Ann Arbor)					1		1	.5%
Connection with Downtown Ann Arbor					1		1	.5%
Maple Road							0	
Newport Road							0	
East Huron River Drive/Hogback							0	
Geddes Road (between Border-to-Border Trail & Superior Twp.)							0	
Total	28	42	42	42	36	21	211	

