

# *Denmark Township 2030 Comprehensive Plan and Mississippi River Critical Area Plan*

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## *Denmark Township, Minnesota*

TKDA Project No. 13964.000

# **TKDA**

ENGINEERS • ARCHITECTS • PLANNERS

# Acknowledgements

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*Thanks to the many residents of Denmark who participated in public meetings, completed the community survey, and who otherwise contribute to the quality of life in the community.*

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*Denmark Township  
2030 Comprehensive  
Plan*

# *Introduction*

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## *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 1999. 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 1999. The update process began with a community survey mailed to all households in the Township, and a separate survey designed for business properties. A copy of the survey and results is included as **Appendix A**. While a diversity of opinions came forward through the survey, Township residents are in favor of Denmark Township 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. Information from the survey has guided the update of the Comprehensive Plan to remain on the planning trajectory established by past planning efforts.

Over a period of six months, a task force made up of Township residents considered the survey results, new data, updated regional and county policies, and local priorities to update the Plan. The task force submitted the draft Plan to the Planning Commission for a recommendation to the Town Board.

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*

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## *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. 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 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.



## **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, manufactured homes, 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, light manufacturing, storage, general services, a restaurant/lounge, 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 Land Use (2005)**

<b>Land Use</b>	<b>Acres</b>	<b>Percent</b>
Agricultural	11,120	61.3
Parks and Open Spaces, and Golf Courses	2,114	11.6
Single Family Residential (includes Farmstead and Seasonal properties)	1,115	6.1
Undeveloped Land	3,582	19.7
Rural Commercial/Industrial, and Extractive	196	1.1
Institutional	9	0.0
Major Vehicular Right of Way	34	0.2
<b>Total Land Area</b>	<b>18,170</b>	<b>100%</b>
Open Water	1,116	
<b>Total Area, Land and Water</b>	<b>19,286</b>	

Source: Metropolitan Council, TKDA





Figure 1. Aerial Photography (2005)



*Denmark Township 2030 Comprehensive Plan*

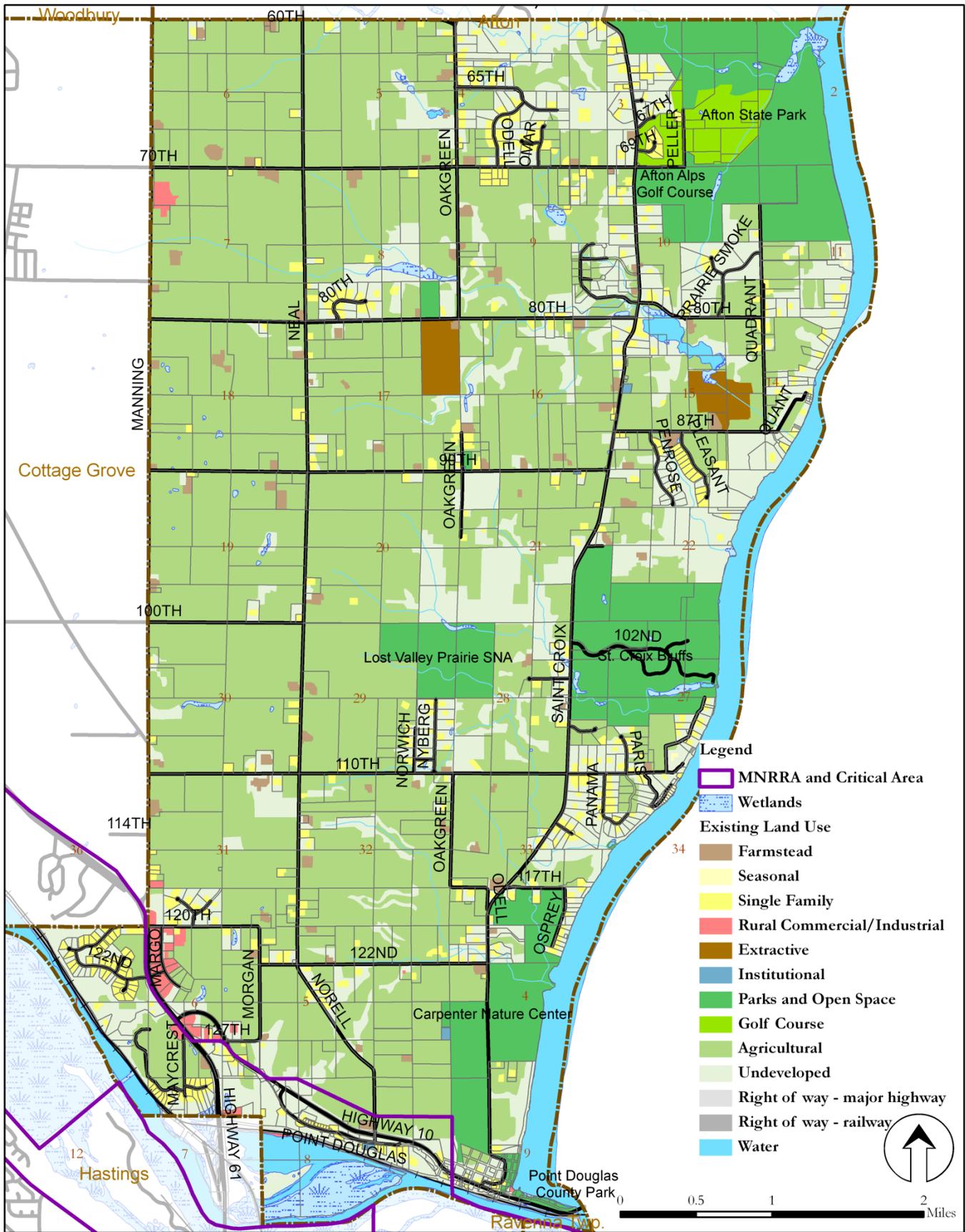


Figure 2. Existing Land Use (2005)

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Source: Metropolitan Council

*Denmark Township 2030 Comprehensive Plan*

## Population and Household Growth

As **Table 2** indicates, 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 49 new households in the 1980s, 114 new households in the 1990s, and 111 households between 2000 and 2006.

**Table 2:  
Population and Household Growth, 1970 - 2006**

<b>Population</b>	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>	<b>2006 estimate</b>
<i>Denmark Township</i>	923	1,140	1,172	1,348	1,665
<i>% increase</i>		24%	3%	15%	24%
<i>Washington County</i>	83,003	113,571	145,880	201,130	228,103
<i>% increase</i>		37%	28%	38%	13%
<b>Households</b>	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>	<b>2006 estimate</b>
<i>Denmark Township</i>	231	318	367	481	592
<i>% increase</i>		38%	15%	31%	23%
<i>Washington County</i>	21,314	35,001	49,246	71,462	83,762
<i>% increase</i>		64%	41%	45%	17%

Source: U.S. Census and Metropolitan Council, Denmark Township 1999 Comprehensive Plan

## 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 3** 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. **Table 4** provides a breakdown of the assessed value of housing

in Denmark, compared with Washington County as a whole, from 2000 to today. 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 3:  
Housing By Unit Type and Housing Tenure, 2000 Census**

<b>Denmark Township</b>	<b>Single Family</b>	<b>2 Unit</b>	<b>3+ unit</b>	<b>Manufactured Housing</b>	<b>Other</b>	<b>Total</b>	<b>Percent Owner Occupied</b>
<i>1990</i>	350	4	2	4	4	<b>364</b>	91%
<i>2000</i>	487	0	5	4	2	<b>498</b>	95%
<i>Percent Increase</i>						<b>37%</b>	

<b>Washington County</b>	<b>Single Family</b>	<b>2 Unit</b>	<b>3+ unit</b>	<b>Manufactured Housing</b>	<b>Other</b>	<b>Total</b>	<b>Percent Owner Occupied</b>
<i>1990</i>	37,445	974	5,491	1,414	3,922	49,246	84%
<i>2000</i>	62,939	814	8,386	1,472	24	73,635	86%
<i>Percent Increase</i>						<b>50%</b>	

*Source: 2000 U.S. Census, Denmark Township 1999 Comprehensive Plan*

**Table 4:  
Housing Assessed Value Trends, 2000 to 2007**

<b>Average Residential Value</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
<i>Denmark Township</i>	\$214,300	\$257,700	\$295,300	\$309,900	\$397,400	\$448,300	\$497,100	\$500,600
<i>Washington County</i>	\$164,100	\$187,400	\$211,800	\$234,800	\$271,800	\$284,200	\$304,200	\$309,600
<i>Township/County Value Index</i>	1.3	1.4	1.4	1.3	1.5	1.6	1.6	1.6

<b>Residential Growth Rate</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
<i>Denmark Township</i>	--	--	16.0%	8.3%	33.6%	3.4%	12.2%	1.0%
<i>Washington County</i>	--	--	12.4%	11.9%	12.5%	8.2%	7.6%	1.4%

*Source: 2007 Assessment Report, Washington County*

## ***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, mobile home 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 5** indicates employment growth and the balance of jobs and housing in the Township since 1970. Employment grew considerably between 1980 and 1990 when nearly 200 new jobs were created in the Township. Between 1990 and 2000, 53 jobs were added in the Township. Growth in employment kept pace with household growth between 1990 and 2000, 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 5:  
Historical Employment**

<b>Employment</b>	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>
<i>Denmark Township</i>	10	50	247	300
<i>Washington County</i>	14,460	27,884	39,164	67,649

<b>Jobs Per Household</b>	<b>1970</b>	<b>1980</b>	<b>1990</b>	<b>2000</b>
<i>Denmark Township</i>	0.04	0.16	0.67	0.62
<i>Washington County</i>	0.68	0.80	0.80	0.95
<i>Metropolitan Area</i>	1.36	1.44	1.45	1.57

*Source: 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.

# *Community Goals and Policies*

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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), transfer of development rights (TDR), 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**

- ✓ Establish criteria for evaluating Washington County Land and Water Legacy program applications.
- ✓ 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**

- ✓ Consider identification of areas in the community where mineral extraction is most appropriate, and which minimize conflicts with commercial agriculture, residential areas, environmentally sensitive areas, and areas with aesthetic value.
- ✓ Limit mineral extraction to designated areas that prevent or minimize environmental and aesthetic impacts on adjacent properties 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 housing choices 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.
- ✓ Accommodate the expansion of 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.
- ✓ Coordinate transportation planning and system improvements with neighboring jurisdictions, Washington County, the Metropolitan Council, and the Minnesota Department of Transportation.
- ✓ 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 Lower St. Croix Watershed Management Organization (WMO).
- ✓ Cooperate with the Lower St. Croix WMO 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.

# ***Growth Management Plan***

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## ***Metropolitan Council Regional Development Framework***

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 Framework*, a growth strategy for the region through 2030 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 2030. 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.

## Regional Development Framework Planning Designation



### 2030 Framework Planning Areas

- |  |  |  |
|--|--|--|
| <span style="display: inline-block; width: 15px; height: 15px; background-color: yellow; border: 1px solid black; margin-right: 5px;"></span> Developed Area   | <span style="display: inline-block; width: 15px; height: 15px; background-color: orange; border: 1px solid black; margin-right: 5px;"></span> Rural Center       | <span style="display: inline-block; width: 15px; height: 15px; background-color: #90EE90; border: 1px solid black; margin-right: 5px;"></span> Diversified Rural |
| <span style="display: inline-block; width: 15px; height: 15px; background-color: #D2B48C; border: 1px solid black; margin-right: 5px;"></span> Developing Area | <span style="display: inline-block; width: 15px; height: 15px; background-color: #C8E6C9; border: 1px solid black; margin-right: 5px;"></span> Rural Residential | <span style="display: inline-block; width: 15px; height: 15px; background-color: #66BB6A; border: 1px solid black; margin-right: 5px;"></span> Agricultural Area |

0 0.5 1 2  
Miles

Map Date: May 2008  
Source: Metropolitan Council

## ***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. Between the 1990 and 2000 Censuses, the community's population increased by 176 persons, or fifteen percent. The Metropolitan Council forecasts that Denmark's population will experience a higher growth rate - thirty percent between 2000 and 2010 - than in the previous ten years. In spring of 2006 the Council estimated that Denmark's population was 1,665 persons, for an average of approximately 50 additional people per year since 2000. Five hundred ninety-two households were estimated for 2006. Even with a recent slow-down in the housing market, it appears that Denmark Township is on track to meet the 2010 forecasts. The trends show that Denmark is experiencing a faster pace of growth than that of the preceding ten years.

**Table 6:  
Denmark Township Forecasts**

<b>Population</b>	<b>2000*</b>	<b>2010</b>	<b>2020</b>	<b>2030</b>
	1,348	1,750	2,150	2,550
<i>% increase</i>		30%	23%	19%

<b>Households</b>	<b>2000*</b>	<b>2010</b>	<b>2020</b>	<b>2030</b>
	481	650	820	990
<i>% increase</i>		35%	26%	21%

<b>Employment</b>	<b>2000*</b>	<b>2010</b>	<b>2020</b>	<b>2030</b>
	300	360	400	440
<i>% increase</i>		20%	11%	10%

*\*2000 Census  
Source: Metropolitan Council*

## ***Land Use Plan***

The Township intends to build upon the existing rural character of the community in planning for its future. The 2030 Planned Land Use map identifies the location of specific land uses that will guide growth in the Township through the year 2030. 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.

## **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.



## **Rural Residential Designation**

The Rural Residential Area provides opportunities for rural low-density housing in areas less suitable for supporting long-term agriculture. The maximum residential density in this area is one home per five acres. This 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 2030 Planned Land Use map reflects where Rural Residential zoning is already in place. The Rural Residential area is expanded by approximately 64 acres located immediately north of the Rural Commercial/ Industrial area and south of 120th Street. This area was reguided from Agriculture to Rural Residential by the 2030 Comprehensive Plan because the area is largely surrounded by Rural Residential and Commercial/Industrial land uses. The area is neighbored by residential development that is Rural Residential development to the north and east, and is adjacent to Rural Commercial/Industrial on the west and south. 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.

### **Single-Family Estate Designation**

The Single-Family Estate designation lies exclusively along the St. Croix and Mississippi River corridors. 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.



### **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 2030 Comprehensive Plan, the Township is expanding the area guided for Rural Commercial/Industrial use. Approximately 54.3 acres of land to the east are added to the area. The new commercial/industrial area is bound by the existing land zoned Commercial/Industrial to the west, by 127th Street to the south, and Morgan Avenue to the east. The northern boundary extends due east from the pre-existing commercial/industrial area, approximately 510 feet south of 122nd Street.

The guiding of this area to Commercial/Industrial supports the Goals and Policies of the Comprehensive Plan, to: Ensure compatibility between commercial and non-commercial land

uses; Increase local employment opportunities; Increase the goods and services available locally to Township residents; and Create a more diverse tax base to avoid an excessive tax burden on residential properties.

Adjacent land uses are largely agriculture and commercial-industrial. Any land use conflicts are expected to be minimal at the interface of commercial/industrial land and agricultural land. Screening and landscaping measures would help to buffer the residential property to the south, located across 127th Street.

The Commercial/Industrial-Rural zoning district (CI) corresponds to the guided land use. The 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. With final adoption of the 2030 Comprehensive Plan, the Township will initiate a zoning map amendment for the area.

### **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**

The Township has much less development than the maximum residential densities allowed by zoning. Denmark Township is not facing “build-out” between now and 2030. Requests for development are evaluated in detail as proposals are brought forward. The number of housing units 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 592 households in Denmark Township in 2006. The 990 forecasted households in the year 2030 can be accommodated under the Township’s existing zoning designations.

**Table 7:  
Residential Development Potential**

<b>Land Use Designation</b>	<b>Gross Acres</b>	<b>Possible Housing Units</b>
<b>Agriculture (1 per 20 acres)</b>	10,650	532
<b>Rural Residential (1 per 5 acres)</b>	3,248	649
<b>Single Family Estate (1 per 3 acres)</b>	1,495	498
	<b>TOTAL</b>	<b>1,679</b>

Source: TKDA

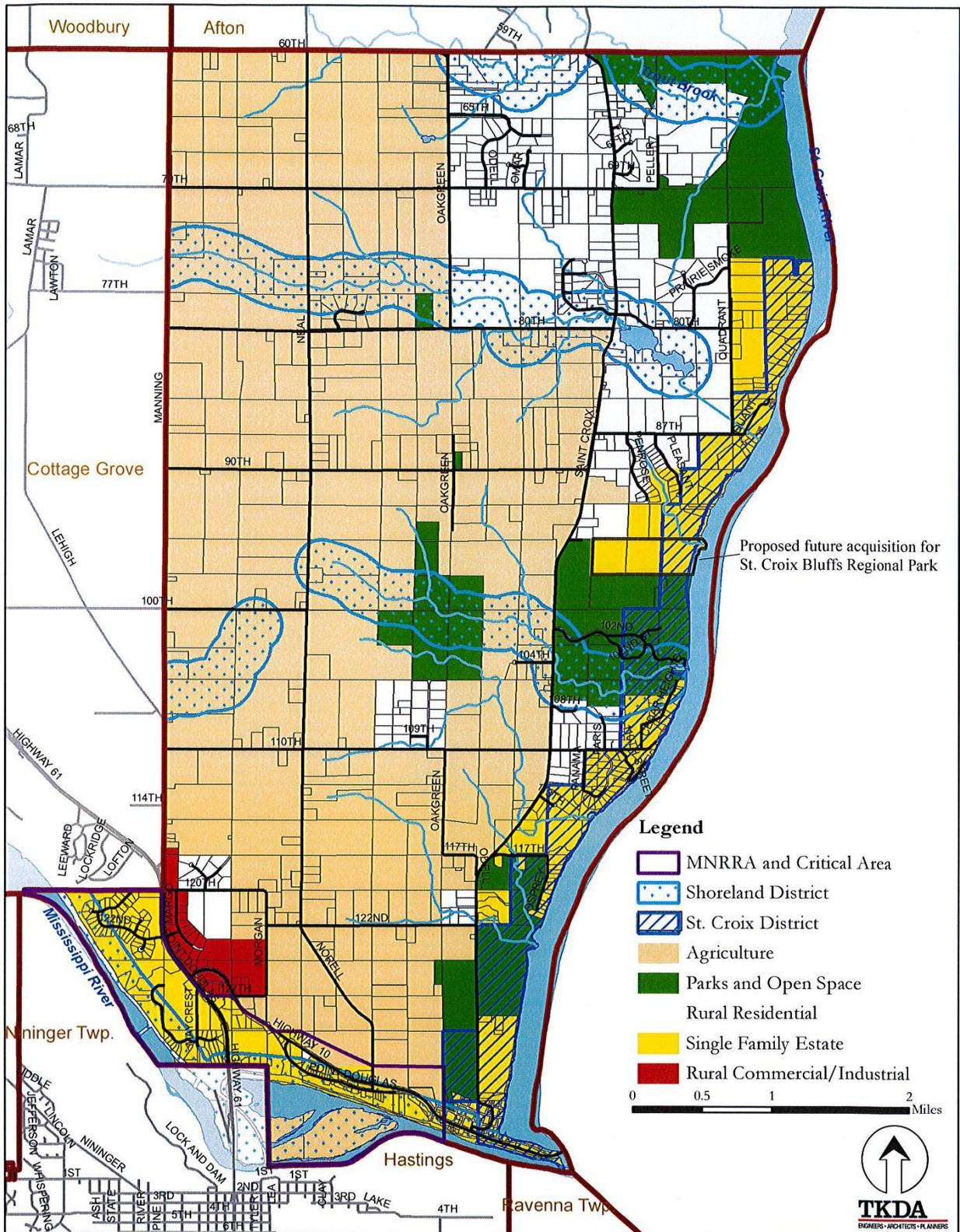
## **Rural Commercial/Industrial Development Potential**

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 2030 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 affect 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 2030. 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.



# 2030 Planned Land Use

Adopted November 1, 2010

Denmark Township 2030 Comprehensive Plan

## 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). An estimated 13,438 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 recently passed Washington County Land and Water Legacy program will result in more conserved lands within Denmark Township. Applications for the program received in 2007 included 400 acres within Denmark Township.

**Table 8:  
Conserved Lands**

Lands	Acres	Percent of Total Land Area*
<b>Afton State Park</b>	871	4.8
<b>Lost Valley SNA</b>	200	1.1
<b>St. Croix Bluffs Park</b>	579	3.2
<b>Point Douglas Park</b>	17	0.1
<b>O’Connor Family-Twp Nature Reserve</b>	20	0.1
<b>Town Hall and Park</b>	6	0.0
<b>Cemeteries</b>	4	0.0
<b>Nonprofit owned</b>	421	2.3
<b>SUBTOTAL: Public and Nonprofit owned land</b>	<b>2,118</b>	<b>11.6</b>
<b>Conservation easement (OSD)</b>	235	1.3
<b>Conservation easement</b>	69	0.4
<b>Scenic easement</b>	27	0.1
<b>Ag Preserves</b>	2,105	11.6
<b>Green Acres</b>	8,884	48.9
<b>TOTAL</b>	<b>13,438</b>	<b>74.0</b>

*\*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.

## 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. 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 Aggregate Resources Map shows sand, gravel and limestone and dolomite resources for the time periods of 1997, 2020, and 2040. The data was generated by the Metropolitan Council. The three time periods reflect depletion by mining and areas that were occupied by urban and rural development in 1997, or are forecasted for development by 2020 and 2040. The data excludes aggregate deposits that coincide with environmental constraints such as wetlands, streams, scientific and natural resources areas, open water bodies, and roadways.

## **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. The large minimum lot sizes and yard setbacks required by the Denmark Township Development Code provide protection from potential shading of solar energy systems by neighboring structures or trees. New subdivisions, where appropriate, should be designed to accommodate use of passive and active solar energy systems with special attention given to street, lot and building orientation.

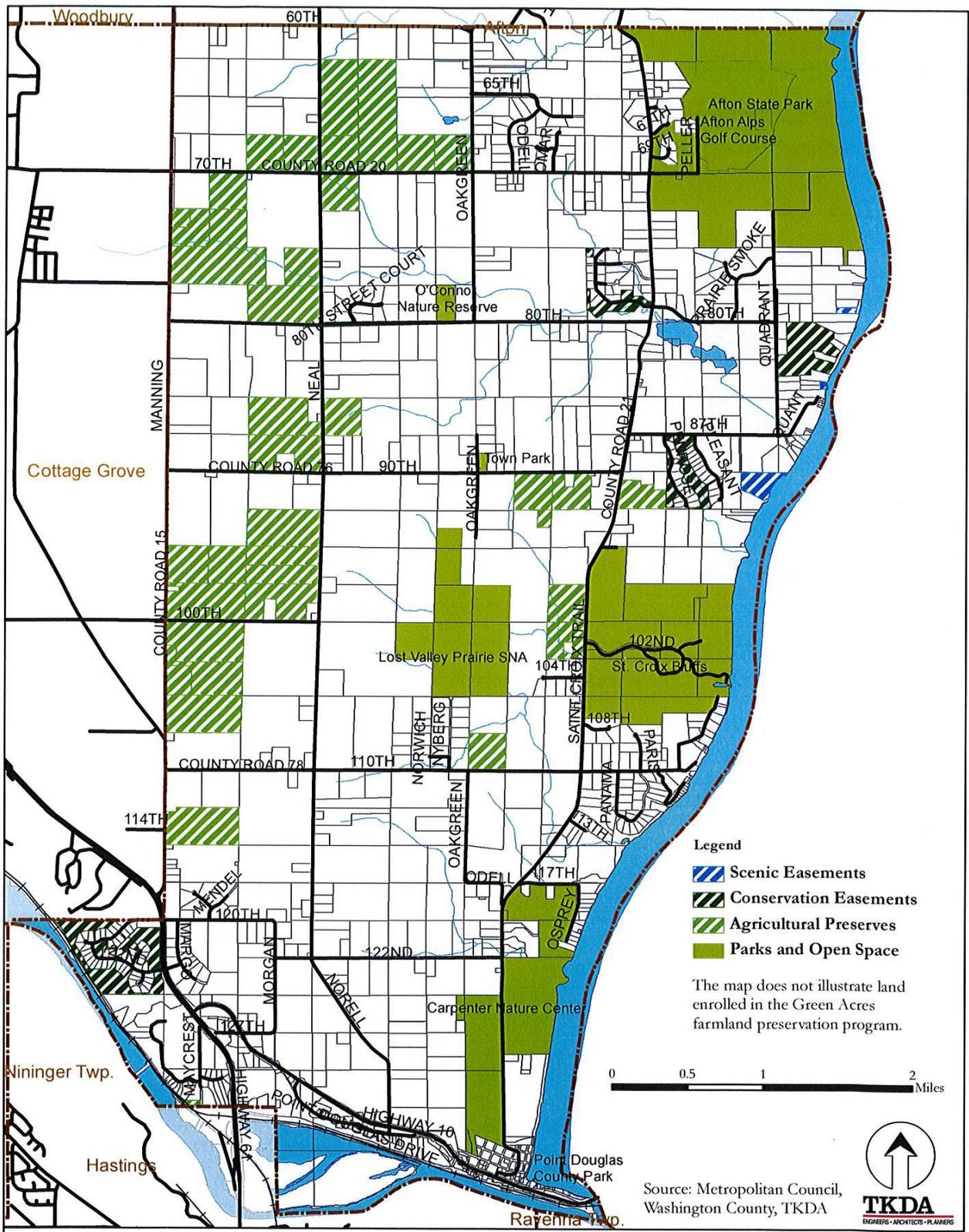


Figure 4. Conserved Lands

Denmark Township 2030 Comprehensive Plan

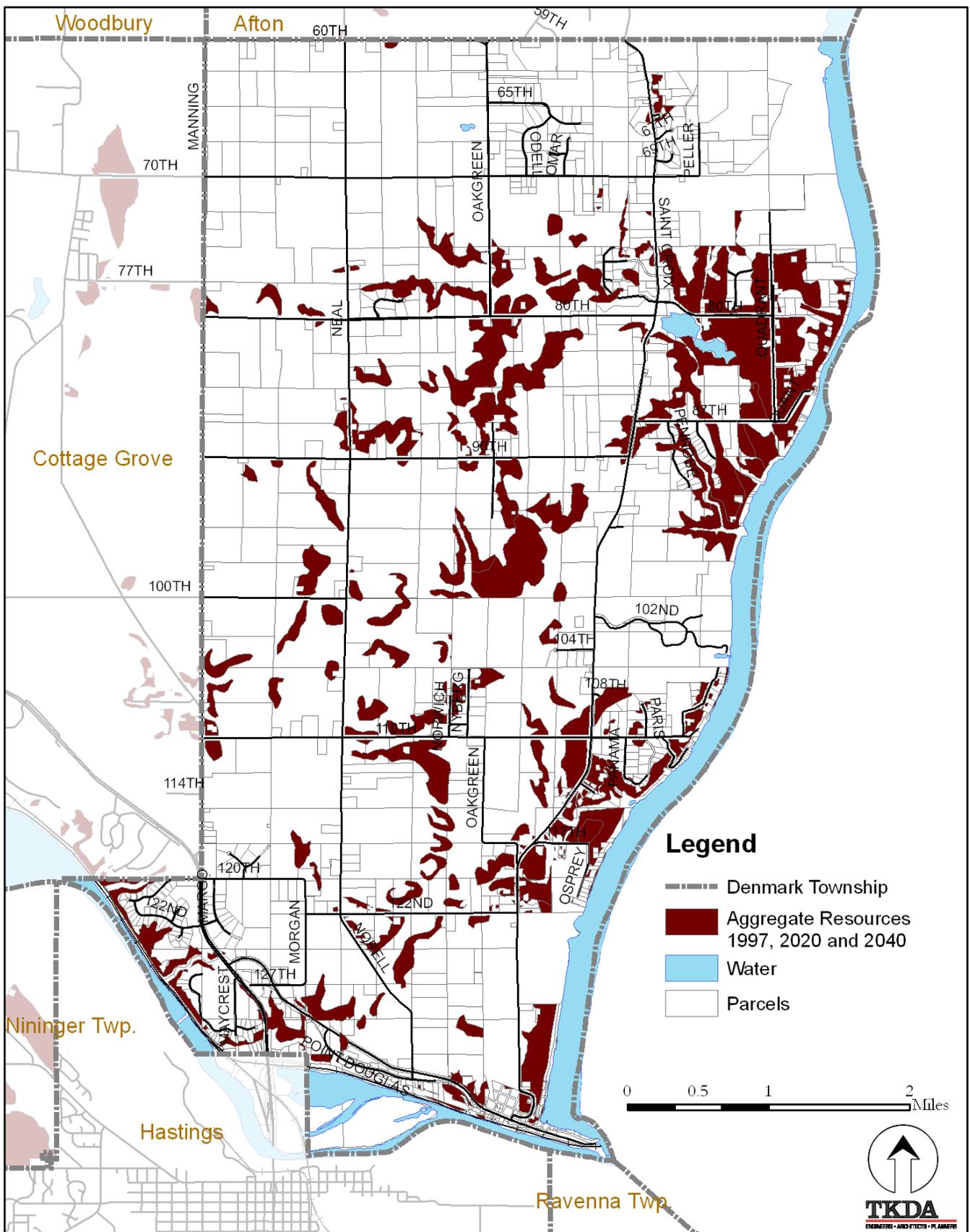


Figure 5. Aggregate Resources

Source: Metropolitan Council, TKDA

*Denmark Township 2030 Comprehensive Plan*

# *Housing*

## **Housing Character**

Housing in Denmark Township is largely single family units in the form of farmsteads and rural residences. There are a few attached dwelling units for seniors, as well. 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.

## **Housing Supply**

The Metropolitan Council forecasts indicate that there will be over 500 additional households from the year 2000 to 2030. New single family housing may take shape in large-lot standard subdivisions, open space developments, and on riverfront parcels. The 2007 Washington County Housing Study conducted by Maxfield Research found that southeastern Washington County would make up two percent of housing demand in the County between 2007 and 2030. The southeastern portion of the County will have nearly zero demand for rental housing for the same time period. The study concludes, “Demand in the Southeast through 2020 will be primarily higher end single-family homes.” The study reports that the average resale value for an existing single-family home was \$403,415 in 2007, and \$855,500 for new construction.

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 Housing and Redevelopment Authority (HRA) programs that are available to assist local residents with their housing needs.



## ***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.

### **Parks**

#### **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 in its next Comprehensive Plan amendment, the Township will update the zoning map to show the new parkland area as Conservancy. 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 zoned Single Family Estate.

#### **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. The Township will convene a group, including an O’Connor family member, to develop a plan for the Nature Preserve consistent with the donor’s vision for the property.

## **Trails**

There are four planned regional trails within Denmark Township.

**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 **Washington County Greenway** is a planned trail corridor to be 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. 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.

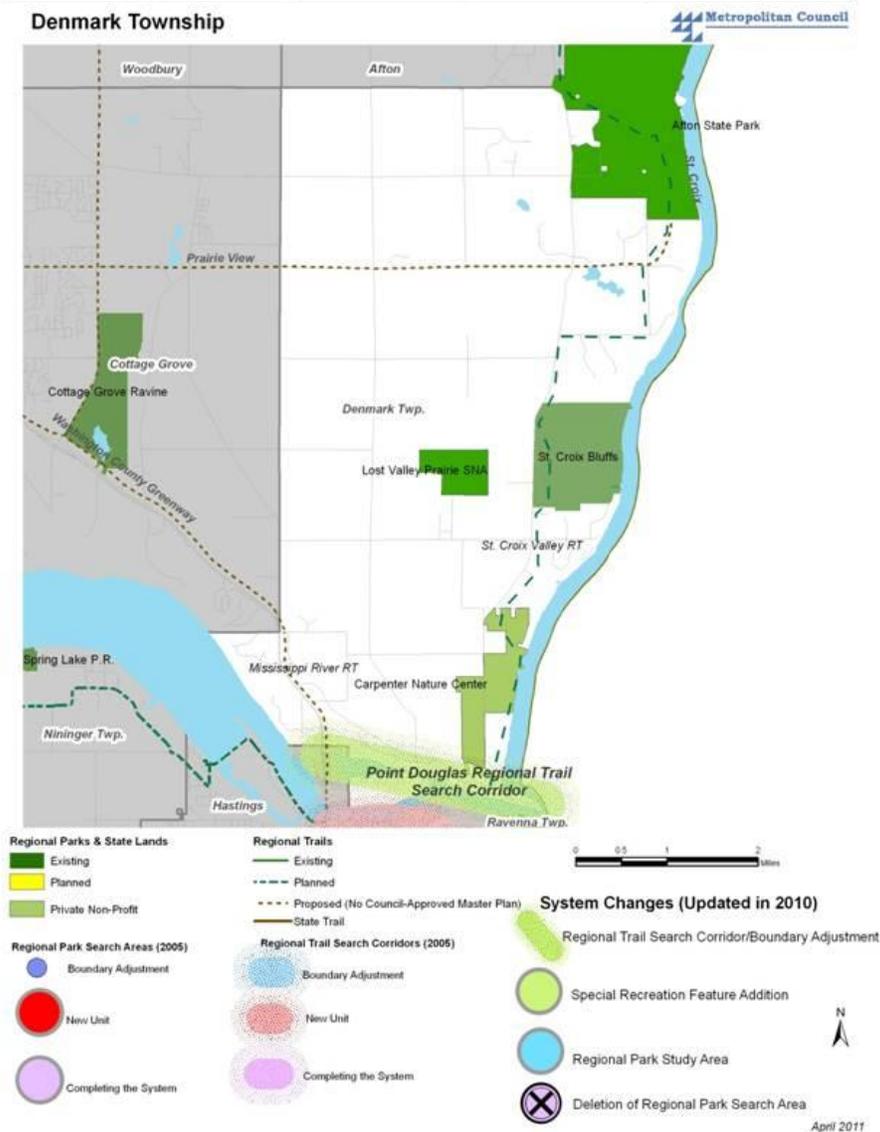
The Town Board reviewed the Washington County master plan for the trail corridor. In May 2005, the Town Board passed a resolution commenting on the trail alignment. The resolution was submitted to the Washington County Board of Supervisors, and included the following comments:

- 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 87<sup>th</sup> Street near the Tiller mining pit.
- The Township was opposed to condemnation of private property for establishment of the trailway 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 planned **Point Douglas Trail**, or Hastings to Prescott Trail, will be a 2.5 mile regional trail that will follow an abandoned railroad bed adjacent to the Mississippi River Regional Trail to the planned St. Croix Valley Regional Trail linking the Twin Cities metropolitan trails with trails in Wisconsin. This regional trail search corridor is a component of the regional parks system. Washington County will develop a master plan to establish this trail alignment and will include the Township and others in the process.

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 value of local trails that are privately owned and maintained within and connecting neighborhoods.

### 2030 Metropolitan Regional Parks System Plan Update



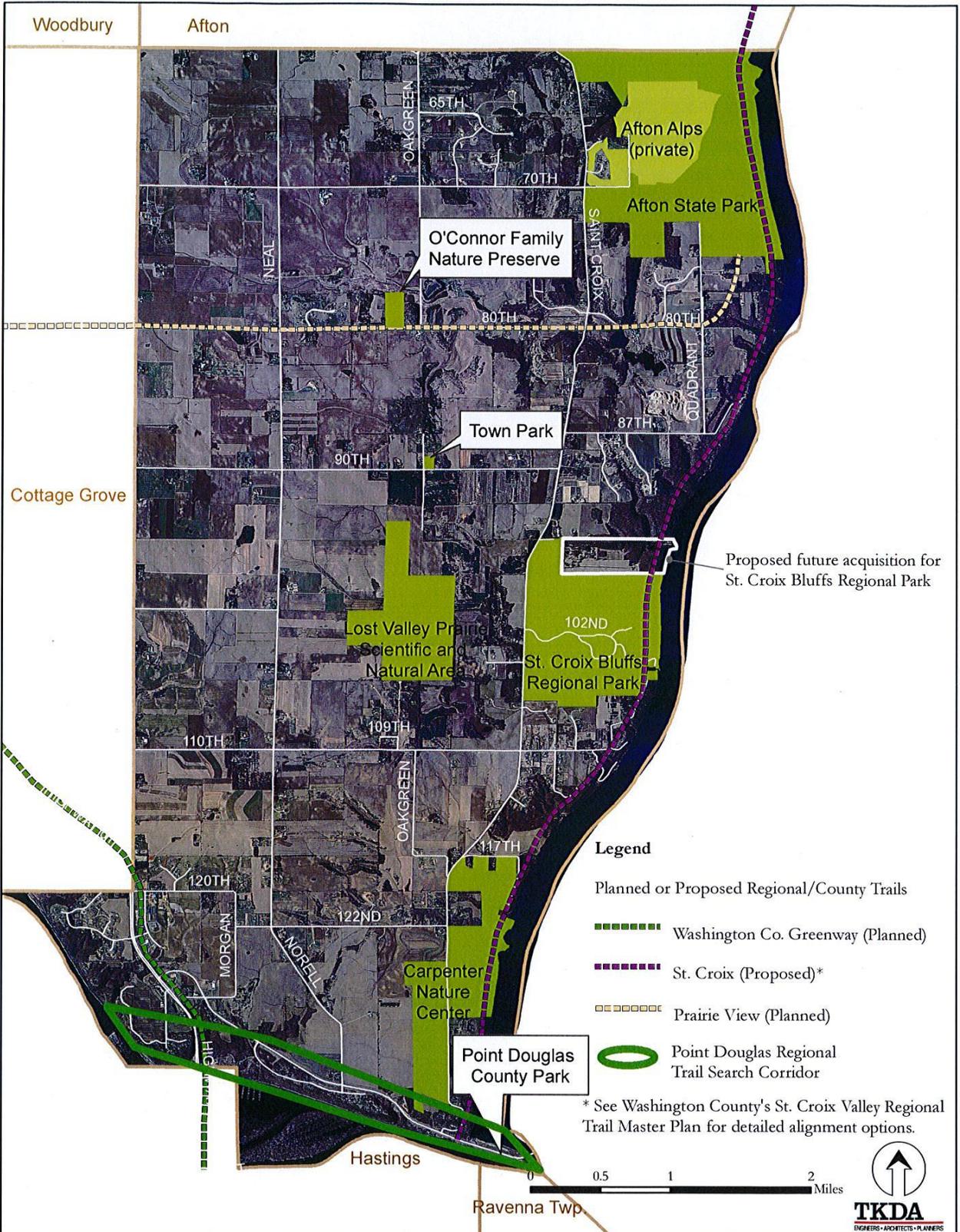


Figure 6. Parks and Open Space, and Trails Search Corridors Denmark Township 2030 Comprehensive Plan

## ***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, and aviation.

The community survey asked residents their opinions about the transportation system. Ninety-six percent of respondents were satisfied with the amount of road connections within the Township. Eighty-five percent said that roads were adequately maintained, with some concerns expressed about maintenance of County roads. Most respondents did not show an interest in changing roadway surfaces from gravel to pavement. The survey also asked about interest in trails or walking shoulders along roadways, and forty-five percent of respondents were interested in such facilities.

### **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 9** indicates the system of roads in the Township and the functional classification of these roads.

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.

“Minor Arterials” generally provide mobility for shorter distances, providing interconnection between other arterial roadways and between regional business concentrations. Minor Arterials are classified as either ‘A’ or ‘B’ for administrative purposes. ‘A’ Minor Arterials are eligible to compete for federal funding whereas ‘B’ Minor Arterials are not. CSAH 20 (70th Street), CSAH 21 (Saint Croix Trail), State Highway 95 (Manning Avenue), and Highway 10 are ‘A’ Minor Arterials.

“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.

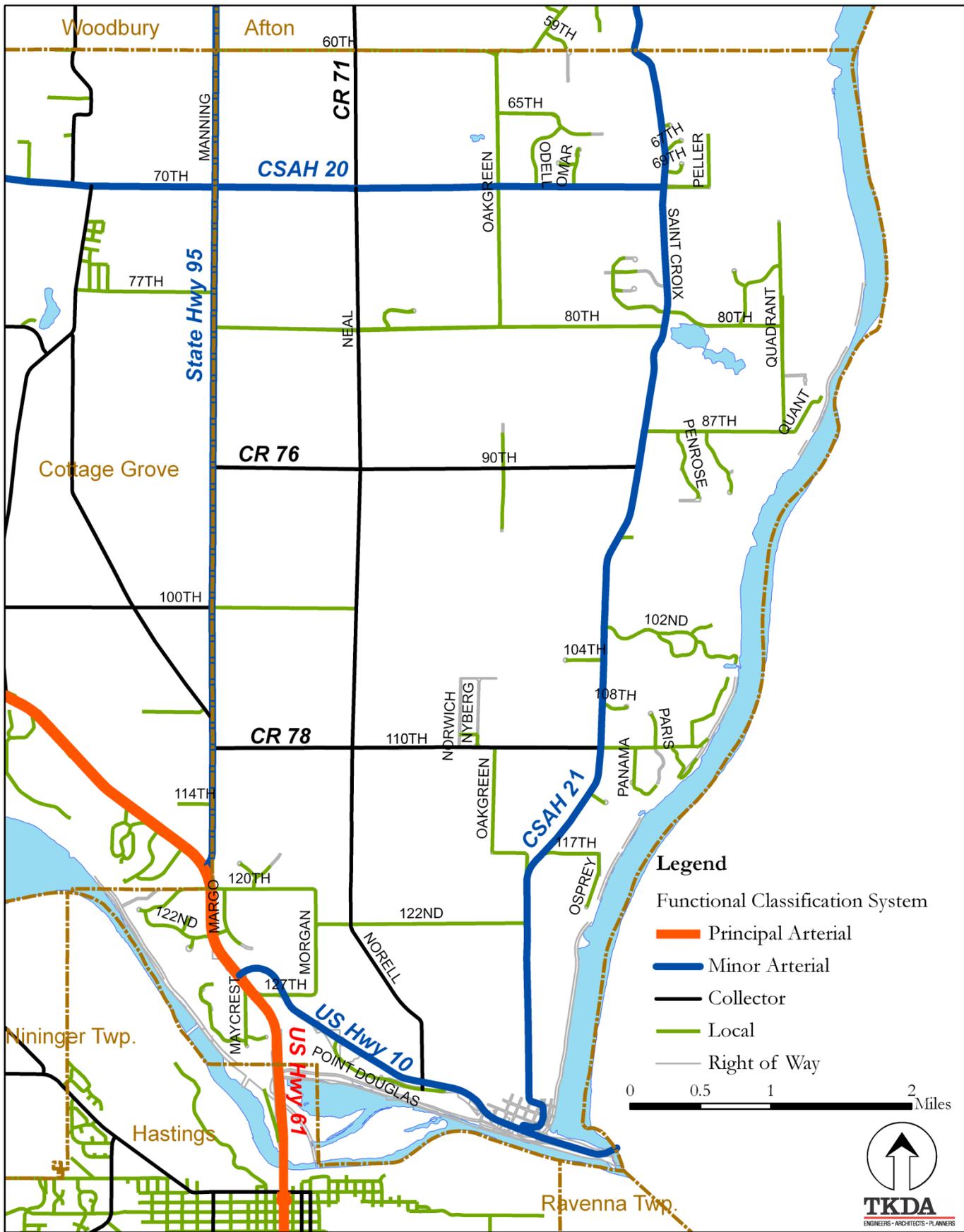


Figure 7. Functional Classification System

Source: Washington County, Metropolitan Council

*Denmark Township 2030 Comprehensive Plan*

**Table 9:  
Roadway Functional Classification**

<i>Name of Roadway</i>	<i>Jurisdiction</i>	<i>Functional Classification</i>
U.S. Highway 61	Mn/DOT	Principal Arterial
U.S. Highway 10	Mn/DOT	A-Minor Arterial - Expander
State Trunk Highway 95	Mn/DOT	A-Minor Arterial - Expander
County State Aid Highway (CSAH) 20	Washington County	A-Minor Arterial - Expander
CSAH 21	Washington County	A-Minor Arterial - Expander
County Road 71	Washington County	Major Collector
County Road 76	Washington County	Major Collector
County Road 78	Washington County	Major Collector

*Source: Washington County and Metropolitan Council*

## Traffic Volumes

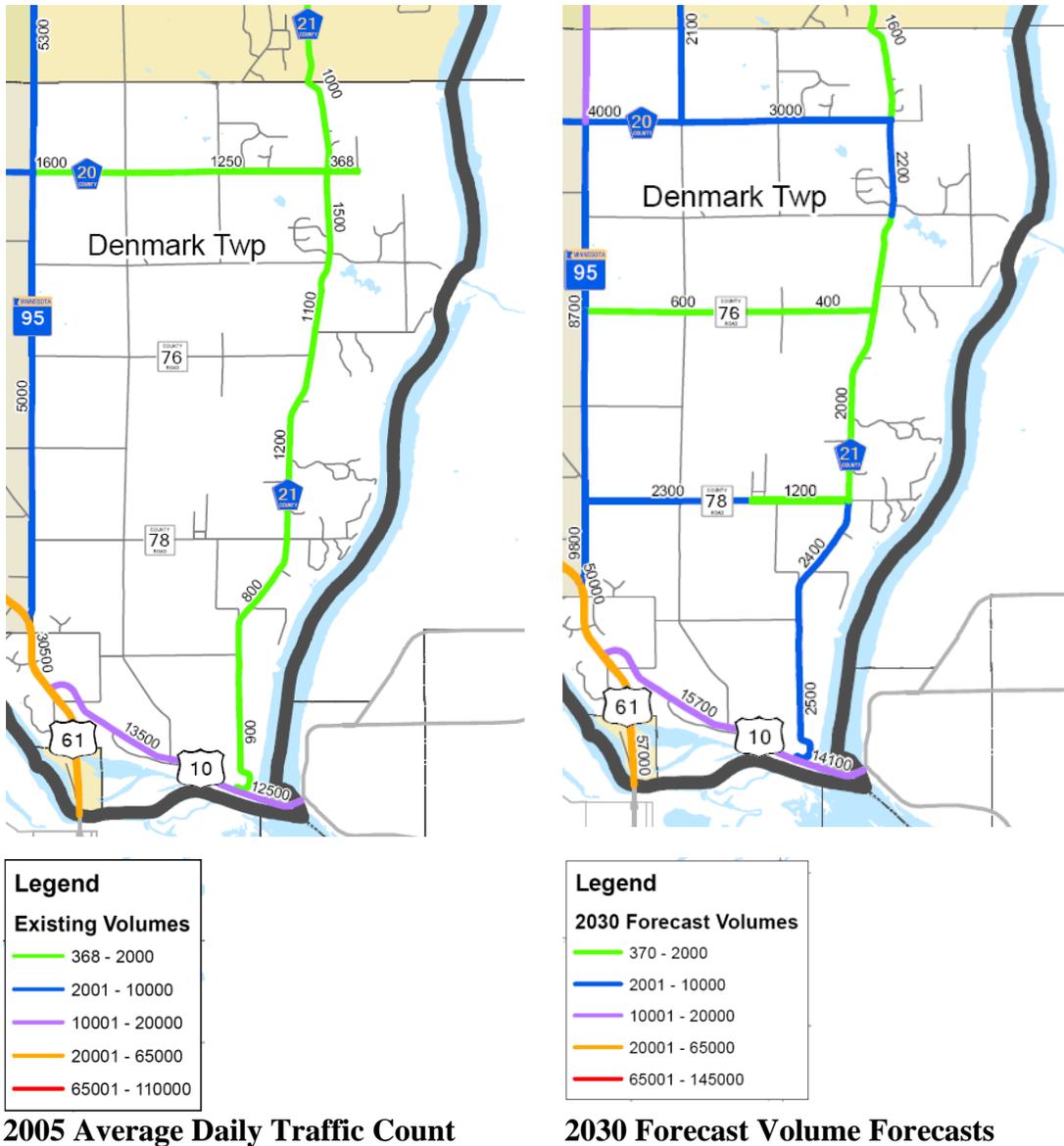
Current average daily traffic counts for Township roads are indicated in **Table 10:** and **Figure 8**, as are current forecasts for these roads. The traffic count and forecast data are provided by Washington County. The traffic forecast model, due to proximity to higher-volume arterials, allocated a larger amount of traffic to County Road 76 than to County Road 78. Washington County expects that the traffic volumes of the two roads will be closer than the model indicated. The traffic growth forecasts far exceed the projected growth in population and employment in the Township. This is due to population and employment growth in the region as a whole, not specifically to traffic generated by Township residents.

**Table 10:  
Existing and Forecasted  
Average Daily Traffic Volumes**

	2005	2030	Percent Increase	Average Annual Growth Rate
<b>Trunk Highway 95</b>				
<i>south of CSAH 20</i>	5,000	8,700	75%	2.2%
<b>U.S. Highway 61</b>				
<i>north of U.S. Highway 10</i>	30,500	50,000	64%	2.0%
<b>U.S. Highway 10</b>				
<i>west of CSAH 21</i>	13,500	15,700	16%	5.4%
<i>east of CSAH 21</i>	12,500	14,100	13%	0.5%
<b>CSAH 21</b>				
<i>south of CR 78</i>	800	2,400	200%	4.5%
<i>south of CR 76</i>	1,200	2,000	67%	2.1%
<i>south of CSAH 20</i>	1,500	2,200	47%	1.5%
<b>CSAH 20</b>				
<i>west of CR 71</i>	1,600	4,000	150%	3.7%
<i>west of CSAH 21</i>	1,250	3,000	140%	3.6%

*Source: Washington County*

**Figure 8:  
2005 Average Daily Traffic Counts  
and 2030 Traffic Volume Forecasts**



Source: Washington County

### Transportation Analysis Zones

Transportation Analysis Zones (TAZ) are geographic boundaries used for transportation planning purposes. The Metropolitan Council identifies two TAZs that coincide with the Township’s boundary, numbered 1079 and 1088, and has assigned the Township’s growth forecasts to the two TAZs. TAZ 1088 includes the area west of Highway 61, and TAZ 1079 is the rest of Denmark Township.

**Table 11:  
TAZ Forecast Allocation for Denmark Township**

TAZ	Population by Year				Households by Year							
	2000	2010	2020	2030	2000	2010	2020	20.0				
1079	1,283	1,650	2,030	2,425	455	610	770	935				
1088	65	100	120	125	26	40	50	55				
Total	1,348	1,750	2,150	2,550	481	650	820	990				
TAZ	Total Employment by Year				Retail Employment by Year				Non-Retail Employment			
	2000	2010	2020	2030	2000	2010	2020	2030	2000	2010	2020	2030
1079	360	340	370	400	287	330	350	350	73	10	20	50
1088	26	20	30	40	5	5	10	10	21	15	20	30
Total	386	360	400	440	292	335	360	360	94	25	40	80

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.

Typically, the locations of local roads are determined through the development review process. The Town has identified general corridors for new local roadways through and near the commercial-industrial area. Margo Avenue South is planned to eventually connect to U.S. Highway 10. Options for future roadway connections to 120th Street, Margo Avenue, and 122nd Street are shown on Figure 9, to serve future residential development in the area.

### **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.

### **Multi-jurisdictional Cooperation**

The transportation network consists of roads under County and State jurisdiction as well as local roads. Washington County's five year Capital Improvement Program does not include any projects within Denmark Township. Mn/DOT is leading an effort to develop options for Manning Avenue (Highway 95 Future Design Concept and Access Study). The Township will continue to work with the State and other partners in this planning process, and recognizes the need for right of way protection along this corridor.

## 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

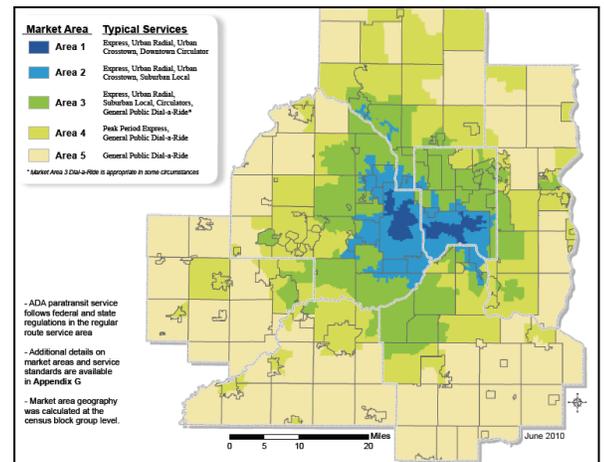
The Township works with Washington County to regulate the number of access points to County roads and with Mn/DOT regarding access onto State and U.S. Highways. In order to promote a safe and efficient transportation system, spacing and access guidelines are incorporated into Denmark's subdivision regulations. 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.

## Aviation

There are no airports, proposed airport sites, search areas or other related facilities in Denmark Township. The Township is, however, home to two airstrips. One is located southwest of the intersection of Neal Ave (County Road 71) and 70<sup>th</sup> Street. The other is located east of the gravel pit near the intersection of 87<sup>th</sup> Street and Quadrant Avenue. 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.

## 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 the "rural" zone, 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.

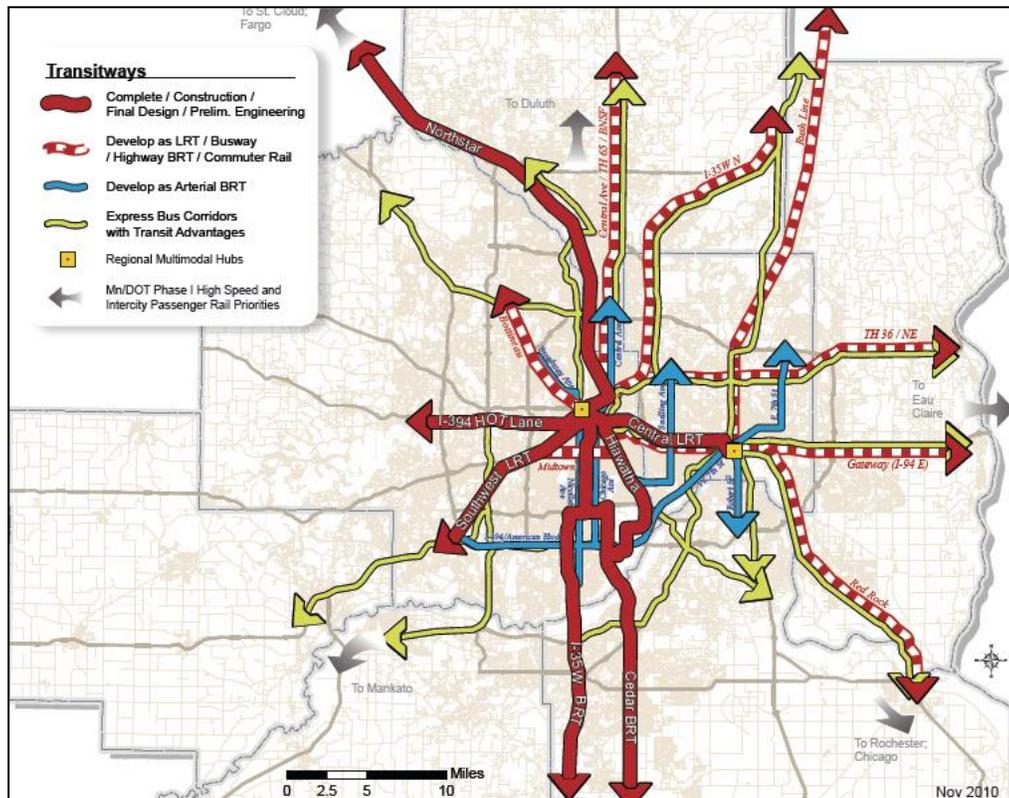


Existing transit service options include dial-a-ride, volunteer driver programs, and carpooling. Rural dial-a-ride service for the general public and transportation services for persons with disabilities are provided by Human Services Inc (HSI). HSI dial-a-ride service for the general public is available from 8 a.m. to 5 p.m. Monday through Friday. There is a "Park and Pool" facility located off of Highway 10, at its intersection with Highway 61. Park and Pools are lots

where people can leave vehicles and meet with their carpools. The Township also lies on the TH 61 express bus corridor.

The Red Rock Corridor is a planned transit corridor that roughly parallels Highway 61. The corridor will connect Hastings to downtown Saint Paul on a dedicated right of way. Station locations or mode of transportation have not yet been determined. Denmark Township will continue to participate in the Red Rock Corridor planning process.

The Metropolitan Council’s 2030 Transportation Policy Plan, revised in 2010, shows the Red Rock transitway corridor could be developed as an LRT/Busway/Highway BRT/Commuter rail corridor. However, the plan indicates that no proposed commuter rail projects in the region other than Northstar appear to be financially feasible. The plan recognizes that studies to date in the corridor have recommended a phased approach, and that intercity high speed rail improvements in this corridor could reduce the cost of implementing commuter rail. The plan also states that commuter rail in the region will re-evaluated when information from the Travel Behavior Inventory and actual Northstar ridership becomes available.



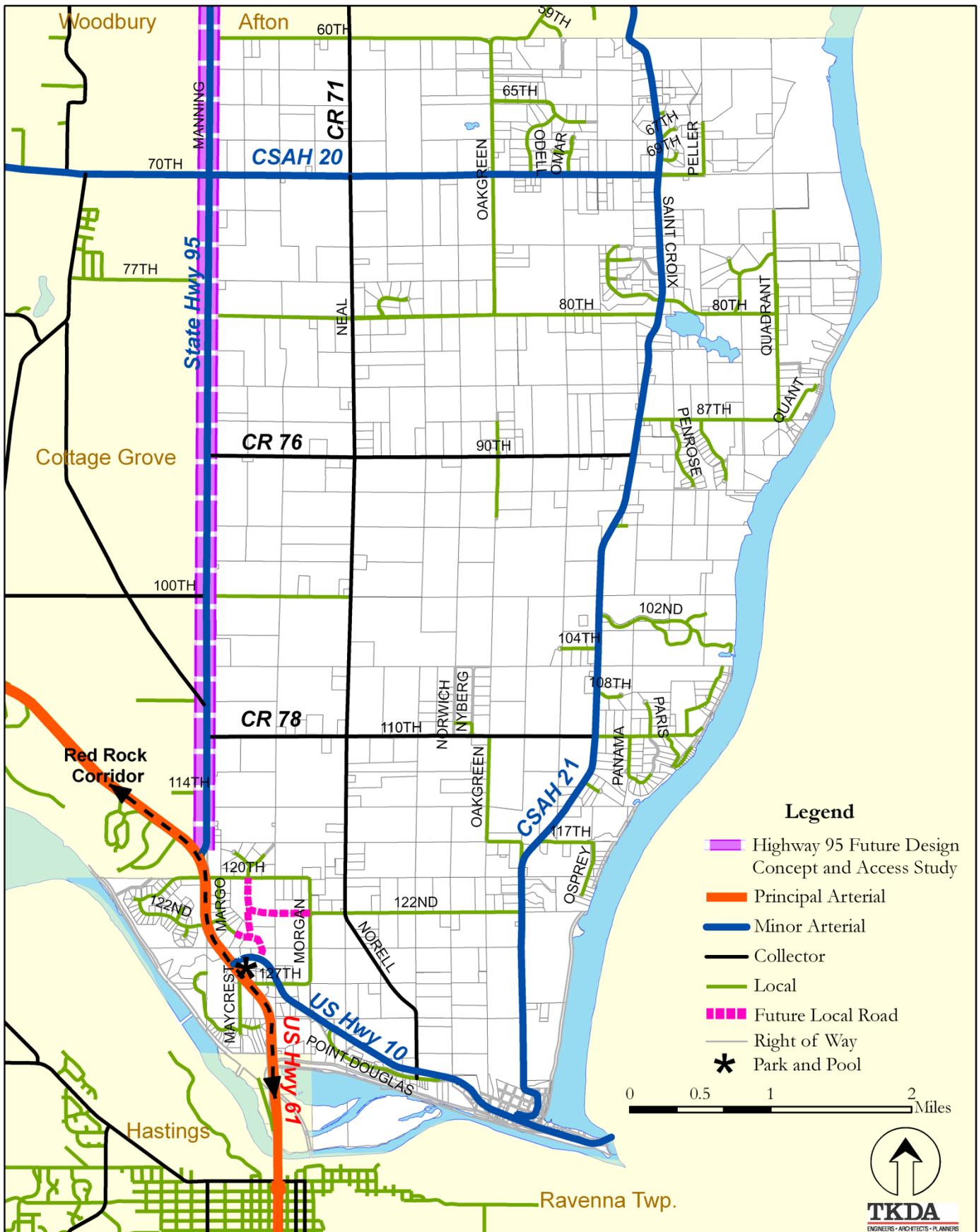


Figure 9. Transportation System

Source: Washington County, Metropolitan Council

Denmark Township 2030 Comprehensive Plan

## ***Wastewater Treatment and 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, ordinances regarding individual sewage treatment systems (ISTS), and wetland, floodplain and shoreland ordinances.

The Metropolitan Council has no plans to provide municipal wastewater or water supply services to Denmark Township within the 2030 planning period. Denmark Township is outside of the Council's regional wastewater system long-term service areas, which are general areas that could potentially be served post-2030. Existing and proposed development in Denmark Township rely on private wells and on-site septic systems.

### **Wastewater**

Denmark Township has adopted Washington County's Individual Sewage Treatment System Regulations. Washington County completes all wastewater system review and permitting actions within Denmark Township. The Township will continue to utilize Washington County as the government authority for permitting and inspecting of individual sewage treatment systems.

As development is proposed, the Township considers the potential for community wastewater and water systems 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 is one existing community wastewater treatment system in the Township, located in the Saint Croix Harbor subdivision on Panama Avenue South.

Washington County is currently updating its subsurface sewage treatment system ordinance to meet MPCA regulations (Minn. Rules Chapter 7080). The rules will include options for private wastewater treatment systems, and require that they meet MPCA regulations.

Washington County's ordinance update will require operating permits for systems more complex than standard residential individual sewage treatment systems. Existing and future community systems, systems with holding tanks, and systems requiring pretreatment will need an operating permit from the County. Permits will address ongoing maintenance and service. Once the new ordinance goes into affect, operating permits will be needed by some Denmark Township business properties and for the existing community system.

To maintain consistency of Township and County wastewater ordinances, the Township will participate in the public comment process for the County ordinance update. With the County's adoption of its new ordinance, the Township will consider updating the Township ordinance accordingly.

## **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 cooperate with Washington County in its efforts to implement the Washington County Groundwater Plan.

## ***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 10** indicates the general location of historic sites in Denmark Township. **Table 11** 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.

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 12:  
Historic Site Information**

<b>Map Number/Name</b>	<b>Note</b>
1. Lutheran Church Site	Located in the Northwest Quarter, Section 9.
2. Shingledecker School	Built in 1867. Still exists on original plot, southeast corner of Section 5 at 70th and Oakgreen. Remodeled into a private home.
3. Indian Fishing Ground	Grounds are now buried by Kinnicnik River deposits and dredge. No trace remaining. 1766 Carver map shows Chippewa village on the Wisconsin side north of Kinnicnik. Judge Foster had a log structure at this site circa 1842.
4. Indian Camp Ground	Dakota hunting and fishing campsite of Chief Little Crow. This camp was seasonal. 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.
5. 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.
6. 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 2008.
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 Office	Store was built about 1876; post office was added in the 1880s. 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 was 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 the 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 in Minnesota outside of Fort Snelling. Established July 18, 1840. Site is vacated.
13. Point Douglas - Hastings Ferry	Established in 1849.
14. Dalrympie Wheat Farm	Located in the Southeast Quarter, Section 30.
15. Dalrympie 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 Farmstead	Located north of 80th Street, west 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

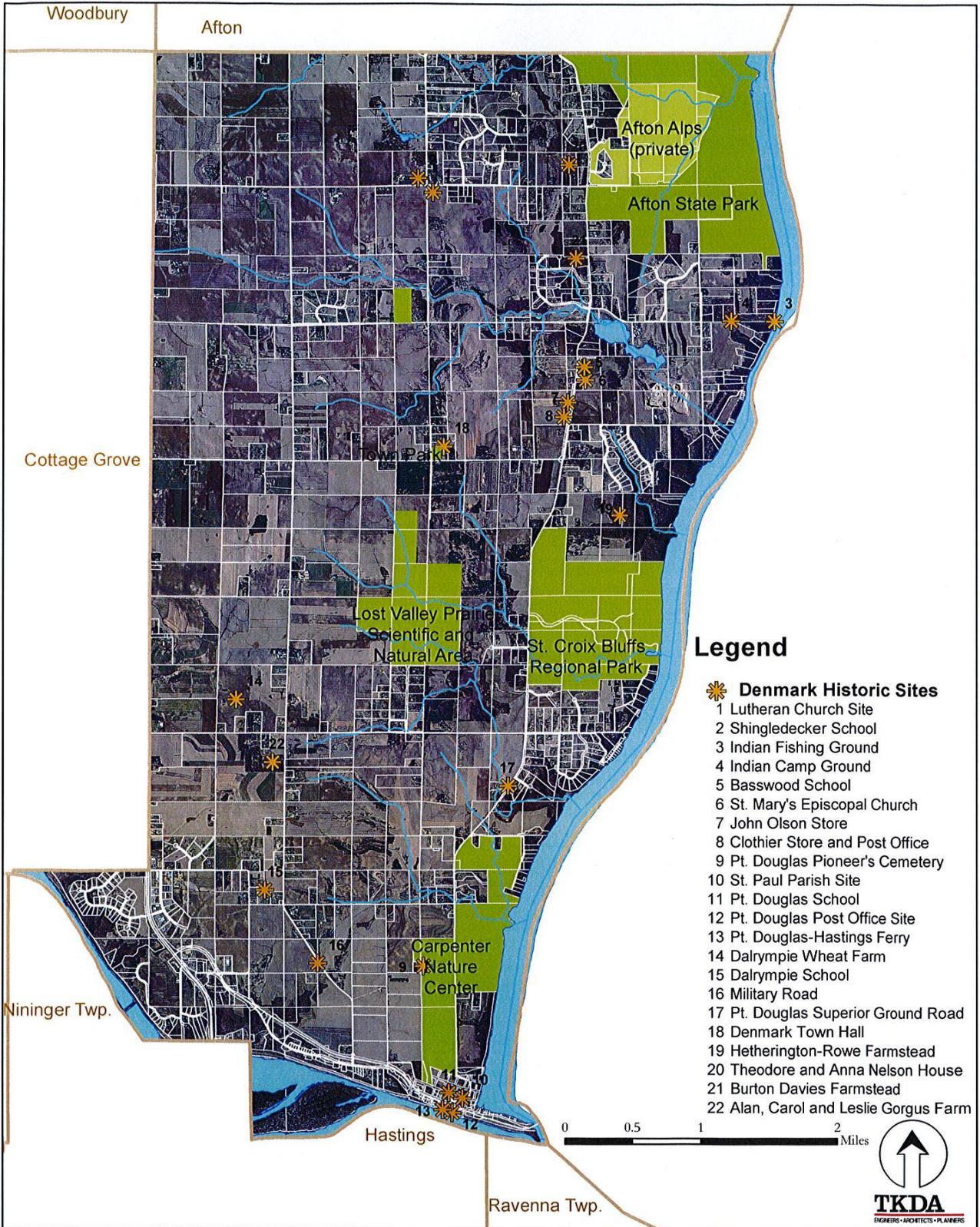


Figure 10. Historic Sites

Denmark Township 2030 Comprehensive Plan

# ***Surface Water Management Plan***

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## ***Purpose and Executive Summary***

Denmark Township understands the importance of protecting the area's valuable surface water, ground water and natural resources. The Township is located within the Lower St. Croix Watershed Management Organization (LSCWMO), shown in Figure 11. 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 LSCWMO Water Management Plan.

The LSCWMO has completed its Watershed Management Plan. The Plan was approved by BWSR in 2005. An amendment to the Watershed Management Plan was submitted to BWSR and is pending approval, as of December 2008. With Denmark Township's adoption of this Comprehensive Plan, the Town will adopt by reference the Lower St. Croix Watershed Management Organization Watershed Management Plan, as amended.

The LSCWMO adopted its water management rules in 2008. Under the new rules, the Township will review development and permit applications, and will enforce the surface water management rules within the Township. The WMO will also review applications and provide comments to the Township.

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

## ***Water Resources-Related Agreements***

The Township is a participant in the Joint Powers Agreement that created and maintains the Lower St. Croix WMO. The WMO includes the Cities of Afton, Cottage Grove, and Hastings, and Denmark Township. The LSCWMO was organized in June, 1985 to fulfill the watershed planning and management responsibilities identified in MN Statutes Chapter 103B. The Joint Powers Agreement was updated in 2005 and 2008.

Washington County is unit of government responsible for wetlands regulation and utilizes the Washington Conservation District for management and single-site erosion control and stabilization. Under the new WMO rules adopted in 2008, the Township will review development and permit applications, and will enforce the WMO's surface water management rules within the Township. The WMO will review and provide comments on applications to the Township.

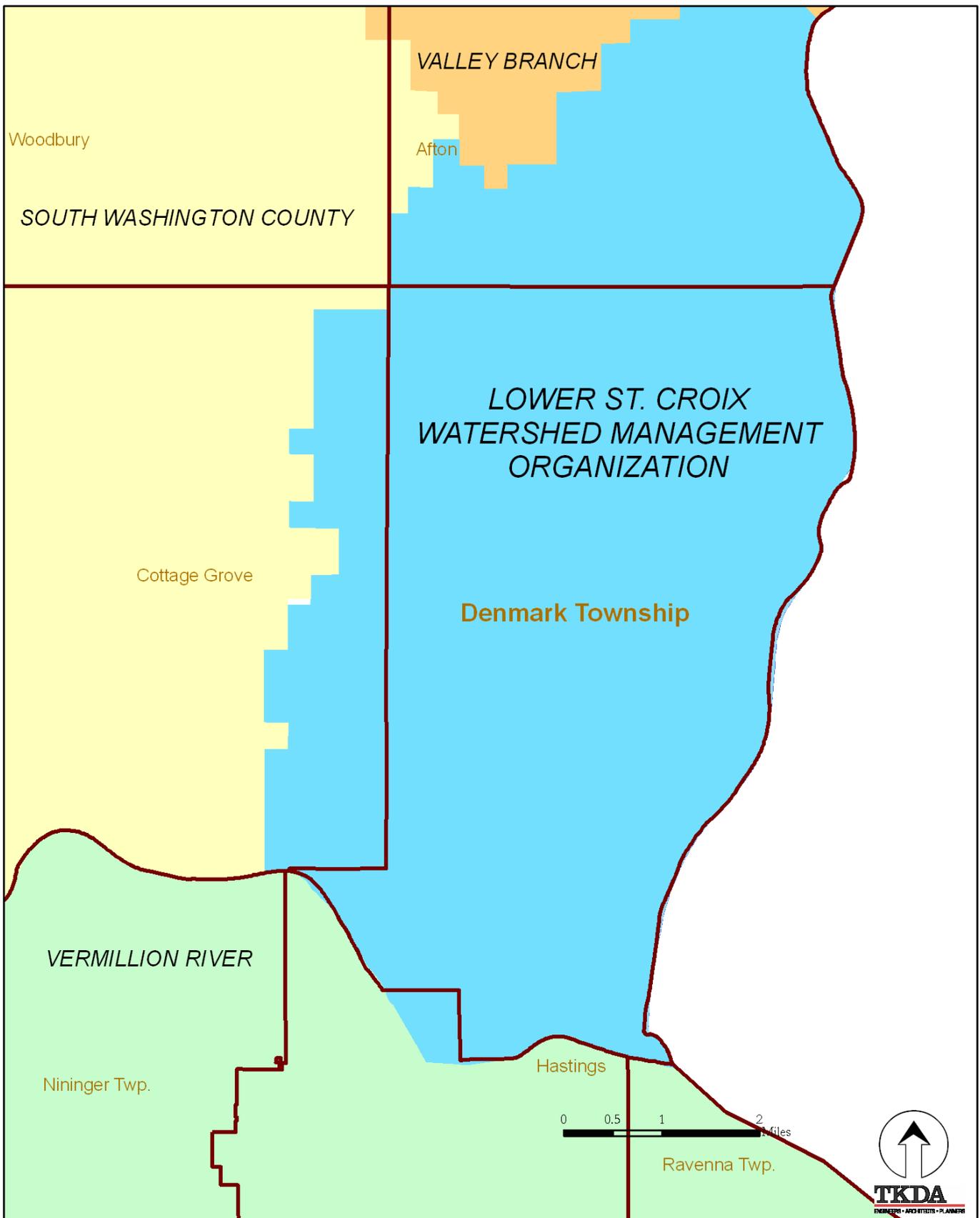


Figure 11. Lower Saint Croix WMO Boundary

*Denmark Township 2030 Comprehensive Plan*

## ***Land and Water Resources Inventory***

Denmark Township is largely rural in character. Its 2030 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.

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. The resources are described in detail in the *LSCWMO Watershed Management Plan* and in the *Denmark Township Natural Resource Inventory and Water Resource Evaluation*. 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'Connors Creek and Lake
- ✓ A variety of wetlands, particularly near O'Connors Creek and Lake

The first four resources in the list above were identified as key surface water features in the LSCWMO Management Plan.

The Metropolitan Council has identified Spring Lake/U.S. Lock and Dam Pool #2 as a priority lake within the Metropolitan Area. The priority lake list is used to focus the regional agency's resources and in the environmental review process. Spring Lake is upriver of Denmark Township.

DNR protected waters within the Township are identified on the following table:

**Table 13:  
Protected Waters**

<b>Protected Waters Number</b>	<b>Name of Resource</b>
82-1	St. Croix Lake
25-17	Conley Lake
	Mississippi River
	Grey Cloud Channel
	4 Unnamed Creeks to Mississippi River
	Unnamed Creek to O'Connors Lake
	Trout Brook
	Unnamed Creek to St. Croix River
82-2	O'Conner's Lake

<b>Protected Waters Number</b>	<b>Name of Resource</b>
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

Denmark Township water resources are illustrated in Figure 12.

**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’Conner’s Creek* drains to O’Conner’s Lake, a land-locked basin. O’Connor’s Lake and Conley Lake are the only lakes within the LSCWMO. 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. The St. Croix River Basin Planning Team has identified a goal of reducing the nutrient load to the St. Croix River by 20 percent. 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. The river is on the MPCA’s list of impaired waters for turbidity.

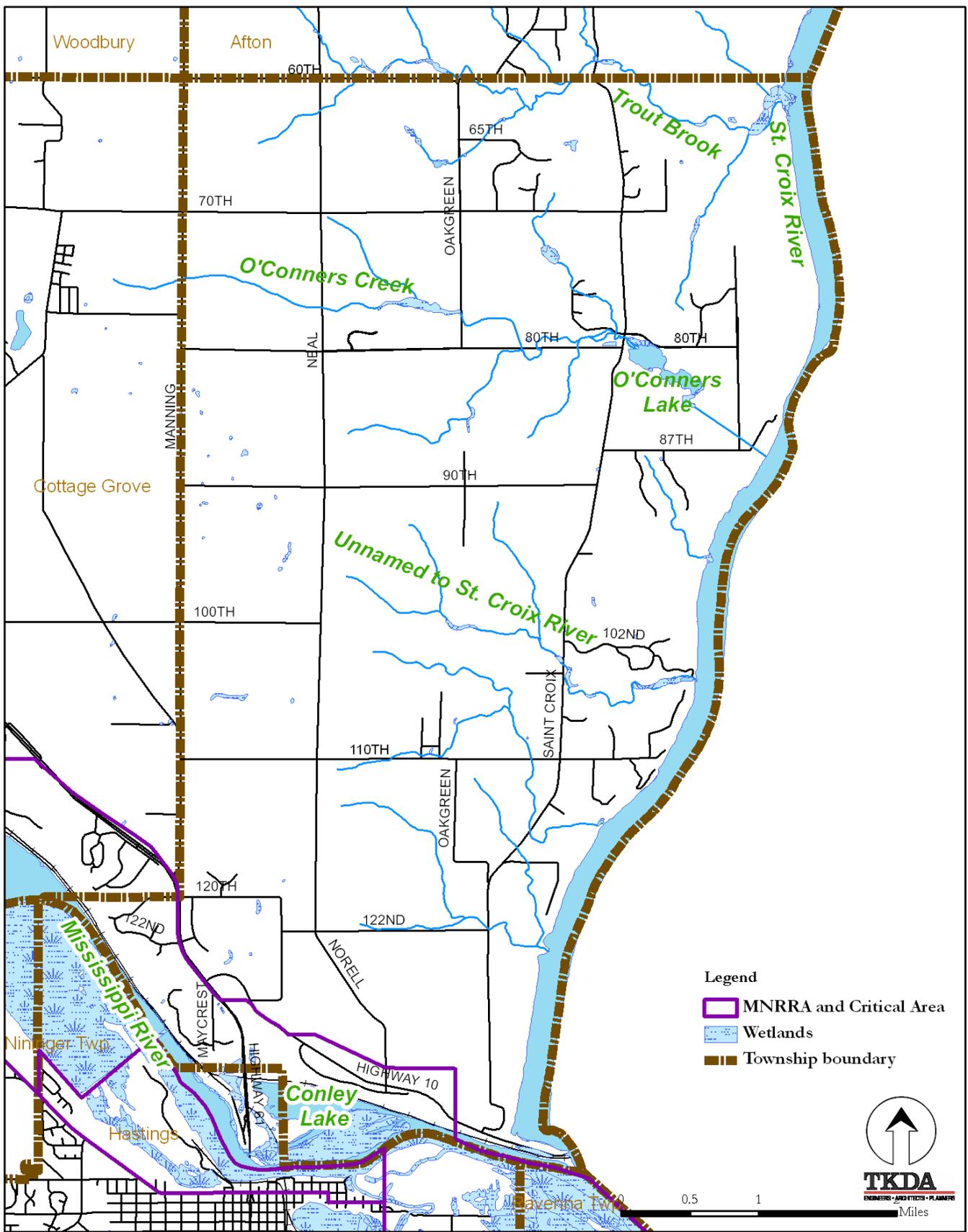


Figure 12. Water Resources

Source: Minnesota Department of Natural Resources

*Denmark Township 2030 Comprehensive Plan*

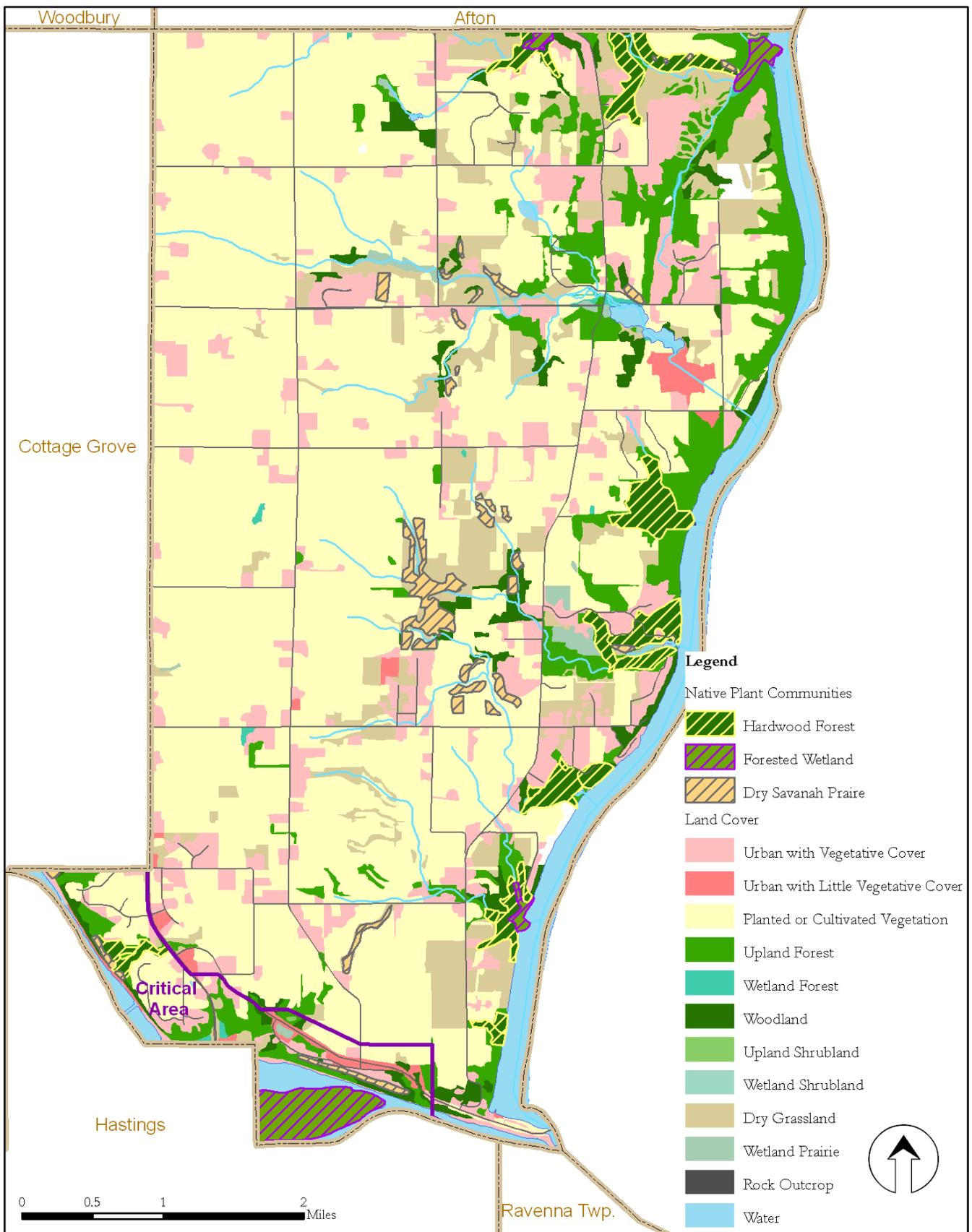


Figure 13. Native Plant Communities and Land Cover



Native Plant Communities data: MN County Biological Survey  
 Land Cover data: Minnesota Land Cover Classification System

*Denmark Township 2030 Comprehensive Plan*

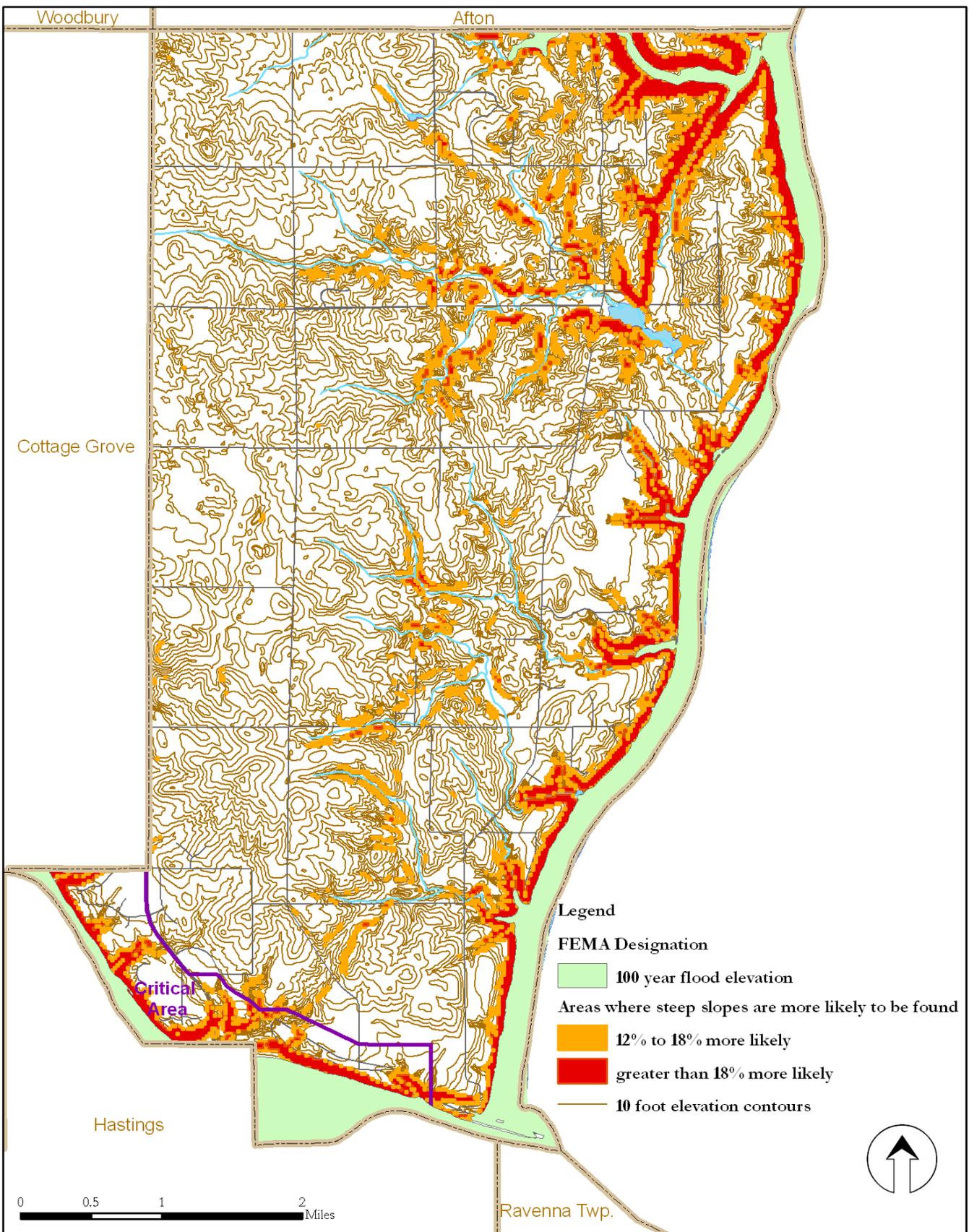


Figure 14. Topography and Floodplain



*Denmark Township 2030 Comprehensive Plan*

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

The Minnesota County Biological Survey identified high quality natural areas remaining in Denmark Township. These areas are shown on Figure 13. 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*

Image from the Metropolitan Design Center Image Bank.  
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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.

Protection of these natural areas is a high priority identified in the LSCWMO Watershed Management Plan. 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 LSCWMO 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. Figures \_\_\_ indicate 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 participated in the development of the LSCWMO Management Plan, which identifies the important water and natural resource issues in the Township. 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'Connors 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 LSCWMO 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 (PCB’s)
- ✓ Mississippi River (turbidity)

A TMDL study for the St. Croix River may be completed in the future. The LSCWMO 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 will also be completed for the Mississippi River in the future. Cooperation with local watershed authorities, local governments and landowners will be needed to reduce nutrient inputs and improve water quality in the River.

## ***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 LSCWMO, 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 LSCWMO Water Management Plan and adopted rules. The Township will enforce the adopted Rules and Regulations of the LSCWMO 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 Mississippi Rivers
  - Floodplain 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 and MS4 permit requirements, where applicable.

**Goal 2:** Protect the quality of local lakes by supporting the LSCWMO lake management goals and plan for lake management, including O’Conner’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 LSCWMO 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 LSCWMO and Washington County to protect wetland resources within the Township and enforce the requirements of the Minnesota Wetland Conservation Act.
- The Township will support LSCWMO requirements for pretreatment of stormwater prior to discharge into all wetlands and other waterbodies.
- The Township will support the LSCWMO requirements for wetland buffers based on the functions and assessments and wetland classifications.
- The Township will require the completion of functions and values assessments of wetlands that have not been assessed by LSCWMO as part of development applications. The assessment will be required to use MnRAM version 3.0 or the most current version.

**Goal 4:** Implement the LSCWMO 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 LSCWMO 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, including the following:
  - Predevelopment peak stormwater flow rates must be maintained for the 2-, 10- and 100-year 24-hour rainfall events.
  - Stormwater runoff volume retention for the volume equivalent to the runoff generated from one-inch of runoff over the impervious surfaces of the development is required on all new developments. Volume control credits may be used to control up to one-half inch of runoff over the impervious surfaces.
  - Water quality pre-treatment, operation and maintenance plan, and vegetation management plan are required for all infiltration practices.
  - Projects proposing stormwater facilities in Karst-sensitive areas must complete a Karst sensitivity analysis consistent with the LSCWMO Karst Feature Inventory and Management Plan (2007).
  - No direct (untreated) discharges of stormwater to natural or improved waterbodies is allowed.
  - All stormwater facilities are required to use skimming devices to remove floatable pollutants prior to discharge.
  - Access to stormwater facilities to allow for maintenance must be provided.

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

*Policy:*

- The Township will work with the LSCWMO 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.

# ***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 participated in development of the LSCWMO's implementation plan and CIP. 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 LSCWMO, adopted by reference (*Chapter 2, Part 3, Section 7 of the Denmark Township Development Code*)
- ✓ Individual 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.

*Mississippi River  
Critical Area Plan*

# Overview

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## ***Critical Area Program/Mississippi National River and Recreation Area***

Denmark is one of twenty-five communities 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 Department of Natural Resources (DNR) now reviews and approves these Critical Area Plans and ordinances, which contain mandatory elements, referred to as *Tier I* elements. 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 CMP incorporates policies and planning elements that are recommended for local jurisdictions (referred to as *Tier II* elements) but which remain voluntary. 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 MNRRA Comprehensive Management Plan.

State law requires communities to complete Critical Area Plans as well as ordinances that are consistent with the Plan. 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 Executive Order 79-19, the Critical Areas Act of 1973 (Minnesota Statute 116G) and related state laws. The MNRRA CMP is broad and intended to address a variety of different river corridor issues. The CMP contains elements that go beyond what is required under State law. 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 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.

## ***Critical Area Policies***

These policies reflect Denmark's specific commitments to the preservation and management of the Critical Area.

### **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.

### **Transportation and Public Facilities**

- ✓ 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.

### **Environmental**

- ✓ 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.
- ✓ Encourage the restoration of degraded wetlands where practical.
- ✓ Ensure implementation of Chapter 4 of the Washington County Development Code, which governs the permitting, design, installation, expansion, and maintenance of individual sewage treatment systems.
- ✓ Ensure implementation of Chapters 5 and 6 of the Washington County Development Code, which governs the management of bluffland and shoreland areas in the Township.
- ✓ Ensure implementation of sections of Chapter 3 of the Washington County 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 of the Washington County Development Code that incorporate recommended erosion and sedimentation control practices of the Washington County Soil and Water Conservation District and the Lower St. Croix Watershed Management Organization (WMO).

- ✓ Participate in and implement the plans of the Lower St. Croix Watershed Management Organization (WMO).
- ✓ 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.

### **Park, Recreation and Open Space**

- ✓ 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.

### ***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**

- ✓ Removal of healthy, non-hazardous vegetation is discouraged, particularly along shoreline, bluff face, in wetlands, and on floodplains.
- ✓ Native plant materials should be used in replanting.
- ✓ Vegetation removal is only appropriate in building and paved areas.
- ✓ 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.

## ***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.

## ***Land Use and Natural Features***

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 1** below provides a breakdown of land uses in Denmark’s Critical Area.

**Table 1:  
MNRRA/Critical Area Land Uses**

	Acres	%
<i>Commercial</i>	20	1.6%
<i>Developed Residential</i>	152	12.2%
<i>Water/slopes/floodplain</i>	524	41.9%
<i>Vacant agricultural</i>	105	8.4%
<i>Vacant Single-Family Estate</i>	449	35.9%
<b>TOTAL</b>	1,250	100.0%

Source: Denmark Township

## ***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. A small portion of Denmark's Commercial/Industrial Area lies within the Critical Area boundary. 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. There is at least one non-conforming use in the Critical Area. Both the Denmark Township Zoning Ordinance and Denmark Township Mississippi River Corridor Ordinance will govern any non-conforming uses in 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.

## ***Native Vegetation***

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.

## ***Preservation Plan***

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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, subdivision standards, shoreland management, floodplain management, and wetland regulations. In addition, the Township will maintain a Mississippi River Corridor Ordinance. New performance standards will be consistent with

Executive Order 79-19 and will incorporate most Tier II guidelines contained in 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.

### ***Residential Density Standard***

Denmark’s portion of the Critical Area is within a “Rural Open Space District”, as defined by the Governor’s Executive Order 79-19. 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 2:  
MNRRA/Critical Area  
Residential Development Potential and Net Density**

	<b>Acres</b>	<b>Residential Density</b>	<b>Potential New Units</b>
<i>Commercial</i>	20	n/a	0
<i>Developed Residential</i>	152	n/a	0
<i>Water/slopes/floodplain</i>	524	n/a	0
<i>Vacant agricultural</i>	105	1:20	5
<i>Vacant Single-Family Estate</i>	449	1:3	150
<b>TOTAL</b>	1,250		155
<b>Total undeveloped acreage</b>	1,078		
<b>Divided by potential new units</b>	155		
<b>Equals net density</b>	6.95		

*Source: Denmark Township*

As noted in **Table 2**, a portion of the Critical Area is also designated Long-Term 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. Denmark Township will utilize its Mississippi River Corridor Ordinance to govern specific dimensional requirements for the entire Critical Area. With regard to the placement of structures, the ordinance specifies 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). These standards meet Tier II planning guidelines. 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 also mandates 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 is also addressed in the Critical Area Ordinance. The Ordinance stipulates 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.) All grading and filling activities requiring a permit must comply with the site planning standards in Section 3 of the Denmark Township Mississippi River Corridor Ordinance.

## ***Bluff Preservation***

Denmark Township recognizes that preservation of bluff areas is crucial to maintain a natural appearance along the corridor. Critical Area Ordinance regulations require that structures must be set back 100 feet from the bluff line, as suggested by Tier II planning guidelines. In addition, the Critical Area Ordinance regulates the cutting of vegetation on the slope or face of bluffs and within the area 40 feet landward from bluff-lines. These provisions are consistent with Tier II Critical Area planning guidelines.

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.

In order to prevent erosion and protect viewsheds, the Township embraces Tier II guidelines that suggest that bluff slopes over 12% be left undisturbed. The Denmark Township Mississippi River Corridor Ordinance will prohibit development on slopes over 18%. The ordinance permits 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 in the County Zoning regulations (Part 3 of Chapter 2 of the Washington County Development Code) 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.

## ***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 is accomplished with many of the requirements described above that address lot width, structure and road setbacks and amount of impervious surface. Other requirements include the preservation of vegetation in the corridor. Specifically, the Denmark Township Mississippi River Corridor Ordinance requires that any structure be setback 200 feet from the ordinary high water mark. This meets both Tier I and Tier II standards. As per Tier II guidelines, 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.

## ***Vegetation 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. The Denmark Critical Area Ordinance regulates 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 Critical Area Ordinance and the County Shoreland Ordinance 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 require that existing vegetation be restored after construction insofar as feasible.

### ***Erosion and Sedimentation Control***

Tier II guidelines are more specific than Tier I guidelines with regard to erosion control, but are essentially implemented within existing County and Township ordinances. 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.

## ***Commercial Navigation/Industry***

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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 would limit 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.



## ***Parks, Trails and Preservation Areas***

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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 MNRRA 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, including the possibility of connecting the Washington County Greenway with the Dakota County Regional Trail. 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. Areas that could be permanently preserved are identified on Figures 12, 13, and 14. Features include areas of undevelopable steep slope and bluff top areas, natural community and rare species sites, and wetlands. These preservation areas could be part of either public or privately owned preservation areas. “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.

## ***Transportation/Public Facilities***

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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

MNRRRA Comprehensive Management Plan, and this document as it plans for and/or improves these roadways.

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.

Parking areas in the Critical Area may be the most relevant concern for Denmark Township. Tier II guidelines specifically address parking facilities, all of which will be associated with residential uses within 300 feet of the river. The Shoreland Management Ordinance states that all new parking areas must be designed to take advantage of natural vegetation and topography to achieve maximum screening from public waters and minimize and control erosion. These measures should be consistent with field office technical guides of the local soil and water conservation district, or other applicable technical material. Parking areas must also meet setback requirements, currently 200'. This does not apply to parking areas for watercraft access that meet vegetative screening and erosion control requirements of the ordinances. Critical area guidelines require new public or private roads to be set back 40 feet from the bluffline.

*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*

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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 LSCWMO, 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 Comprehensive Plan identifies a number of specific changes to the ordinances that need to be considered by the Township. Some of these changes include:

- ✓ 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.
- ✓ Amend the zoning map to be consistent with the 2030 Planned Land Use map.
- ✓ A review of the commercial district provisions to promote development, ensure appropriate use and regulation, and prevent land use or environmental incompatibility. This will include a review of signage regulation.
- ✓ A review of ordinances to implement the surface water management plan.
- ✓ Modification of the sewage treatment system regulations, after Washington County's adoption of its new ordinance.

Implementation items in addition to ordinance review include:

- ✓ Establish criteria for evaluating Washington County Land and Water Legacy program applications.
- ✓ Development of a plan for the O'Connor Family-Denmark Township Nature Preserve consistent with the donor's vision for the property.

## ***Capital Improvements***

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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***

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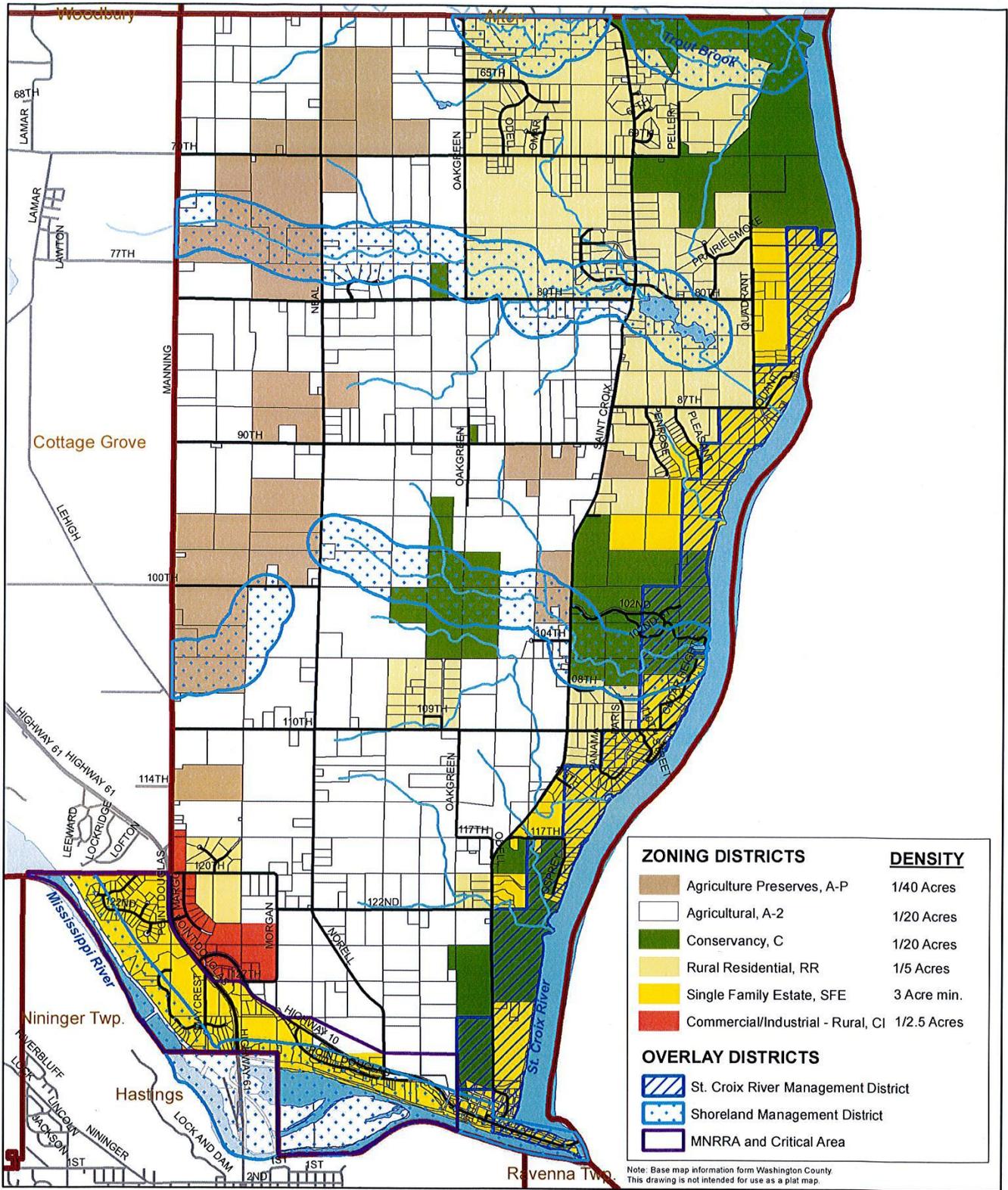
The Comprehensive and Critical Area Plans are intended to be general and flexible; however, formal amendments to the Plan will be required when land use elements or growth policies are revised. Periodically, the Township should undertake a formal review of the plan to determine if amendments are needed 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.



# Denmark Township Zoning Map

Adopted November 1, 2010



*Appendix A:  
Community Survey and  
Results*

*Appendix B:  
Previously Adopted  
Land Use Plan*