

Denmark Township

2040

COMPREHENSIVE
PLAN

wsb

FOCUS ENGINEERING, inc.

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Chapter 1: Introduction

Purpose and Authority

Denmark Township has developed this Comprehensive Plan to fulfill comprehensive planning requirements under the Metropolitan Land Planning Act. Under Minnesota Statutes 462.351-375 and 473.851-871, Denmark Township has the authority to prepare a comprehensive plan to direct development and manage growth. This Plan replaces the Comprehensive Plan that was developed and adopted in 2009 and updated in 2011. Denmark Township has also developed the Mississippi River Critical Area Plan, contained herein, to fulfill planning requirements under the Minnesota Critical Areas Act, Minnesota Statute 116G, and Executive Order 79-19. References to the “Plan” and the planning process herein generally included the “Comprehensive Plan”, as well as the “Critical Area Plan”.

Community Planning Process

This Comprehensive Plan is an update of the Comprehensive Plan previously adopted in 2009. The update process began with a meeting with the Metropolitan Council to review the Townships 2030 Comprehensive Plan. The Metropolitan Council was complimentary of the existing plan and indicated that a simple update to the plan was needed. The Town Board determined that review of the 2040 Comprehensive Plan be done by joint meetings with the Town Board and the Planning Commission. Meetings were held with that group to review and recommend changes to the Comprehensive Plan. Staff incorporated these changes into the 2040 Comprehensive Plan

Since the adoption of the 2030 Comprehensive Plan, Denmark Township has been implementing the goals and policies by continuing to preserve its rural character. This character includes a landscape of farms, the natural environment, and low density development that does not require urban services.

The Township shall use this Plan, to the greatest degree possible, as a guide for managing future growth and development in the Township.

Overview of Denmark Township

Historical Background

Historical settlement of the Denmark Township area began in Point Douglas, at the southeastern tip of Washington County at the confluence of the Mississippi and St. Croix Rivers. In July 1840, the first post office in Minnesota outside of Fort Snelling was established here, with Levi Hurtsill as its postmaster. In 1843, David Hone, one of the original partners in the Marine Mill Company, located in the southern part of the Township. Hone and Hurtsill, along with Oscar Burris, laid out the village of Point Douglas in 1849. Other early settlers included William Dibble, Simon Shingledecker, Martin Leavitt, E. H. Whitaker, Caleb Truax, G. W. Campbell, Thomas Heatherington, Mark Wright and John Allibone.

The soils in the Denmark area were ideal for crop cultivation and the area was to become one of the prime farming areas of the region. Point Douglas was the early depot from which supplies were purchased and transported to interior settlements in the 1840's. Hurtsill and Burris built and operated what became the largest merchandise business in the county. Many believed that Point Douglas, because of its early business dominance, would become the most important City in the northwest.

Trades and services accompanied settlement of the area. W. McAboy opened the first blacksmith shop in 1851; and an early lime kiln, operated by William Bush, was in use by 1856. David Hone built the first frame building at Point Douglas. This structure, called Union House, was the showplace hotel of its time. In 1852, Hone built another large frame building, which he named the Northwestern House and used primarily as a store. Later uses of Northwestern House included a hotel, a boarding house, and dance hall that became the center of social activity during the 1860's. Many other stores and feed mills came into being during the heyday of Point Douglas. However, they began to decline as other settlements prospered in the river valleys.

Settlers organized to meet the educational and spiritual needs of the growing population. According to early historians, the first school in the township was known as the Valley School and was organized in 1850. The Reverend W. T. Boutwell is credited with preaching the first sermon at Point Douglas in 1844 and Reverend Wilcoxon is credited with organizing St. Mark's Parish at Point Douglas in 1856 as well as St. Mary's Episcopal Church in 1863.

The Township of Denmark was organized in 1858. According to historical accounts of Washington County, the Township name arose because of a preponderance of men named Mark. It was said that the community was a literal "den of Marks". The first elected officials were James Shearer, Chairman; Thomas Wright and David Hone, Supervisors; and G.W. Campbell, Clerk. Further information about the history of Washington County may be found in Willard E. Rosenfelt's publication "Washington: A History of the Minnesota County", 1997.

Although growth and development in the Township has occurred during the last century and

a half, the character of the Township remains predominantly rural. The Township does not have central wastewater treatment services or public water supplies. Property owners are responsible for individual sewage treatment systems and private wells. Most of the Township is zoned to maintain agricultural production, but each of the river corridors to the east and the south has historically been developed with low-density residential development.

Natural Features

Topography

Denmark has a diverse landscape that includes relatively level areas, as well as ravines and moderate to excessive slopes. Land formations along the Mississippi and St. Croix Rivers, including steep bluffs, are indicative of the geologic history of these large and important rivers. Steep slopes are also characteristic of the tributaries leading to the St. Croix. The western portion of the Township is fairly level with occasional rolling hills.



Vegetation

The original vegetation of the Township prior to settlement by Europeans included areas of oak savanna, aspen-oak parkland and prairies. The oak savanna communities paralleled the St. Croix and Mississippi Rivers and covered the northwest portion of the Township, with prairies covering the interior. The oak savanna and aspen-oak parkland were plant communities with scattered groves of trees and shrubs surrounded by prairie grasses and flowers. The prairie communities in Denmark Township were generally dry prairies--including dry bedrock-bluff prairies, dry gravel prairies, and sand-dune prairies.

Some remnants of these communities remain today, particularly on the St. Croix and Mississippi River bluffs and along stream corridors. Much of the prairie in the township was converted to agricultural uses. Some remnants of the original plant communities are protected within the Lost Valley Scientific and Natural Area (SNA), Afton State Park, and Carpenter Nature Center. Remnants also remain on private properties.

The Washington Soil and Water Conservation District completed a Natural Resources

Inventory of Denmark Township in 2002. The Inventory includes a detailed description of the natural communities remaining in the Township, and provides recommendations for protection, management and restoration of these communities.

Existing Land Uses

Denmark Township is characterized by the scenic river valleys of the Saint Croix and Mississippi, and the rolling farmland in the interior of the Township. **Figure 1**, Aerial Photography, shows the predominantly agricultural and residential settlement pattern across this landscape. Existing land use patterns as identified in **Figure 2, Existing Land Use**, and

tabulated in **Table 1**, illustrate the low-density rural character of the Township. Below are descriptions of the land use categories in Denmark.



Agriculture

Agriculture is the primary land activity in the Township. Agricultural lands are used for purposes including farming, dairying, pasturage, horticulture, floriculture, viticulture, and animal and poultry husbandry and accessory uses. Residences on agricultural lands are shown as farmsteads on the Existing Land Use map.

Productive soils for agricultural uses are located west of CSAH 21, except in the north portion of the Township and in scattered areas east of CSAH 21. Most of the land lying west of



County State Aid Highway 21, except for scattered residential dwellings, is used for agricultural purposes. However, since 1960, urbanization has increased the demand for residential development in the Township.

Parks and Open Spaces

Parks and Open Spaces are for active recreational use, such as playfields, exercise equipment, or golf courses, and passive open spaces such as trails and picnic areas. Open Spaces also include areas for protecting natural resources for environmental or aesthetic purposes.

Public and quasi-public open spaces include Afton State Park, Afton Alps Golf Course, St. Croix Bluffs Regional Park, the DNR owned and managed Lost Valley Scientific and Natural Area, the privately-owned and operated Carpenter Nature Center, and Point Douglas County Park as well as the Hastings to Prescott Trail. The Township owns two park properties: the community park located at the Town Hall and the O'Connor Family-Denmark Township Nature Preserve.

Afton Alps includes a private open space that consists of 306 acres of land that provides year-round recreational opportunities in the form of ski hills, bike paths, trails and a golf course. Denmark Township negotiated higher density in the adjoining Afton Alps development in exchange for commitments by the developer to provide and maintain more open space including the ski hills whose primary use is skiing.



Residential Areas

Single Family Residential development is scattered throughout the Township. Concentrations of residential development occur along the river corridors because of the high scenic value of the corridors and the lower suitability of the land for farming. Residential development occurs in the form of conventional subdivisions, lot averaging subdivision, and through Open Space Design. The Township added Open Space Design standards to its Development Code to meet its goals of preserving open space and the community's rural character.

Single Family Residential lands are identified on Figure 2, Existing Land Use, as those with one- family homes, seasonal/vacation homes, farmsteads, and the open space adjacent to a residence. The portion of a residential lot that is not immediately adjacent to the residence is categorized as “undeveloped” in the existing land use data. The lands classified as undeveloped are shown in light green on the Existing Land Use map.

Rural Commercial/Industrial Area

An existing commercial/industrial area of approximately 150 acres is adjacent to U.S. Highway 61 and U.S. Highway 10. The area is partially developed. Businesses include vehicle and equipment sales, a bussing company, day care center, light manufacturing, storage, general services, and a gasoline/convenience store.

Institutional

Institutional land uses in the Township include the Town Hall, cemeteries and a place of worship.

Table 1: Existing Generalized Land Use (2016)

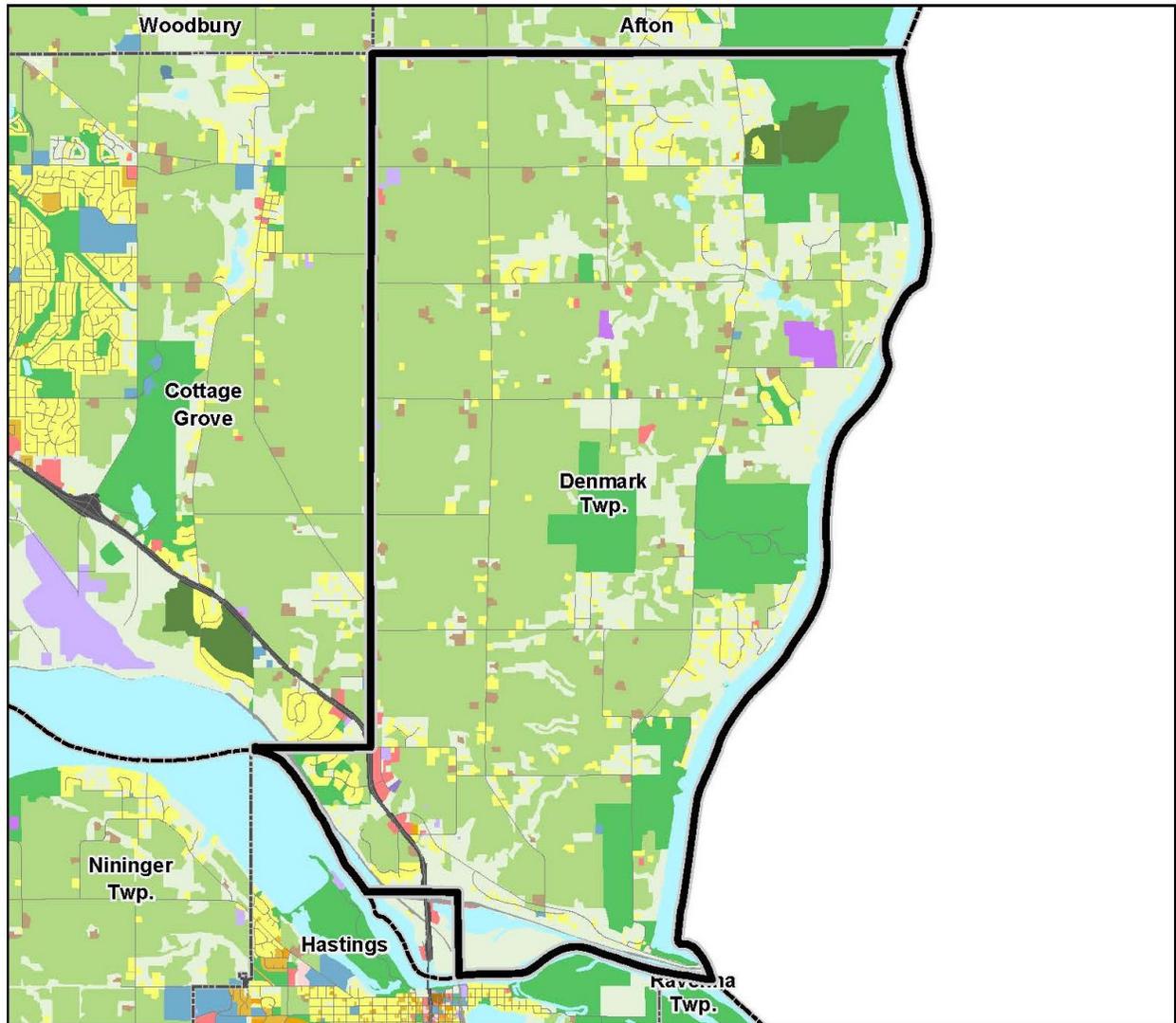
Land Use	Acres	Percent
Farmstead	249	1%
Seasonal/Vacation	10	<1%
Single Family Detached	1,063	6%
Manufactured Housing Park	0	0%
Multifamily House	4	<1%
Single Family Attached	0	0%
Multifamily	0	0%
Retail and Other Commercial	90	0%
Office	0	0%
Mixed Use Residential	0	0%
Mixed Use Industrial	4	<1%
Mixed Use Commercial and Other	0	0%
Industrial and Utility	30	<1%
Extractive	96	1%
Institutional	10	< 1%
Park, Recreational or Preserve	2,338	12%
Golf Course	188	1%
Major Highway	38	<1%
Railway	57	0%
Agricultural	10,477	54%
Undeveloped Land	3,517	18%
Water	1,116	6%
Total	19,286	100%

Source: Metropolitan Council

Figure 1: Aerial Photography (2017)



Figure 2: Generalized Land Use (2016)
Denmark Township, Washington County



2016 Generalized Land Use



Population and Household Growth

Steady population and household growth has occurred in Denmark Township since 1970. The average household size has remained slightly above that of the County, reflecting a difference in lifestyle and housing opportunities in the Township. From 1970 through 2000, Denmark has experienced a lower rate of population growth than Washington County as a whole. Estimates of current population and household figures show that growth rates in the Township exceeded those in the County over the past six years. Even with this slight increase in population growth, Denmark Township continues to have a fairly even growth rate. The Township has a rural land use pattern of predominantly agricultural lands and large lot residences, which limits the increase in population and households.

The Township grew by 105 new households in the 1990s, and 162 households in the 2000's, and an estimated 29 households between 2010 and 2016.



Housing

Housing in Denmark Township reflects the low-density, rural character of the community. Nearly all housing in the Township is single-family detached, which reflects a number of practical and market-related constraints to other types of housing. The lack of public wastewater treatment systems makes higher density and attached housing less feasible. In addition, the market for higher density and attached housing is limited due the lack of urban-related services, amenities and economic opportunities commonly associated with higher density housing. The aesthetic value of the rural atmosphere, particularly along the Mississippi and St. Croix River corridors, has attracted higher value development.

Table 2 provides a breakdown of housing by unit type, single family, attached housing, manufactured housing, or other. The great majority of housing in Denmark Township is single family, owner occupied homes. The chapter on housing provides a breakdown of the assessed value and home ownership of housing in Denmark compared with Washington County. Average housing values in the Township have been consistently higher than the County's, to a greater degree over the last three years in particular.

Table 2: Housing by Unit Type

	Single Family	Townhomes (Single-Family attached)	Duplex, Triplex and Quad	Multifamily (5 units or more)	Manufactured Housing	Total
1990	374	7	6	0	4	391
2000	487	0	5	0	4	496
2010	654	0	4	0	0	658
2016	683	0	4	0	0	687
Washington County						
1990	38,484	3,889	2,095	5,429	1,475	47,372
2000	54,270	8,669	2,180	7,020	1,472	73,611
2010	63,329	13,117	2,823	11,743	1,362	92,374
2016	66,590	13,713	2,841	13,213	1,333	97,690

Source: 2010 U.S. Census, Metropolitan Council

Schools

Most of Denmark Township is part of Hastings Independent School District #200. District #200 includes one kindergarten, three elementary schools, one junior high, one senior high school, a learning center/high school alternative, and community education program. The Hastings Independent School District schools are located in the City of Hastings. A portion of the Township, north of 80th Street, is part of the South Washington Independent School District #833 which encompasses most of Cottage Grove and Woodbury to the west. A small area south of 60th Street near St. Croix Trail is located in the Stillwater Independent School District #834. Denmark will cooperate with each school district to help accommodate and meet the needs of students who reside in

the Township, as well as for the educational needs of the community at large.

Employment and Local Economy

Commercial agriculture is the primary economic activity in the Township in terms of employment, income and land use. Other commercial and industrial opportunities in the Township are restricted to the commercial/industrial district. Individual businesses are concentrated at the intersection of U.S. Highways 10 and 61. These include vehicle and equipment sales, light manufacturing, storage, general services, and a gasoline/convenience store. Finally, there are private recreational facilities, parks, and outdoor educational facilities that provide employment. These include Carpenter Nature Center, Saint Croix Bluffs Regional Park, Afton State Park, Point Douglas County Park, and Afton Alps ski area.

Table 3 indicates employment growth and the balance of jobs and housing in the Township since 1970. Employment grew considerably between 1980 and 1990 when 197 new jobs were created in the Township. Job creation was more stagnant between 1990 and 2000 with 53 jobs being added in the Township. It grew again from 2000 to 2016 with 183 jobs being added over that time to the Township for a total estimated employment figure of 483 jobs.

Growth in employment kept pace with household growth between 2000 and 2010, with approximately .6 to .7 jobs per household. Residents of rural communities in the metropolitan region typically commute to other communities for employment, so the lower ratio of employment to households in Denmark Township in comparison to the County and Metropolitan Area is not surprising. That Denmark Township continues to maintain and gradually add to its employment base likely indicates the stability of local employers.

Table 3: Historical Employment

	1970	1980	1990	2000	2010	2016
Employment						
Denmark Township	10	50	247	300	629	483
Washington County	14,460	27,884	39,164	67,649	71,957	82,674
Jobs Per Household						
Denmark Township	0.04	0.16	0.67	0.62	1.02	1.33
Washington County	0.68	0.80	0.80	0.95	1.22	0.88
Metropolitan Area	1.36	1.44	1.45	1.57	1.38	1.43

Source: Metropolitan Council

Chapter 2: Community Goals & Policies

The Township has established a set of goals to help guide the community, particularly the roles and responsibilities of the Township government. These are official statements that reflect, to the degree possible, mutual goals of participants in the planning process. They represent desired outcomes or conditions related to the physical, natural, and economic characteristics of the community. Policies, on the other hand, are specific, official positions of the Township that guide day-to-day planning, administration and implementation strategies such as capital improvements, zoning and other official controls.

Comprehensive Community Goal

It is the goal of Denmark Township to manage growth and change in the community in a manner consistent with the preservation of natural and environmental features, the preservation of the rural quality of the Township, and the protection of public health, safety and welfare for existing and future residents.

Land Use Goals and Policies

Goals

- ✓ Protect the rural character of the Township through growth management strategies.
- ✓ Protect and preserve the St. Croix River corridor and the Mississippi National River and Recreation Area.
- ✓ Protect a base of long-term agricultural land as a source of open space, rural character, and economic livelihood.
- ✓ Encourage the continuation of commercial farming as a viable land use and significant economic activity.
- ✓ Establish land use patterns that preserve and protect the natural qualities and existing character of the landscape.
- ✓ Provide opportunities for new residential and commercial development that are consistent with the above Comprehensive Community Goal.
- ✓ Maintain and enhance the value of agricultural, residential and commercial property.
- ✓ Provide for the economic availability, removal and processing of sand, gravel, rock, soil, and other aggregate materials vital to the economic well-being of the region, while protecting against adverse impacts.

Policies - Agriculture

- ✓ Designate areas for long-term commercial agricultural use, based upon agricultural land evaluation and site assessment criteria.
- ✓ Permit and encourage agricultural uses in areas not specifically designated for long-term agricultural use.
- ✓ Educate residents on the potential conflicts or incompatibilities that can arise between development and agricultural uses.
- ✓ Support the rights of farmers to farm.

Policies - General Development

- ✓ Allow residential densities to be at levels consistent with the character of existing development.
- ✓ Encourage and explore land use options related to preservation of open space.
- ✓ Encourage the clustering of residential uses, provided that the clusters meet open space and environmental preservation criteria, as well as other criteria outlined in the Township's zoning and subdivision ordinances.
- ✓ Consider various land use planning tools including, but not limited to, purchase of development rights (PDR), an existing ordinance governing the transfer of development rights (TDR) for contiguous parcels, and conservation easements.
- ✓ Maintain a Township map that identifies existing development.
- ✓ Encourage that all new development proposals consider the impact of new development on existing homes.
- ✓ Encourage and promote land regulations that preserve property values.

Policies - Conserved Lands

- ✓ Encourage that public, for-rent agricultural lands be rented to local Township farmers.
- ✓ Encourage County, State, or other agencies to consider local tax implications in its evaluation of Land and Water Legacy requests or other conservation programs.
- ✓ Continue to request policy changes to provide local governments some level of payment in lieu for properties that are either taken off the tax roll or their value reduced due to conservation/scenic easements.
- ✓ Encourage the State of Minnesota to consider the qualification requirements for farmland protection programs to ensure that the programs meet their intended purposes.

Policies - Aggregate Resources

- ✓ Limit mineral extraction to designated areas that prevent or minimize environmental and aesthetic impacts on adjacent properties as well as properties guided for residential use, and the Township as a whole.
- ✓ Provide safeguards and controls regarding noise, dust, odors, traffic, drainage, groundwater quality and other factors which will minimize the environmental and aesthetic impacts on mined or other property.
- ✓ Allow for the extraction of high quality aggregate prior to nonagricultural development.
- ✓ Require that land is restored to a usable, attractive condition after the mining operation is finished.

Policies - River Corridors

- ✓ Enforce mandatory river corridor development standards for the St. Croix and Mississippi River corridors.
- ✓ Prevent commercial or industrial uses from negatively impacting the river corridor areas.

- ✓ Apply setback and height restrictions and encourage careful site design to maintain the ability to view the river corridors from existing open space and developed areas.

Housing Goals and Policies

Goals

- ✓ Retain the low-density, single-family residential and rural character of the Township.
- ✓ Provide a range of residential housing options within a rural context.

Policies

- ✓ Enforce all applicable building code standards to ensure housing quality.
- ✓ Encourage the rehabilitation of the existing housing stock as a source of affordable housing.
- ✓ Maintain residential development standards that do not preclude the provision of moderate cost housing.

Commerce and Industry Goals and Policies

Goals

- ✓ Support the economic viability of farms and farm-related businesses.
- ✓ Encourage economic opportunities within designated commercial/industrial areas.
- ✓ Ensure compatibility between commercial and non-commercial land uses.
- ✓ Increase local employment opportunities.
- ✓ Increase the goods and services available locally to Township residents.
- ✓ Create a more diverse tax base to avoid an excessive tax burden on residential properties.

Policies

- ✓ Limit commercial development in agricultural areas and commercial/industrial zoning districts to those uses which can operate using on-site sewage treatment systems, in order to prevent premature expansion of metropolitan systems.
- ✓ Require site planning and building design that result in adequate site buffering, screening, landscaping, circulation, parking, and safety.
- ✓ Regulate commercial signage to balance the needs of businesses while also protecting the rural quality of the Township.
- ✓ Encourage commercial-industrial uses that are non-threatening to the environment.

Transportation Goals and Policies

Goals

- ✓ Maintain a safe, cost-effective, efficient and environmentally sensitive rural road transportation system.
- ✓ When proposed, consider transit, rideshare and dial-a-ride programs.

Policies

- ✓ Require that new roads shall meet Township “Standard Specifications for New Roadway Construction”, as amended.
- ✓ Encourage development designs that minimize the need for new roadways.
- ✓ Provide information to residents about transportation alternatives, such as park-and-rides, rideshare programs, and dial-a-ride programs.
- ✓ Work with neighboring jurisdictions including, Washington County, the Metropolitan Council, and the Minnesota Department of Transportation on transportation planning and system improvements as necessary. The Township shall inform residents of system changes on a case by case basis.
- ✓ Develop priorities to improve the existing transportation system.

Environment / Water Resources Goals and Policies

Goals

- ✓ Protect environmental systems from harm.
- ✓ Protect the environment from air, noise, and light pollution.
- ✓ Maintain and enhance the natural amenities of the Township for existing and future residents.
- ✓ Promote nondegradation of surface waters, ground water resources and wetland areas to protect their quality and functions as natural habitats, drinking water, and aesthetic qualities.

Policies

- ✓ Educate residents and commercial landowners about practices that preserve and improve the natural environment and surface and ground water resources; and encourage their use.
- ✓ Participate in and implement the rules of the South Washington Watershed District (SWWD).
- ✓ Cooperate with the South Washington Watershed District (SWWD) to complete a functions and values assessment of wetlands within Denmark Township.
- ✓ Require a functions and values assessment of wetlands by applicants as they seek to develop properties, using MnRAM version 3.0 or the most current version, if wetlands on the properties were not assessed by the WMO.
- ✓ Require protection of wetlands through stormwater management and buffer standards.
- ✓ Protect ground water resources by managing land use and development to protect aquifers and recharge areas.
- ✓ Where development is proposed, encourage that it is suited to site, soil conditions and existing drainage patterns.
- ✓ Require erosion control measures to protect and preserve surface waters.
- ✓ Encourage the preservation and restoration of native vegetation in areas not used for agricultural purposes.
- ✓ Continue to utilize Washington County as the government authority for permitting and inspecting of individual sewage treatment systems.

- ✓ Cooperate with other agencies in identifying circumstances where businesses must conduct groundwater monitoring due to the potential of hazardous materials polluting water resources.
- ✓ Evaluate the potential for community sewage treatment systems, if proposed, to accomplish the Town's environment/water resources goals.

Parks, Open Space and Recreation Goals and Policies

Goals

- ✓ Provide recreational opportunities for all residents of the Township.
- ✓ Enhance park and recreation areas of the Township.
- ✓ Work cooperatively with other entities to identify potential trails.

Policies

- ✓ Maintain and encourage use of the Town Hall park.
- ✓ Require the dedication of park or open space land, or cash in lieu of land, in conjunction with the subdivision of all properties.
- ✓ Accept land gifts or require land dedications in areas with potential open space, natural feature or habitat qualities.
- ✓ Identify potential trail corridors.
- ✓ Encourage developers to provide trails and access to public trails.
- ✓ Consider the promotion and preservation of contiguous open space.

Community Facilities and Services Goals and Policies

Goals

- ✓ Provide efficient and responsive basic services to residents and local businesses.
- ✓ Maintain a limited Township budget and prioritize community services.
- ✓ Utilize services available from other units of government.

Policies

- ✓ Communicate information and issues to residents in a timely, regular, and thorough manner.
- ✓ Incorporate and encourage Township resident participation in community newsletters and events.
- ✓ Coordinate with other units of government to avoid duplication of effort, to collaborate where appropriate, and to address issues that may affect multiple jurisdictions.

Resilience and Sustainability Goals and Policies

Goal

- ✓ Provide opportunities for residential scale solar energy production.

Policy

- ✓ Maintain large minimum lot sizes and yard setbacks to protect properties from

potential shading of solar energy systems by neighboring structures or trees.

Chapter 3: Land Use

Metropolitan Council Regional Development Plan, Thrive MSP2040

The Metropolitan Council is the regional agency responsible for ensuring the implementation of the Metropolitan Land Planning Act. The Council develops regional plans, then reviews local plans to ensure consistency with the regional plans. Specifically, the Council develops plans for the regional "systems": transportation, parks, and water resources. Local comprehensive plans must not result in the creation of substantial negative impacts on these systems ("system impacts"). A system impact might involve a community allowing more growth or development than the metropolitan highway or wastewater treatment system could accommodate. The Metropolitan Council has the authority to require communities to change their plans when the Council finds a system impact. Denmark is unlikely to create a system impact given the low-density rural nature of the Township.

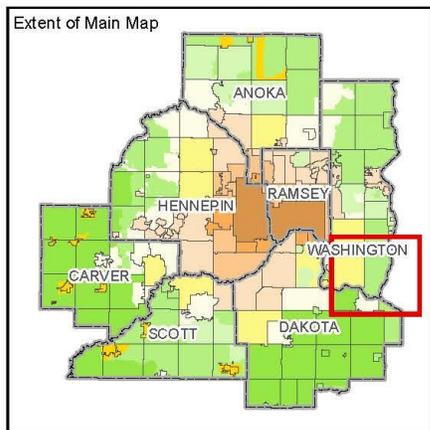
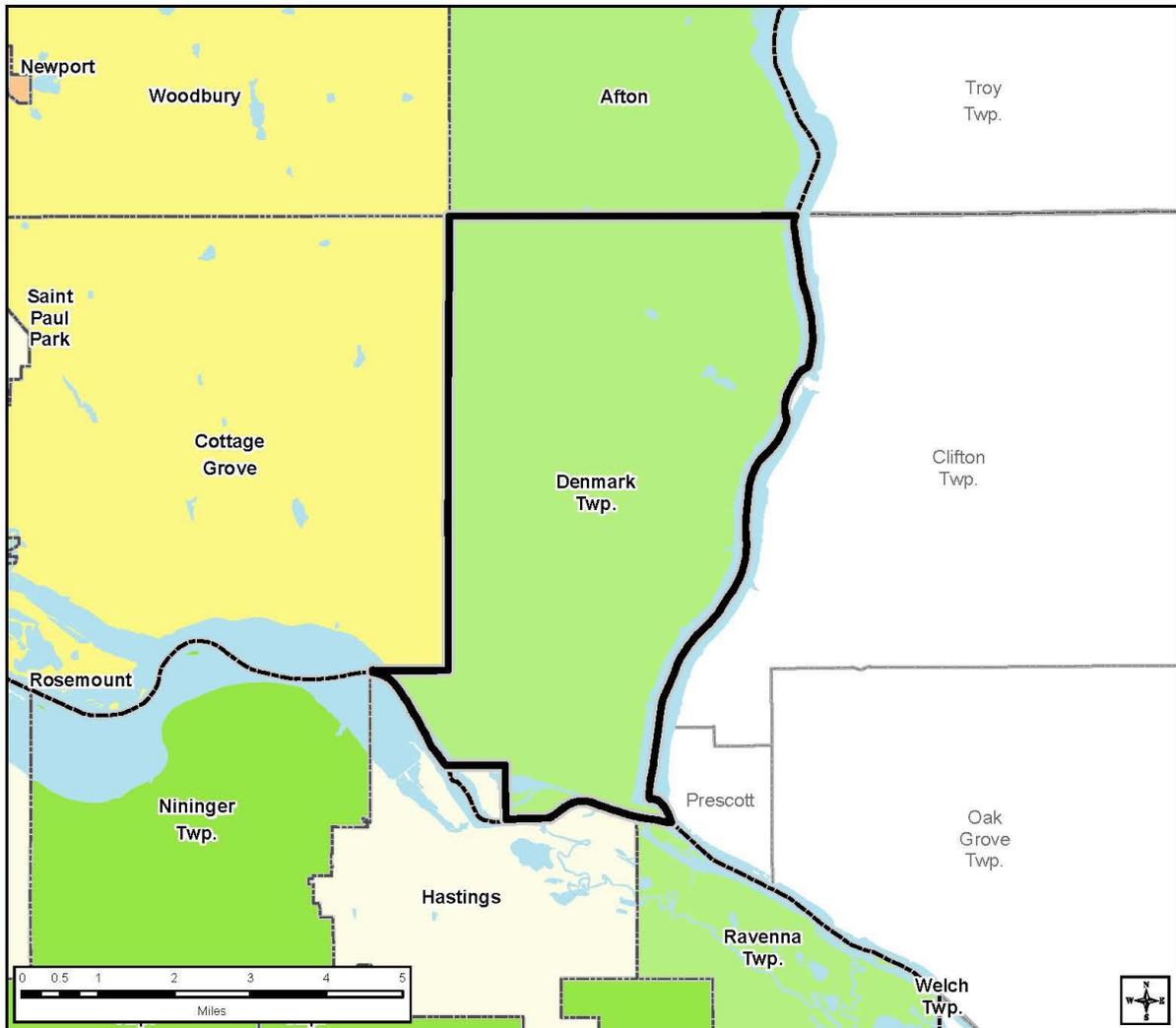
The Metropolitan Council has also developed a *Regional Development Plan, Thrive MSP2040*, a growth strategy for the region through 2040 that identifies future areas for urban development, including investments in regional infrastructure such as highways and sewers. The Framework also addresses other regional planning issues such as affordable housing, redevelopment, and transit. The Council may find that components of a community's plan are inconsistent with regional policies in these areas. This finding may hurt a community's chances for future regional funding opportunities, but the Council does not have the authority to require communities to make changes to their plans in these cases.

The urban area that is served by regional wastewater treatment is called the Metropolitan Urban Services Area, or MUSA. Denmark is currently outside of the MUSA. The areas that the Framework has identified for the expansion of the regional wastewater treatment system are generally contiguous to existing MUSA. The Metropolitan Council has identified areas it feels are most appropriate for future MUSA through the year 2040. These areas are designated as Urban Planning Areas (Developing Area and Developed Area). The Framework also designates Rural Planning Areas, places where urban level development is discouraged.

The Metropolitan Council designates Denmark Township as Diversified Rural. The Diversified Rural area is to plan for average densities of no more than 1 housing unit per 10 acres. In general, the Township supports this designation as it has a desirable rural atmosphere that the Township intends to protect. The policy of Denmark Township is to permit only residential densities that maintain the permanent rural character of the Township.

Figure 3: Regional Development Plan, Thrive MSP2040 Framework Planning

**Community Designation
Denmark Township, Washington County**



Community Designation

- | | |
|--------------------------|------------------------------------|
| Urban Center - Core City | Rural Center |
| Urban Center | Diversified Rural |
| Urban | Rural Residential |
| Suburban | Agricultural |
| Suburban Edge | Outside Council planning authority |
| Emerging Suburban Edge | |
-
- | |
|------------------------------|
| County Boundaries |
| City and Township Boundaries |
| Lakes and Major Rivers |

Population, Household and Employment Forecasts

The Metropolitan Council forecasts are reported in **Table 6**. Denmark Township has experienced moderate population and household growth since the completion of its last Comprehensive Plan. As shown in **Table 4** between the 2000 and 2010 Censuses, the community’s population increased by 389 persons, or 29 percent. The Metropolitan Council forecasts that Denmark’s population is and will continue to experience a slower growth rate between 2010 and 2020. The growth rate is expected to rise only slightly from 2020-2040 as demonstrated below in **Table 6**.

Table 4: Population Growth (1970 – 2017)

Population	1970	1980	1990	2000	2010	2017 estimate
Denmark	923	1,140	1,172	1,348	1,737	1,782
% increase		24%	3%	15%	29%	3%
Washington	83,003	113,571	145,896	201,130	238,136	253,128
% increase		37%	28%	38%	18%	6%

Table 5: Household Growth (1970 – 2017)

Household	1970	1980	1990	2000	2010	2017 estimate
Denmark	231	318	391	496	658	648
% increase		38%	23%	27%	33%	-1.5%
Washington	21,314	35,001	47,372	73,611	92,374	97,690
% increase		64%	35%	55%	25%	6%

Source: U.S. Census and Metropolitan Council

Table 6: Denmark Township Forecasts (2017 – 2040)

Population				
	2017 (estimate)	2020	2030	2040
	1,782	1,920	2,160	2,410
% increase		7.7%	12%	12%
Employment				
	2017 (estimate)	2020	2030	2040
	548	640	640	650
% increase		32.5%	0%	1.6%
Households				
	2017 (estimate)	2020	2030	2040
	648	720	860	1,000
% increase		4.8%	19%	16%

Source: Metropolitan Council & 2010 Census

Land Use Plan

The Township intends to build upon the existing rural character of the community in planning for its future. The 2040 Planned Land Use map identifies the location of specific land uses that will guide growth in the Township through the year 2040. Land use categories set the stage for plan implementation strategies, including the zoning and subdivision ordinances and any capital improvements. The majority of the land is designated as Long-Term Agriculture, while most of the rest of the land is designated as Rural Residential or Single-Family Estate. A small portion of the community where there are existing businesses is designated as Rural Commercial/Industrial. Township land use policies, previously listed, support these designations.

The Township has not altered any parcels 2030 future land use designation with the proposed 2040 future land use plan.

Figure 4: 2030 Future Land Use Plan

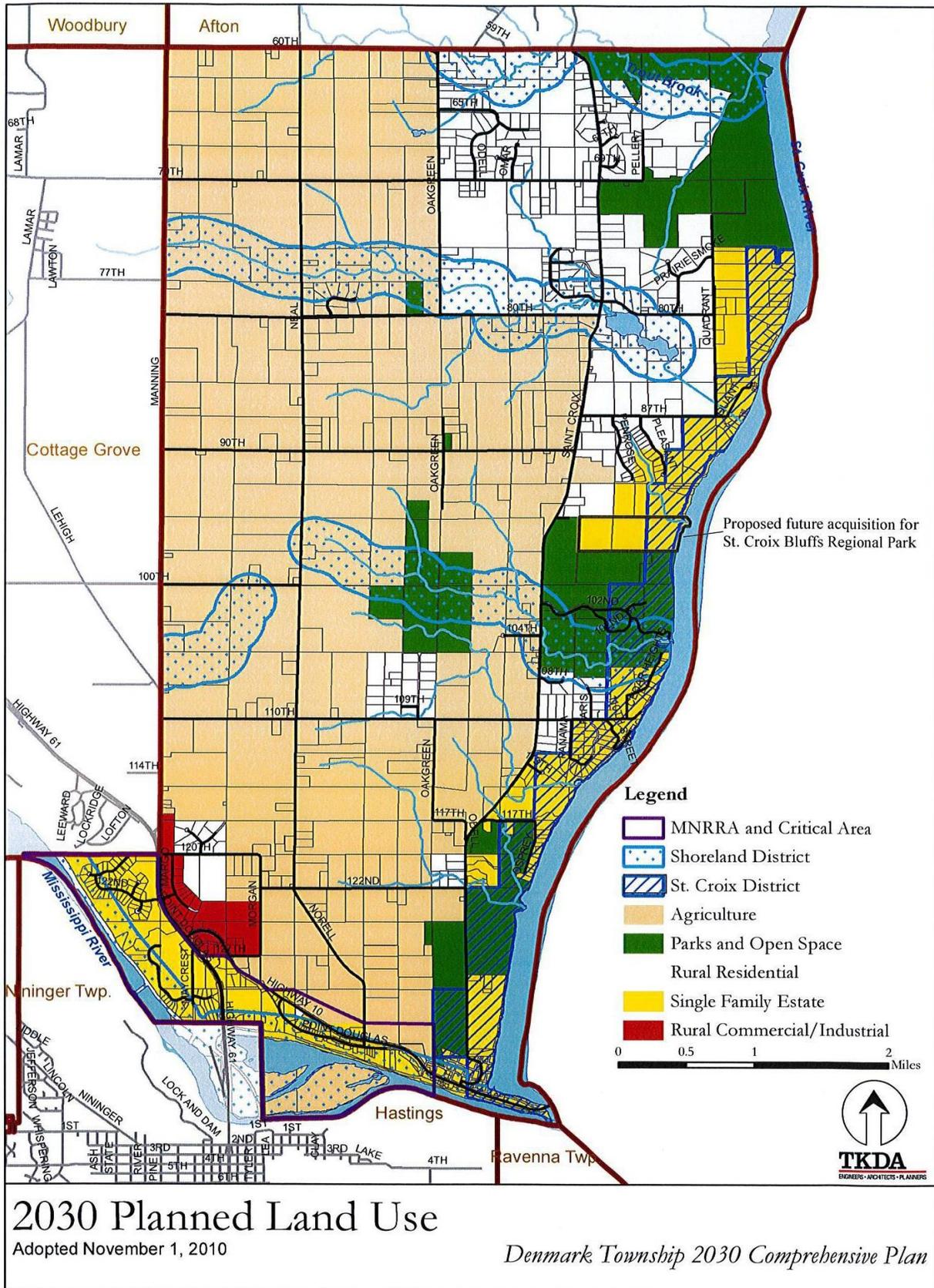


Figure 5: 2040 Future Land Use Plan

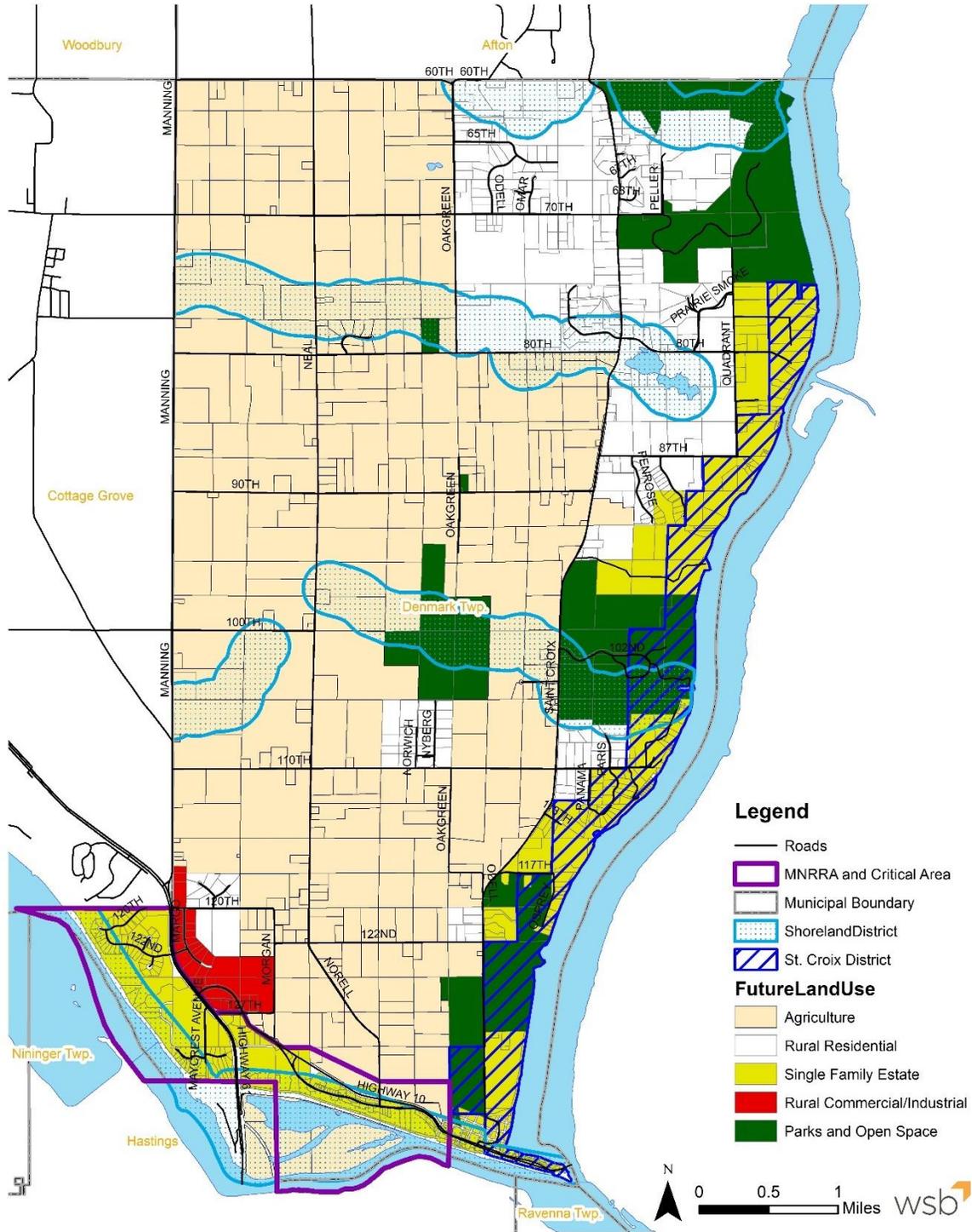


Table 7: 2040 Future Land Use Designations in Acreages by Planning Period

Future Land Use Designation	Planning Period					
	2018 - 2020	% of Total	2021 - 2030	% of Total	2031 - 2040	% of Total
Agriculture	10,626	55%	10,626	55%	10,626	55%
Rural Residential	3,270	17%	3,270	17%	3,270	17%
Single Family Estate	1,930	10%	1,930	10%	1,930	10%
Rural Commercial/Industrial	214	1%	214	1%	214	1%
Parks and Open Space	2,099	11%	2,099	11%	2,099	11%
Open Water	1,116	5%	1,116	5%	1,116	5%
Right-of-Way	31	<1%	31	<1%	31	<1%
Total Acres	19,286	100%	19,286	100%	19,286	100%

Long-Term Agriculture Designation

Areas designated for long-term agriculture will generally permit a maximum density of two homes per forty acres. The primary intent of this designation is to support the continuation of agricultural uses. Consequently, farming, farm-related industry, and low-density residential uses are permitted, while other open space, recreational, rural, and other non-urban uses are generally conditional uses in this area. Other uses are prohibited.

The current Metropolitan Agricultural Land Preservation Program protects farmland from escalating property taxes and assessments as a result of development pressure. In exchange, a participant’s land must be zoned at one unit per forty acres and restrictive covenants are placed upon the land. Participation in program benefits and development restrictions cease eight years following a notice of expiration. The Township amends the zoning to a one unit per forty acres density for lands enrolled in this program.

The associated zoning designations for property guided Long-Term Agriculture is either “Agricultural Preserves” which requires a minimum lot size of 40 acres or “Agriculture A-2” which requires a minimum lot size of 20 acres.

Rural Residential Designation

The Rural Residential Area provides opportunities for rural low-density single family detached housing in areas less suitable for supporting long-term agriculture. The maximum residential density in this area is one home per five acres. The character of this area is intended to be a mix of small-scale farming, hobby farms, and rural residential homesteads.

In large part, the Rural Residential area shown on the 2040 Planned Land Use map reflects where Rural Residential zoning is already in place. The Rural Residential area was not expanded from the extents of the 2030 land use for the purposes of the 2040 land use plan.



The designation of Rural Residential is consistent with the existing character of the area. The guiding of this area to Rural Residential supports the Goals and Policies of the Comprehensive Plan, to: Provide opportunities for new residential and commercial development consistent with the overall goal of the Comp Plan; Allow residential densities to be at levels consistent with the character of existing development; Retain the low-density, single-family residential and rural character of the Township; and Provide a range of housing choices within a rural context.

The associated zoning designation for property guided Rural Residential is “Rural Residential - RR” which requires a minimum lot size of 5 acres.

Single-Family Estate Designation

The Single-Family Estate designation lies exclusively along the St. Croix and Mississippi River corridors and is intended for single family detached homes. This area provides additional residential opportunities within the most scenic parts of the Township, at densities which are higher than the Rural Residential area, but which still maintain the rural character and protect the environment. The land use guidance for this area is one unit per 3 acres. The St. Croix River Management District and Shoreland Management District provide additional protection in terms of environmental and scenic value.

The associated zoning designation for property guided Single Family Estate is “Single Family Estate SFE” which requires a minimum lot size of 3 acres.



Rural Commercial/Industrial Designation

A Rural Commercial/Industrial area lies adjacent to the east side of U.S. Highway 61 where the highway enters Denmark from Cottage Grove. This area is ideally suited for rural commercial and industrial uses, given its location along a high traffic corridor on the regional highway system. The goals for the Rural Commercial/Industrial are to increase local employment opportunities, increase the goods and services available locally to Township residents, and to create a more diverse tax base. This district is intended to provide a mix of business, including clean light-industrial, light assembly, research and development, office, service commercial, restaurant and retail that can be adequately served with individual sewage treatment systems and private wells. Businesses are to be low intensity uses that are compatible with Denmark Township's rural character. Businesses should not generate wastes that could pose the risk of groundwater contamination. The Town's Ordinances will be used to protect water resources from potential adverse impacts.

With the 2040 Comprehensive Plan, the Township is not expanding the area guided for Rural Commercial/Industrial use.

The Commercial/Industrial-Rural zoning district (CI) corresponds to the guided land use. The Commercial/Industrial-Rural (CI) District allows for a mix of commercial and light industrial businesses by Conditional Use Permit. The District calls for uses that are non-threatening to the environment that are served by individual wells and wastewater treatment systems and which are a minimum of 2.5 acres in size.

Parks and Open Space Designation

Parks and Open Spaces include publicly and privately-owned parks and open spaces. See the Parks and Trails section of the Growth Management Plan for further information.

Residential Development Potential

Denmark Township is not facing "build-out" between now and 2040. Requests for development are evaluated in detail as proposals are brought forward. The number of housing units that a given parcel of land could yield depends on the characteristics of the land, such as the presence of protected natural resources,

and the zoning designation.

An estimate of residential development potential gives a sense of how many households the Township could accommodate under current zoning. The estimate overstates the development potential because it assumes no unique characteristics of the land or other constraints to development, and assumes no lands enrolled in Ag Preserves.

There were an estimated 648 households in Denmark Township in 2017. The additional housing units identified in the Metropolitan Councils 2040 forecasted household total of 1,000 can be accommodated under the Township's existing land use designations based on existing land availability.

Staged Development and Redevelopment

Denmark Township is currently entirely outside of the Metropolitan Urban Service Area (MUSA) and the MUSA is not planned to be extended into the Township within the 2040 planning period. As a result, there is no local infrastructure such as public sewer or water that would be impacted by each 10-year planning period. The Township will continue to work with Washington County on private utility systems.

Rural Commercial/Industrial Development Potential

Out of a total area of an estimated 205 acres, there are approximately 80 gross acres of undeveloped or underdeveloped land in the Rural Commercial/Industrial area. Assuming a lot size of 2.5 acres and considering land needs for public right of way, the area has the potential for approximately 20 to 25 additional businesses.

The Metropolitan Council employment forecasts are reported in **Table 6**. The Rural Commercial-Industrial area is a significant source of employment within Denmark Township. The planned Rural Commercial-Industrial area is expected to be similar to existing development in the amount of employment generated. The area is not expected to fully develop within the 2040 planning horizon, and so the forecasts are acceptable to the Township.

Access to the Commercial/Industrial area is off of Township roads Margo Avenue, 127th Street South and Morgan Avenue South. Because of proximity to Highways 10, 61, and 95, the traffic generated has a limited effect on the local transportation system. The Commercial/Industrial area is within a half-mile of the Red Rock transit corridor. This local concentration of employment has the potential to contribute to corridor ridership, to a level appropriate for development served by on-site wastewater treatment and water supply.

No urban services - public water or wastewater systems - are in place nor planned to serve the Rural Commercial/Industrial area. The developed properties are served by individual systems and future development will also be served by private

systems, either individual systems or package systems. Denmark Township is outside of the Metropolitan Council’s Long-Term Sewer Service Area, the Council’s map identifying potential areas that could receive urban services at some point in time after 2040. If there is future indication that urban services may become available in the vicinity of the Rural Commercial/Industrial area, the Township will at that time examine the potential for connecting the area to urban services.

Conserved Lands

Denmark Township is unique in its abundance of open spaces that are conserved from development by a variety of methods: lands owned by public or private nonprofit agencies, lands held in conservation easements, and lands enrolled in farmland protection programs (Green Acres and Ag Preserves). Published in the fall of 2017, according to the Metropolitan Council, the Township had 2,027.88 acres of land enrolled in Agricultural Preserve. An estimated total of 13,443 acres are conserved either temporarily (such as by farmland programs) or for the long-term (such as by conservation easement). These lands make up approximately three quarters of the Township’s land area. The Washington County Land and Water Legacy program provides an opportunity for additional properties with Denmark Township to become conserved lands.

Table 8: Conserved Lands

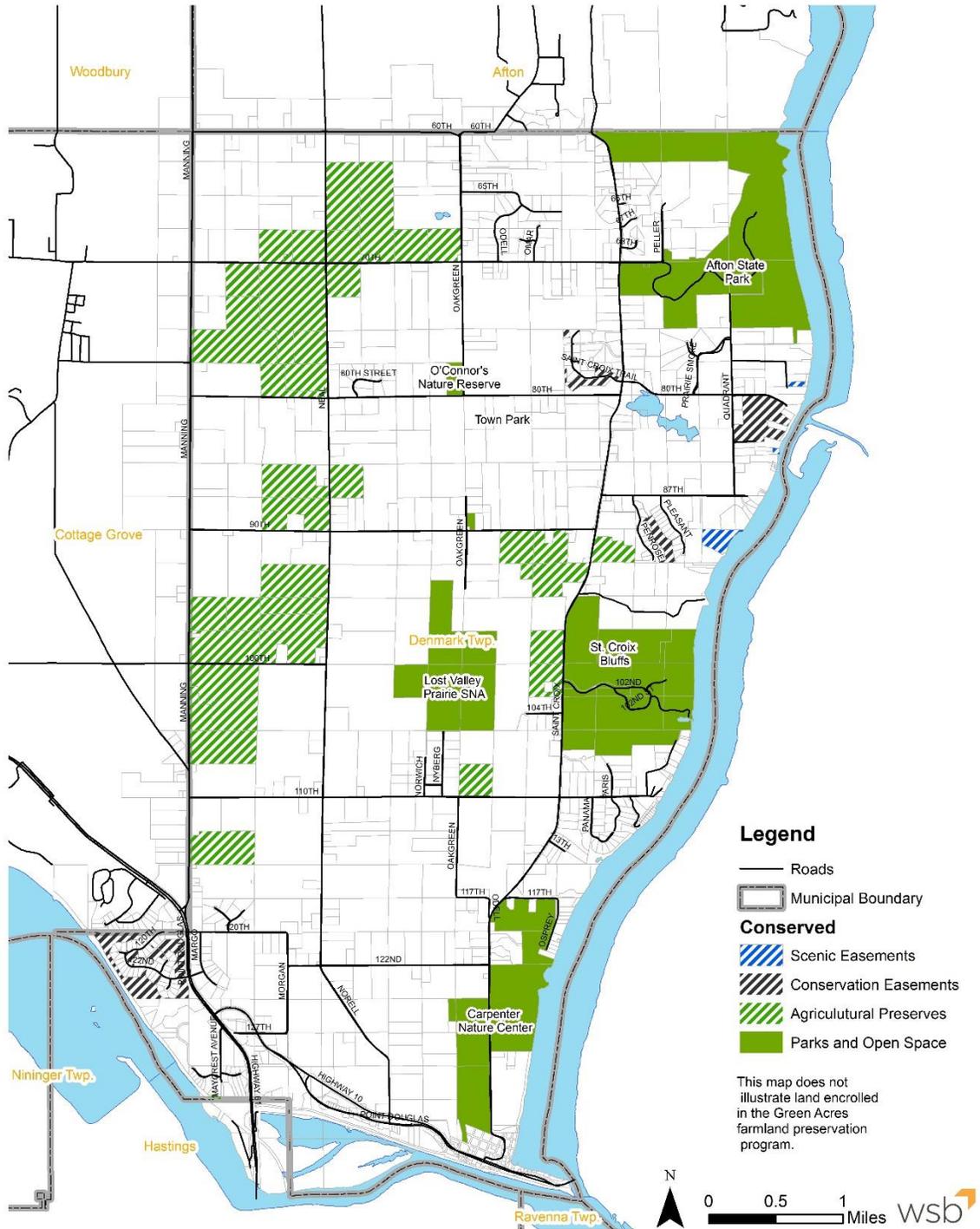
Lands	Acres	Percent of Total Land Area*
Afton State Park	871	4.8
Lost Valley SNA	320	1.8
St. Croix Bluffs Park	579	3.2
Point Douglas Park	17	<0.1
O’Connor Family-Twp Nature	20	<0.1
Town Hall and Park	6	<0.1
Cemeteries	4	<0.1
Nonprofit owned	421	2.3
SUBTOTAL: PUBLIC AND NONPROFIT OWNED LAND	2,238	12.3
Conservation easement (OSD)	198	1.1
Conservation Easement	69	0.4
Scenic Easement	27	<0.1
Ag Preserves	2,027	11.2
Green Acres	8,884	48.9
Total	13,443	74.0

**Total land area in the Township, less water, is 18,170 acres
 Numbers are approximated based on information from Washington County, Metropolitan Council, and the Township.*

The Township supports conservation of open spaces and natural resources. These

are community assets that contribute to Denmark Township's rural character. The Township holds these values while recognizing that conservation of open spaces creates a shift in property tax burden. The Township is concerned that local properties outside of conservation areas will increasingly take on the full fiscal impact of preserving open space.

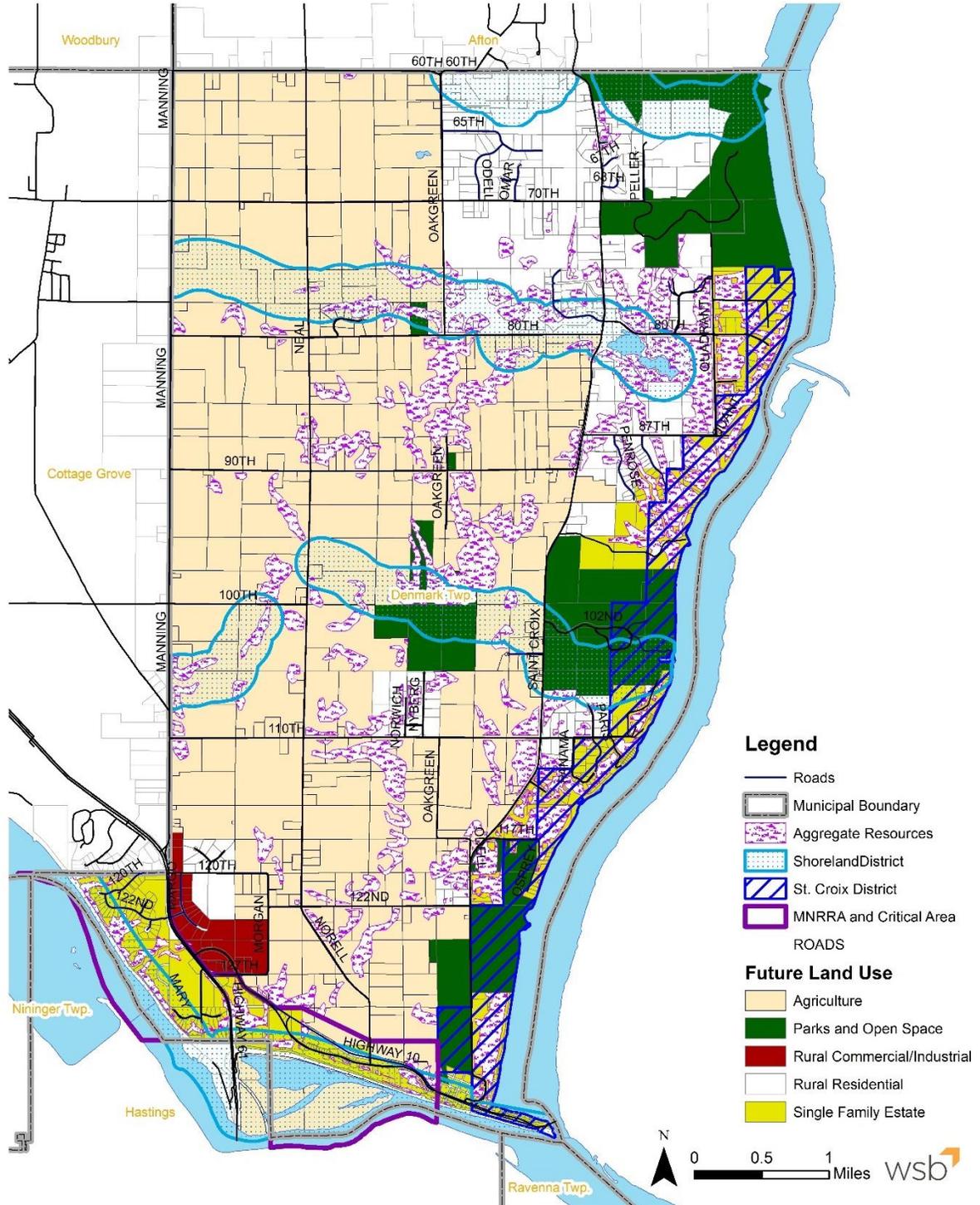
Figure 6: Conserved Lands



Aggregate Resources

The Metropolitan Council requires that communities identify aggregate resources within local boundaries and plan for the extraction of aggregate. Denmark Township has areas of aggregate- rich land and currently has two gravel mining operations within the Township. New mining operations are not permitted within the Shoreland, St. Croix, and MRCCA overlay districts. The Township respects individual property rights and has no policies that would pressure property owners to use aggregate-rich lands for mining or quarrying purposes. The Township will notify property owners who submit development plans in areas with high aggregate resources of their ability to have those resources extracted prior to urbanization.

Figure 7: Aggregate Resources



Chapter 4 – Housing

Housing

Housing in Denmark Township is largely single family units in the form of farmsteads and rural residences. Housing character is largely determined by local property owners under the regulations of the Denmark Township Development Code and the State building code. The Town’s influence on housing character, through the Development Code, results in single family residences that are distanced from adjacent properties and roads to create the open spaces of a rural setting. The Township provides regulation related to housing including accessory buildings, outdoor storage, home-based businesses, and accessory dwelling units.



Table 9: Housing Assessed Value Trends, 2010 to 2016

Average Residential Value	2010	2011	2012	2013	2014	2015	2016
<i>Denmark Township</i>	\$481,300	\$469,000	\$440,600	\$396,500	\$382,900	\$379,400	\$386,000
<i>Washington County</i>	\$264,800	\$257,200	\$249,300	\$241,900	\$240,200	\$243,600	\$253,300
<i>Township/County Value Index</i>	1.8	1.8	1.8	1.6	1.6	1.6	1.5

Source: 2012-2016 American Community Survey 5-Year Estimates

Housing Supply

The 2010 census identified 658 households within the Township. The Metropolitan Council projects a total of 1,000 households by 2040. As such, the Metropolitan Council forecasts indicate that there will be 342 additional households added to the Township by 2040. New single family housing may take shape in agricultural areas, large-lot standard subdivisions, open space developments, and on riverfront parcels.

Table 10: Housing Tenure (2016)

Owner Occupied Units	Rental Units
650	37

Source: Metropolitan Council Existing Housing Assessment

Table 11: Housing Types (2016)

Single Family Units	Multifamily Units	Manufactured Homes	Other Housing Units
683	4	0	0

Source: Metropolitan Council Existing Housing Assessment

Table 12: Housing Availability Based on Area Median Income (AMI)

	At or Below 30% AMI	31 – 50% AMI	51 – 80% AMI
Housing Units Available	3	8	65
Housing Cost Burdened Households	25	37	19
Housing Shortage	-22	-29	+46

Source: Metropolitan Council Existing Housing Assessment

Denmark Township has a shortage of housing for households with incomes below 50% of AMI. The chart below shows that there are 25 households experiencing cost burden, whose incomes are at or below 30% of AMI. There are only three housing units available that are affordable to households with income at or below 30% of AMI, meaning 22 of the households experiencing burden have no prospect of owning units affordable to them in Denmark. The numbers are similar for households with incomes between 31% and 50% of AMI. There is a shortage of 29 housing units in this category, meaning 29 households with incomes in this range will not be able to access a housing unit affordable to them. There is an excess of housing units available that are affordable to households with incomes between 51% and 80% of AMI. While it is good to have excess units available in this range, they may be owned or occupied by households making incomes in one of the lower ranges, meaning they are still the source of housing cost burden.

Table 13: Housing Affordability Based on Area Median Income (AMI)

At or Below 30% AMI	31 – 50% AMI	51 – 80% AMI
4	10	64

Source: Metropolitan Council Existing Housing Assessment

Given the rural nature of the Township and the predominance of single-family homes, the Township has a limited number of options to address housing affordability. Without central wastewater treatment systems, the Township cannot undertake strategies to address affordability through increased densities. The Township is in favor of Washington County Community Development Agency (CDA) programs that are available to assist local residents with their housing needs.

The Townships system statement provided by the Metropolitan Council indicated that the Township does not have a share of the region’s need for low and moderate income housing. In addition, the ALHOA indicated that in June of 2016, the Council adopted changes to the [Guidelines for Priority Funding for Housing Performance](#) such that communities that have *neither* Livable Communities Act goals for affordable and lifecycle housing *nor* an Allocation of Affordable Housing Need will no longer be required to complete the Survey. Denmark Township fit these criteria.

The following describes the number of publicly subsidized housing units within the Township.

1. Senior Housing = 0
2. Housing for people with disabilities = 0
3. All other; include expiration dates of affordability requirements when applicable = 0

Table 14: Housing Cost Burdened Households in 2016

Income at or below 30% of AMI	Income 31% to 50% of AMI	Income 51% to 80% AMI
25	37	19

Summary of Existing Housing Needs

1. Households for residents with incomes between 31% and 50% of AMI.
2. Households for residents with incomes at or below 30% of AMI
3. Maintenance of existing housing stock which over time can become naturally occurring affordable housing (noah) stock.

Affordable Housing Tools		Provide affordable housing for residents 50%-31% of the Area Median Income (AMI)	Provide affordable housing for residents at or below 30% of the Area Median Income (AMI)	Maintenance of existing housing stock
An "X" below indicates that the Township would consider using this tool for a future housing project				
County, Regional, State, and Federal Programs	Washington County Community Development Block Grants (CDBG)	X	X	X
	Washington County Owner-Occupied Residential Rehabilitation Deferred Loan Program	X	X	X
	Minnesota Housing Finance Agency Consolidated RFP	X	X	X
	Washington County CDA Foreclosure Counseling	X	X	X
	Community Activity Set Aside (CASA) Program	X	X	X
	Washington County Septic Loan Program	X	X	X
Local Policies and Programs	Zoning Regulations	X	X	X
	Effective Referrals Program	X	X	X
Preserve Long Term Affordability	Community Land Trusts	X	X	X
	Support Developer use of Low Income Housing Tax Credits (LIHTCs)	X	X	X

County, Regional, State, and Federal Funding Programs

Washington County Community Development: Washington County Community Development offers assistance programs, including CDBG and HOME funds, when funding is available that support housing rehabilitation and affordable housing projects. Denmark Township will continue to work with the County when appropriate and funding, programs and opportunities become available.

Washington County Owner-Occupied Residential Rehabilitation Deferred Loan Program: Owner-occupied residential rehabilitation deferred loan program which can be used to assist residents with interior and exterior home improvements. Homeowners may receive deferred loans up to \$18,000 with no interest and no monthly payments. The full amount of the loan is not due until the homeowner moves, transfers the title, or takes cash out on a refinance of the property. These loans are available to households at or below 80 percent of the area median income, adjusted for household size, and may be used to finance projects to make homes safe and livable.

Minnesota Housing Finance Agency Consolidated RFP: This major annual funding request from Minnesota Housing Finance Agency supports affordable housing development. The Township will consider working with developers in coordination with MHFA in supporting RFP submissions for projects that will bring a significant number of new affordable units that meet affordability thresholds of 50% AMI or below.

Washington County CDA Foreclosure Counseling: Denmark residents who may have fallen behind on mortgage payments can contact Washington County CDA and have access to foreclosure counseling free of charge.

Community Activity Set Aside (CASA) Program: This program provides access to pools of Minnesota Housing Finance Agency (MHFA) mortgage revenue bond funds set-aside to provide end loans with subsidized interest rate to first-time homebuyers. Specifically, the program supports initiatives that target funds towards underserved populations, increasing the stock of affordable housing or addressing a community specific housing credit need.

Washington County CDA Septic System Loan Program: Denmark residents with failing septic systems can apply for loans and grant funds available to help rural residents update their noncompliant subsurface sewage treatment systems.

Local Policies and Programs

Zoning regulation Denmark Township will continue to monitor its zoning and subdivision ordinances to make certain that its regulatory policies align with its

housing goals and aspirations as outlined in this Plan. Zoning regulation should be in alignment with and support the City's housing goals. Township's existing ordinance currently allows for temporary dwelling units for the purposes of a care facility for an infirm relative or for the purposes of housing relatives engaged in farming activities. These temporary dwelling units provide for an alternative housing option to meet the housing needs of the community.

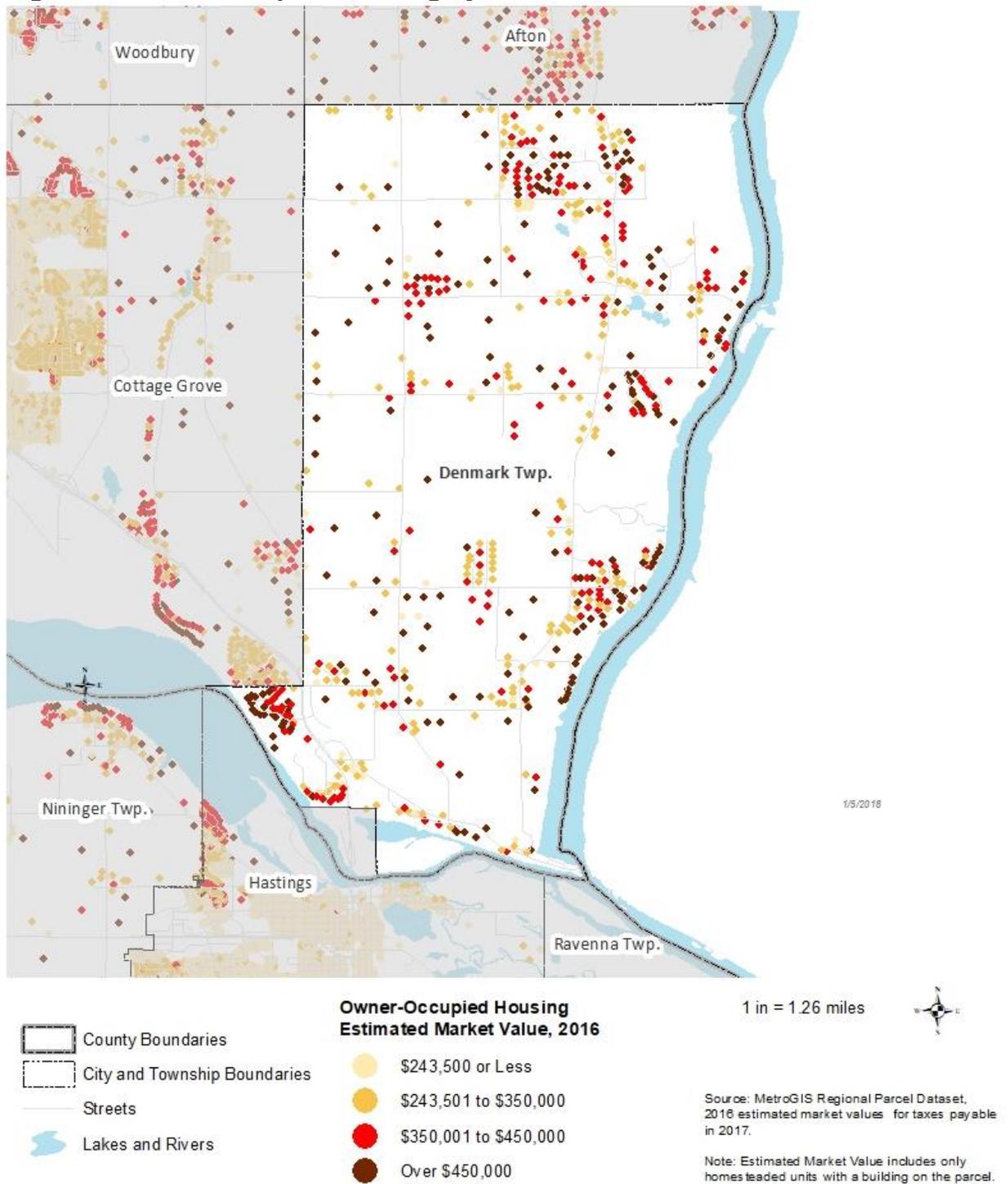
Effective referrals The Township supports providing appropriate resources and education for existing housing support programs offered by other agencies and organizations. While the Township does not have the capacity to provide a full-time staff to offer this service, there are opportunities to more effectively communicate to residents and prospective residents about existing programs offered through Washington County and beyond. Effective housing referrals will increase opportunities for residents to enter the community whom would otherwise have barriers and improve the likelihood of existing housing maintenance. Housing programs support residents at a range of income levels, from very low up to moderate incomes, depending on the program.

Preservation of Long Term Affordability Tools

Community Land Trust (CLT) – A CLT provide permanent affordability for income-eligible households. Typically, a CLT is structured where a homeowner owns the building and the land trust leases the land to the homeowner. Households that make at or below 80 percent of AMI typically qualify for these homes. Currently Two Rivers Community Land Trust serves all of Washington County and thus would be available to Denmark Township residents.

Low Income Housing Tax Credit Properties (LIHTC) With LIHTC, developers apply for tax credits to offset costs at the time of development. Although the City does not fund this type of assistance, Centerville will consider stating its intent of support for developers who pursue LIHTC and who intend to seek ways to retain the affordability of the LIHTC property after the terms of LIHTC are up.

Figure 8: Owner-Occupied Housing by Estimated Market Value



Chapter 5 - Parks and Trails

The Township is committed to working with the Minnesota Department of Natural Resources, Washington County, and Metropolitan Council on park and trail improvements that benefit the Township as well as the State, County and region.

In December 2009 the Township adopted a Parks Master Plan which established a final master plan for the Town Hall Park as well as the Final Nature Preserve Master Plan for the O'Connor Family – Denmark Township Nature Preserve.

State, Regional and County Parks

Denmark Township is home to **Afton State Park**, Minnesota Department of Natural Resources **Lost Valley Scientific and Natural Area**, **Saint Croix Bluffs** Regional Park, and Point Douglas County Park.



Washington County and Denmark Township have a Memorandum of Understanding (MOU) regarding St. Croix Bluffs Regional Park, signed in 2004. The MOU specifies that Washington County will notify the Township of any additional land acquired for the park, and that the Township would update the zoning map to show the new parkland area as Conservancy. Since the execution of that MOU, the Township has rezoned the park land to Conservancy and has guided the property as Park and Open Space on its land use map. Washington County adopted a Master Plan for St. Croix Bluffs Regional Park in 2003, which includes a proposed future expansion of the park to the north by approximately 120 acres. To date, the 120 acre area has not been acquired by Washington County for the park, and therefore this area remains guided and zoned as Single Family Estate. If Washington County does acquire the additional 120 acres, the Township will at that time reguide and rezone the additional acreage appropriately.

Denmark Township Park Property

The Township owns two park properties: the community park located at the Town Hall and the O'Connor Family-Denmark Township Nature Preserve.

The Town Hall park has a multi-purpose playfield, picnic pavilion, and basketball hoop. It shares parking with the Town Hall. The Township will consider options for the northern, undeveloped portion of the property, such as park improvements or a future public building.



The O'Connor Family-Denmark Township Nature Preserve is a 20 acre property that was donated to the Township by the O'Connor family in 2002. The land was given to the Township with the intent that it be kept in a natural state. James and Michelle O'Connor's letter of dedication says, "I do not envision or expect there will be any significant 'park-like' development on the land for years, if ever." The letter names the land as a nature preserve and indicates that a family member should be involved in any committee making decisions regarding the property. The donation was made to the Township so that the land will be "enjoyed by the people of the area forever" and to honor past generations of O'Connors, who, "played active roles in the area church, school, social and community life of Denmark Township."

The O'Connor Family-Denmark Township Nature Preserve is a landscape of rolling hills, woods and open areas. The land is a reminder of the Township's agrarian and immigrant history. The O'Connor dedication letter describes the family's relationship with the land from the time of his great grandfather's arrival to the Township in 1864 as an Irish immigrant pioneer. The family's history at two farmsteads in the Township includes the area at O'Connor's Lake, which used to be called Frog Hollow.

Possibilities for amenities that would uphold the O'Connor's vision for the property as a nature preserve include plantings, trails, signage, benches, and nature interpretation. In 2010, the Township in partnership with the Washington Conservation District (WCD) budgeted funds and began prairie restoration of the site. The location of the O'Connor Family Nature Reserve is shown in **Figure 9** Parks and Open Space.



Trails

There are four identified regional trails within Denmark Township shown in Figure 10.

The **Prairie View Regional Trail** is planned in a general alignment running east-west along 80th Street, connecting the Mississippi River in St. Paul to the St. Croix River in Denmark Township.

The **Mississippi River Trail (MRT)** is a regional trail corridor located along the southwestern border of Denmark Township, connecting to Cottage Grove and Hastings.

The **St. Croix Valley Regional Trail** is a proposed trail corridor parallel to the St. Croix River. At this time the Metropolitan Council has identified a general alignment for the corridor which is shown in **Figure 9**.

Washington County completed a master plan for the trail corridor in 2005 that identifies detailed trail alignment options. The Master Plan proposed a bikeway on Saint Croix Trail (County 21) with a number of trail connections between Saint Croix Trail and the Saint Croix River.

The Town Board reviewed the Washington County master plan for the trail corridor. In May 2005, the Town Board passed a resolution commenting on the trail alignment. The resolution was submitted to the Washington County Board of Supervisors, and included the following comments:

- The Township supported an alignment and concentration of the proposed trail along St. Croix Trail (County 21).
- The Township identified safety and traffic concerns related to the route proposed along Quadrant Avenue and 87th Street near the Tiller mining pit.
- The Township was opposed to condemnation of private property for establishment of the railway system. Additional required right-of-way should be acquired from willing sellers.
- The Township supported routing trails through parks and natural areas, if a satisfactory agreement has been reached between the public or private owner and Washington County.

The Township supported holding additional public and private meetings for stakeholders to discuss the proposed trail location and design.

The **Point Douglas Regional Trail**, is a multiple-use trail in southeastern Washington County. The trail runs west along the backwaters and main channel of the Mississippi River, providing vistas of the river. The trail is a key link in the regional network, connecting to the Mississippi River Trail Bikeway, the planned St Croix Valley Regional Trail, and trails in Dakota County and St Croix County (WI). The trail will also provide vital connections to local trails, parks, schools, and businesses.

With the construction of these trails, Denmark Township will have a high level of trail connectivity for a rural area. The regional trails will allow for east-west and north-south movement across the Township, as well as connections to destinations in nearby Cottage Grove and Hastings. The Township has not identified future corridors for Town-owned and maintained trails. When land is developed, the Township will consider the addition of local trails that are privately owned and maintained within neighborhoods.

Figure 9: Parks and Open Space System

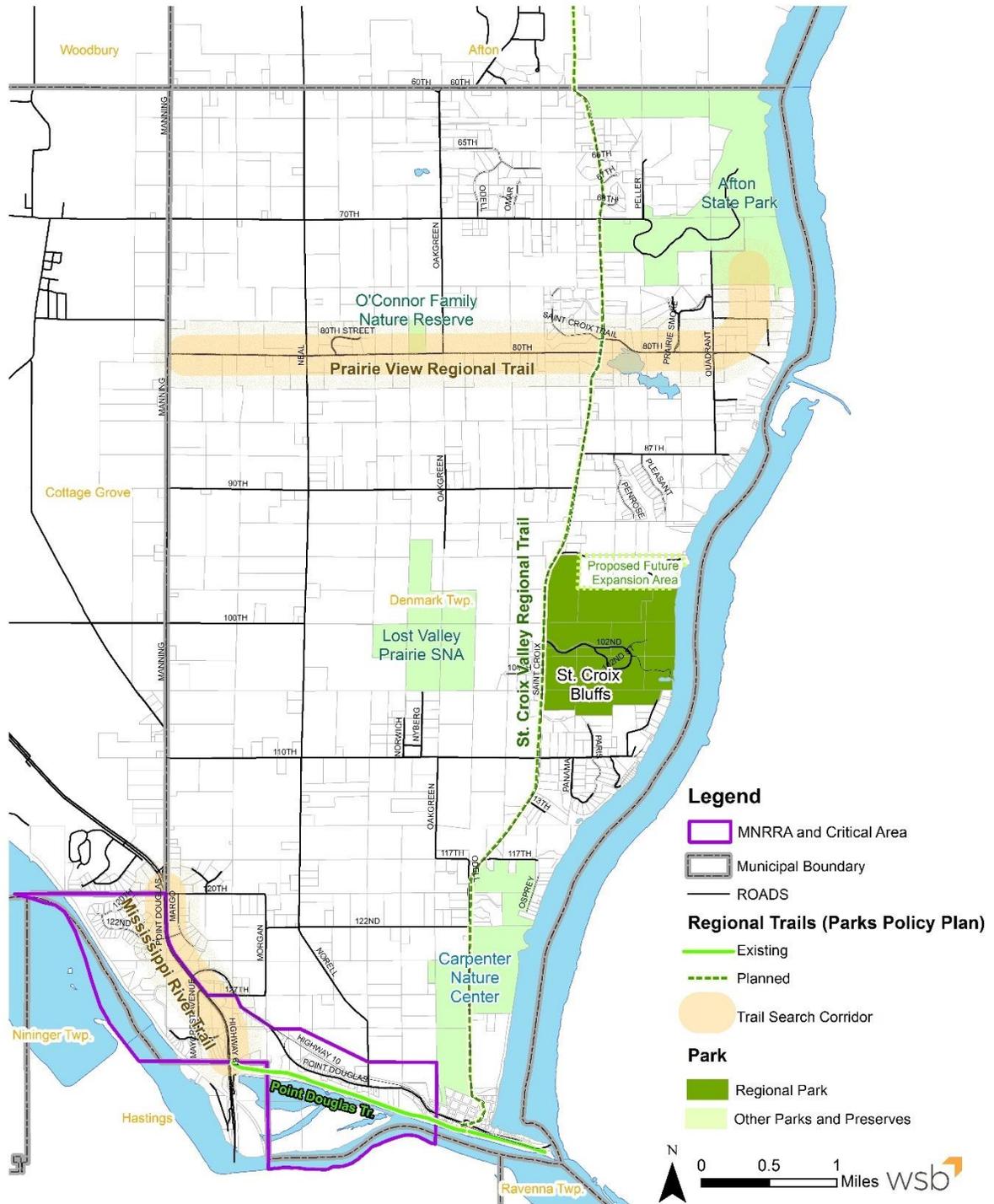
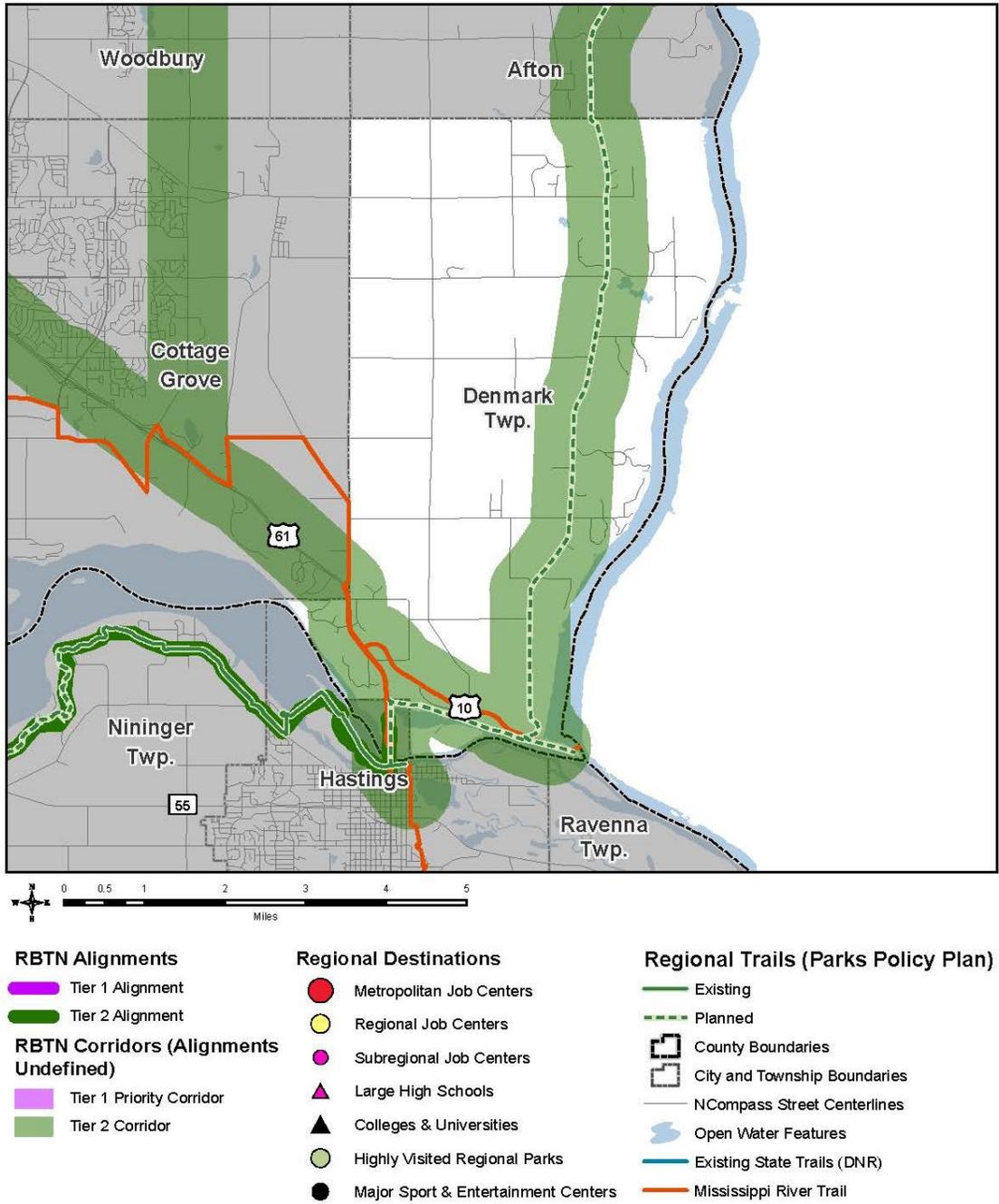


Figure 10: Regional Bicycle Transportation Network (RBTN)



Implementation:

Where feasible and dependent upon available grant funds, Denmark Township will coordinate with partner jurisdictions in the planning of identified parks and trails within the community as shown in the parks and trails systems figures shown above. In addition to new park and trail amenities, the Township will continue to maintain its existing facilities with annual maintenance.

Chapter 6 – Transportation

The transportation system in Denmark consists principally of roadways, but this plan also considers other aspects of the regional transportation system, including transit services, bicycling and walking, freight, and aviation.

Roadway Functional Classification

Roadways within Denmark Township are under the jurisdiction of different levels of government, including the State of Minnesota, Washington County and the Township. Roadways are designed as a hierarchical system that accommodates both shorter and longer trips, and provides for local property access. Functional classification of roadways involves the designation of roads for particular purposes, whether it is speed, traffic volume, long-distance travel, or access to local destinations. Roadway functional classification includes principal arterials, minor arterials, collectors and local streets. Table 15 indicates the system of roads in the Township and the functional classification of these roads.

Table 15: Roadway Functional Classification

Name of Roadway	Jurisdiction	Functional
U.S. Highway 61	Mn/DOT	Principal Arterial
U.S. Highway 10	Mn/DOT	A-Minor Connector
State Trunk Highway 95	Mn/DOT	A-Minor Connector
County State Aid Highway (CSAH) 20	Washington County	A-Minor Expander
St. Croix Trail S (CSAH 21)	Washington County	A-Minor Connector
County Road 71	Washington County	Minor Collector
County Road 76	Washington County	Major Collector
County Road 78	Washington County	Major Collector
102nd Street S (St. Croix Bluffs Regional Park Access)	Washington County	Local Road

Source: Metropolitan Council

The metropolitan highway system is made up of “Principal Arterial” roadways. These include all interstate freeways and other major roadways that provide long distance connections within the metropolitan area. Connections with other roadways are limited to other principal arterials and to a minimal number of other roads. Within Denmark Township, Highway 61 is classified as a principal arterial.

“Connectors” generally provide mobility for shorter distances, providing interconnection between other arterial roadways and between regional business concentrations. CSAH 20 (70th Street), CSAH 21 (Saint Croix Trail), State Highway 95 (Manning Avenue), and Highway 10 are Minor Connectors.

“Collectors” connect local destinations with arterial roadways and provide supplemental interconnection between places. County Road 71 (Neal Avenue), County Road 76 (90th Street), and County Road 78 (110th Street) are Collectors in Denmark Township.

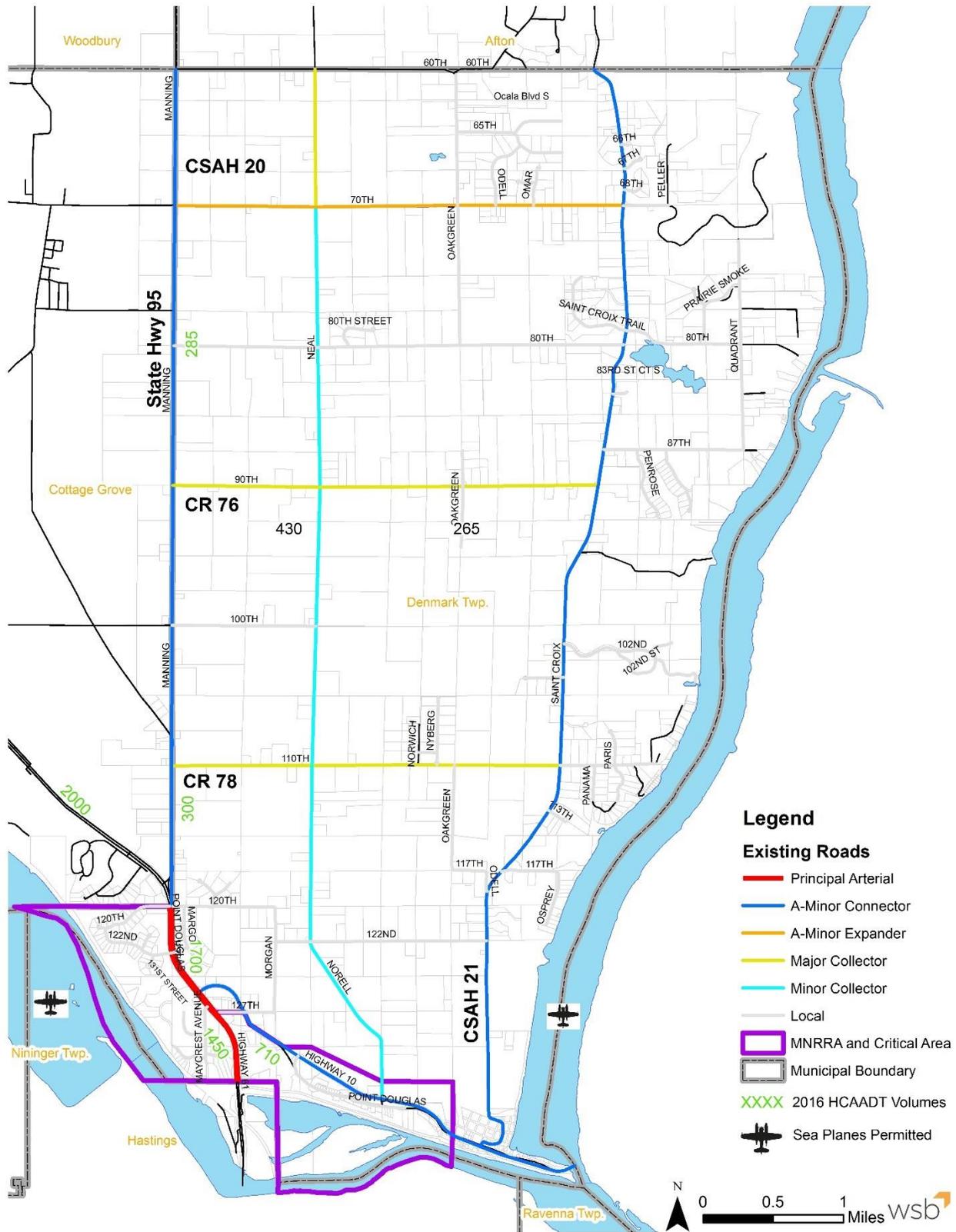
“Local” streets are under the jurisdiction of the Township. The main function of local streets is to

provide access to individual properties and connecting these properties to the rest of the roadway network. They are generally not designed for long distance travel. The initial construction of local streets is the responsibility of those who develop the land.

Table 16: Planning Level Roadway Capacities by Facility Type

Roadway Type	Planning Level Daily Capacity (ADT)	Approaching Capacity (85% ADT)
Two-lane undivided urban	10,000	8,500
Two-lane undivided rural	12,000	10,200
Three-lane (two-lane with turn lanes)	22,500	19,125
Four-lane undivided urban	20,000	17,000
Five-lane urban (four-lane with turn lanes)	32,000	27,200
Four-lane divided rural	38,000	32,300
Four-lane expressway (no signals)	60,000	51,000
Four-lane freeway	80,000	68,000
Six-lane freeway	120,000	102,000

Figure 11: Current Transportation System



Current average daily traffic counts for Township roads are shown in Figure 12, as are current forecasts for these roads. The traffic count and forecast data are provided by Washington County. Increases to anticipated traffic levels by 2040 are due to population and employment growth in the region as a whole, not specifically to traffic generated entirely by Township residents.

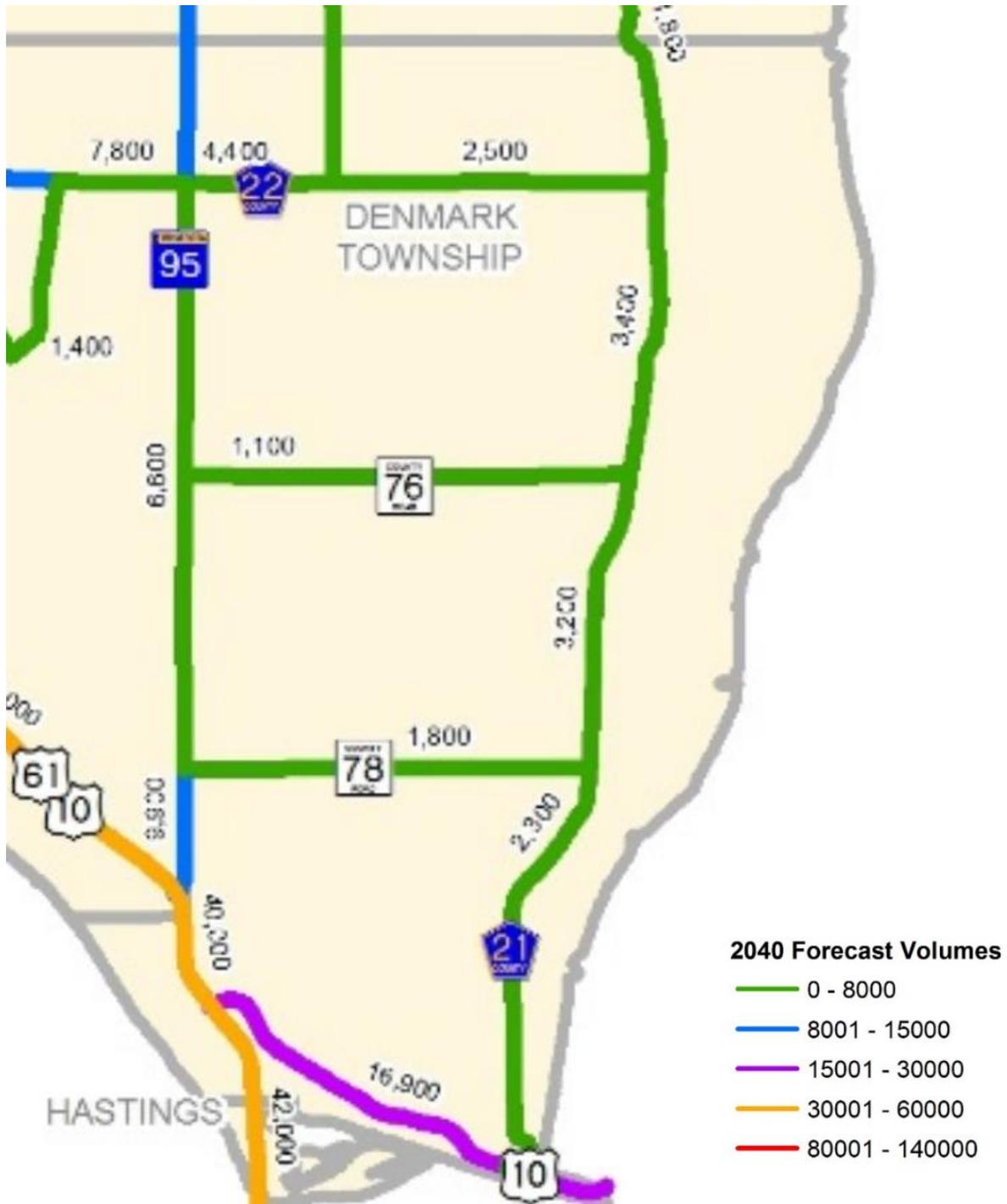
Figure 12: 2016 Average Daily Traffic Counts

Source: Washington County 2040 Comprehensive Plan



Figure 13: 2040 Traffic Volume Forecasts

Source: Washington County 2040 Comprehensive Plan



Transportation Analysis Zones

Transportation Analysis Zones (TAZ) are geographic boundaries used for transportation planning purposes. The Metropolitan Council identifies five TAZs numbered 2453, 2461, 2462, 2463, and 2484 and has assigned the Township’s growth forecasts to the five TAZs. TAZ 2463 covers the entire southern portion of the Township extending north to 110th Street S (Co Rd 78). TAZ 2461 is located west of St. Croix Trail S (Co Rd 21) extending to the western Township boundary and north of 110th Street S (Co Rd 78) and south of 70th Street S. TAZ 2462 is east of St. Croix Trail S (Co Rd 21) extending to the eastern Township boundary and north of 110th Street S (Co Rd 78) and to the northern Township boundary. Lastly, TAZ 2484 covers a portion of the southwestern portion of the Township and is primarily the land west of County Highway 61.

Table 17: TAZ Forecast Allocation for Denmark Township

TAZ	Population				Households				Employment			
	2010	2020	2030	2040	2010	2020	2030	2040	2010	2020	2030	2040
2453	235	236	266	303	77	89	106	127	23	52	51	52
2461	437	529	596	679	172	198	237	280	58	20	30	44
2462	531	556	608	662	183	208	242	275	143	93	99	108
2463	319	375	446	547	120	141	178	227	253	393	392	400
2484	215	224	244	219	63	84	97	91	71	82	68	46
Total	1,737	1,920	2,160	2,410	615	720	860	1,000	629	640	640	650

Source: Metropolitan Council

Future Transportation Improvements

New Local Roads

Township roadway connectivity has been achieved by incremental development of local roads as land is subdivided. The Denmark Township Development Code contains standards pertaining to how new roads interact with the existing system. The Town requires dedication of right of way for appropriate connections to adjacent, undeveloped properties. Code requirements include standards specific to land use, such as standards for commercial-industrial frontage roads and access spacing. The locations of local roads are determined through the development review process.

Improvements to Local Roads

The Township has both paved and gravel roads. All new roads built in the Township are required to be paved. On an annual basis, the Township conducts a road tour and considers improvements to Township roads. If specific gravel roads are under consideration for paving, traffic counts are taken. The most heavily traveled roads are the highest priority for paving. Identified safety concerns are also factored into planned improvements. Figure 14 shows the number of existing lanes for all principal and A-minor arterials. No lane expansions for any of the roadways identified in Figure 14 are planned at

Figure 14: 2017 Roadway Lanes



this time.

Multi-jurisdictional Cooperation

The transportation network consists of roads under County and State jurisdiction as well as local roads. Washington County’s 2018 – 2022 Road and Bridge Capital Improvement Program does not include any projects within Denmark Township. The Township will continue to work with the County, State, and other partners as transportation improvement plans are made which include roadways within the Township.

Pedestrian and Bicycle Facilities

Four regional trail corridors are planned within the Township. The Township considers pedestrian accommodations along new local roads through the development review process. Planning for trails is discussed in the Parks and Trails section of the Plan.

Access Management

The Township works with Washington County to regulate the number of access points to County roads and with Mn/DOT regarding access onto State and U.S. Highways. In order to promote a safe and efficient transportation system, spacing and access guidelines are incorporated into Denmark’s subdivision regulations. Guidelines describe access spacing on principle arterials, minor arterials, collectors and local roads. The land use associated with proposed access points also determines the appropriate spacing.

Table 18: Washington County Access Spacing Guidelines

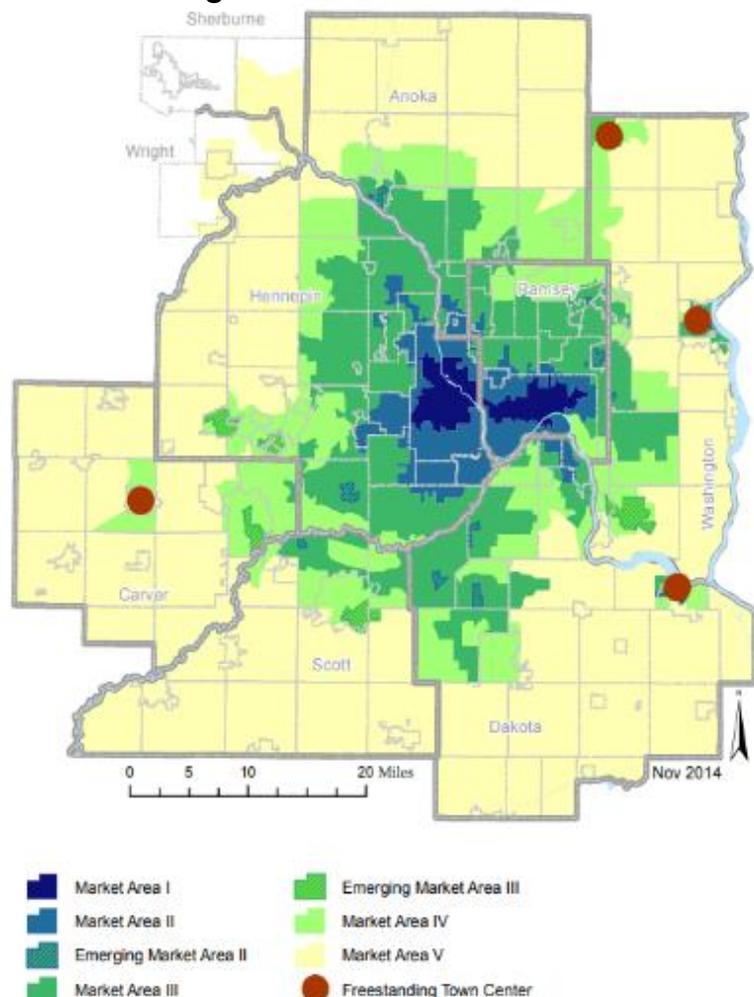
Functional Classification	Full-Movement Intersection	Partial Movement Intersection	Private Driveways	Signal or Roundabout Spacing
Principal Arterial	½ mile	¼ mile	Variable	½ mile
Minor Arterial	¼ miles	¼ mile	Variable	¼ mile
Collector	1/8 mile	N/A	Variable	1/8 mile

Transit

The Metropolitan Council is principally involved in the planning of the region's transit system. It also operates Metro Transit, the largest provider of transit services. For planning purposes, the Council designates areas of the region based upon the potential market demand for transit services. The Denmark Township area is within Market Area 5, an area that is not served with fixed route transit due to low population and employment densities. Typical services for this area are limited to general public dial-a-ride.

Existing transit service options include Transit Link, a county wide service provided by the Metropolitan Council. Transit Link service for the general public is available from 8 a.m. to 5 p.m. Monday through Friday. The Township also lies on the TH 61 express bus corridor.

Figure 15: Transit Market Areas



The Red Rock Corridor is a 20-mile transitway connecting the Twin Cities' southeastern suburbs to Saint Paul and Minneapolis. The planned route is shown in Figure 16. The transitway will originate in Hastings and stop in Cottage Grove, Newport, and Saint Paul's Battle Creek neighborhood before connecting to the Saint Paul Union Depot. An implementation plan, completed in 2017, outlined a phased approach presenting near-term and long-term recommendations to incrementally build transit service in the southeast metro. Near-term strategies include expanding local and express bus service in the corridor and working with cities on transit-supportive land use plans. Long-term strategies focus on working with cities to implement transit-supportive land use plans and monitoring corridor ridership for potential service improvements including full build out of BRT service. At this time the plan does not propose any stops within the Township boundary. An implementation date for BRT service has not been selected at this time.

Figure 16: Red Rock Transit Corridor



Freight

There are no rail lines, barge facilities or intermodal freight terminals with the Township. The Township does have land guided for commercial/industrial use in the area of Margo Avenue and 120th Street South. This traffic will travel along Margo Avenue, 120th and 122nd Street South to connect to U.S. Highway 61. There are presently no issues related to insufficient height, width, or turning radii along that route that would inhibit commercial traffic. Figure 11 provides current heavy commercial average annual daily traffic (HCAADT) estimates.

Aviation

There are no airports, proposed airport sites, search areas or other related facilities in Denmark Township. The Township is, however, home to one airstrip. It is located southwest of the intersection of Neal Ave (County Road 71) and 70th Street. The nearest airports are the Lake Elmo Airport, classified as a Minor Airport by the Metropolitan Council, and the Minneapolis-St. Paul International Airport.

The Minnesota Department of Transportation allows seaplane operations on the St. Croix River and Mississippi Rivers. The principal planning concern with regard to aviation is the control of structures that might interfere with the navigation of airspace. The Township must notify the Federal Aviation Administration and the Minnesota Department of Transportation of any structure, existing or proposed,

that could impact flight navigation. Denmark currently has no structures of that height and its current codes do not permit structures that high.

Chapter 7 - Wastewater Treatment & Water Supply

The Township recognizes the importance of groundwater sensitivity and has established environmental protection policies that will enhance protection of groundwater in the Township and region. Denmark will ensure protection of local groundwater through implementation of its Surface Water Management Plan, subsurface sewer treatment system (SSTS) regulations, and wetland, floodplain and shoreland ordinances.

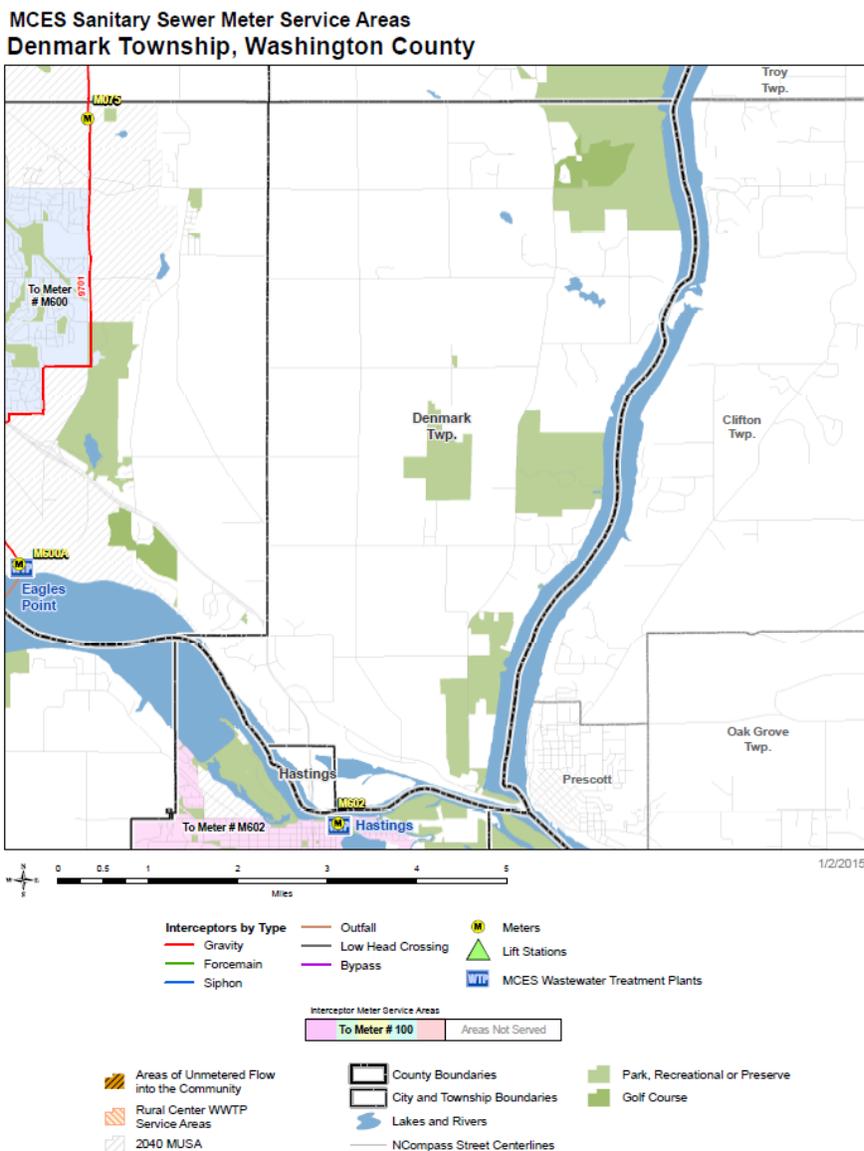
Data relative to the number, location, and maintenance status of existing SSTS within the Township were provided to the Metropolitan Council by Washington County. That data is the most current and accurate which the County currently has which is what the Township is dependent upon as Washington County administers SSTS regulations within the Township.

Figure 17: MCES Sanitary Sewer Meter Service Area

Wastewater

The Metropolitan Council has no plans to provide municipal wastewater services to Denmark Township within the 2040 planning period as shown on the MCES Sanitary Sewer Meter Service Areas Map and Regional Wastewater System Long-Term Service Area Map. Existing and proposed development in Denmark Township will rely subsurface sewage treatment systems.

As noted in Chapter 4 of Denmark Township’s Development Code, Washington County has adopted and administers Subsurface Sewage Treatment System Regulations. These regulations which comply with MPCA regulations (MN rules Chapter 7080-7083) can be found on Washington County’s [website](#). All systems must be installed and maintained to meet the standards of the Washington County (SSTS) ordinance and Minnesota Rules Chapter 7080-7083. The County SSTS Ordinance is codified in the Development Code as Chapter 4, Ordinance #206. The County is responsible for implementing the ordinance in Denmark Township, including requirements for: compliance inspections of



existing systems, permitting and inspection of new and replacement systems, site review, maintenance requirements, and operating permits for Type IV Advanced Sewage Treatment Systems. A map depicting current non-compliant systems within Denmark Township can be found in Washington County’s 2040 Comprehensive Plan. The Township will continue to utilize Washington County as the government authority for permitting and inspecting of individual sewage treatment systems.

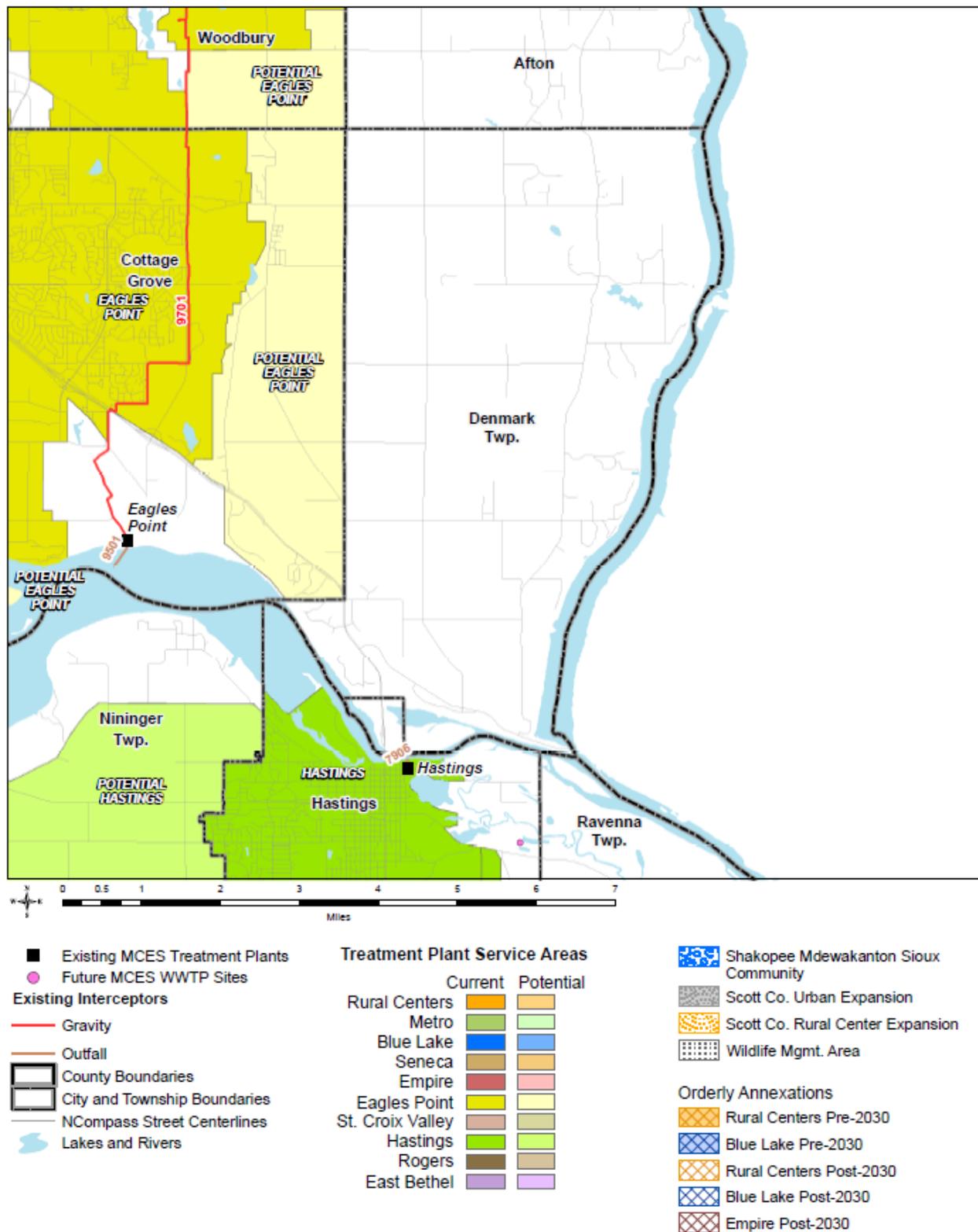
Community-wide household, population and employment forecasts have been allocated based on the wastewater system serving Denmark Township which is proposed to be unsewered.

Table 19: Unsewered Forecasts

Forecast Year	Forecast Component	Population	Households	Employment
2010	Unsewered	1,737	615	629
2020	Unsewered	1,920	720	640
2030	Unsewered	2,160	860	640
2040	Unsewered	2,410	1,000	650

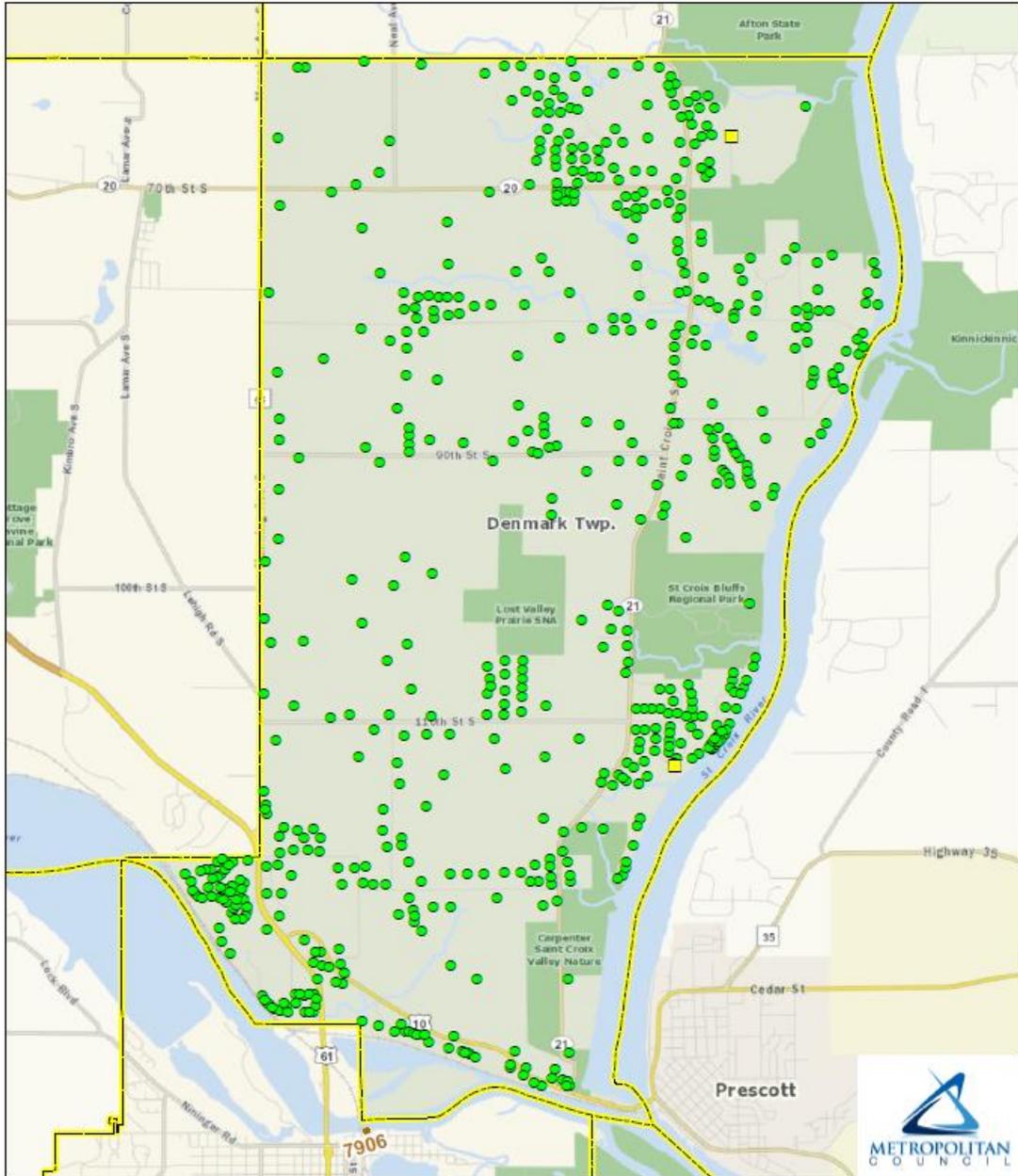
As development is proposed, the Township considers the potential for community wastewater to meet environment/water resources goals. Community systems are potential options for Open Space Design subdivisions under the regulations of the Denmark Township Development Code. The Code addresses construction, ownership, and maintenance for community systems. These local standards are in addition to County and State requirements. There are two existing community wastewater treatment system in the Township, located in the Saint Croix Harbor subdivision on Panama Avenue South. The second private septic system noted in Figure 19 is the septic system located at Afton Alps which was permitted by the Minnesota Pollution Control Agency (MPCA) as it was permitted to accommodate a flow of more than 10,000 gallons per day. The Township does not keep records for type of treatment, age, or treatment capacity as Washington County and the MPCA administer those responsibilities.

Figure 18: Regional Wastewater System Long-Term Service Areas



The following map provided by Washington County shows the locations of the existing subsurface sewage treatment systems.

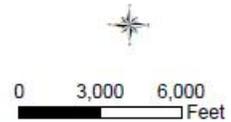
Figure 19: Individual Sewer Treatment Systems (ISTS)



Individual Sewer Treatment Systems (ISTS)
Denmark Township

Source Data: SSTS, (ISTS) Washington County (June 2017),
Metropolitan Council and MCES.
Map created by MCES.

- Individual Sewer Treatment Systems (ISTS) (Approx. 612 Systems)
- Private Wastewater Treatment (Approx. 2 Systems)
- MCES Effluent
- City & Township Boundaries



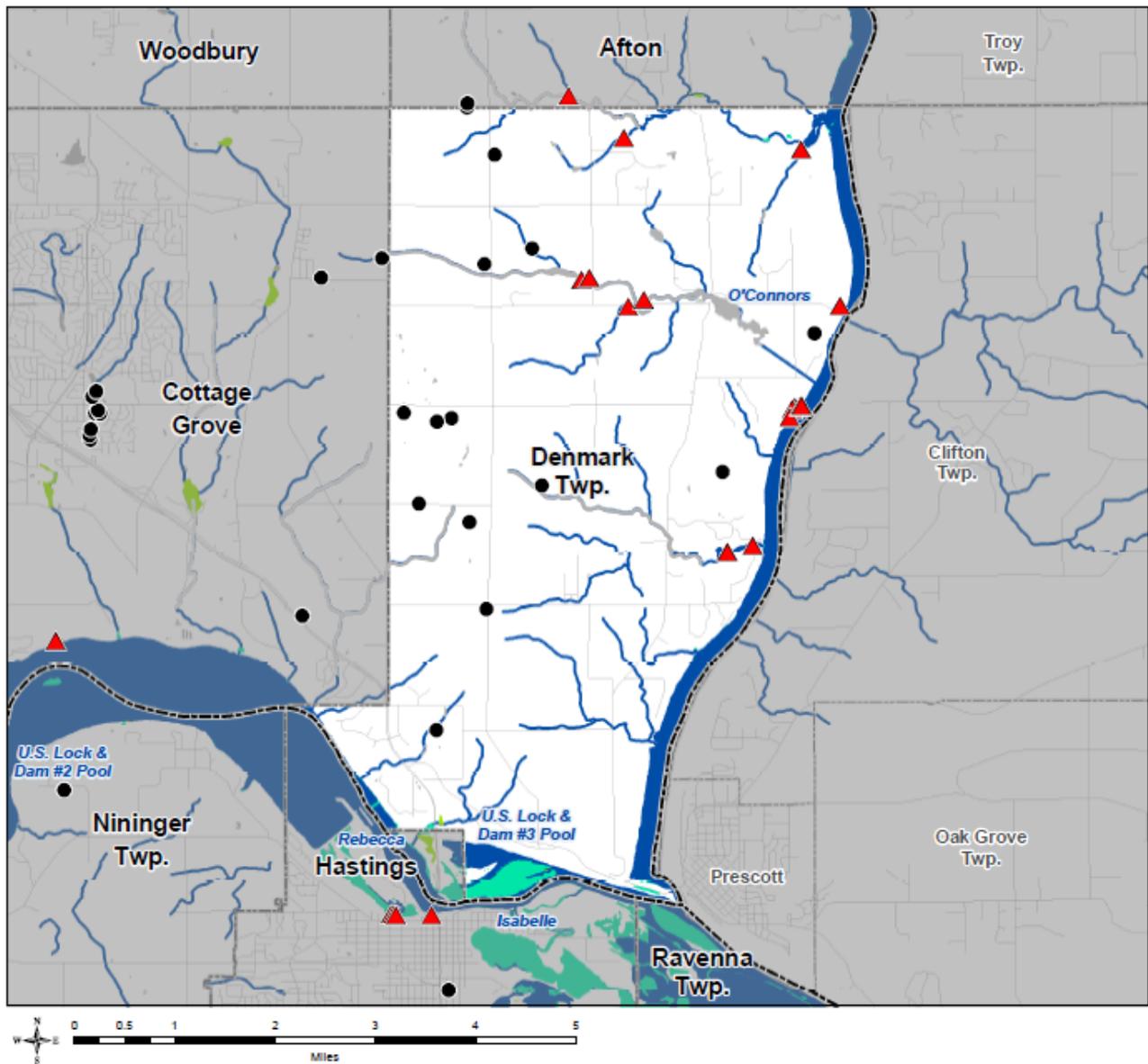
Water Supply

Private wells and community water supply systems are regulated by the State of Minnesota, Department of Health. Community wells are options for Open Space Design subdivisions under the regulations of the Denmark Township Development Code. There is one existing community well in the Eagles Watch subdivision, the neighborhood located west of Highway 61 at 122nd Street. The Township will continue to cooperate with Washington County in its efforts to implement the Washington County Groundwater Plan. There are no public water supply systems planned for Denmark Township.

Denmark Township is located within the priority sampling area for testing private wells to determine if water from the well exceeds current guidance values for Perfluoroalkyl Substances (PFAS) as set by the Minnesota Department of Health (MDH). To date, no wells have been identified as having a well advisory. Denmark Township will continue to work with state and local officials regarding potential contamination and the State settlement with its law suit against 3M.

The following maps as provided by Metropolitan Council show how surface waters interact with groundwater and locations of groundwater monitoring and testing.

Figure 20: Surface Water and Groundwater Interaction



Karst Features (DNR)

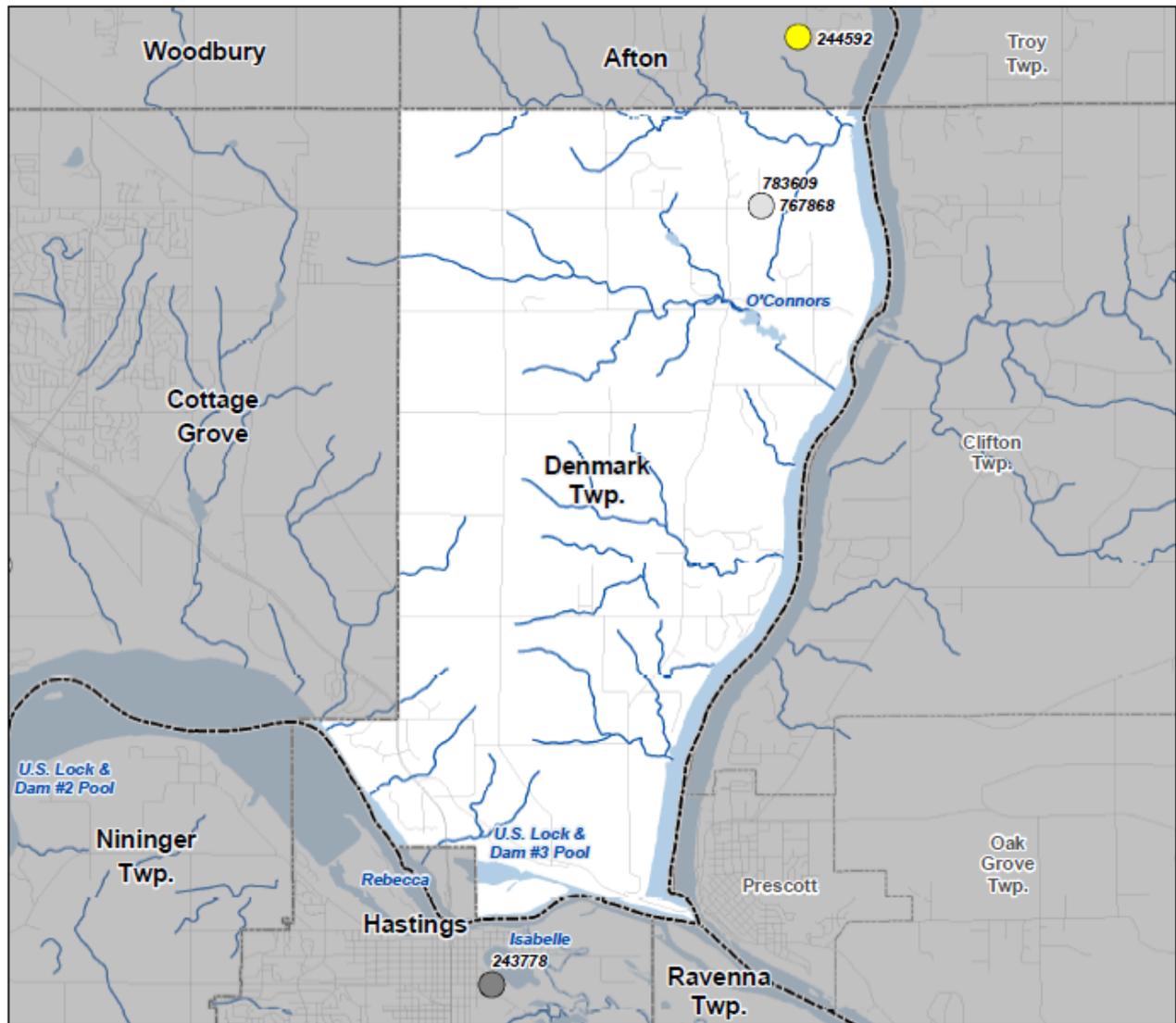
- ▲ Spring
- Sinkhole
- Calcareous Fens

Surface water type (regional screening by Met Council)

- Disconnected from the regional groundwater system
- Recharges aquifers
- Receives and discharges groundwater
- Supported by upwelling groundwater
- ~ Trout Streams (DNR)

- ▭ County Boundaries
- ▭ City and Township Boundaries
- NCompass Street Centerlines
- Other Open Water Features

Figure 21: Groundwater Level Monitoring Wells



Observation Wells (DNR)

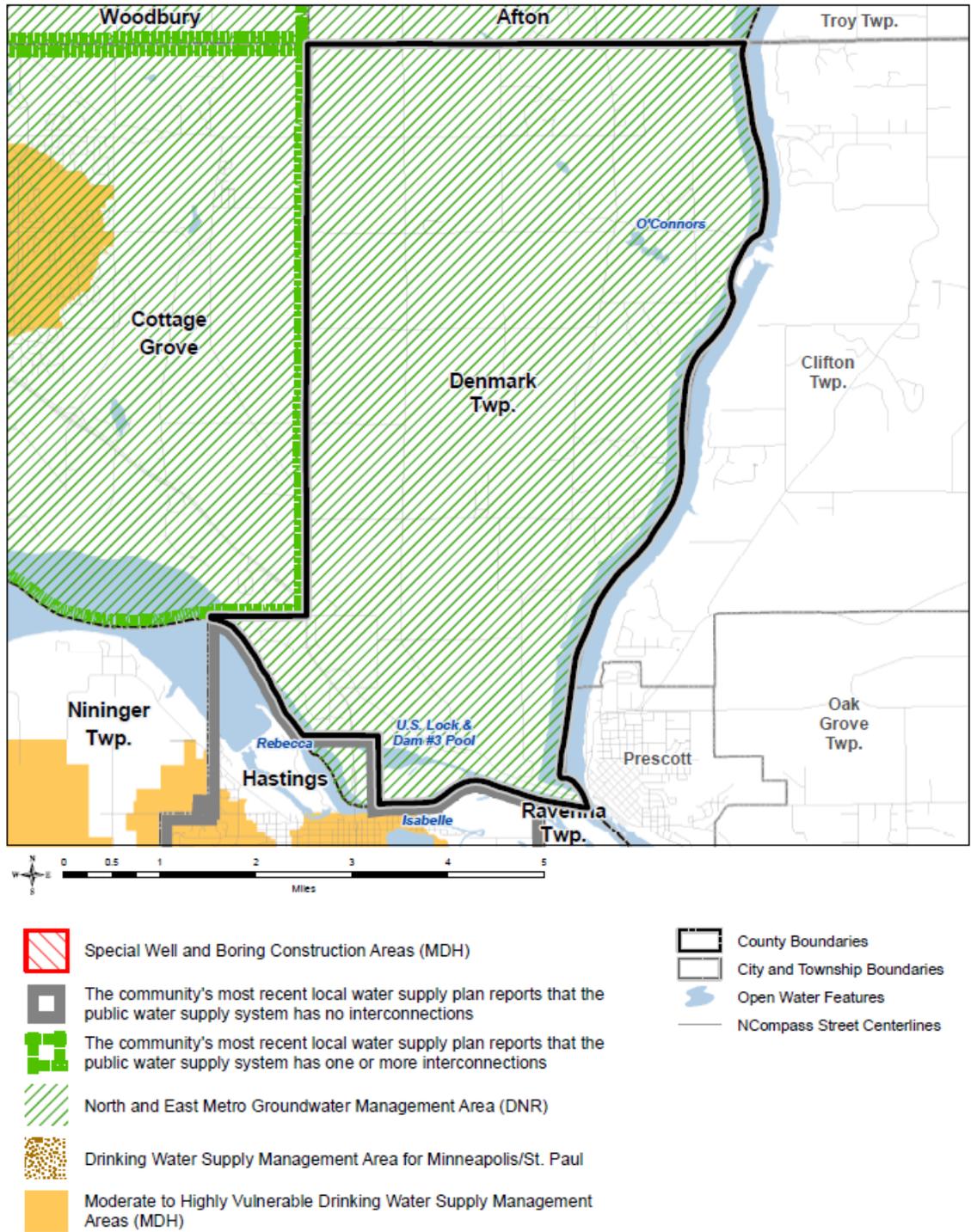
- Showing upward trend in annual minimum values
- Showing downward trend in annual minimum values
- Showing no trend in annual minimum values
- Insufficient data to evaluate a trend

- ▭ County Boundaries
- ▭ City and Township Boundaries
- NCompass Street Centerlines
- Open Water Features
- Rivers and Streams, perennial & intermittent

*Minnesota Department of Health aquifer test locations not shown for security reasons.
Please contact the MDH for more information.*

Denmark Township is included in the North and East Metro Groundwater Management Area (GWMA) as defined by the DNR.

Figure 22: Municipal Public Water Supply System Interconnections and Management Areas



Chapter 8 - Historic Preservation

Denmark Township is committed to preserving the rural quality of life in the Township as it grows. This includes preserving sites related to the Township’s history. The Denmark Township Historical Society was founded in 2000 and hosts a website, publishes a newsletter, and organizes events. The Society is one of the sources of historic site information published in this chapter.

[Figure 23](#) indicates the general location of historic sites in Denmark Township. Table 20 below provides additional information about these sites. The map may not include all resources, nor should it be used as a sole determination of historic value. The Township encourages consultation with groups that may have additional information about the history of sites, including The Denmark Township Historical Society, Washington County, the State Historic Preservation Office, Native American groups, or others.

The Township has one site on the National Register of Historic Places. District No. 34 school was placed on the National Register on May 19, 2014. The site is located on the southwest corner of Hertzell and Ramsey Streets and the original structure was built in 1868 but moved in 1905. The original structure is still intact and operated as the Church of the Messiah at Prairie Island.

Many historic structures have been lost as a result of neglect, demolition and/or reconstruction. The Township government cannot afford to purchase and maintain historic buildings and sites. However, the Township, through this Plan and other possible means, will educate residents and developers as to the social value of historic buildings and sites. The Township will encourage the creative re-use of historic structures by individuals and organizations, the identification and marking of historic sites, and the purchase of structures and sites by government agencies and private organizations and individuals interested in historic preservation. The Township will use the site plan review process to prevent or minimize impacts on natural, historic and cultural resources and consult other agencies to assist in the review of development plans.

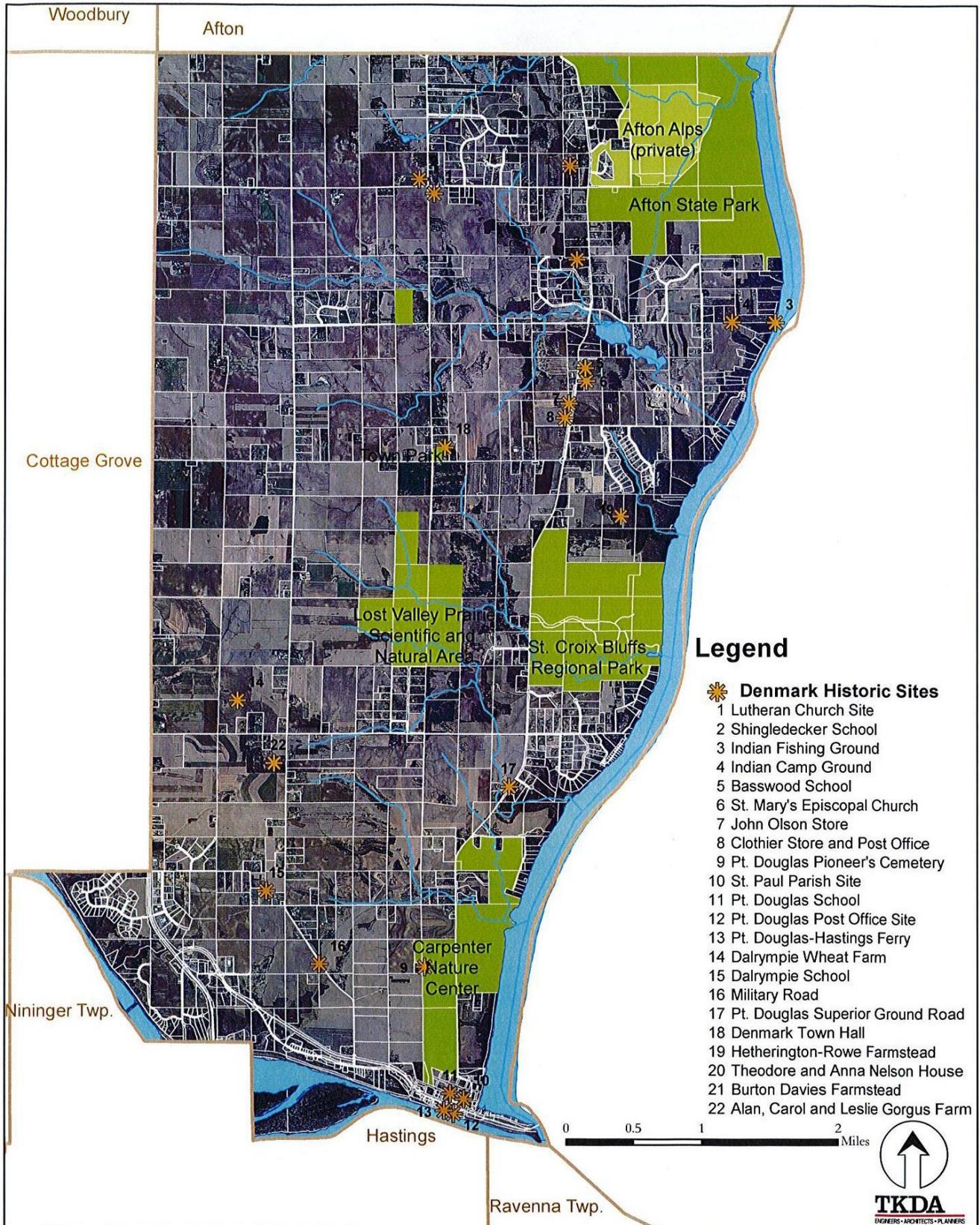
Table 20: Historic Site Information

Lutheran Church Site	Located in the Northwest Quarter, Section 9
Shingledecker School	Built in 1867. Still exists on original plot, southeast corner of Section 5 at 70th and Oakgreen. Remodeled into private home.
Indian Fishing Ground	Grounds are now buried by Kinnickinik River deposits and dredge. No trace remaining. 1766 Carver Map shows Chippewa village on the Wisconsin side north of Kinnickinik. Judge Foster had a log structure at this site circa 1842.
Indian Camp Ground	Dakota hunting and fishing campsite of Chief Little Crow. This camp was seasonal and located on the Mississippi River on south end of Section 8 between Norell and St. Croix Trail. Burial mounds from ancestors along cliff above Point Douglas, recorded by T.H. Lewis, 1822.
Basswood School Site	The Basswood School was organized in 1854. The school house was built in 1857 with the last class 100 years later. Still exists; original structure still intact but modified. Moved across St. Croix Trail from original site.
St. Mary’s Episcopal Church	Organized and built in 1863. Land purchased from George Van Alstine. Modified in 1963. Original structure still intact on

	original site. Considered oldest wood-framed Episcopal church in continuous operation. Still in operation as of 2019.
7. John Olson Store	Built in 1871 by John Olson and later made into a home by Thomas Paley. Structure no longer exists. Paley and Clothier/Herman homesteads are one in the same, along St. Croix Trail.
8. Clothier Store and Post	Store was built about 1876; post office was added in the 1880's. Structure no longer exists.
9. Point Douglas Pioneer's Cemetery	Located a quarter mile west of Carpenters Nature Center entrance on St. Croix Trail. Calvin Henry was the first burial in 1855. Thomas James as the last burial in 1932. Still exists and is under the care of the Denmark Township Historical Society.
10. St Paul Parish Site	The church was built on the southwest corner of Hertzell and Ramsey Streets in 1868 but moved in 1905. The original structure is still intact and operated as the Church of the Messiah at Prairie Island.
11. Point Douglas School	This is claimed to be the first school in Minnesota. Started in 1844 in the Dibble home which still exists on Highway 10. In 1850, a log building was raised but burned in 1852. First teacher was Sara Judd. Current structure has significant historical value with outhouses (not originals), still in the original places. Interior still intact. It is number one on the Denmark Township Historical Society's most endangered list.
12. Point Douglas Post Office Site	First post office established in Minnesota outside of Fort Snelling. Established July 18, 1840. Site is vacated.
13. Point Douglas – Hastings Ferry	Established in 1849.
14. Dalrymple Wheat Farm	Located in the Southeast Quarter, Section 30
15. Dalrymple School	School District 58, built in 1877, located at Neal and 122nd Street. Moved to Gorgus property.
16. Military Road	Road laid out in 1849; extended to Fort Snelling and St. Paul
17. Point Douglas – Superior Ground Road	Road laid out in 1848; St Croix Trail closely follows original layout
18. Denmark Town Hall	Land purchased from William Clark in 1899. Original Town Hall was constructed in June of 1900.
19. Hetherington-Rowe Farmstead	Established 1848; Century Farm. Log dwelling until 1880 when the present frame house was built.
20. Theodore and Anna Nelson House	Located south of Afton State Park, west side of St. Croix Trail
21. Burton Davies	Located north of 80th Street, west side of St. Croix Trail.
22. Alan, Carol and Leslie Gorgus Farm	Established 1883. Located in the Northeast Quarter, Section 31

Source: Denmark Township Historical Society

Figure 23: Historic Site Information



Chapter 9 - Surface Water Management Plan

Purpose and Executive Summary

Denmark Township understands the importance of protecting the area's valuable surface water, ground water and natural resources. At the time of the 2030 Comprehensive Plan, the Township was located within the Lower St. Croix Watershed Management Organization (LSCWMO). In 2010, South Washington Watershed District (SWWD) petitioned to enlarge its boundary to include all of Denmark Township. The Township supported this enlargement and it was approved by the Minnesota Board of Soil and Water Resources (BWSR) in September 2010. The Township has been and will continue to be an active participant in watershed management. This Local Surface Water Management Plan (LSWMP) will guide Denmark Township in conserving, protecting and managing its surface and ground water resources, and in working with other organizations in these activities.

This plan has been created to meet the requirements detailed in Minnesota Statutes 103B and Minnesota Rules 8410, administered by the Board of Water and Soil Resources (BWSR). This plan is also consistent with the goals and policies of the Metropolitan Council's Water Resources Management Policy Plan, and the SWWD Water Management Plan.

The South Washington Watershed District's October 2016 Watershed Management Plan (WMP) was approved by the Board of Water and Soil Resources on October 27, 2016 and adopted by the SWWD Board of Managers on November 9, 2016. The WMP is deliberately streamlined from previous versions and is intended to serve a wide audience by providing broad easy to understand overviews of Issues facing the District and programs intended to address those issues while also directing the readers to more detailed information. The Plan also makes use of several web-based tools. Readers will see references to the District's Web Viewer, Water Quality database, Story Mapping, and Electronic Library. The District's plan and supporting documentation can be found on the District's [website](#).

This chapter includes the Townships goals, policies and implementation strategies for water resource management. The Township will continue to cooperate with the SWWD, Washington County, state agencies, and others as it implements this Surface Water Management Plan.

Water Resources-Related Agreements

The Township had previously been a participant in the Joint Powers Agreement that had been created for the Lower St. Croix WMO. Once the SWWD was expanded to include Denmark Township, the Joint Powers Agreement was terminated.

SWWD is unit of government responsible for wetlands regulation and utilizes the Washington Conservation District for management and single-site erosion control and stabilization. The Township also coordinates and collaborates with SWWD on reviews for new development and permits. SWWD provides review and comments in accordance with their regulations which are incorporated into the Township's approval process.

Land and Water Resources Inventory

Denmark Township is largely rural in character. Its 2040 Comprehensive Plan indicates that the Township will continue to preserve its rural character. This includes its landscape of farms, natural areas, and low-density development that does not require urban services. Existing and proposed land use plans can be found in the land use sections of the Comprehensive Plan.

The Township includes high quality natural areas and water resources. These resources still have natural connections that help to protect the health and function of the diverse habitats within the Township. Additional detailed information can be found in the SWWD WMP. This section summarizes the natural resource and water resource inventory information available for the Township and identifies the most significant resources in the Township.

Water Resources Inventory

Denmark Township includes or drains to some significant water resources:

- ✓ The St. Croix River - a National Wild and Scenic River
- ✓ The Mississippi River, Spring Lake and Conley Lake
- ✓ Trout Brook
- ✓ O'Connor's Creek and Lake
- ✓ A variety of wetlands, particularly near O'Connor's Creek and Lake

Watershed boundaries, surface water features and impaired waters are provided on the following map. Extensive additional data can be found the SWWD interactive mapping tool: <http://map.swwdmn.org/>

Figure 24: Surface Water Resources

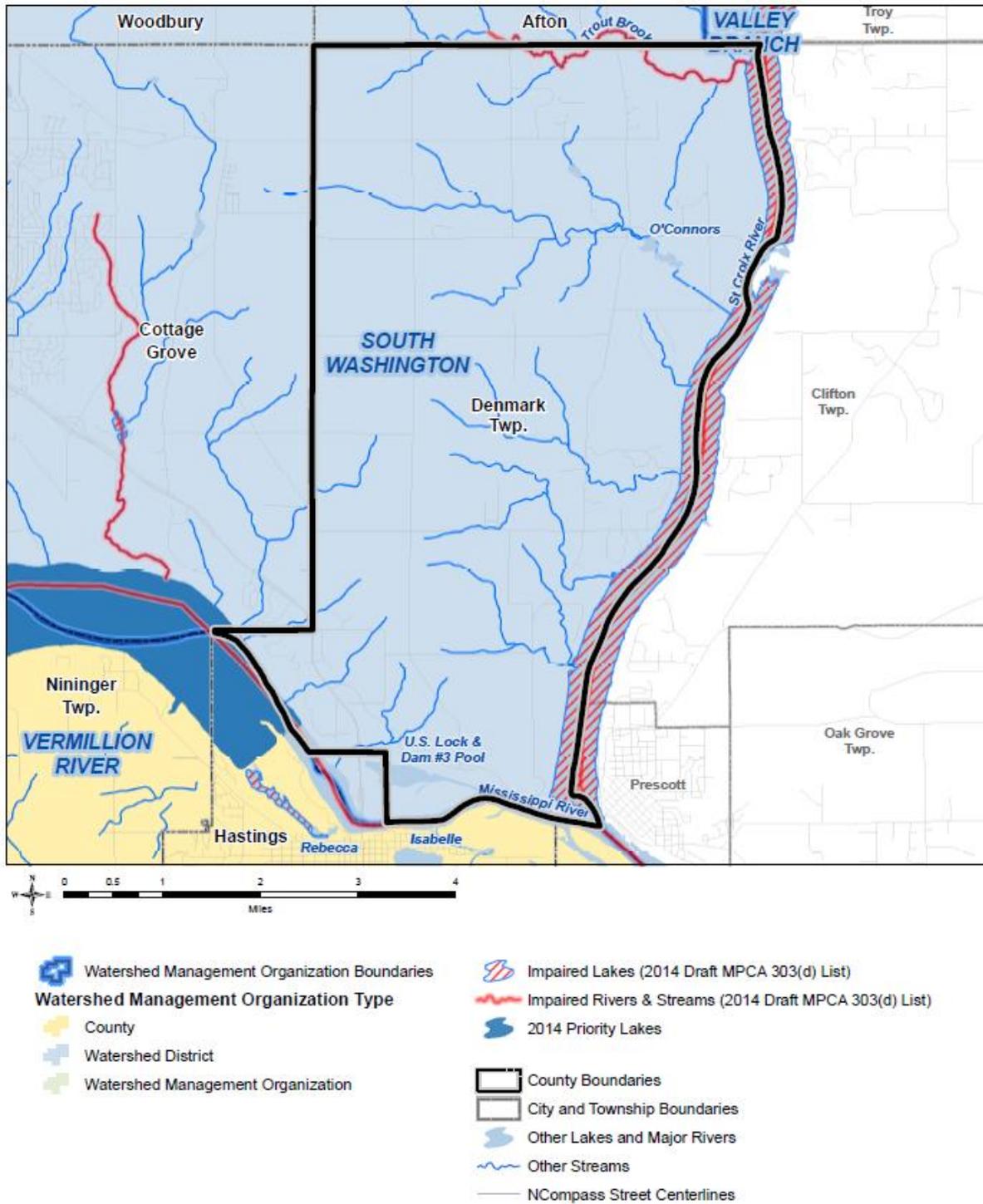


Table 21: Protected Waters

Protected Waters Number	Name of Resource
82-1	St. Croix Lake
25-17	Conley Lake
	Mississippi River Grey Cloud Channel
	4 Unnamed Creeks to Mississippi River Unnamed Creek to O'Connor's Lake Trout Brook
	Unnamed Creek to St. Croix River
82-2	O'Conner's Lake
Protected Waters Number	Name of Resource
82-84	Unnamed wetland
82-85	Unnamed wetland
82-86	Unnamed wetland
82-87	Unnamed wetland
82-471	Unnamed wetland
82-472	Unnamed wetland
82-475	Unnamed wetland
82-483	Unnamed wetland

Key Water Resources in the Township, and Issues for Management

- ✓ Trout Brook is a ground-water supported stream that provides water temperatures and habitat suitable for trout. Development within its watershed could threaten this habitat.
- ✓ O'Connor's Creek drains to O'Connor's Lake, a land-locked basin. The Creek is groundwater-fed. The creek and lake are sensitive to stormwater volume impacts and impacts to their groundwater resource.
- ✓ The St. Croix River is a National Wild and Scenic River. Water quality concerns include bluff and streambank erosion and nutrient loading from its watershed. Several small intermittent streams drain directly to the St. Croix River through Denmark Township. Management of erosion, sediment and pollutant loads from its tributaries is a resource management issue.
- ✓ The Mississippi River and Conley Lake receive drainage from Denmark Township through several small tributaries, coulees and ravines. Bluff-line erosion and sedimentation from the watershed are a concern for this resource.

Land-based Natural Resources--Natural Areas in the Township

The Minnesota County Biological Survey identified high quality natural areas remaining in Denmark Township. The areas include a variety of prairie, woodland and wetland communities. Many of the concentrations of high quality natural areas in the Township are associated with its water resources, and include the following:

- ✓ The Trout Brook watershed has a large area of oak forest. The forest provides significant habitat and helps to protect the quality and habitat of the creek
- ✓ Several significant oak forest areas exist along the St. Croix River
- ✓ A large floodplain forest remains near Conley Lake
- ✓ Significant areas of dry prairie and other natural communities remain within the Lost Valley Prairie Scientific and Natural Area, Afton State Park, Carpenter Nature Center, and within private lands along the Mississippi River bluffs

Carpenter St. Croix Valley Nature Area and the St. Croix River at St. Croix Trail South and Highway 10



The bluff areas within the Township, concentrated in the northeast, north central and south central portions of the Township are also significant natural and scenic areas.

The remaining natural areas and native plant communities are described in the “Natural Features” section of this Comprehensive Plan. The “Community Goals and Policies” chapter includes the Township’s goals and policies for protection of the natural areas remaining in the Township.

Denmark Township Natural Resource Inventory and Water Resource Evaluation

A natural resource inventory was completed in Denmark Township in 2002. The inventory identifies land cover and natural communities throughout the Township. The inventory also identifies seeps, springs, and areas of streambank erosion within the Trout Brook and O’Connor’s Creek subwatersheds. The inventory includes detailed maps of potential sediment delivery to these resources.

All of the subwatersheds that outlet to the Mississippi or St. Croix Rivers received high water quality rankings. The O’Connor’s Lake subwatershed received a moderate ranking because it does not have an outlet. The report gives Trout Brook a high water quality ranking and recommends that it be restored to a trout-producing stream.

Natural Resource Corridors

Several organizations have identified “natural resources corridors” that connect the high quality natural areas and water resources in the Township with similar areas in adjacent communities. These corridors generally significant water resource corridors, such as the St. Croix River and its bluffs, Trout Brook and O’Connor’s Lake & Creek corridor. Protection of connections within these corridors will help to maintain the health of water resources and habitat for the long-term.

Groundwater Resources

Groundwater resources in the Township are important for local drinking water supplies and for their interactions with local surface water resources, such as Trout Brook and O’Connor’s Lake.

Denmark is within the karst region identified in the SWWD Management Plan. Surface water systems are well-connected to the groundwater system in karst regions. This allows for pollutants from the surface to reach aquifers relatively easily. Areas with Karst topography are particularly sensitive to groundwater contamination. The SWWD mapping tool indicates that much of Denmark Township is located within areas that are high or very-highly sensitive to pollution of shallow and deep ground water aquifers.

Nitrate contamination has been identified in private water supplies within the watershed near Denmark Township (in Cottage Grove). The cause of the contamination has been identified as fertilizer application from both residential and agricultural uses. Individual septic treatment systems and animal agriculture are also potential sources of nitrate contamination in the watershed.

Assessment of Problems and Corrective Actions

Denmark Township has cooperated with SWWD in the development of their watershed plans, which identify the important water and natural resource issues throughout the watershed. Many of the issues relate to potential problems that could occur with future development and could impact the high-quality

resources remaining in the Township. The major issue areas and specific resource concerns identified in the Plan are described below.

Issue: Protection of Surface Water Resources

- ✓ Development in the Trout Brook subwatershed could affect the rate and volume of runoff, and impact the habitat quality of the stream.
- ✓ Existing development (particularly mining activities) and future development may impact the quality of the lake and groundwater resources.
- ✓ Key issues are bluffline/streambank erosion and nutrient loading. Erosion sites have been identified along the St. Croix, and others probably exist.
- ✓ Bluffline erosion and sedimentation also impact the Mississippi River.
- ✓ Watershed wide management of development is needed to protect water and natural resources as portions of the watershed develop.

Issue: Mitigation of Stormwater Impacts

- ✓ The Denmark Township Water Resource Inventory noted significant areas of erosion and sedimentation along Trout Brook and O’Connor’s Creek in the Township.
- ✓ Gully erosion along the St. Croix and Mississippi River bluffs leads to sedimentation and habitat destruction.
- ✓ New developments need to provide water quality treatment for stormwater, and meet watershed requirements for rate and volume control and water quality treatment.
- ✓ Floodplain standards and building elevations are needed for future development, especially in areas around landlocked basins.
- ✓ There is a need to limit stormwater rates and volumes for new development.

Issue: Groundwater Quality and Quantity

- ✓ Groundwater resources require protection from nitrate contamination, especially in agricultural areas.
- ✓ Karst features require special protection from surface water contamination.
- ✓ Appropriate pretreatment practices should be utilized for infiltration BMP’s to mitigate potential impacts to groundwater resources in sensitive recharge areas.
- ✓ The SWWD and local governments should work cooperatively to implement the recommendations of local groundwater studies and plans.

Issue: Protection of Key Natural Resources

- ✓ The native plant communities and rare species within the Trout Brook watershed need to be protected from clearing and fragmentation.
- ✓ Invasive, non-native species should be controlled to protect the quality of native plant communities. Significant natural communities along the St. Croix River, Mississippi River and Lost Valley Prairie Scientific and Natural Area is a priority.

Impaired Waters

The Minnesota Pollution Control Agency has identified “impaired waters” throughout the State. The

impaired waters in or connected with Denmark Township include the following:

- ✓ St. Croix River (aquatic consumption)
- ✓ Mississippi River (aquatic consumption, life and recreation)
- ✓ Trout Brook (aquatic recreation)

A TMDL study for the St. Croix River has been approved for mercury and will be needed for PCBs. The SWWD and local governments will need to cooperate with these studies to protect the St. Croix River as an outstanding regional water resource.

A TMDL study has been approved for some pollutants for the for the Mississippi River. A TDML study is needed for E. coli for Trout Brook. Cooperation with local watershed authorities, local governments and landowners will be needed to reduce nutrient inputs and improve water quality in the River and Trout Brook.

Goals and Policies

Denmark Township will protect and manage its valuable water and natural resources. The Township recognizes the need to work with others, including the SWWD, Washington County, and the State of Minnesota to achieve its goals for the protection of surface waters, ground water, and related natural resources. The following are the adopted Surface Water Management goals and policies for Denmark Township.

Goal 1: Denmark Township is committed to a goal of no adverse impacts to water resources in the area.

Policies:

- The Township will work cooperatively with state agencies, and landowners to protect local wetlands, lakes, streams and groundwater to preserve the values of these resources for future generations.
- The Township concurs with the SWWD Water Management Plan and adopted rules. The Township will enforce the regulations of the SWWD within the Township.
- The Township will manage land use and use its growth management strategies to protect surface and ground waters within the Township. These include the following elements:
 - Land Use Plan and Zoning Regulations
 - River corridor development standards for the St. Croix and future MRCCA Ordinance
 - Stormwater Management Performance Standards
 - Erosion Standards
 - Wetland regulations
 - Encourage clustering of residents to preserve open space and the environment
 - Consider purchase of development rights, transfer of development rights and use of conservation easements to protect natural resources
- The Township will review its existing erosion and sediment control ordinance, and will update the ordinance to be consistent with NPDES Construction Stormwater Permit, where applicable.

Goal 2: Protect the quality of local lakes by supporting the SWWD lake management goals and plan for lake management, including O'Connor's Lake and Conley Lake.

Policy:

- The Township will implement its land use plan, zoning and subdivision ordinances, and erosion and sediment control ordinance to protect lake water quality, and work with the SWWD to achieve the lake management goals.

Goal 3: Protect wetland resources by requiring functions and values assessments of the wetlands in the Township, and enforcing wetland management requirements.

Policies:

- The Township will cooperate with the SWWD and Washington County to protect wetland resources within the Township and enforce the requirements of the Minnesota Wetland Conservation Act.
- The Township will support SWWD requirements for pretreatment of stormwater prior to discharge into all wetlands and other waterbodies.
- The Township will support the SWWD requirements for wetland buffers and wetland protection..

Goal 4: Implement the SWWD management requirements for stormwater quality and quantity, infiltration and filtration of stormwater, standards for wet detention basins and other best management practices to protect surface and groundwater resources.

Policies:

- The Township will implement the SWWD standards for control of peak runoff, infiltration and filtration, and best management practices to control Total Suspended Solids (TSS), Total Phosphorus (TP), and runoff from development or redevelopment within the Township.

Goal 5: Protect the quality of Outstanding Resource Value Waters (ORVW), such as the St. Croix River.

Policy:

- The Township will work with the SWWD and others to and achieve the nondegradation goals for ORV Waters by implementing its Subdivision and Zoning Ordinance, land use plan, and River corridor development standards for the St. Croix River.
- The Township will support SWWD efforts to reduce nutrient loading to the river including the Trout Brook Restoration project and other planned projects.

Implementation Program

Financial Considerations

Denmark Township owns and manages a limited number of storm water management facilities, including culverts under public roadways, and drainage easements over a limited number of ponds within private developments. The Township does not have a formal capital improvement program, as capital expenditures are infrequent. The Township budgets for any capital improvements on an ongoing basis. The Township will annually review capital expenditures that may arise as a result of implementing the Local Surface Water Management Plan. The Township uses general fund revenues to fund these improvements.

The Township requires that developers finance the improvements that are required to ensure that private developments meet Township and Watershed requirements.

Township Ordinances

The Township has adopted ordinances that provide standards and regulations to manage water resources. These include the following:

- Zoning Ordinance (Chapter 2 of the Denmark Township Development Code)
- Subdivision Ordinance (Chapter 3 of the Denmark Township Development Code)
- Open Space Design (Chapter 2 , Part 3, Section 4 of the Denmark Township Development Code)
- Shoreland Management Regulations (Chapter 6 of the Denmark Township Development Code*)
- Floodplain Regulations (Chapter 9 of the Denmark Township Development Code*)
- Lower St. Croix Bluffland and Shoreland Management Regulations (Chapter 5 of Washington County Development Code*)
- Rules and Regulations of the SWWD, adopted by reference (Chapter 2, Part 3, Section 7 of the Denmark Township Development Code)
- Subsurface Sewage Treatment System Regulations (Chapter 4 of the Denmark Township Development Code*)

For these chapters, the Denmark Township Development Code adopted Washington County regulations by reference.

After the SWMP is adopted, the Township will revise or update its ordinances as described in the Goals and Policies section of this plan, to ensure that they meet state requirements and are consistent with the goals of this Plan.

Chapter 10 – Mississippi River Corridor Critical Area Plan

Introduction

Brief History: Critical Area Program/Mississippi National River and Recreation Area

Denmark is one of thirty local jurisdictions within a 72-mile Mississippi River corridor through the Twin Cities metropolitan area. In 1976, a Governor's Executive Order established this corridor as a "Critical Area". This required, per the Critical Areas Act of 1973, that communities develop plans to protect the historic, cultural, aesthetic, and natural qualities of the river. The State of Minnesota Department of Natural Resources (DNR) has updated the requirements under the new Minnesota Rules Chapter 6106 in January of 2017. The Department of Natural Resources (DNR) reviews and approves Critical Area Plans and ordinances. The extent of the Critical Area in Denmark Township is illustrated in the Mississippi National River Recreation Area Growth Management Plan/Critical Area map. The following are general purposes of the Critical Area Program:

- ✓ Protect and preserve unique and valuable state and regional resources.
- ✓ Prevent and mitigate irreversible damage to these resources.
- ✓ Preserve and enhance natural, aesthetic, cultural and historic value for the public use.
- ✓ Protect and preserve the river as an essential element in the national, state and regional transportation, sewer and water and recreational systems.
- ✓ Protect and preserve the biological and ecological functions of the corridor.

The United States Congress designated this same corridor as the Mississippi National River and Recreation Area (MNRRA) in 1988. The intent of this legislation was to enhance the resources of the metropolitan river corridor, develop overall policies for the management of lands and water within the corridor, and increase regulatory consistency. These policies are contained in the MNRRA Comprehensive Management Plan (CMP), which was developed by the Mississippi River Coordinating Commission and National Park Service, in consultation with local and state units of government. The National Park service is the body responsible for local implementation of the CMP. It has no review or regulatory authority over local plans and ordinances but can recommend funding for implementation plans in communities that incorporate the CMP. The following are general purposes of the MNRRA Program:

- ✓ Preservation and enhancement of environmental values.
- ✓ Enhanced outdoor recreation opportunities.
- ✓ Conservation and protection of scenic, historical, cultural, natural and scientific values.
- ✓ Commercial use consistent with purpose of designation.

The Minnesota State Legislature amended the 1976 Land Planning Act in 1995 to require that communities amend their comprehensive plans every ten years. The Metropolitan Council, the DNR and the National Park Service coordinated efforts to provide technical assistance to communities that are updating their plans to meet mandatory Critical Area planning requirements, as well as encouraging communities to address the voluntary elements of the MRCCA.

State law requires communities to complete Critical Area Plans as well as ordinances that are consistent with the Plan. The Township completed its original Critical Area Plan in 1998 and is now updating it consistent with its Comprehensive Plan update. The Township must submit the Plan to the Metropolitan Council for review. The Township must also submit the Plan and ordinances to the DNR, for review and approval, based upon consistency with elements of Chapter 6106, Part 6106.0100 of Mn State Statutes and related state laws. The MNRRA CMP is broad and intended to address a variety of different river

corridor issues. There is additional emphasis on public access to the river, historic preservation, and habitat restoration/mitigation.

Critical Area Goals

The following are goals of Denmark Township regarding the future use, preservation and enjoyment of the Mississippi River Corridor Critical Area. These goals have also been incorporated into the Comprehensive Plan.

- ✓ Protect the rural character of the Township through growth management strategies.
- ✓ Protect and preserve the St. Croix River corridor and the Mississippi National River and Recreation Area.
- ✓ Preserve the open space, scenic and natural qualities of the Critical Area, as well as its ecological and economic functions.
- ✓ Establish land use patterns that preserve and protect the natural qualities and existing character of the landscape.
- ✓ Protect environmental systems from harm.
- ✓ Maintain and enhance the natural amenities of the Township, including wildlife habitat.
- ✓ Protect surface waters and wetland areas to protect natural habitats, ground water quality and aesthetic qualities.
- ✓ Provide recreational opportunities for all residents of the Township.
- ✓ Enhance park and recreation areas of the Township.

Denmark Township originally developed an MRCCA plan in 1998. That plan was then updated as a component of the 2030 comprehensive plan update. The 2030 planning effort included public input in the form of a community survey and a series of community meetings to gather feedback from the community on components of the Townships comprehensive plan and MRCCA plan. The 2040 Comprehensive Plan update and MRCCA plan update included public meetings with the Town Board and Planning Commission where input was gathered and later incorporated into the plan.

Since 2008 the Township has amended its zoning map as listed in their implementation plan and in accordance with the Townships goals and policies relative to the MRCCA.

Intergovernmental Cooperation

The Comprehensive Plan and Mississippi River Critical Area Plan were created in consultation and negotiation with a variety of levels of government and government agencies. Denmark Township recognizes that the planning process does not end at the Township’s borders and that there are opportunities and concerns that go beyond the local level. Denmark is part of a County, a state, a metropolitan region, a watershed, and is among many communities that share the river corridor area for a variety of uses. Denmark recognizes its responsibility to participate in the protection of not only local resources, but resources of county, state, regional or national significance.

Denmark Township must comply with a variety of statutory obligations that impact the natural and built environment in the Township. These include Critical Area requirements; Metropolitan Land Planning Act requirements; County land use planning requirements; shoreland, floodplain and wetland regulations; and other requirements. Meeting planning goals at the local, county, and regional level often requires participation by multiple levels of government. These include, among others, the DNR, the Metropolitan

Council, and Washington County. The Township supports the spirit of many of the plans, programs, policies, and obligations that impact the community. The Township is also committed to voicing concerns when it feels that plans and regulations are unnecessarily strict, cumbersome or do not adequately meet the interests of local residents.

Preservation Plan

Several ordinances control the density and character of any development in the Critical Area. These include Township's Zoning Ordinance and Chapters of the Washington County Development Code that address zoning, shoreland management, floodplain management, and wetland regulations. In addition, the Township will develop and maintain a Mississippi River Corridor Ordinance. New performance standards will be consistent with Executive Order 79-19 and the MNRRA Comprehensive Management Plan. Among a variety of land disturbing activities that will require the input of the DNR, the Township will also solicit the input of the DNR when a proposed land disturbing activity may impact a natural community or sites of rare species.

Shoreline Preservation

The preservation of the shoreline area is an important aspect of the Critical Area Plan and an important aspect in maintaining the quality and character of the corridor. In particular, the shoreline area is a corridor for wildlife movement; and stable vegetation along the shoreline prevents erosion and preserves river water quality. This portion of the Critical Area is also the most sensitive to the visual impacts of development. The preservation of the shoreline including the preservation of vegetation in the corridor will be addressed when the Township develops its Mississippi River Corridor Critical Area (MRCCA) Ordinance. Specifically, the Denmark Township Mississippi River Corridor Ordinance will require that any structure be setback 200 feet from the ordinary high-water mark. Existing sign regulations would not allow a sign within 100' of the shoreline; and commercial signage will not be placed within any residential district. The County Shoreland Regulations require that no trees over 6 inches in diameter be cut within the designated 200' setback area and that natural vegetation be maintained insofar as feasible. Additional measures to preserve vegetation in the Critical Area are described below. Opportunities for trail connections and public access to shoreline areas may be limited in Denmark, but the Township will consider any land dedication opportunities that may arise through the residential subdivision process.

Erosion and Sedimentation Control

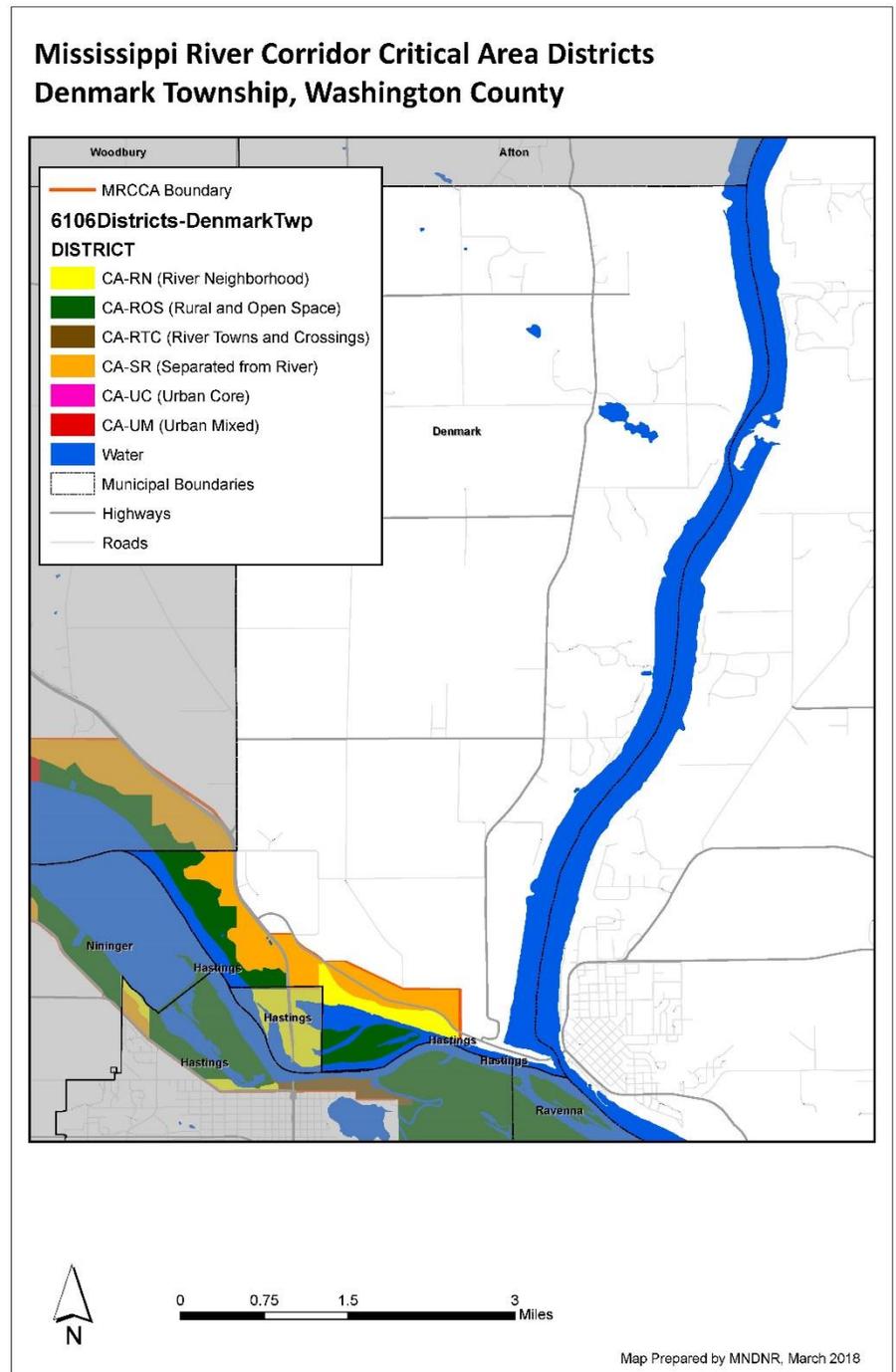
Stormwater management standards are contained in Chapter 2, Part 3, Section 1.6 of the Washington County Development Code (Zoning Ordinance), Section 10.3 of the Washington County Subdivision Ordinance, and Sections 10.3 and 10.4 of the Township Subdivision Ordinance.

MRCCA Districts

Three different MRCCA districts have been identified within Denmark Township and are shown in Figure 25. They include CA-RN (River Neighborhoods), CA-ROS (Rural and Open Space), and CA-SR (Separated from River). Districts are based on the natural and built character of different areas of the river corridor. Structure setbacks from the OHWL and bluffs, building height limits, and the amount of open space required for subdivisions/redevelopment vary by district.

Land within the MRCCA boundary is designated in the 2040 Future Land Use map as either Single Family Estate, or Agriculture and includes the Shoreland Overlay District. Single Family Estate designation is located exclusively along the St. Croix and Mississippi River corridors. This allows for residential opportunities that while denser than the Rural Residential area, maintains the rural character and protects the environment with a maximum density of one housing unit per three acres. The Agriculture designation permits a maximum density of one home per twenty acres to preserve open space and rural character. These land use descriptions and development densities are consistent with the descriptions of the CA-RN, CA-ROS, and CA-SR MRCCA districts.

Figure 25: MRCCA Districts



District Descriptions:

CA-RN (River Neighborhoods –

The river neighborhood district (CA-RN) is characterized by primarily residential neighborhoods that are riparian or readily visible from the river or that abut riparian parkland. The district includes parks and

open space, limited commercial development, marinas, and related land uses.

The CA-RN district must be managed to maintain the character of the river corridor within the context of existing residential and related neighborhood development, and to protect and enhance habitat, parks and open space, public river corridor views, and scenic, natural, and historic areas. Minimizing erosion and the flow of untreated storm water into the river and enhancing habitat and shoreline vegetation are priorities in the district.

CA-ROS (Rural and Open Space) –

The rural and open space district (CA-ROS) is characterized by rural and low-density development patterns and land uses, and includes land that is riparian or visible from the river, as well as large, undeveloped tracts of high ecological and scenic value, floodplain, and undeveloped islands. Many primary conservation areas exist in the district.

The CA-ROS district must be managed to sustain and restore the rural and natural character of the corridor and to protect and enhance habitat, parks and open space, public river corridor views, and scenic, natural, and historic areas.

CA-SR (Separated from River) – Land that is separated from and not visible from the river.

The separated from river district (CA-SR) is characterized by its physical and visual distance from the Mississippi River. The district includes land separated from the river by distance, topography, development, or a transportation corridor. The land in this district is not readily visible from the Mississippi River.

The CA-SR district provides flexibility in managing development without negatively affecting the key resources and features of the river corridor. Minimizing negative impacts to primary conservation areas and minimizing erosion and flow of untreated storm water into the Mississippi River are priorities in the district.

Zoning and Other Ordinances Affecting Land Use

Most of the land is zoned Single-Family Estate, or one home per three acres. Portions of the Critical Area are zoned A-2 (Agriculture), or one home per twenty acres. Much of the Critical Area cannot be developed, however, due to the presence of floodplain and steep slopes near the river. A portion of the Critical Area is also within Washington County's Shoreland Overlay Zoning District.

Land uses that are inconsistent with existing regulations may continue, provided they meet all other applicable regulations and do not pose immediate risks to the public health, safety and welfare. Once developed, the Mississippi River Corridor Critical Area (MRCCA) Ordinance as well as the already developed Denmark Township Zoning Ordinance will govern any non-conforming uses identified within the Critical Area. The Mississippi River Corridor Ordinance contains provisions that prohibit the continuance of a non-conforming use if such activity ceases for an extended period of time or if a majority of the facility is damaged. With regard to nonconforming residential properties, the Denmark Township Ordinance includes provisions to allow reconstruction of a residence in the same footprint as the non-conforming home.

Non-conforming lots and non-conforming structures may continue under the regulations of the Denmark Township Ordinance. The Ordinance describes some circumstances where changes to a non-conforming structure are allowed by right. If not allowed by right under the Ordinance, a proposed change to a non-conforming lot or structure may be considered through the variance procedure.

The Mississippi River Critical Area in Denmark constitutes approximately 1,250 acres. Much of this area consists of important natural features, including bluffland, shoreland, wetlands and floodplain. Table 22 below provides a breakdown of land uses in Denmark’s Critical Area.

Table 22: MRCCA Land Uses

Acres		%
Commercial	0	0.0%
Developed Residential	412	33.4%
Water/slopes/floodplain	524	42.6%
Vacant agricultural	135	11.0%
Vacant Single-Family Estate	159	13.0%
TOTAL	1,230	100.0%

Source: Denmark Township

Residential Density Standard

Denmark’s portion of the Critical Area is within a “Rural Open Space District (CA-ROS)”, as defined by Chapter 6106, Part 6106.0100 of Mn State Statute. . The intent of this district is to preserve the open, scenic and natural characteristics of the area, as well as the ecological and economic functions of the corridor. The interim regulations contained in the Executive Order stipulate a maximum density of five acres, but the DNR has deferred to the Council the authority to establish density standards for the corridor. The Metropolitan Council accepted Denmark Township’s and Washington County’s last generation of comprehensive plans, which included densities higher than the maximum contained in the Executive Order. Denmark Township will retain its Single-Family Estate density standard of one home per three acres, which has been in effect for nearly thirty years, which is more restrictive than the County’s density standard, and which the Township believes is not in conflict with the goal of preserving open space, scenic resources, and ecological functions in the Critical Area.

Table 23: MRCCA Residential Development Potential and Net Density

	Acres	Residential Density	Potential New Units
Commercial	0	n/a	0
Developed Residential	412	n/a	0
Water/slopes/floodplain	524	n/a	0
Vacant agricultural	135	1:20	6
Vacant Single-Family Estate	159	1:3	53
Total	1,230		59
Total undeveloped acreage	294		
Divided by potential new units	59		
Equals net density	4.98		

Source: Denmark Township

As noted in Table 23, a portion of the Critical Area is also designated Agriculture. The density permitted in this area is limited to one home per twenty acres. There are also over 500 acres of undevelopable area within the corridor, consisting of floodplain, steep slopes and the river itself. When the undevelopable area is included in the density analysis for potential remaining development in the Single-Family Estate and Long-Term Agricultural districts, the net maximum density for residential development is one home per seven acres.

Denmark Township's Zoning Ordinance allows flexible lot size standards and open space development performance standards. The purpose of these development options is to enhance and preserve natural features in the river corridor while maintaining existing development rights.

Building Scale and Context: Dimensional Requirements

A particular concern about development in the Critical Area is related to the scale of buildings and their relationship to the natural landscape. The scale, height and mass of buildings are regulated through the zoning ordinance, subdivision ordinance, and requirements of County Shoreland Management Regulations. The low-density character of the area resolves many of the issues related to "context" and "scale". In some cases, clustered development may be appropriate in order to preserve special natural features. This is possible through the existing zoning and subdivision ordinances.

Maintaining the quality and character of the Critical Area includes protecting sensitive shoreline and bluff areas by regulating the proximity of structures to either the shoreline or bluffline and limiting the visibility of structures from the river. Once developed, Denmark Township will utilize its Mississippi River Corridor Critical Area (MRCCA) Ordinance to govern specific dimensional requirements for the entire Critical Area. With regard to the placement of structures, the ordinance will specify minimum structure and road setbacks from the ordinary high water level and bluffline (200 feet and 100 feet, respectively) as well as a maximum structure height (35 feet). Denmark Township utilizes the Washington County Shoreland Management Ordinance (adopted by the Township by reference) and Denmark Township Zoning Ordinance to protect the shoreline and shoreland area. These requirements include minimum lot width at the shoreline and setback line (currently both 250 feet). The ordinance will mandate a maximum impervious surface of 25%. Although the Shoreland District is smaller than the Critical Area, the application of its standards further protects an important portion of the Critical Area.

The disruption or change in the topography of the Critical Area will also be addressed in the Mississippi River Corridor Critical Area (MRCCA) Ordinance. The Ordinance will stipulate that no grading, filling, or excavating can be conducted in the Critical Area without first obtaining a permit (except in cases where the grading, filling or excavating is the minimum required for a building site and utilities.)

Primary Conservation Areas (PCAS)

General Overview

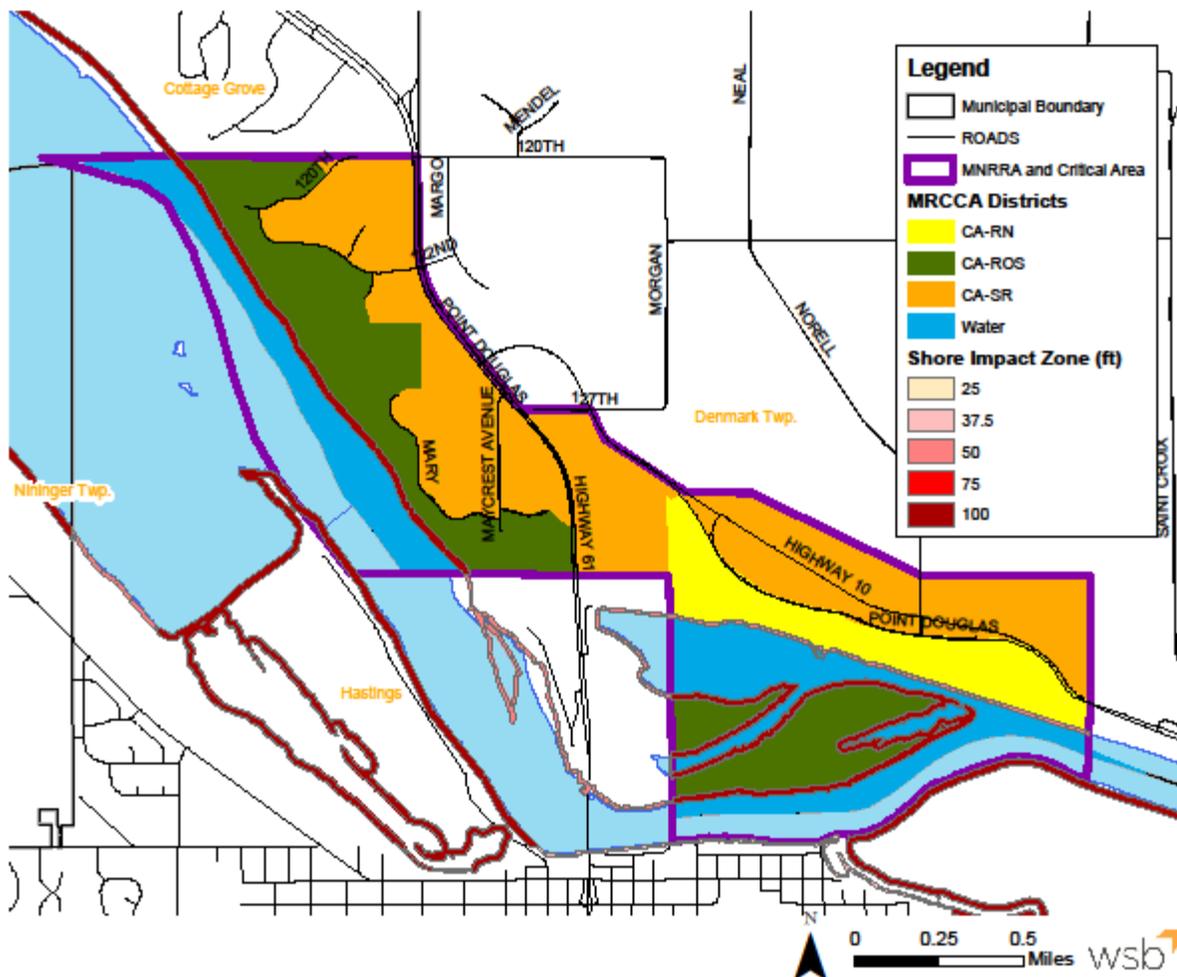
The term Primary Conservation Area (PCAs) defines the key natural and cultural resources and features, including shore impact zones (SIZ), bluff impact zones (BIZ), floodplains, wetlands, gorges, areas of confluence with tributaries, natural drainage routes, unstable soils and bedrock, native plant

communities, cultural and historic properties, significant existing vegetative stands, tree canopies and “other resources” identified in local government MRCCA plans. This definition consolidated natural and cultural resources and features listed in statute into a single definition to shorten the MRCCA rules. The term is used in several parts of the rules to ensure that key resources and features are given priority consideration for protection.

Shore Impact Zone

The shore impact zone is a “buffer” area between the water’s edge and the area where development is permitted. The land along the water’s edge is environmentally sensitive and needs special protection from development and vegetation removal.

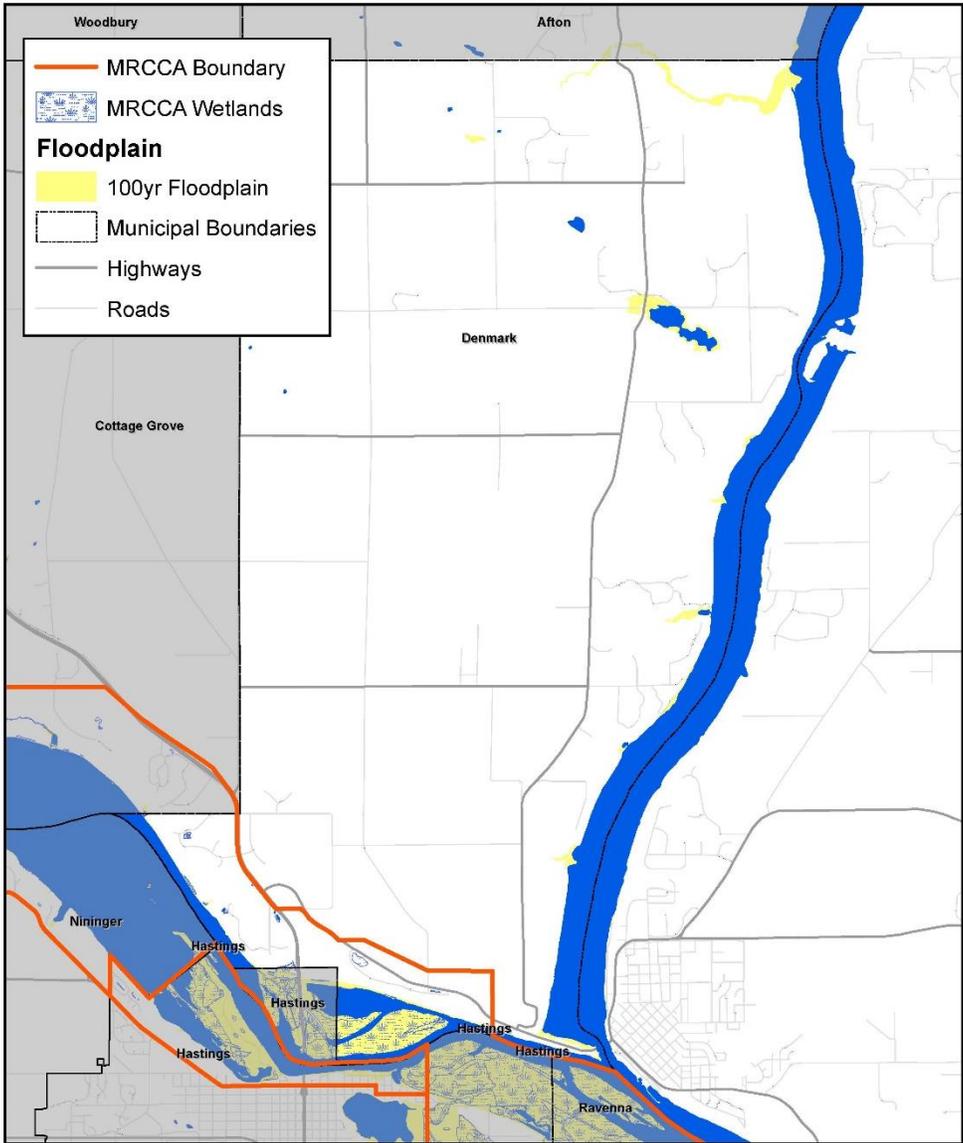
Figure 26: MRCCA Shore Impact Zones



Floodplains & Wetlands

Wetlands are transitional lands between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water. Floodplains are the areas adjoining a watercourse which have been or may be covered by large floods that typically occur on an average frequency in the magnitude of the 100-year recurrence interval.

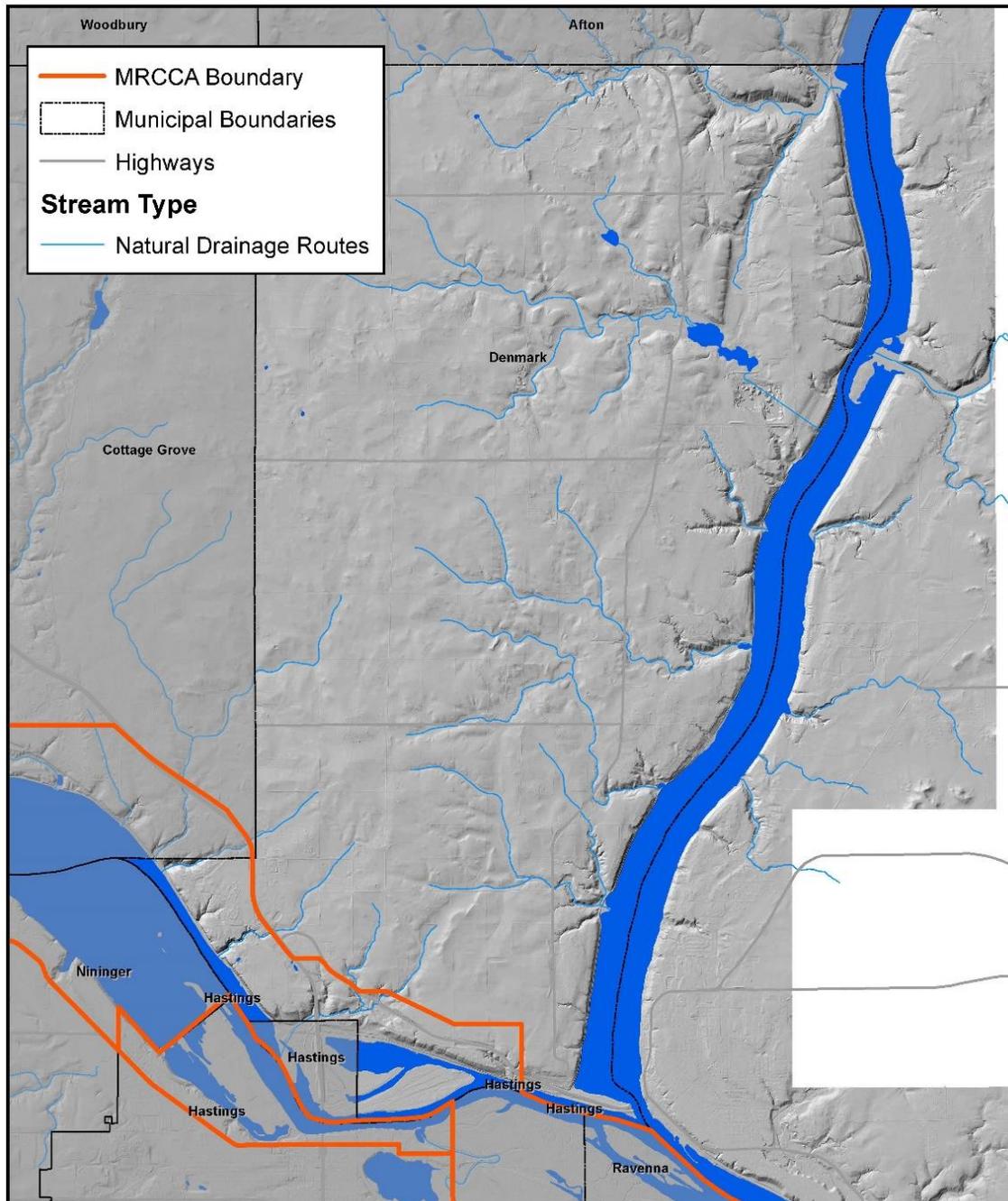
Figure 27: Mississippi River Corridor Critical Area: Wetlands & Floodplains



Natural Drainage Ways

Natural drainage ways are natural open linear depressions which function for the collection and drainage of surface water. It may be permanently or temporarily inundated. The liquids flow under the force of gravity.

Figure 28: Mississippi River Corridor Critical Area - Natural Drainage Routes



Bluffs & Bluff Impact Zones

Bluffs are a natural topographic feature having a slope that rises at least 25 feet and the grade of the slope averages 18 percent or greater, measured over a horizontal distance of 25 feet. A bluff impact zone means the bluff and land within 20 feet of the bluff.

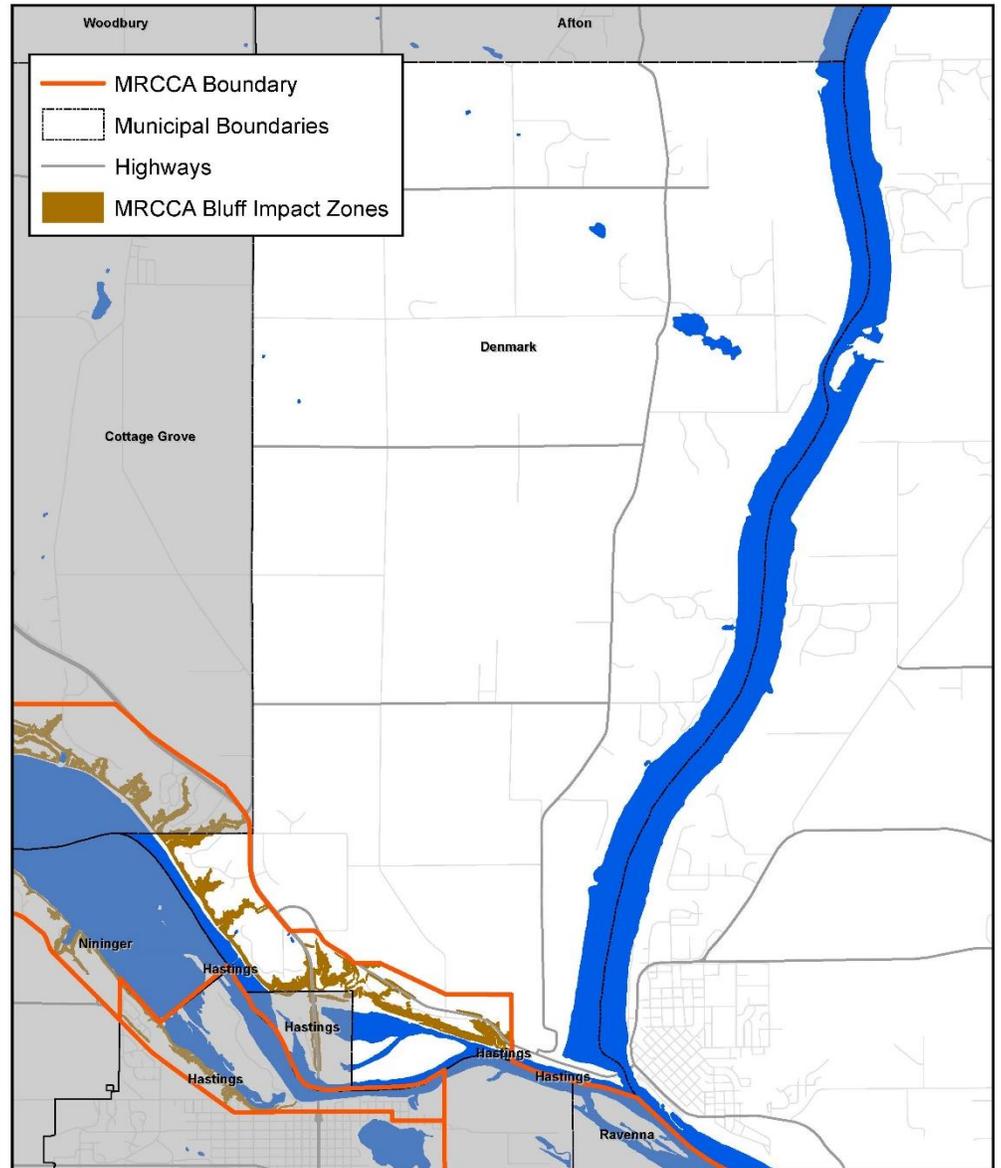
Denmark Township recognizes that preservation of bluff areas is crucial to maintain a natural appearance along the corridor. Once developed, the MRCCA Ordinance will require that structures must be set back 100 feet from the bluff line as well as regulate the cutting of vegetation on the slope or face of bluffs and within the area 40 feet landward from bluff-lines.

The preservation of Bluff areas is further accomplished by enforcement of the Washington County Shoreland and Zoning

Ordinances, which also addresses grading of the land. The Shoreland Ordinance prohibits grading or filling within 20' of the bluffline (Bluff Impact Zone) or within 100' of the shoreline (Shore Impact Zone, or half the structure setback from the shoreline). Part 3 of Chapter 2 of the Washington County Development Code addresses requirements for 'Land Alteration and Grading'. In addition, Section 1.7 of the Denmark Township Zoning Ordinance addresses standards for 'Land Alteration' and the Denmark Township Subdivision Ordinance addresses erosion control.

The MRCCA Ordinance once developed will prohibit development on slopes over 18%. The ordinance will permit development on slopes between 12% and 18% only if a variety of performance standards are met, including those that address safety, the impact on views from the river, and the installation of individual sewage treatment systems (which cannot be placed on slopes greater than 12%). Performance standards

Figure 29: Mississippi River Corridor Critical Area – Bluff Impact Zones



in the County Zoning regulations also stipulate a more thorough review of plans for development on slopes that are 13% or more. The Township will also seek the review and input of the Department of Natural Resources for development proposals on land that exceeds 12% slope.

Native Plant Communities & Significant Existing Vegetative Stands

Native plant communities are plant communities that have been identified as part of the Minnesota biological survey. They represent the highest quality native plant communities remaining in the MRCCA. Significant vegetative stands are plant communities identified by the National Park Service that are largely intact and connected and contain a sufficient representation of the original native plant community. Much of this vegetation contributes to the scenic value of the MRCCA.

The Department of Natural Resources Biological Survey provides important information about remaining native and undisturbed plant “communities” in the County. In the most downstream portion of the Critical Area, there is a peninsula in the river, just to the south of Conley

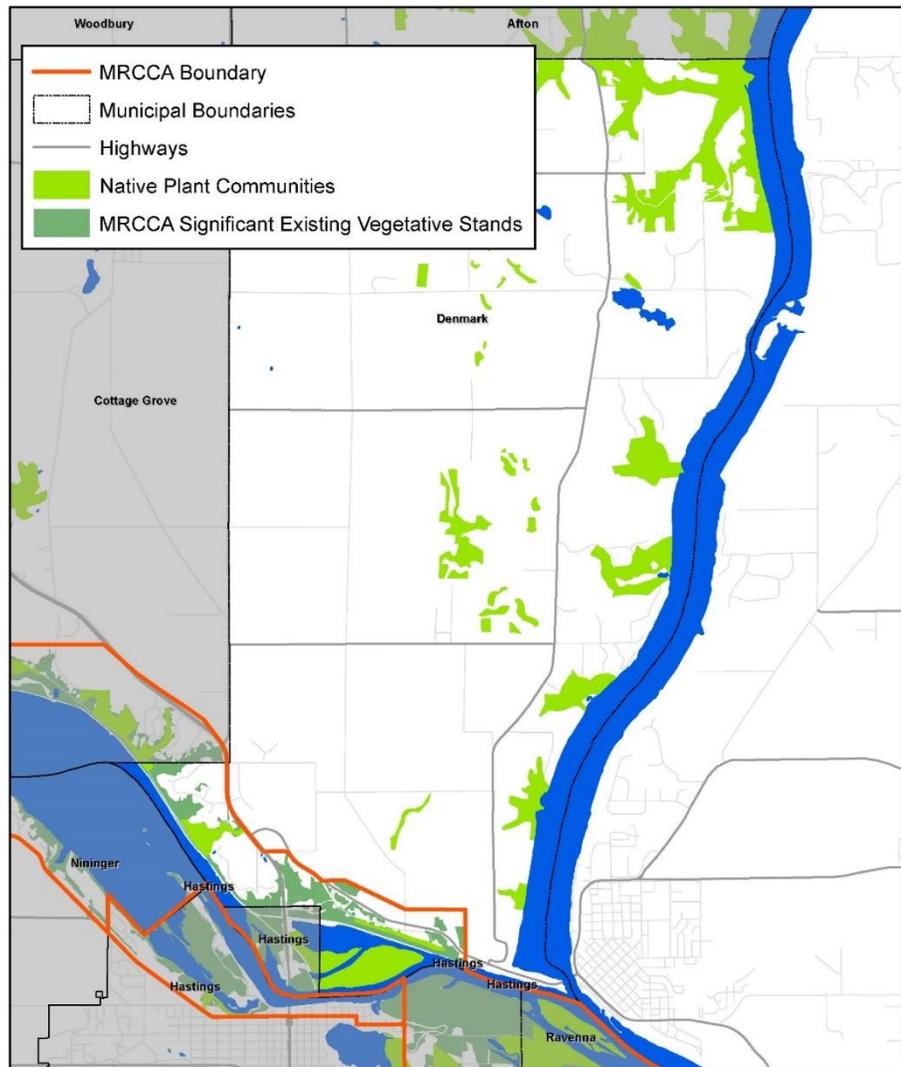
Lake. This area is seasonally flooded by the Mississippi River and contains a relatively undisturbed Silver Maple Floodplain Forest. The forest canopy is dominated by silver maples with occasional canopy trees such as green ash, black ash, American elm, slippery elm and hackberry.

Upstream, associated with a ravine area, lies a relatively undisturbed area that includes Maple Basswood Forest, Oak Forest, and communities of plants growing from moist, moss-covered rock walls (typically ferns). Along the river lies Dry Bedrock-Bluff Prairie, where mostly bluestem, side-oats grama, and satin grasses cover shallow soils over bedrock.

Cultural & Historic Properties

Historic properties are properties with features such as an archaeological site, standing structure, site,

Figure 30: Mississippi River Corridor Critical Area – Native Plant Communities and Significant Existing Vegetation Stands



district, or other property that are listed in the National Register of Historic Places, the State Register of Historic Places, or are locally designated as a historic site.

Currently there is one property, District No. 34 School listed on the National Register of Historic Places. The property is located on the southwest corner of Hertzell and Ramsey streets and the original structure was built in 1868 but moved in 1905. The Township also has a number of locally significant properties which are shown in Figure 22 located in Chapter 8: Historic Preservation. A description in addition to the physical location of those sites can also be found within Chapter 8 of the Township Comprehensive Plan.

Unstable Soils & Bedrock

The stability of soil can be attributed to the mix of sand, gravel, silts, clay, water, air and other factors that cause soil stability issues. Karst formations are a form of unstable bedrock and are areas where sinkholes, springs, caverns, and stream sinks may exist.

The Township is not currently aware of any formal studies that have been completed to analyze areas of potentially unstable soils or bedrock.

Public River Corridor Views (PRCVS)

Public River Corridor Views (PRCVs) are views toward the river from public parkland, historic properties, and public overlooks, as well as views toward bluffs from the ordinary high water level of the opposite shore, as seen during the summer months. PRCVs are identified for protection due to the aesthetic value they bring to the MRCCA. The Township does not have any land that provides views from the ordinary high water line (OHW) towards bluffs across the river.

All land within the MRCCA in the Township is under private ownership with the exception of the Point Douglas Regional Trail. While the Township does not have any views from public parklands, it does have views of the river from the Point Douglas Trail within the MRCCA Boundary. A photo of the river as viewed from the Point Douglas Trail has been included and Figure 32 shows the location and viewshed of the photo. The natural vegetation and direct view of the river is what makes the identified view valuable. The river is within sight when utilizing the Point Douglas Trail. What would negatively affect this view would be too much vegetation removal that could increase erosion and degrade local water clarity. Conversely what could improve the view would be added variety in native vegetation.

The Township coordinated with the City of Hastings and their consultant team to obtain feedback on PRCVs across the river. The City of Hastings indicated no important PRCVs.

The Township coordinated with Nininger Township and their consultant team to obtain feedback on PRCVs across the river. Nininger Township indicated that there were no PRCV's.

The following are implementation actions for the Township related to PRCVs:

1. Ensure that information on the location of PRCVs is readily available to property owners to understand how PRCV-relevant ordinance requirements, such as vegetation management and land alteration permits, apply to their property for project planning and permitting.
2. Establish procedures for processing applications with potential impacts to PRCVs, including:
 - a. Identifying the information that must be submitted and how it will be evaluated.
 - b. Developing visual analysis approach for CUPs for additional height in the RTC and UM districts (if applicable) as well as for proposed PUDs and variances. The Township does not have any RTC or UM districts and as a result this typically required item is not applicable.
 - c. Determining appropriate mitigation procedures/methods for variances and CUPs.
3. Actively communicate with other communities to protect views other communities have identified in your community that are valuable, and vice versa.

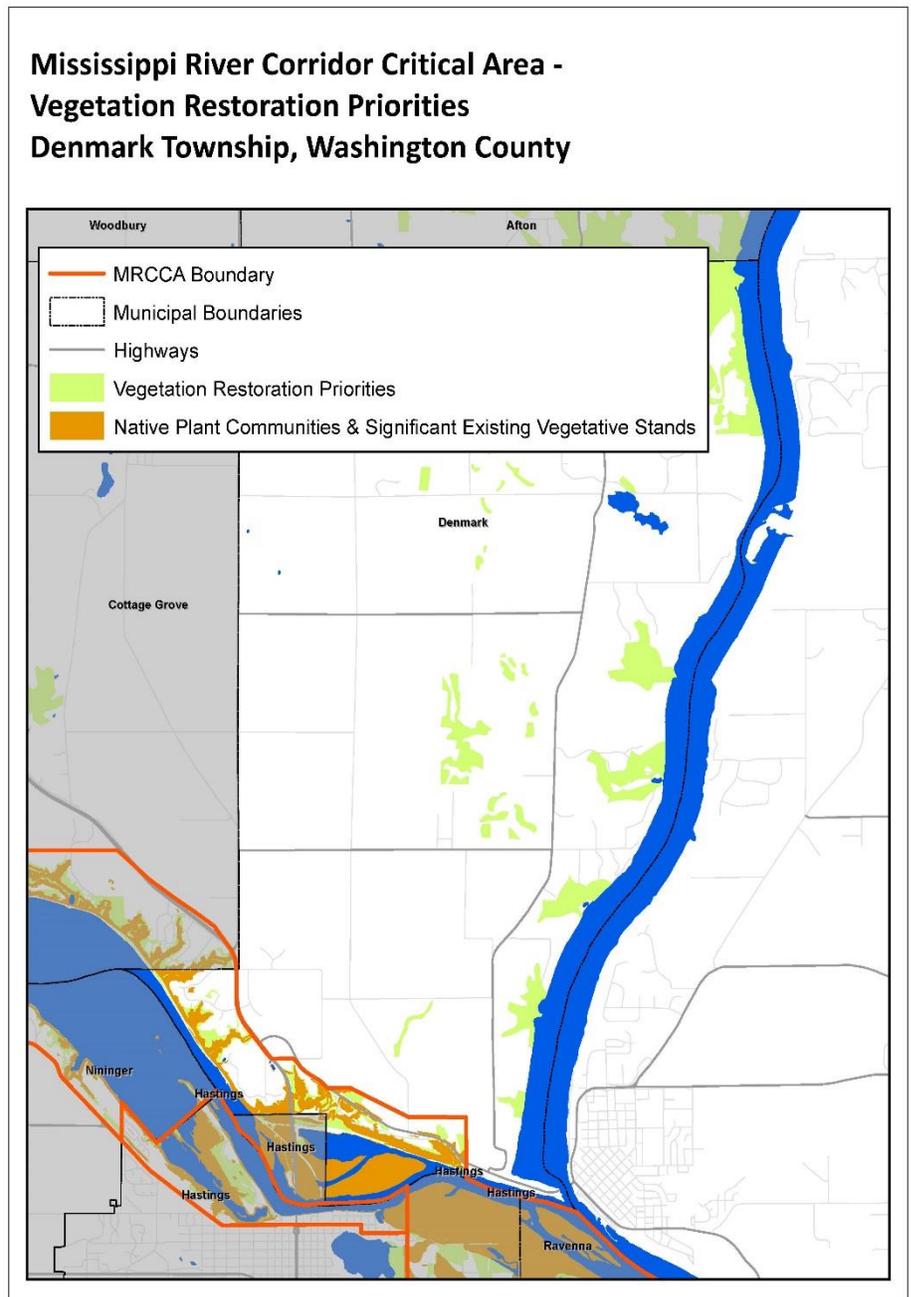
Priorities for Vegetation Restoration and Preservation

Vegetation is an essential part of the Mississippi River Critical Area. Its preservation is important to landowners, visitors to the area, and recreational users of the Mississippi River. The value of vegetation can be measured in terms of economic benefit, the quality of habitat, hydrological function or recreational appeal. The preservation of vegetation in the Critical Area involves ongoing management as well as requirements at the time of the site development process.

Regulating the cutting of vegetative areas within the Critical Area is the most important strategy in preserving a contiguous vegetative cover along the river. Regulations should be the strictest in bluff areas, where development could have the most pronounced impact on erosion and views. Washington County currently regulates and permits the cutting of vegetation on the slope or face of bluffs and within the area 40 feet landward from bluff-lines. Cutting is allowed in other areas, provided that the areas are kept to a minimum size, blended with the natural terrain, and done so as to maintain the aesthetic value of the area and not result in risk of erosion. Tree cutting in the Shoreland District requires a permit from the County. Landowners should, consistent with applicable ordinances, retain the right to control aspects of vegetation management on their own property.

Careful site planning is necessary to maintain the quality of the corridor as development occurs. Among other site plan content requirements, applicants for development permits should demonstrate that all grading will be conducted in a manner that preserves existing trees. Both the Township MRCCA Ordinance and

Figure 32: Mississippi River Corridor Critical Area – Vegetation Restoration Priorities



the County Shoreland Ordinance will address the use of natural vegetation for the control of surface water drainage and limit the amount of impervious surface area. The Shoreland Management Ordinance states that a maximum of 25% of the lot may be covered with impervious surface. In order to retard surface water run-off and erosion, both the Shoreland Management Ordinance and the Critical Area Ordinance will require that existing vegetation be restored after construction insofar as feasible.

The following are implementation actions for the Township related to natural vegetation restoration:

1. Ensure that through partnerships and the Comprehensive Plan that information on the location of natural vegetation restoration priorities is readily available to property owners to understand how relevant ordinance requirements apply to their property for project planning and permitting.
2. The Township will ensure that a vegetation permitting process will continue to be implemented. Currently Washington County has and will continue its vegetation permitting process for lands within the Shoreland District which complies with MRCCA rules.
3. Utilize existing shoreland ordinance and future Critical Area Ordinance when evaluating natural vegetation restoration, erosion prevention and bank and slope stabilization, or other restoration priorities identified in this plan in CUP, variances, and subdivision/PUD processes.
4. The Township will focus on prioritizing and establishing a process for evaluating priorities for natural resource protection.

Surface Water Uses

Surface water uses are uses of the river surface such as recreational boat traffic, barge fleeting (a managed parking lot for barges on the river) and commercial riverboat tours. Surface water uses are related to, but different from, water-oriented uses which are land uses (barge terminals, recreational marinas). Surface water uses may cause surface water use conflicts and external impacts. Where these surface water uses exist, communities should address how they will be managed to minimize external impacts and surface water conflicts. Surface waters of the Mississippi River and St. Croix Rivers are primarily used for pleasure boating, although a significant amount of barge traffic occurs on the Mississippi River. The Mississippi is rather narrow as it passes through the Township, which limits potential use for barge fleeting. The close presence of King’s Cove Marina would also result in a conflict between recreational and commercial uses.



In addition, opportunities for river related industries are limited due to the absence of developable land at the river. With exception of the railroad corridors at the river’s edge, land near the river is either within the Mississippi River floodplain or part of the river bluff. A commercial boating marina is located within the City of Hastings, immediately south of Denmark in the backwaters of the Mississippi River.

At this time there are no barge fleeting areas within Denmark Township.

The Township does not intend to regulate surface water uses at this time. As such, no implementation actions are required by the MnDNR.

Water-Oriented Uses

Water-oriented uses are commercial and industrial land uses that require water access such as barge terminals and recreational marinas. Water-oriented uses are land uses that are often related to, but are different from, surface water uses, which are uses of the river surface (barge fleeting, recreational boat traffic, riverboat tours).

Water-oriented uses provide economic benefits as well as external impacts and land use conflicts (road traffic, hours of operation, noise, increased water surface use). It is required that if existing and/or future land use plans include water-oriented uses, the plan should address how existing and future commercial and industrial water-oriented uses will be managed to minimize external impacts and land use conflicts.

As there are no known water-oriented uses with Denmark Township, no implementation actions are required by the MnDNR.

Open Space & Recreational Facilities

MRCCA plans provide for and encourage creation, connection, and maintenance of open space and recreation facilities and identify potential public access points and trail locations. Open space and recreational facilities, such as parks, trails, scenic overlooks, natural areas, islands, and wildlife areas add to the quality of a community and increase opportunities for the public to access the river. Figure 9: Parks and Open Space identifies parks and open space as it relates to the MRCCA boundary.

The opportunities for trail connections, new open spaces, and public access to the river may be limited in Denmark due to existing development, site constraints, existing railroads, and acquisition priorities of Washington County. However, the Township is committed to working with the County, State agencies, and the National Park Service to further explore the feasibility and desirability of public trails or access to bluff top areas in Denmark's Critical Area. The County Plan references the MRCCA program and the possibilities for funding facilities under the MNRRA Comprehensive Management Plan. The railroads along the river, if ever abandoned, could become important trail connections in the Critical Area. The Township will consider this and other potential trail connections in the corridor.

The Parks, Trails and Open Spaces section of the Comprehensive Plan describes in detail opportunities for improvements to parks, trails and open space resources. The Township will work cooperatively with Washington County and the Minnesota Department of Transportation in identifying opportunities for scenic overlooks, dedicated open space or recreational resources. Opportunities for passive recreational or trail uses in floodplain areas on the east shore of the Mississippi River are more likely in the portion of the Critical Area that falls within Hastings.



Figure 32 Native Plant Communities and Land Cover, and Figure 35 Topography and Floodplain include areas of undevelopable steep slope and bluff top areas, natural community and rare species sites, and wetlands. “Steep slopes”, as indicated on maps, generally represent areas where slopes may preclude development. Detailed survey maps are necessary, however, to precisely indicate areas where slopes exceed both 12% and 18%, as well as the true extent of other natural features.

Figure 33: Native Plant Communities and Land Cover

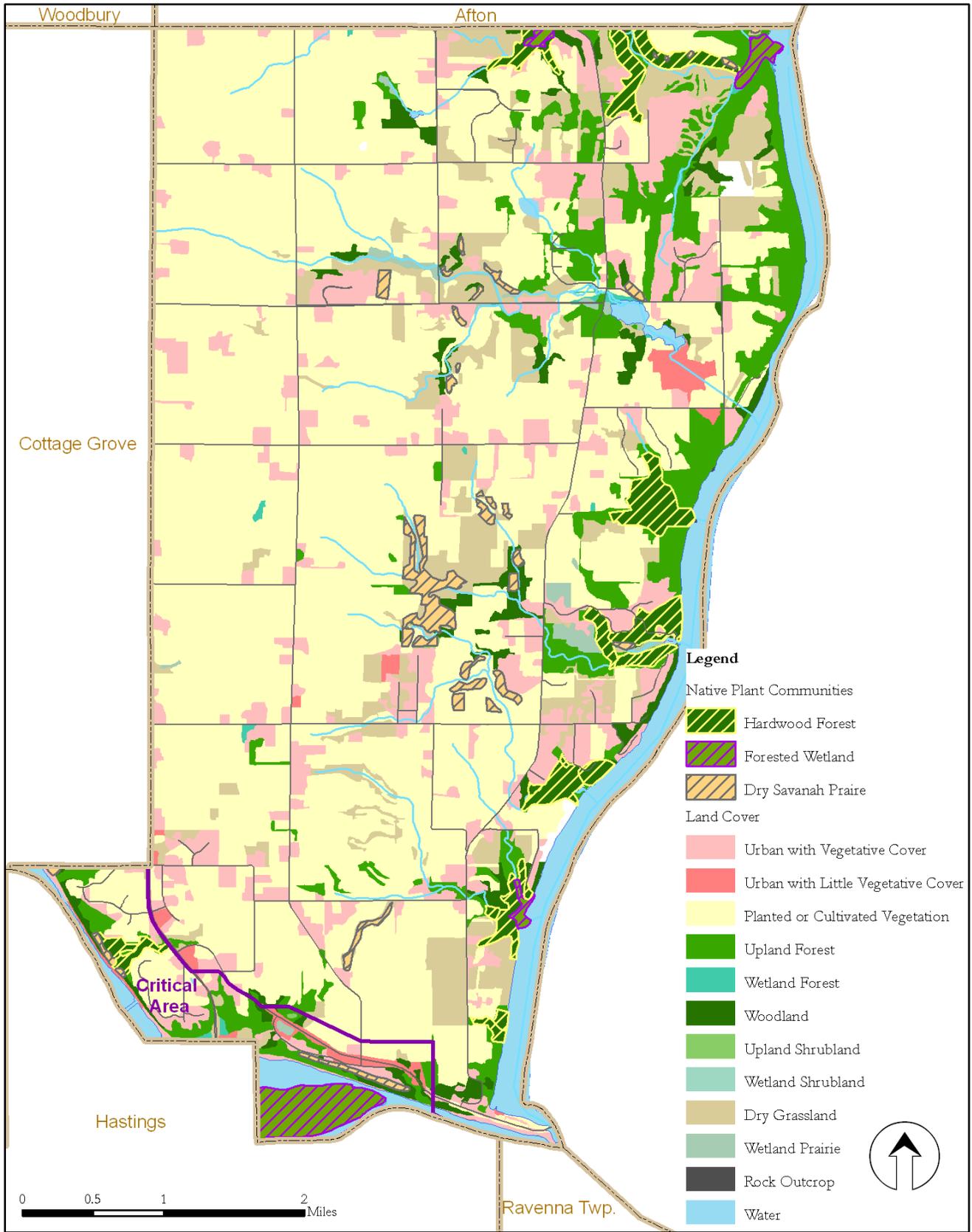
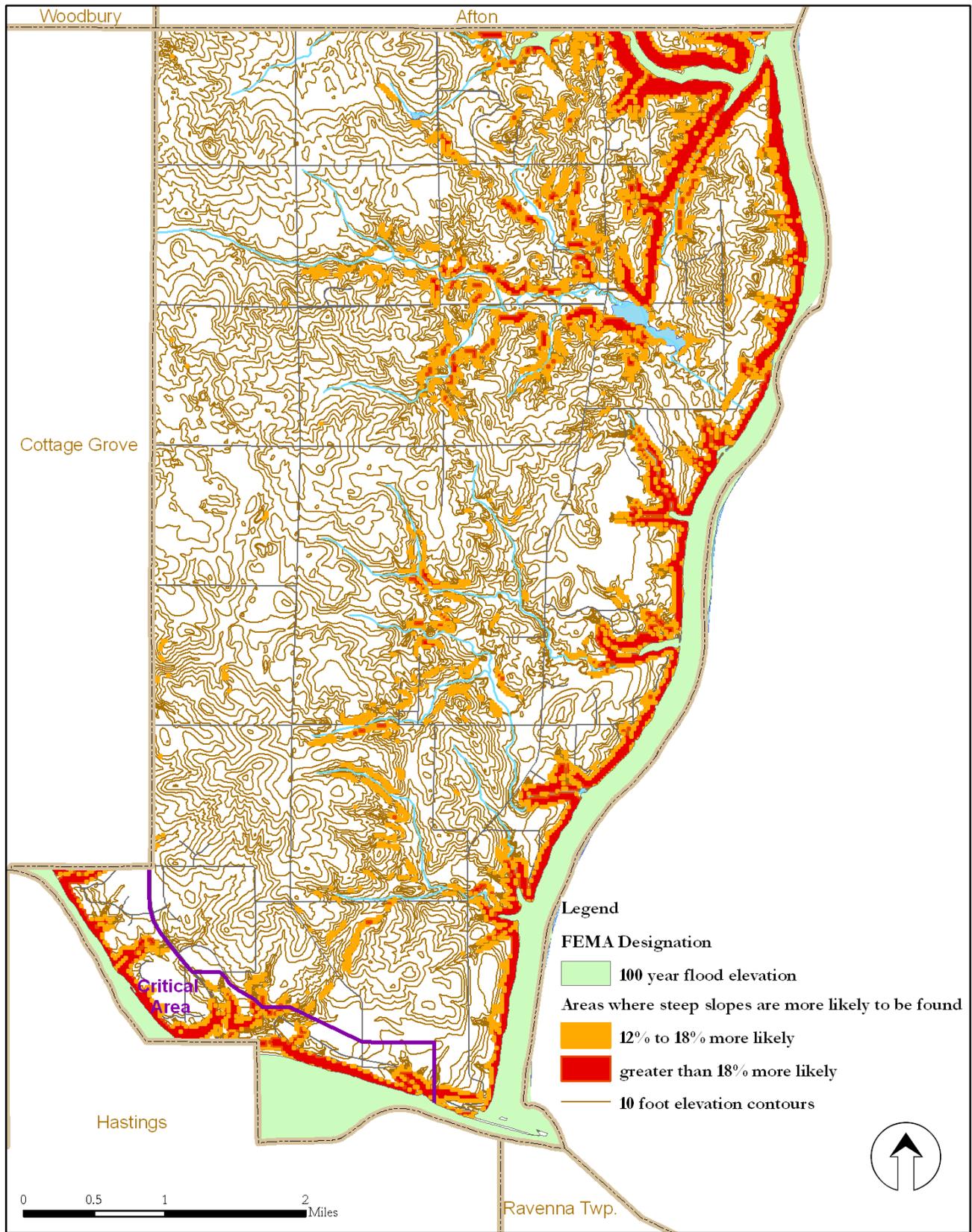


Figure 34: Topography and Floodplain



The following are implementation actions for the Township related to open space and recreational facilities:

1. Include facilities in the capital improvement program for parks and open space facilities. As the Town currently has no park or open space facilities within the MRCCA or plans for the future to have such facilities there is no capital improvement program for such facilities. All land is in private ownership.
2. Develop a system for reviewing, tracking, and monitoring open space required as part of the subdivision process.

Transportation & Public Utilities

Public transportation facilities are defined as all transportation facilities provided by federal, state, or local government and dedicated to public use, such as roadways, transit facilities, railroads, and bikeways. Public utilities are defined as electric power facilities, essential services, and transmissions services. Electric power facilities, essential services, and transmission services are further defined in the rules. An existing Township ordinance prohibits commercial solar electric systems. Accessory solar electric systems are permitted in all zoning districts as an accessory use to the principal use of the property. Any roof mounted systems are required to not extend more than two feet above the plane of the roof and any ground mount systems are limited to a maximum of fifteen (15) feet in height. These height limitations will limit any impact these systems may have on PCAs and PRCVs. The Township is not aware of any existing or planned electric power generating facilities within the MRCCA boundary.

The principal transportation and public facilities in Denmark's Critical Area include U.S. Highways 10 and 61 and two active railroads along the riverfront. There are no other public facilities proposed in the river corridor, including facilities that would involve river crossings.

U.S. Highways 10 and 61 are under the jurisdiction of the Minnesota Department of Transportation (Mn/DOT). Mn/DOT should recognize the goals of the Critical Areas Act, the MNRRA Comprehensive Management Plan, and this document as it plans for and/or improves these roadways. Figure 11 of the Comprehensive Plan show the Townships transportation system

The Township will refer to this Plan when reviewing any public facility work by other levels of government. In planning and designing construction or reconstruction of all public transportation facilities, the Township will consider the inclusion of scenic overlook, safe pedestrian crossings and facilities along the corridor, and the reasonable use of land between the river and the transportation facility. New or modified transportation facilities should complement the planned land and water uses and not stimulate incompatible development.

Transportation and utilities can have a negative impact on scenic views, habitat and soil erosion. Development of these facilities must be conducted in a manner that minimizes impacts. There is currently one large transmission line that extends across the critical area near the Prescott River Bridge. This transmission line does have an impact on views in the area but its existing is important to the local power grid. If any future utility crossings are proposed the Township will try to have new lines utilize existing crossings to minimize new visual impacts.

The following are Township implementation actions related to transportation and public utilities:

1. The Township does not create an annual capital improvement program and as a result the requirement to include transportation facilities in a capital improvement program is not applicable.
2. No commercial facilities are allowed within the MRCCA boundary per ordinance and as a result there is no need to incorporate specific design and placement conditions that would minimize impacts of solar and wind generation facilities and essential transmission services to PCAs and PRCVs.

Key Issues & Opportunities

Presently all land within the MRCCA boundary is privately owned except for the land utilized by the Point Douglas regional trail. This private ownership limits both issues and opportunities within the Township. However, the Township will continue to utilize its Ordinances and this plan for the management of the Critical Area and conformance to the purpose of MRCCA districts.

Critical Area Policies

General

These policies reflect Denmark’s specific commitments to the preservation and management of the Critical Area and conformance to the purpose of MRCCA districts.

Environmental

- ✓ Projects proposing stormwater facilities in Karst-sensitive areas as defined by the South Washington Watershed District (SWWD) must complete a Karst sensitivity analysis.
- ✓ Comply with all local, county, state, and federal regulations for activities occurring in naturally or environmentally sensitive areas.
- ✓ Provide uninterrupted vegetated shorelines by restricting or prohibiting development on shoreland and floodplain areas, wetlands, and other natural features that serve important environmental functions.
- ✓ Enforce development standards consistent with soil suitability, steep slopes, and ground water sensitivity.
- ✓ Maintain natural vegetation on steep slopes, bluffs and floodplains.
- ✓ Enforce development standards consistent with the Wetlands Conservation Act.
- ✓ Washington County administers Chapter 4, Subsurface Sewage Treatment Regulations of the Washington County Development Code on behalf of Denmark Township, which governs the permitting, design, installation, expansion, and maintenance of subsurface sewage treatment systems.
- ✓ Ensure implementation of Chapters 5, Lower St. Croix River Bluffland and Shoreland Management and Chapter 6 Shoreland Management Regulations and Chapter 9 Floodplain Management Regulations of the Washington County Development Code.
- ✓ Ensure implementation of Chapter 3 of the Township’s Development Code that reference stormwater management, including the MPCA’s publication “Protecting Water Quality in Urban Areas” to minimize rates and volumes of runoff and to improve water quality.
- ✓ Ensure implementation of sections of Chapter 3, Subdivision Regulations of the Township’s Development Code that incorporate recommended erosion and sedimentation control practices of the South Washington Watershed District (SWWD)

- ✓ Participate in implementation of the plans of the SWWD.
- ✓ Require the preservation and restoration of native vegetation in areas not used for agricultural purposes when possible to protect wildlife habitat, bluffs and floodplain forests.
- ✓ Encourage the restoration of degraded wetlands where practical.

Districts/Land Use

- ✓ Allow residential densities to be at levels consistent with the character of existing development.
- ✓ Encourage the clustering of residential uses, provided that the clusters meet open space and environmental preservation criteria, as well as other criteria outlined in the Township's zoning, subdivision and Critical Area ordinances.
- ✓ Enforce mandatory river corridor development standards for the St. Croix and Mississippi River corridors.
- ✓ Prevent commercial or industrial uses from negatively impacting residential uses or the river corridor areas.
- ✓ Prohibit mineral extraction uses in the Critical Area.
- ✓ Apply setback and height restrictions and encourage careful site design to maintain the natural view of the river corridors from existing open space and developed areas and from the river.
- ✓ Protect and preserve natural, historic and cultural resources where possible.
- ✓ Require site plan review and building design that minimizes site alteration and impact on sensitive natural resources and which includes and addresses adequate site buffering, screening, landscaping, circulation, parking, and safety.
- ✓ Encourage, where practical, the placing of utilities underground.
- ✓ Regulate commercial signage so that it does not detract from the quality of the Mississippi River Critical Area Rural Open Space District.
- ✓ Guide land use/development consistent with the management purpose of each district.

Primary Conservation Areas (PCAs)

- ✓ Protect PCAs and minimize impact to PCAs from public and private development and land use activities (landscape maintenance, river use, walking/hiking, etc.).
- ✓ Support mitigation of impacts to PCAs through, subdivisions/PUDs, variances, CUPs, and other permits.
- ✓ Make restoration of removed Native Plant Communities and natural vegetation in riparian areas a high priority during development.
- ✓ Support alternative design standards that protect the Townships identified PCAs, such as conservation design, transfer of development density, or other zoning and site design techniques that achieve better protections or restoration of primary conservation areas.
- ✓ Make permanent protection measures (such as public acquisitions, conservation easement, deed restrictions, etc.) that protect PCAs a high priority.

Public River Corridor Views (PRCVs)

- ✓ Protect and minimize impacts to PRCVs from public and private development activities.
- ✓ Protect and minimize impacts to PRCVs from public and private vegetation management activities.
- ✓ Protect PRCVs located within the community and identified by other communities (adjacent or across the river).

Restoration Priorities

- ✓ Protect native and existing vegetation during the development process, and require restoration if any is removed by development. Priorities for restoration shall include stabilization of erodible soils, riparian buffers and bluffs or steep slopes visible from the river.
- ✓ Seek opportunities to restore vegetation to protect and enhance PRCVs identified in this plan.
- ✓ Seek opportunities to restore vegetation in restoration priority areas identified in this plan through the CUP, variance, vegetation permit and subdivision/PUD processes.
- ✓ Sustain and enhance ecological functions (habitat value) during vegetation restorations.
- ✓ Evaluate proposed development sites for erosion prevention and bank and slope stabilization issues and require restoration as part of the development process.
- ✓ Encourage the restoration of degraded wetlands where practical.

Surface Water Uses

- ✓ Recognize the Mississippi River as a “working river” that is important to the economy of the Twin Cities metropolitan area and the Midwest.
- ✓ Minimize potential conflict of water surface uses authorized under Minn. Statute, Chapter 86B (MR 6110.3000 – 6110.3800).
- ✓ Seek to balance commercial and recreational surface water uses.

Water-Oriented Use

- ✓ No known water-oriented uses within Denmark Township.
- ✓ Minimize potential conflict of water-oriented uses within other land uses.

Open Space & Recreational Facilities

- ✓ Encourage creation, connection, and maintenance of open space, recreational facilities, including public access to the river.
- ✓ Identify and encourage connection of CA-SR district land to existing and planned parks and trails.
- ✓ Encourage that land dedication requirements be used to acquire land suitable for public river access.
- ✓ Require the dedication of park or open space land, or cash in lieu of land, in conjunction with the subdivision of all properties.
- ✓ Accept land gifts or require land dedications in areas with potential open space, natural feature or habitat qualities.
- ✓ Encourage the preservation or restoration of habitat and biological diversity.
- ✓ Identify potential trail corridors that provide connections to and views of the river.
- ✓ Encourage developers to provide trails and access to public trails.
- ✓ Protect stream banks from recreational impacts.

Transportation & Public Utilities

- ✓ Minimize impacts to PCAs and PRCVs from solar and wind generation facilities, public transportation facilities and public utilities.
- ✓ Encourage development designs that minimize the need for new roadways.
- ✓ Require utility companies and other agencies to minimize the number of river crossings by utilizing existing crossings and not to alter the character of the river or stimulate other

- incompatible development.
- ✓ Prohibit temporary casual mooring in the Critical Area, except in emergencies.

Implementation Actions

- ✓ Ordinance Updates (MRCCA Overlay & Zoning)
- ✓ Develop and adopt a MRCCA ordinance consistent with MRCCA rules.
- ✓ The Township does not at this time anticipate any implementation flexibility but at the point of ordinance creation/adoption if something arises the Township will coordinate with the MnDNR.
- ✓ Review zoning designations to verify that allowed uses are consistent with MRCCA.
- ✓ Adopt overlay district complaint with MRCCA goals and policies
- ✓ Amend zoning map to reflect new MRCCA districts

MRCCA Ordinance Administration

- ✓ Ensure site plan submittals and review procedures are consistent with MRCCA rules.
- ✓ Continue to coordinate with Washington County on their MRCCA vegetation and land alteration permit process.
- ✓ Incorporate MRCCA rules into review process for CUPs/PUDs/variances

Education & Outreach

- ✓ Utilize outreach and communication materials provided by Washington County, MnDNR, and National Park Service (NPS) to alert MRCCA property owners of new districts and zoning requirements
- ✓ Through partnerships Township residents will have available to them the location of PCAs, relevant ordinance requirements, and information as to how various requirements may apply to their property.
- ✓ Through partnerships Township residents will have access to information created by those partners that will help them determine appropriate mitigation procedures/methods for variances and CUPs.
- ✓ Township residents will be able to utilize outreach and web materials provided by Washington County, MnDNR, and National Park Service (NPS) (mapping applications, FAQs, handouts, or other materials) to help property owners identify when their property is in the MRCCA and what regulations apply.

Capital Improvements

- ✓ The Township does not have any planned Capital Improvements within the MRCCA district boundary.

Land Acquisition

- ✓ The Township is not currently nor does it anticipate actively seeking to acquire land.

Specific Planning Efforts, Projects & Initiatives

- ✓ The Township will participate with partner agencies in conducting master planning, key corridor projects/initiatives, feasibility studies and research as needed to address issues in the MRCCA. In doing so, the Township will coordinate with regional, state, and national park planning efforts within the MRCCA.

Critical Area Guidelines

The following are guidelines, rather than policies, that the Township will encourage homeowners and land developers to observe when conducting activities that disturb land within the Critical Area. Most of these guidelines are more or less incorporated into existing ordinances. However, the Planning Commission should refer to these guidelines when exercising review authority regarding permits and plans for site development.

Vegetation

- ✓ Native plant materials should be used in replanting.
- ✓ Grading should preserve root aeration zone and stability of existing trees. It should also provide adequate watering area equal to at least 50% of crown area. Fencing should be used to ensure this.
- ✓ Vegetation could be selectively pruned to improve river views and vistas, but not alter the character or massing of vegetation.
- ✓ Large areas of bluegrass should be avoided in order to maintain natural appearance, control pollution and conserve water.

Erosion and Sedimentation Control

- ✓ Development should be suited to site, soil conditions and existing drainage patterns.
- ✓ Minimize runoff rates and maximize absorption of water.
- ✓ Natural erosion control is preferable over structural.
- ✓ Erosion and sediment control should take place prior, during and after site construction.
- ✓ Preserve quality of surface water runoff and ground water recharge.
- ✓ Fill should be stabilized with plant material and not exceed 4:1 slope.
- ✓ Wetlands and other water bodies should not be used as sediment traps.
- ✓ Detention ponds for temporary water storage should be used when practical.
- ✓ Natural slopes and vegetation are preferable to retaining walls, but when necessary, walls should be no higher than 5 feet and be constructed of wood or natural stone. If walls are terraced, space between terraces should be at least 15 feet and heavily planted.

Chapter 11 - Resilience and Sustainability

It is the goal of the Township to provide opportunities for residential scale solar energy production. To achieve that goal, the Township will maintain the policy of large minimum lot sizes and yard setbacks to protect properties from potential shading of solar energy systems by neighboring structures or trees.

Solar Energy

A 1978 amendment to the Metropolitan Land Planning Act requires that local comprehensive plans address the protection of solar access for solar energy systems. A strategy for the Township to address the protection of solar access for solar energy systems is for new subdivisions, where appropriate, be designed to accommodate use of passive and active solar energy systems with special attention given to street, lot and building orientation. The large minimum lot sizes and yard setbacks required by the Denmark Township Development Code is the implementation action which provides protection from potential shading of solar energy systems by neighboring structures or trees.

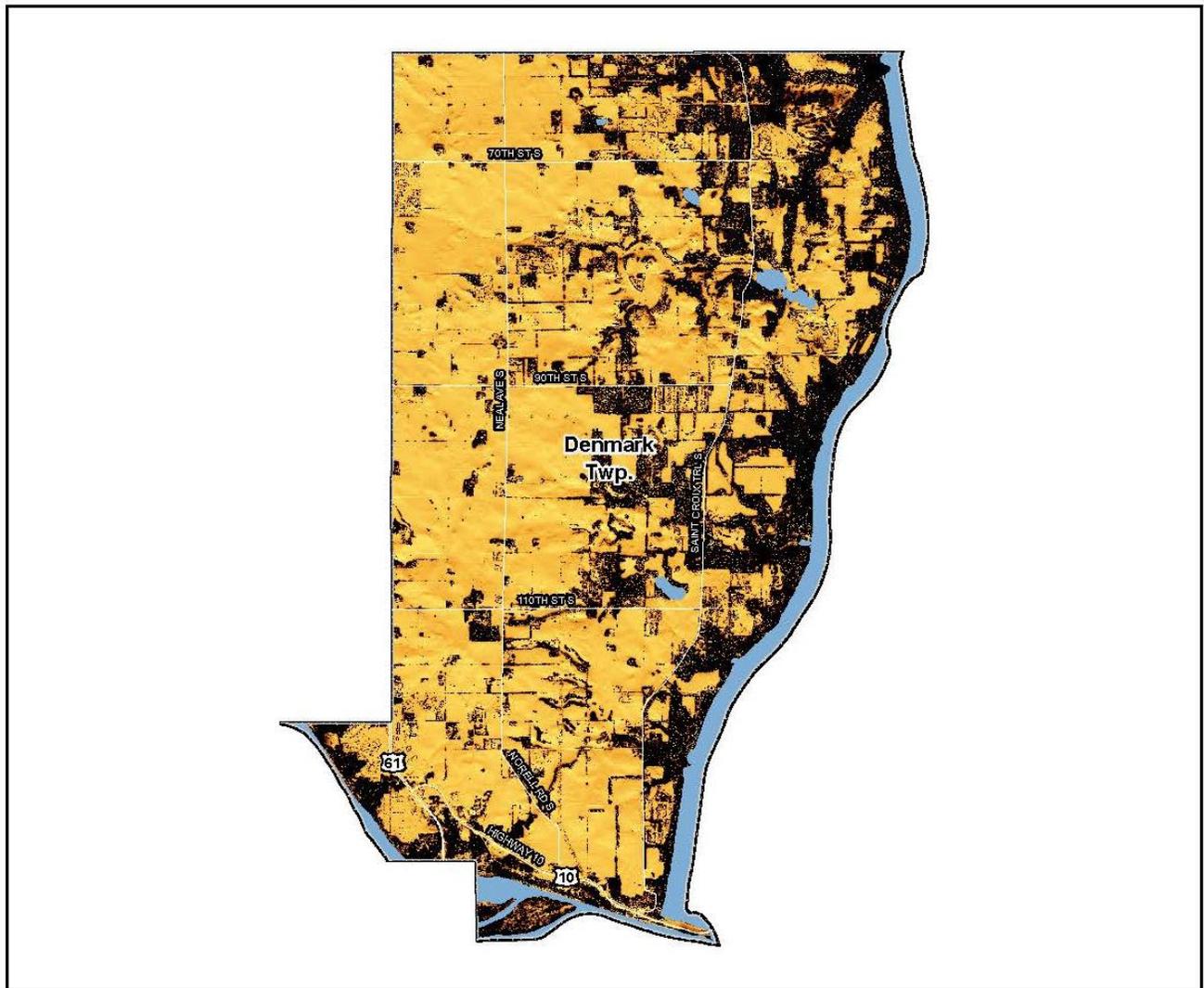
The Township currently has a large solar facility, permitted by the Public Utilities Commission (PUC), which is a 41.6 acre site and generates 5 megawatts (MW) in annual power. In addition to this large facility, the Township currently has multiple residential solar energy production facilities which are either ground mounted or roof mounted systems. The Township does not currently track those systems.

The Township adopted a solar electric system ordinance on February 6th, 2017. The Township supports and allows residential solar facilities but does not permit commercial solar facilities.

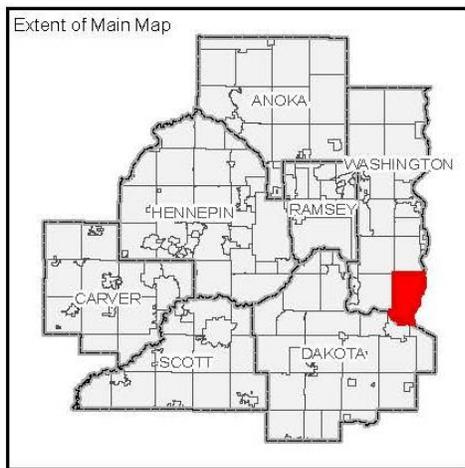
Table 24: Metropolitan Council Established Solar Potential

Gross Potential (Mwh/yr)	Rooftop Potential (Mwh/yr)	Gross Generation Potential (Mwh/yr)^2	Rooftop Generation Potential (Mwh/yr)^2
59,360,353	220,310	5,936,035	22,031

Figure 35: Gross Solar Potential



12/8/2016



**Gross Solar Potential
(Watt-hours per Year)**

High : 1278350
Low : 900001

- Solar Potential under 900,000 watt-hours per year
- County Boundaries
- City and Township Boundaries
- Wetlands and Open Water Features

Source: University of Minnesota U-Spatial Statewide Solar Raster.

Chapter 12 – Economic Competitiveness

Minnesota Statutes 473.859 Subd. 1 states that local comprehensive plans shall contain objectives, policies, standards, and programs to guide redevelopment and preservation for all lands and waters within the jurisdiction of the local governmental unit.

Chapter 2 describes in detail the goals and policies of the Township as it relates to development within the Community. Chapter 3 provides guidance on topics related to land use. This comprehensive plan together with the Township zoning ordinance provide guidance for both redevelopment and preservation for all lands and waters within the Townships jurisdiction.

Chapter 13 – Implementation Program

The implementation of the Comprehensive and Critical Area Plans does not end with adoption. The Township’s official controls, such as the zoning ordinance and subdivision regulations, will ensure day to day monitoring and enforcement of the Plan. The regulatory provisions of these ordinances, as revised, will provide a means of managing development in the Township in a manner consistent with the Comprehensive Plan and Critical Area Plan.

Official Controls

As part of the planning process, the Township will evaluate its land use controls and consider amendments to existing ordinances which eliminate inconsistencies with the Comprehensive Plan, enhance performance standards, protect public and private investments, conform to mandatory State and Federal regulations and make it an understandable document. The principal official controls used to implement the Comprehensive Plan include the following:

- ✓ Zoning Ordinance (Chapter 2 of the Denmark Township Development Code)
- ✓ Subdivision Ordinance (Chapter 3 of the Denmark Township Development Code)
- ✓ Mississippi River Corridor Ordinance
- ✓ Shoreland Management Regulations (Chapter 6 of Denmark Township Development Code*)
- ✓ Floodplain Regulations (Chapter 9 of Denmark Township Development Code*)
- ✓ Lower St. Croix Bluffland and Shoreland Management Regulations (Chapter 5 of Denmark Township Development Code*)
- ✓ Rules and Regulations of the SWWD, adopted by reference (Chapter 2, Part 3, Section 7 of the Denmark Township Development Code)
- ✓ Individual Sewage Treatment System Regulations (Chapter 4 of Denmark Township Development Code*)
- ✓ Mining Regulations (Chapter 7 of Denmark Township Development Code*)

For these chapters, the Denmark Township Development Code adopted Washington County regulations by reference.

The 2030 Comprehensive Plan update identified a number of specific changes to the ordinances that need to be considered by the Township. Some of these changes have been completed and others the Township is still working towards completion. Provided below is a list of those changes and their completion status.

Table 25: Implementation Plan from 2030 Comprehensive Plan		
Identified Change	Complete	Not Complete
Implementation of a Mississippi River Critical Area Overlay Ordinance to ensure implementation of Tier I and Tier II elements of the Critical Area Plan, including DNR notification requirements.		No longer relevant with updated MRCCA. Will not be completed.
Amend the zoning map to be consistent with the 2030 Planned Land Use map.	Complete	
A review of the commercial district provisions to promote development, ensure appropriate use and regulation, and prevent land use or environmental incompatibility. This will	Complete	

include a review of signage regulation.		
A review of ordinances to implement the surface water management plan.	Complete	
Modification of the sewage treatment system regulations, after Washington County's adoption of its new ordinance.	Complete – adopted by reference. Washington County Administrators.	
Establish criteria for evaluating Washington County Land and Water Legacy program applications		No longer relevant. Will not be completed.
Development of a plan for the O'Connor Family-Denmark Township Nature Preserve consistent with the donor's vision for the property.	Complete	

Denmark Township will continue its implementation efforts following the 2040 Comprehensive Plan. This will include the following as required by Minnesota Rules Chapter 6106.

Table 26: 2040 Comprehensive Plan Implementation	
Identified Change	Anticipated Completion Year
Update existing MRCCA ordinance compliant with the goals and policies of the MRCCA plan, and with Minnesota Rules part 6106.0070, Subp. 5 – Content of Ordinances.	2019 -2020
Maintain the Zoning Ordinance standards to be consistent with the MRCCA rules and regulations.	Ongoing

Capital Improvements

The Township does not have a formal capital improvement program, as capital expenditures are infrequent. The Township budgets for any capital improvements on an ongoing basis. The Township will annually review capital expenditures that may arise over a five-year period as a result of implementing the comprehensive plan. This may include public and private investments in infrastructure, park expenditures, infrastructure repair and replacement, building maintenance and repair, and other planned capital expenditures. Like the Comprehensive Plan, the capital improvements planning process is ongoing and subject to modification, as appropriate.

The preservation of natural resources in the Mississippi River Critical Area will likely occur through processes that do not depend on capital expenditures by the Township alone. Preservation will result from the ongoing implementation of this and other plans. This includes ordinances that protect natural

resources, land dedications through open space development; and the acquisition of trails, corridors, or sensitive areas as a result of the planning and implementation of County and State agencies.

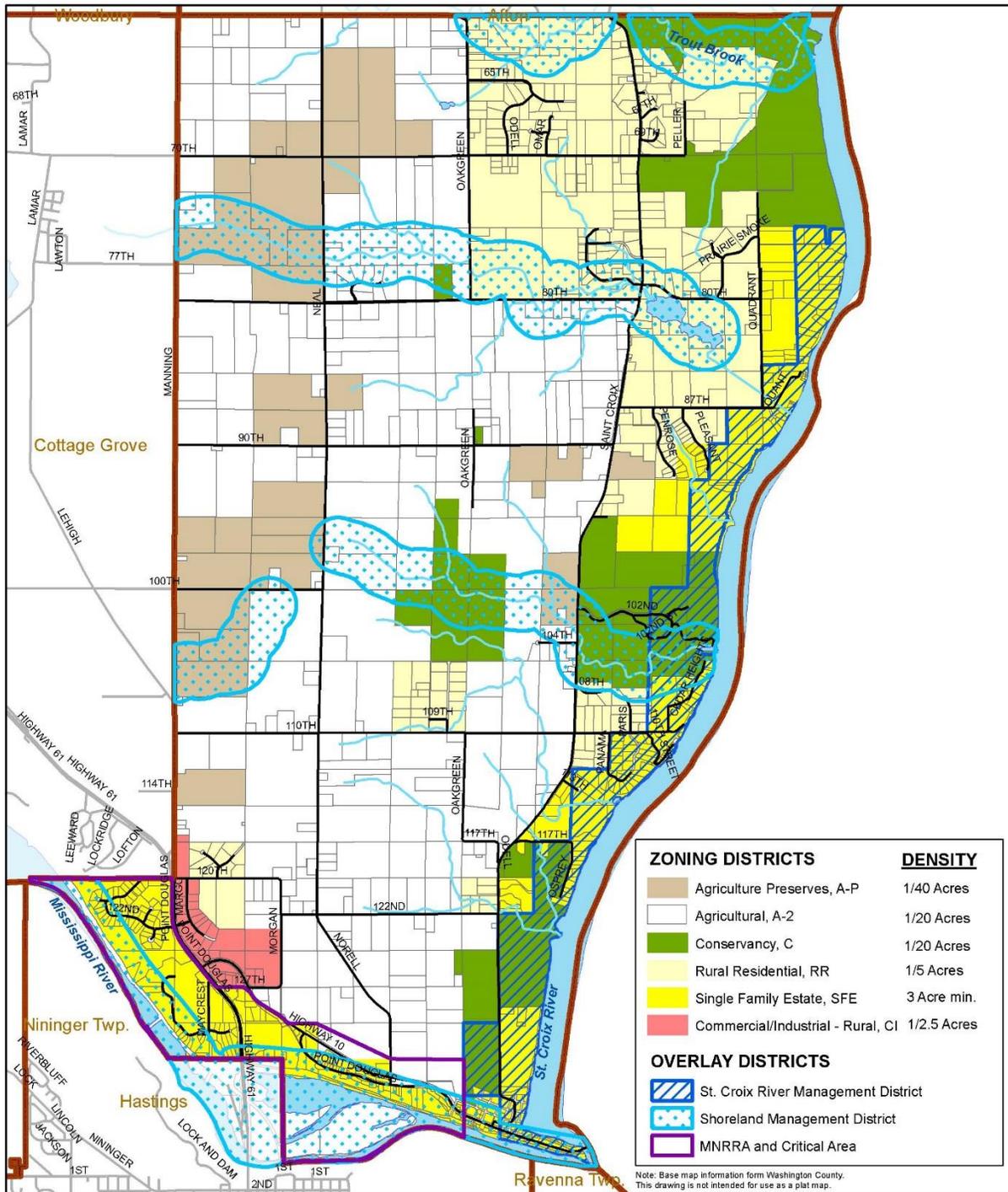
Plan Amendment Process

The Comprehensive and Critical Area Plans are intended to be general and flexible; however, formal amendments to the Plan will be required when land use elements or growth policies are revised. Periodically, the Township should undertake a formal review of the plan to determine if amendments are needed to address changing factors or events in the community. While a plan amendment can be initiated at any time, the Township should carefully consider the implications of the proposed changes before their adoption.

When considering amendments to this plan, the Township will use the following procedure:

- ✓ Landowners, land developers, the Planning Commission or the Town Board may initiate amendments.
- ✓ Upon a request for an amendment the Town Board will review the amendment request and direct the staff or the planning consultant to prepare a thorough analysis of the proposed amendment.
- ✓ Staff or a planning consultant will present to the Planning Commission a report analyzing the proposed changes, including their findings and recommendations regarding the proposed plan amendment. The Planning Commission will make a recommendation to the Board as to whether or not the Town Board should proceed with the plan amendment.
- ✓ The Town Board will decide whether or not to proceed with the proposed amendment. If a decision is made to proceed, a formal public hearing will be held before the Planning Commission on the proposed amendment.
- ✓ Following the public hearing the Planning Commission will make a recommendation to the Town Board.
- ✓ The Town Board will receive the recommendation from the Planning Commission and make a final decision on whether to adopt the amendment.
- ✓ All amendments to the plan must be submitted to the Metropolitan Council (and DNR for Critical Area) for review prior to implementation.

Figure 36: Zoning Map



Denmark Township Zoning Map

Adopted October 3, 2011





wsb 

FOCUS ENGINEERING, inc.

