



2040 Washington County



2040 Comprehensive Plan

A Policy Guide to 2040



October 2019

2040 Comprehensive Plan

A Policy Guide to 2040



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2040 Washington
County **Comprehensive Plan**



Aerial view within Washington County towards the Twin Cities

Chapter 1 - Executive Summary

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Washington County Vision

A great place to live, work, and play... today and tomorrow.

Washington County Mission

Providing quality services through responsible leadership, innovation, and the cooperation of dedicated people.

Washington County Goals

- To promote the health, safety, and quality of life of citizens.
- To provide accessible, high-quality services in a timely and respectful manner.
- To address today's needs while proactively planning for the future.
- To maintain public trust through responsible use of public resources, accountability, and openness of government.

Washington County Values

- **Ethical:** to ensure public trust through fairness, consistency, and transparency.
- **Stewardship:** to demonstrate tangible, cost-effective results and protect public resources.
- **Quality:** to ensure that services delivered to the public are up to the organization's highest standards.
- **Responsive:** to deliver services that are accessible, timely, respectful, and efficient.
- **Respectful:** to believe in and support the dignity and value of members of this community.
- **Leadership:** to actively advocate for and guide the County toward a higher quality of life.

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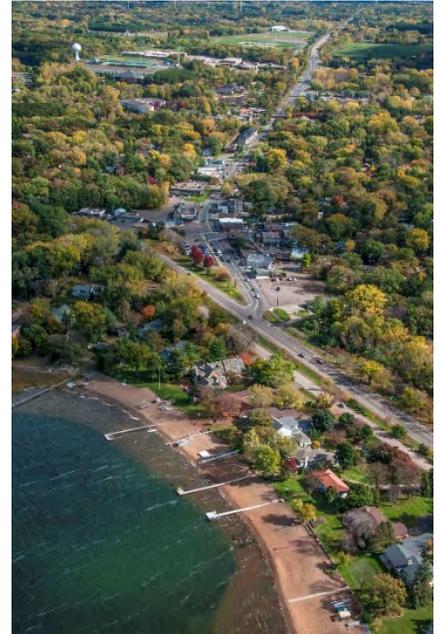
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Setting

Washington County is an area of abundant beauty, historical character, and agricultural heritage located on the eastern edge of the Twin Cities Metropolitan Area. The county has historically played a diverse role in the region, serving the Twin Cities with its commercial, industrial, community, natural, and agricultural resources. Today the county is no less diverse. From the corn fields of Denmark Township to the residential communities of Woodbury and Cottage Grove; the office and retail complexes along I-94 to the cooling waters of the St. Croix and Mississippi rivers; the booming industry in St. Paul Park and Bayport to the outdoor recreation in Lake Elmo; and the lake communities around Forest Lake to the pastoral wooded settings of Scandia and May Township, each area plays a unique role in the county and region.

Washington County covers 423 square miles, measuring 38 miles from north to south and 14 miles from east to west. The county contains 27 cities and six townships. The western boundary of the county is within 5 miles of St. Paul. The eastern boundary shares the beautiful St. Croix River as a border with the State of Wisconsin. The county is bounded on the south and southwest by 16 miles of the commercially navigable Mississippi River.



Purpose and Scope

The 2040 Comprehensive Plan describes the analysis, future projections, goals and strategies that Washington County has developed for how decisions will be made over the next twenty years. The 2040 Comprehensive Plan is an official document adopted by the County Board as a guide for policy decisions about the physical development of the county. The plan sets broad policies and strategies to direct the future growth and development in the areas of land use, transportation, water resources, parks, trails, and open space, housing, resilience and sustainability, and economic competitiveness. For each topic, the plan identifies issues, sets goals, establishes policies to achieve the goals, and identifies strategies and actions needed to implement the policies.

County Role

Washington County, like the other 86 Minnesota counties, provides a variety of essential services to create vibrant, healthy, and safe communities. The role that the county government plays supplements the efforts completed at both the state and local level. Counties support and maintain public infrastructure, transportation and economic development assets; keep residents healthy; ensure public safety to protect its citizens; maintain public information; and implement a broad array of programs in a cost-effective and efficient manner.¹ These efforts are coordinated with many government partners, including:

¹ Why Minnesota Counties Matter!, Association of Minnesota Counties

- **Cities and Townships** – Washington County cities and townships provide services at the smallest form of government. These local governments provide essential services like those provided by a county, including transportation and utility infrastructure, public safety, public administration. Cities and townships in Washington County provide a majority of land use and zoning authority in an effort to protect the health, safety and welfare of all residents.
- **Metropolitan Council** – Washington County is one of the seven-counties included within the Twin Cities Metropolitan Area, referred to as the Metropolitan Council. The Council was established to develop a shared vision and direction and to provide regional planning and guidance for the metro area. The essential services provided by the Metropolitan Council include operation of Metro Transit, Metro Mobility and Transit Link services; collecting and treatment of wastewater; water supply planning; planning for future growth; providing affordable housing options; and planning and developing a regional parks and trails system.
- **State Agencies** – Washington County coordinates with a variety of state agencies to coordinate planning efforts and implementation. These include agencies such as the Department of Transportation (MnDOT) and the Department of Natural Resources (MnDNR). Each of these departments provides for improvement and planning of various systems across the State of Minnesota.

Metropolitan Development Framework and Policy Plans

The Metropolitan Council was created in 1967 to help ensure the coordinated, orderly and economic development of the seven-county Twin Cities Metropolitan Area (1967 Minnesota Laws, chapter 896). State law requires the Metropolitan Council to adopt a comprehensive Metropolitan Development Guide that establishes parameters for regional infrastructure and local planning. This guide is comprised of a Regional Development Framework and policy plans for water resource management; parks and open space; and transportation, including transit and aviation. Minnesota Statutes section 473.864 requires local governmental units (Counties, Cities, and Townships) to develop a comprehensive plan, fiscal devices and official controls that conform to the metropolitan policy plans.

The 2040 Regional Development Framework, *Thrive MSP 2040*, was adopted by the Metropolitan Council on May 28th, 2014, and sets out five broad outcomes to guide the region’s development:

1. **Stewardship:** Responsibly managing the region’s natural and financial resources, and making strategic investments in our region’s future.
2. **Prosperity:** Fostering investments in infrastructure and amenities that create regional economic competitiveness, attract and retain successful businesses, a talented workforce, and wealth.
3. **Equity:** Connecting all residents to opportunity and creating viable housing, transportation, and recreation options for people of all races, ethnicities, incomes, and abilities.
4. **Livability:** Creating and renewing vibrant places and underlying infrastructure, investing in regional parks and affordable housing, and collaborating with partners to achieve the full range of possibilities.
5. **Sustainability:** Protecting regional vitality for generations to come by preserving our capacity to maintain and support our region’s well-being and productivity over the long term.

Thrive MSP 2040 contains the following guiding principles to govern how the region will implement the systems and policy plans to advance the outcomes of the plan.

Integration. *Thrive MSP 2040* recognizes that a key factor in the success of the region is the ability to integrate its activities to pursue the five overall outcomes, achieve greater efficiencies, and address complex problems that require the input of all involved. Coordinating effectively with stakeholders and partners of all backgrounds, abilities, and desires is crucial in the long-term wellbeing and sustainability of the region.

Collaboration. The Metropolitan Council recognizes that the issues and challenges that face the region cannot be solved by a single individual or organization. No single entity has the capacity or authority to take on the burden of working alone. Success is a result of coordinated collaboration between a range of public and private entities and extensive partnerships with residents and local organizations.

Accountability. Results matter to the Metropolitan Council. Forming a lasting commitment to monitor and evaluate the effectiveness of policies and practices allows governing bodies to adjust course to improve future outcomes. Improved accountability is achieved through data-driven approaches to measuring progress, providing easily accessible information, and actively learning from Thrive indicators.

The Metropolitan Council has adopted policy plans to implement *Thrive MSP 2040* and to guide the expansion of the four regional systems: transportation, housing, water resources (including wastewater collection and treatment), and regional parks and open space.

- The **2040 Transportation Policy Plan** addresses the need to prepare for expected growth in the region. The transportation policy gives priority to maintaining the existing metro highway system, reducing bottlenecks that impede travel, implementing new strategies to improve the system's efficiency, and adding capacity where possible. It also supports the expansion of the transit system. Aviation is included in the transportation policy plan.
- The **2040 Housing Policy Plan** addresses complex and difficult housing challenges in the region. It recognizes that these challenges demand more innovative strategies, increased inclusion, and greater collaboration. The policies that this plan lays forth strive to manage and preserve the existing housing stock, create and conserve a mix of housing affordability, and expand housing options for people of all life stages and economic means.
- The **2040 Water Resources Management Policy Plan** establishes policies to ensure the protection of water resources as the region continues to grow. It focuses on assessing the region's water supply, protecting surface water from pollution and ensuring that wastewater flowing into sewer systems is treated efficiently.
- The **2040 Regional Parks Policy Plan** recognizes the need to maintain and expand the open spaces that promote the quality of life in the region.

2040 Comprehensive Plan Overview

2040 Forecasts

The Metropolitan Council projects the following forecasted growth for Washington County between 2015 and 2040:

- 79,185 people (32 percent increase)
- 37,421 households (40 percent increase)

The Metropolitan Council projects the following forecasted growth between 2010 and 2040.

- 33,453 jobs (46 percent increase)

2040 Comprehensive Plan Intent

As part of the plan's public engagement efforts, the intent of the Comprehensive Plan emerged. The plan intent is a broad statement that encompasses the overarching aspirations of the plan. More importantly, this statement reflects the public's desire to maintain the County's unique character.

To accommodate the county's projected population growth of 79,185 people between 2015 and 2040 while incorporating sustainable growth and preserving the natural, cultural, and historic characteristics of the county.

Priority Planning Principles

The 2040 Comprehensive Plan supports a development pattern that, as much as practicable, meets current needs without creating environmental, economic, and social burdens on future generations. The County is committed to maintaining or enhancing economic opportunity and community well-being while protecting and restoring the natural environment upon which people and economies depend.

Customer service is an important part of county business. Maintaining a high level of satisfaction from citizens about quality of service, knowledge, courteousness, and responsiveness while experiencing an increased demand for services is important to the County. The County uses a performance measurement program to maintain and improve upon its commitment to high-quality service that meets and exceeds the needs and expectations of county residents.

Washington County's core functions foster an environment where commerce can develop and thrive. The Washington County Community Development Agency supports a robust business climate by: providing well-planned, essential infrastructure; maintaining a low tax rate; and assisting in creating an ample pool of skilled employees. The County strives to maintain the right blend of services to support a vibrant business sector, be it transportation and transit services, public safety, health and human services, corrections services, workforce housing, or other public services. The County is committed to stewardship of cultural and natural amenities such as land and water resources, parks and open spaces, and libraries which contribute to a high quality of life for business owners, employees and families. The County's efforts in workforce development provide skilled employees that enable companies to be competitive and successful in the local, regional, and global economies.

In 1996, the Minnesota Legislature defined sustainable development as development that maintains or enhances economic opportunity and community well-being while protecting and restoring the natural environment upon which people and economies depend. Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs. Washington County aims to meet current needs without placing environmental, economic, and social burdens on future generations to meet their own needs.

2040 Plan Public Engagement

Public engagement is a key component of the successful implementation of long-range planning efforts. A three-phase engagement strategy was developed to incorporate the public’s desires for the future of their community and stakeholder-supported strategies into the 2040 Comprehensive Plan. The input received throughout this effort is directly connected to the goals, policies and strategies described within each of the plan elements.



Phase 1 – Discovery



The first phase of public engagement set out to gain initial input from residents throughout the County regarding the opportunities and constraints they perceive for the future. Engagement events during this phase were aimed at gathering input that would inform the goals and policies of each plan element. A total of nine “pop-up events” occurred during the first phase, engaging over 250 residents. This strategy meets people where they are and captures their participation for a short period of time. General questions regarding participants’ favorite characteristic or valuable amenities were asked (see Figures 1 and 2). Detailed results are included in Appendix A.

Figure 1: What is your favorite characteristic about Washington County?



Figure 2: Which amenities provided by Washington County are most valuable to you?



Phase 2 – Element Review



The second phase was held mid-way through the plan’s development to provide an opportunity to share initial findings and strategies with the public. Input gathered during this phase ensured that the draft elements were responding to the public’s concerns and began to lay out a path towards achieving the vision.

Three open houses were held, directed at the northern, central and southern portions of the county. Participants were invited to review boards that described and outlined the initial findings of each plan element. Input received during these meetings helped to inform the finalization of each plan element of the draft Comprehensive Plan. A Local Government Unit (LGU) forum was also held which gathered together representatives from the 33 cities and townships of Washington County. A presentation was given and covered the plan elements and progress to-date. The LGU Forum also offered an opportunity for each agency in attendance to share the status of their Comprehensive Plan and ask questions of the county.

Phase 3 – Plan Review

The third phase of public engagement set out to gain input from residents regarding the final draft plan, and to confirm and reiterate the results of the first two phases of engagement. This final phase of engagement also set out to provide educational materials to the public regarding each plan element, future trends that may impact the county, and how the Comprehensive Plan will work to address and mitigate potential impacts that may arise.

Following the release of the draft plan for public review in early 2018, a survey was developed to gain insight into resident’s understanding and thoughts of the Comprehensive Plan. The results of this survey allowed for a better understanding of what about the plan residents would like to see improved upon as the plan is being completed.

Brief informational videos, covering each plan element and its contents, were produced and made publicly available for comment on the plan’s website starting in March 2018. Videos were approximately two minutes in length.

Lastly, Washington County staff were present for the entirety of the Washington County Fair from August 1st through August 5th of 2018 to promote and discuss the Comprehensive Plan. Staff were present with a variety of materials including a full draft copy of the plan, handouts containing information on each plan element and links to the online survey, as well as a screen showcasing the introductory Comprehensive Plan video. In total, nearly 200 visitors stopped by the booth to learn more about the comprehensive plan and provide input.



Plan Elements

The 2040 Comprehensive Plan contains 11 chapters that are guided by the County’s mission, values, goals, vision, and priority planning principles and public engagement findings. Many of the policies and plan elements remain consistent from the previous 2030 plan. New elements, strategies and actions from a decade of planning and projects since the adoption of the last plan include changes to land use regulations and the addition of resilience and sustainability and economic competitiveness chapters. It also includes new policies and strategies to address contemporary issues such as emergency preparedness, healthy communities, transit, and transit-oriented development. Below is a summary of each chapter of the plan and its goals.

County Context – Chapter 2

This chapter takes a close look at Washington County’s people, economy, and important themes that face the County in upcoming years. It contains key data that lays the framework for the plan.

Goals and Policies – Chapter 3

This chapter outlines the vision, goals, policies, and strategies for the 2040 Washington County Comprehensive Plan. These elements have been refined from the previous versions of the Washington County Comprehensive Plan, and include feedback from public outreach events, to reflect the current desires and concerns of residents. These elements, when utilized together, serve as a guide for how the community acts and grows as the plan is implemented. Beyond inclusion in this chapter, the goals, policies and strategies are integrated into each respective chapter.

Land Use Plan – Chapter 4



The Land Use Plan describes the areas where the County maintains land use authority, including subsurface sewage treatment systems, the Lower St. Croix River bluff land and shoreland areas, other shorelands, mining, floodplains, and the official map for Big Marine Park Reserve. Land use authority for all other areas is maintained by the respective city or township. The Land Use Plan provides for logical development patterns that preserve the existing natural resources, retain the existing character of the County, and provide a high quality of life.

Transportation Plan – Chapter 5

A key function of Washington County is to provide a robust transportation system. The transportation system supports the County’s land use and development plans, while minimizing the impact on the County’s historic and natural resources. The Transportation Plan provides policies and strategies that keep the transportation system functioning safely and efficiently. The plan’s overall goal is to increase capacity, improve safety, and reduce congestion within the constraints of the existing infrastructure and to avoid premature roadway widening.



Water Resources Plan – Chapter 6



Washington County promotes holistic management of groundwater and surface water resources and strives to work with local and state agencies to maintain a safe and abundant supply of water resources. This chapter summarizes existing conditions related to surface water, water supply, and wastewater, and discusses the structure for managing these resources across multiple agencies and levels of government.

Parks, Trails, and Open Space Plan – Chapter 7

The Washington County park system provides large open spaces that preserve the County's unique and sensitive natural resources, and provides recreational experiences that supplement local, state, or federal parks. The Parks, Trails, and Open Space Plan sets the overall goals and policies that guide development of county-controlled sites and facilities. It establishes a direction for land preservation, development, and use of various resources of the county park system.



Housing Plan – Chapter 8



Washington County directly supports a variety of interrelated resources and service, including first-time homebuyer assistance, financial and budget counseling, transportation assistance, employment services, social services, and housing maintenance. The Housing Plan focuses on promoting a diverse housing supply, ensuring that affordable housing options are available to residents and those who work in the County, and safeguarding the physical quality of housing to provide healthy living environments.

Resilience and Sustainability Plan – Chapter 9

The Resilience and Sustainability Plan is a new addition to the 2040 Comprehensive Plan which supports the County's vision for the future. Washington County strives to maintain its identity, high quality of life, and access to a healthy lifestyle for current and future residents. A key factor in this is ensuring resilience and sustainability through the County's ability to react, adapt and thrive in the face of environmental, social, and economic changes. The Resilience and Sustainability Plan summarizes the current strategies related to resiliency and sustainability in the County and it presents an implementation plan for future decision making processes.



The County's commitment to a resilient and sustainable future is incorporated into all element of the plan. While resilience and sustainability are new concepts to comprehensive planning, these concepts are widely included in current County operations. Strategies and initiatives that support this commitment are highlighted and identified with the symbol to the left, with text highlighted in a light green.



Economic Competitiveness Plan – Chapter 10

The Economic Competitiveness Plan is another new addition to the 2040 Comprehensive Plan, but highlights initiatives that remain a core part of Washington County's planning activities. A large part of these initiatives is recognized in Washington County's Economic Development Plan prepared by the Community Development Agency (CDA). The CDA has created this plan in

collaboration with local cities and townships. This is a plan that reflects their vision of the county from an economic development perspective.

Implementation Plan – Chapter 11

This chapter outlines the tools, funding mechanisms, ordinances, and other plans available to the county that can be utilized to carry out and achieve the goals, policies, and strategies for the 2040 Washington County Comprehensive Plan.



2040 Washington
County **Comprehensive Plan**



Downtown Stillwater

Chapter 2 - County Context

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Washington County Vision

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Washington County Values

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- Responsive: to deliver services that are accessible, timely, respectful, and efficient.
- Respectful: to believe in and support the dignity and value of members of this community.
- Leadership: to actively advocate for and guide the County toward a higher quality of life.

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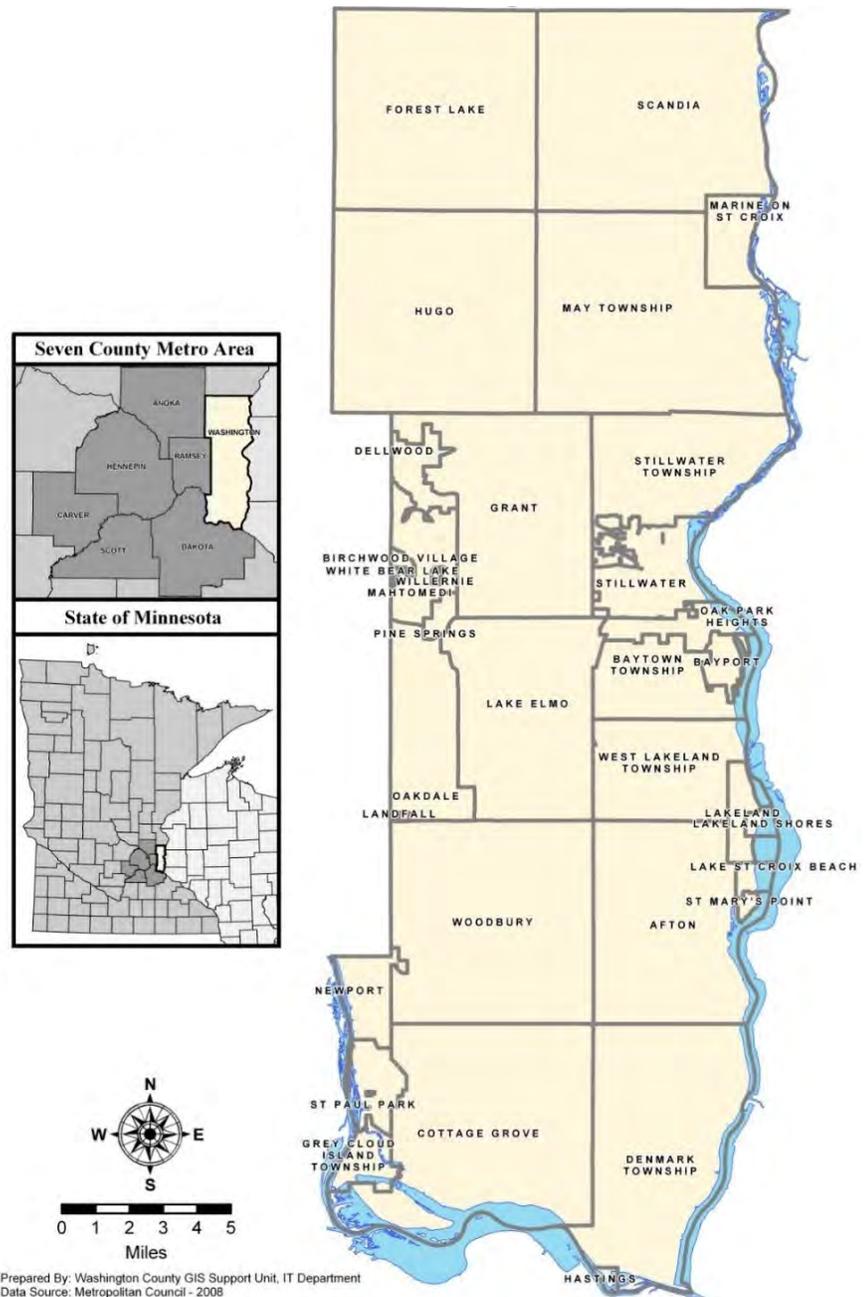
Executive Summary

Washington County is an area of abundant beauty, historical character, and agricultural heritage located on the eastern edge of the Twin Cities Metropolitan Area. The county is home to 27 cities and six townships. Encompassing 423 square miles of land and water surface, Washington County is the fourth smallest county in the state based on land area. The county is 38 miles from north to south and 14 miles from east to west. The St. Croix River forms the entire eastern border and the Mississippi River forms the southern and southwestern border (see Figure 1). In 2015, an estimated 251,015 people resided in the county.

Demographic characteristics will be referred to using one of three terms throughout this chapter – county, estimates, and forecasts. These terms provide a reference to how the number was developed, and are defined as:

- **Count:** represents an official count of a dataset. This term is only used when representing totals from a decennial (10-year) U.S. Census.
- **Estimate:** represents data from a historic period that is outside of a Census data set. For example, the 2015 population estimate of 251,015 is calculated based on past conditions but is not as accurate as a county.
- **Forecast:** represents data for a period in the future. This data is calculated based on assumed growth rates, providing a general assumption for future populations.

Figure 1: Regional Context & Washington County Communities



Historic Settlement Patterns and Influences

Washington County has historically played a diverse role in the region, serving the Twin Cities Metropolitan Area with its commercial, industrial, historical, natural, and agricultural resources.

Originally part of St. Croix County of the Wisconsin Territory, Washington County was established on October 27, 1849 after the formation of the Minnesota Territory. Many of the first permanent settlements after the 1837 treaties with native populations were located along the rivers in the area of what later became Washington County. The earliest townsite developments were in Stillwater, Lakeland, and Marine on St. Croix along the St. Croix River. Settlements in the 1840s and 1850s along the St. Croix River included Copas, Arcola, Baytown, Afton, and Oak Park. Early townsites on the Mississippi River included Grey Cloud, Point Douglas, and Newport.

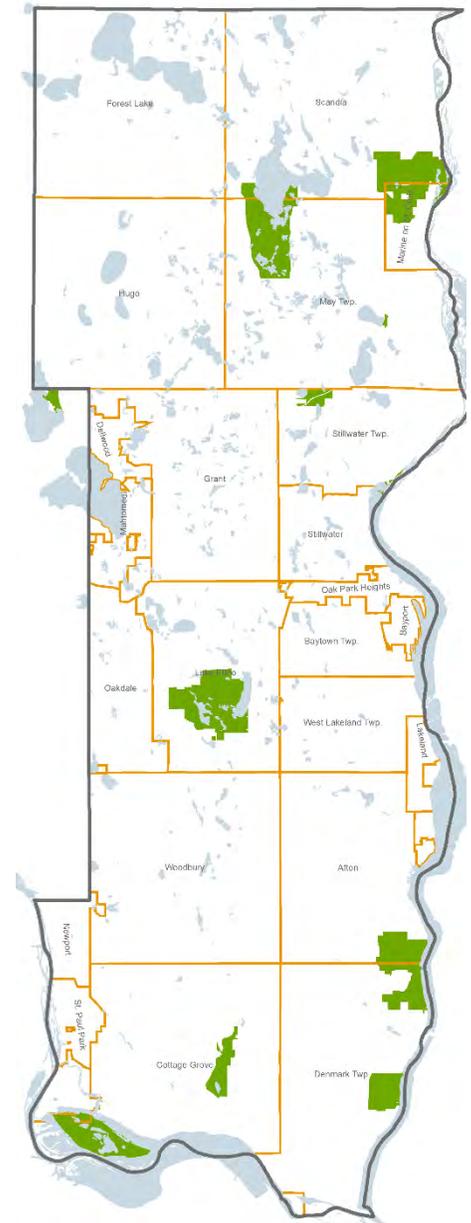
The county was one of the first areas of the state settled by people from the eastern United States and Europe, particularly Scandinavians. The earliest Swedish settlement in Minnesota occurred in Scandia in 1850, an area that was formally organized as a township in 1893.

The first commercial sawmill was established in Marine in 1839. By the 1850s, a sawmill site located in present day Stillwater became a booming lumber town. Cut timber was shipped via the Mississippi River to St. Louis and other southern markets. After the turn of the 19th century, much of the northern forests were felled and sawmilling declined, as did the area’s economy. The populations of Stillwater and Washington County plummeted.

Agriculture gained importance and became the economic mainstay of the county through the 1950s. Townships of Afton, Denmark, Lakeland, Oakdale, Cottage Grove, Baytown, Grant, Oakdale, and Red Rock (now known as Woodbury) were important agricultural areas.

The railroad played an important role in the early development of Washington County. In the 1960s, construction of interstates 694 and 94 and improvements to the state highways, such as Highway 61, facilitated suburban growth in the outer rings of the Twin Cities Metropolitan Area. Cottage Grove and Oakdale were the first suburbs. Growth in suburban areas continues today.

Figure 2: Wetlands and Regional Parks



Washington County as a Place



Scenic beauty, historic significance, recreational amenities, and proximity to the growing Twin Cities Metropolitan Area have made Washington County a popular recreation and tourism destination. These qualities also explain the county’s continued popularity for residential and commercial development.

Washington County’s physical environment is very diverse, with varying surface and underground features throughout the county. The county is fortunate to have high-quality lakes, woodlands, agricultural areas, watersheds, wetlands, and two nationally significant river valleys. These natural resources and features are remarkably intact compared with those in other metropolitan counties; this is rapidly changing due to development. Parks and preserved open space provide an opportunity to preserve portions of the county’s many natural systems, including groundwater, wildlife habitats, and vegetative and landscape types (see Figure 2).

Surface waters cover about 9 percent or about 38 square miles of the county’s 423 square miles. The majority of the county’s surface waters consist of lakes and wetlands, most of which are located in the northern half of the county. The largest lakes are Forest Lake, Big Marine Lake, Lake Elmo, White Bear Lake, and Lake St. Croix. Many of the larger lakes, once resort and vacation spots during the first part of the 20th century, are now ringed with residential development.

Before settlement, as much as 80 percent of the county was forested. The rest of the county was covered by lakes, wetlands, and prairie. After the timber was harvested and the land was cleared, agriculture prevailed. Nearly all the land suitable for agriculture was being farmed by the early 1900s. Today, woodlands cover about 9 percent of the county according to the Minnesota Land Cover Classification System, and about 54 percent of the land area is classified agriculture or undeveloped land according to the Metropolitan Council.

While much of Washington County has retained its rural atmosphere, today it is considered a “suburban” county. However, the county continues to maintain its diverse image, from the corn fields of Denmark Township to the residential neighborhoods of Woodbury, and from the office and retail complexes along I-94 to the cooling waters of the St. Croix River. Each area of Washington County possesses a distinct set of landscapes and resources.

Washington County is a place where a prosperous economy grows with vital industries. The continual expansion of the Twin Cities Metropolitan Area, with its resultant population growth, has caused a spread of highly developed suburban areas in Washington County in the cities of Woodbury, Cottage Grove, and Oakdale. The communities of Stillwater, Hugo, Bayport, St. Paul Park, Newport, and Forest Lake have developed economic bases that support a local labor force.

Scenic beauty, historic significance, recreational amenities, and proximity to the growing Twin Cities Metropolitan Area have made Washington County a popular recreation and tourism destination.

Data Sources

This chapter takes a closer look at Washington County’s people, economy, and important themes that face the community into 2040. The data from this section comes from the 2010 U.S. Census, the annual American Community Surveys (ACS), the Washington County Community Health Assessment, the Minnesota Department of

Employment and Economic Development, the Minnesota Department of Education, and the Metropolitan Council. Appendix B Washington County At-A-Glance, contains a summary of current data for Washington County.

Two agencies provide population and household projections for Washington County, the Minnesota State Demographer and the Metropolitan Council. Their projections are generated by differing methodologies. The Minnesota State Demographer’s projections are based on the U. S. Census data. The projections are tied to a series of overall statewide control numbers against which cities and townships, in the aggregate, must match. The State Demographer’s projections are used to establish broad statewide policies and to understand trends that influence statewide planning and legislation.

The Metropolitan Council’s projections are generated with a greater understanding of land availability, site suitability, and historic growth patterns in the quadrants, rings, and communities of the Twin Cities Metropolitan Area. The Metropolitan Council uses the projections to set its policies related to the location of the Metropolitan Urban Services Area and the services it provides. These projections will be used to inform elements throughout the comprehensive plan.

Population and Households

Historic Growth

Washington County experienced modest population growth in the early part of the 20th century, increasing by only 24 percent between 1900 and 1950. The county experienced dramatic population growth during the second half of the 20th century. Population grew by 58 percent between 1960 and 1970 and was followed by a sustained high growth rate until 2000. With its population surging to 201,130, Washington County was the third fastest growing county in Minnesota in the 1990s. Since 2000, growth has slowed to a rate not seen since the early 1900s.

According to the U.S. Census Bureau, between 2000 and 2010 population growth was increasingly concentrated in the cities of Forest Lake, Hugo, and Woodbury. The communities of Woodbury, Cottage Grove, and Oakdale housed 52 percent of the total population in 2010 and 50 percent in 2015 (see Appendix C). The communities of Lake Elmo, Hugo, St. Paul Park, May Township, and Woodbury are all projected to experience population growth of over 40 percent by 2040.

Table 1: Washington County Growth in Population and Households, 1970 to 2040

	1970	1980	1990	2000	2010	2015	2020	2030	2040
Population	83,003	113,571	145,896	201,130	238,136	251,015	268,410	299,130	330,200
Percent Increase*	58%	37%	28%	38%	18%	5%	7%	11%	10%
Households	21,314	35,001	49,246	71,462	87,859	92,669	102,280	116,210	130,090
Percent Increase*	55%	64%	41%	45%	23%	5%	10%	14%	12%

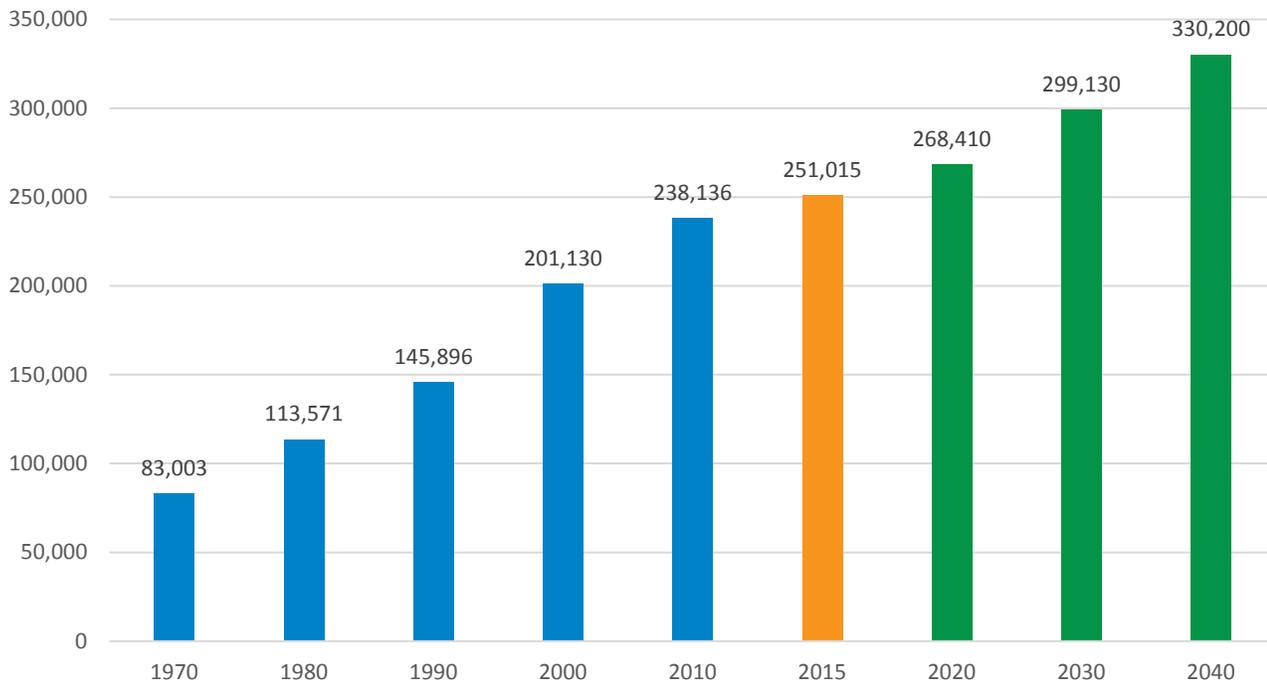
*Percentages rounded to the nearest whole number.

Source: U.S. Census Data for 1970-2010, Metropolitan Council estimates for 2010, 2015, 2020, 2030 and 2040.

Projected Growth

Today, Washington County is the fifth most populous county in Minnesota and is projected to continue this role through 2040. The American Community Survey estimates the county’s population in 2015 to be 251,015, representing a 5.4 percent growth from the 2010 official count. The county’s population is expected to grow at a modest rate with the population expected to reach 330,200 people by the year 2040 (see Figure 3). This growth will result in an increase of 32 percent and 79,185 people between 2015 and 2040.

Figure 3: Washington County Population 1970 to 2040



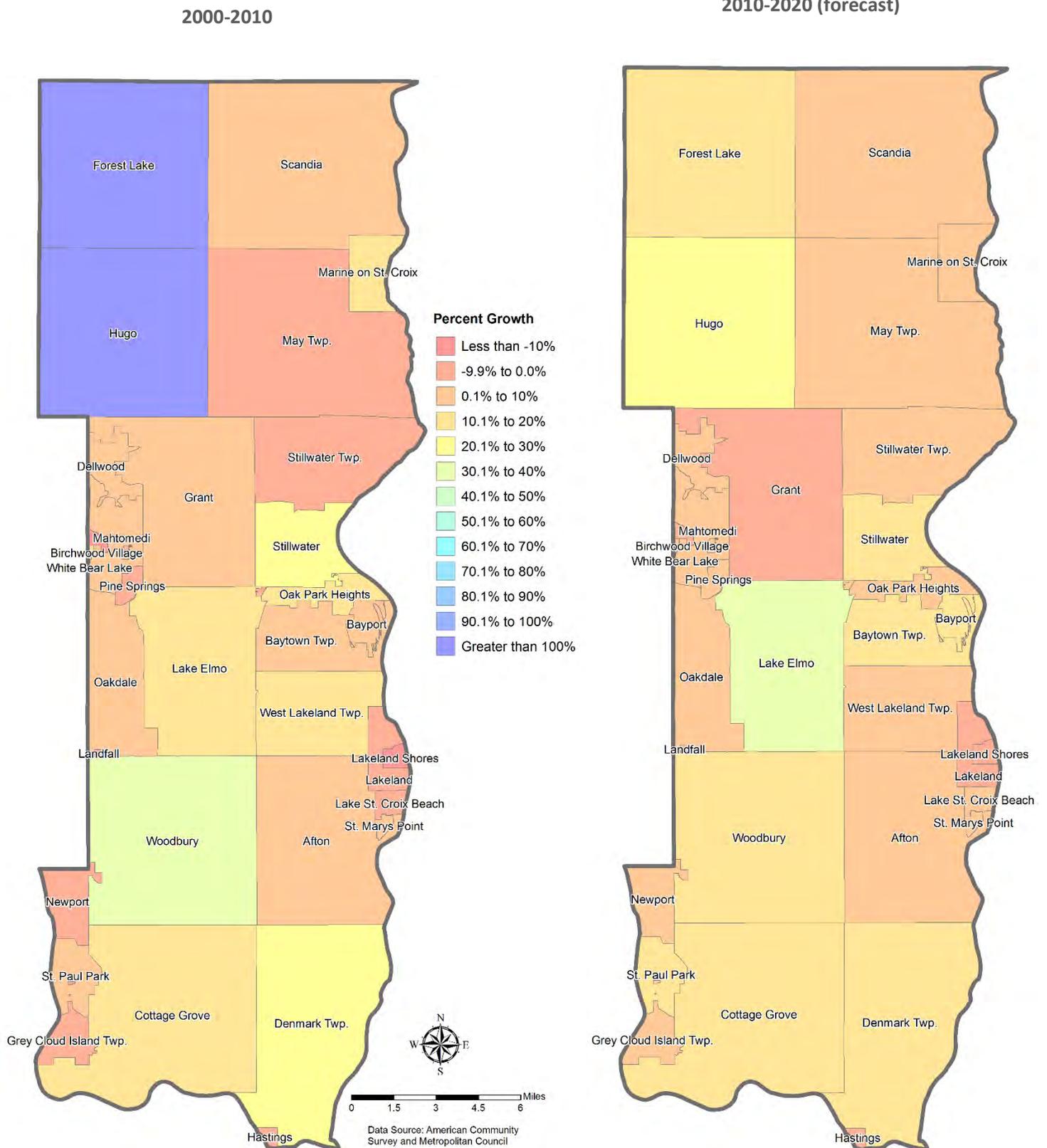
Source: U.S. Census, American Community Survey, Metropolitan Council

Washington County as a whole has experienced population growth since 1970 and is projected to continue to grow into 2040. Not all communities within the county have experienced positive population growth between the last two decennial Censuses. For example, May Township experienced a declining population from 2000 to 2010, but is expected to experience positive growth for the next 30 years (see Figure 4). The concentrations of the County’s population are also expected to change into 2040, particularly on the eastern side of the county (see Figure 5). Appendices B and C contain the Metropolitan Council’s population and household growth by community.



To accommodate the Metropolitan Council’s projected population growth into 2040, considerations must be made for additional housing and employment throughout Washington County. Washington County households are expected to grow by 41.3 percent from 87,859 in 2010 to 130,090 by 2040 (see Figure 6). Additionally, employment is expected to increase by 37.7 percent from 71,897 in 2010 to 105,410 by 2040.

Figure 4: Population Growth by Community, 2000 to 2040



2020-2030 (forecast)

2030-2040 (forecast)

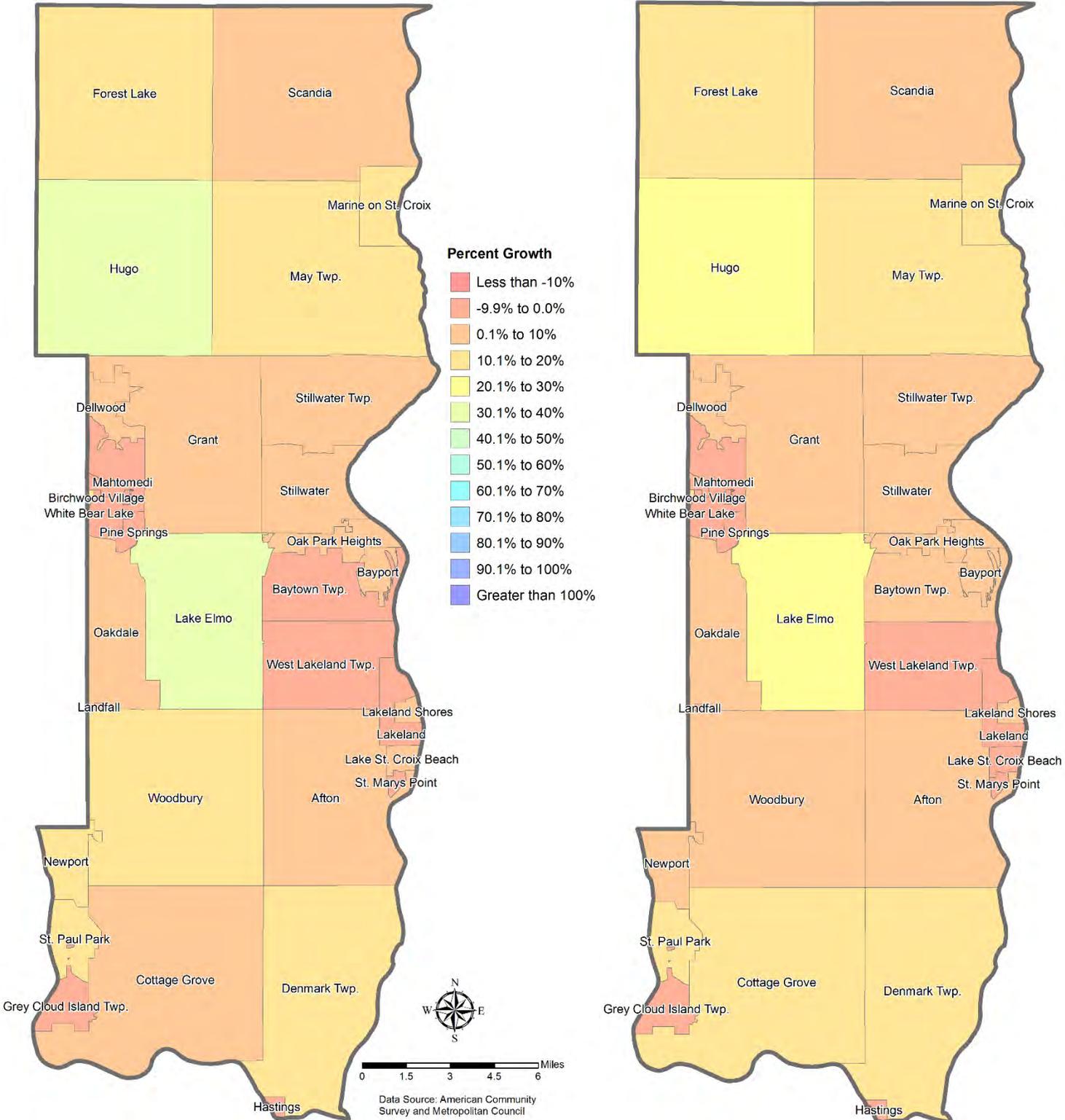
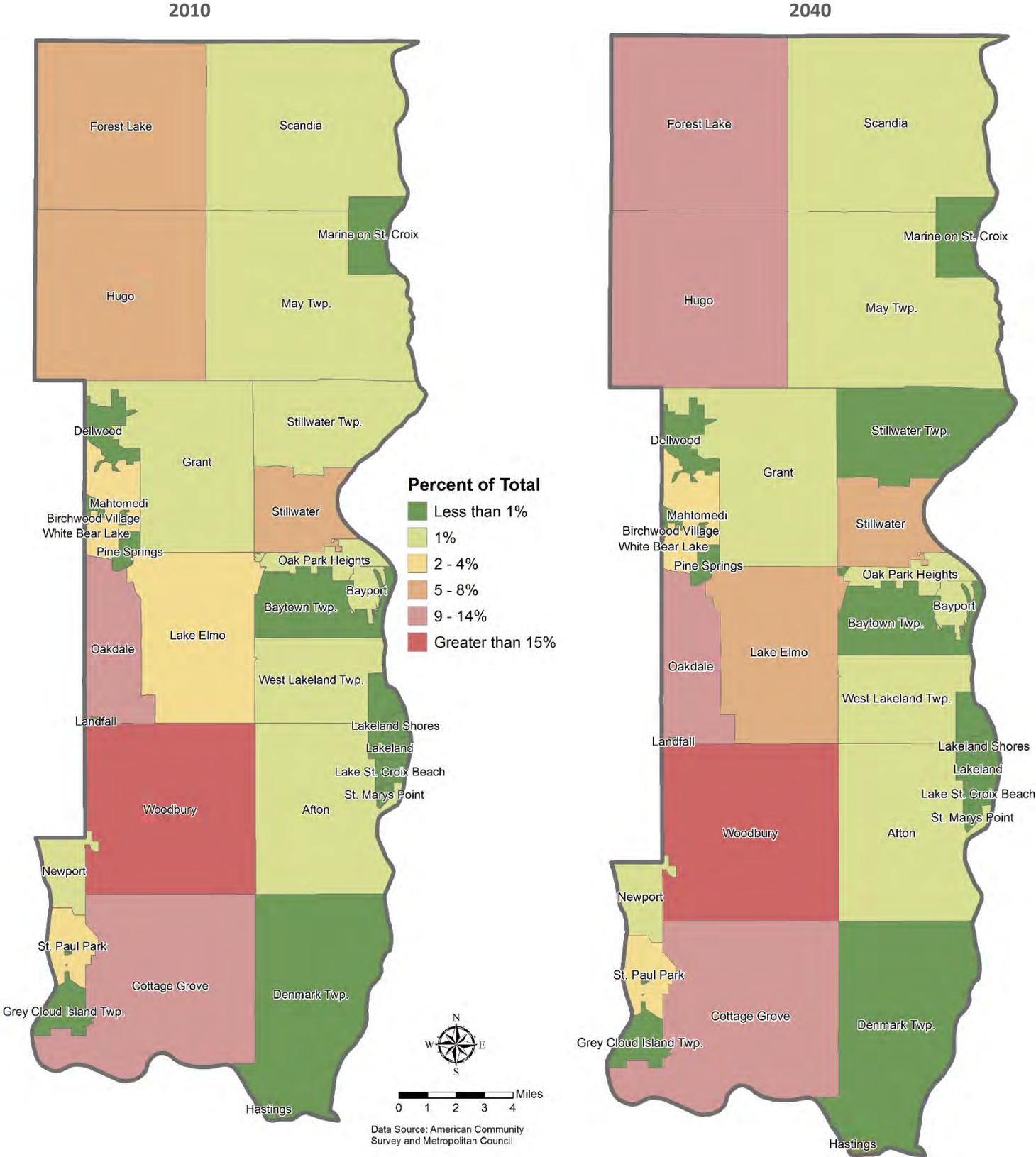


Figure 5: Percent of Total County Population, 2010 and 2040



Population Characteristics

This section highlights current and historic characteristics of Washington County’s population which is used to inform the population, housing, and employment projections throughout the Comprehensive Plan Elements.

Household Types

The 2015 American Community Survey reports 90,932 households in Washington County, an increase of 3 percent from 2010. In 2015, 73 percent of households are family households, of which 37.2 percent have their own children less than 18 years. Non-family households make up about 27 percent of Washington County. Residents 65 years of age and over make up 8.4 percent of the non-family households within the county. The average household size is 2.67 persons and the average family size is 3.13 persons.

A majority of the housing stock in Washington County continues to be single family dwellings, comprising 68 percent in 2016. The number of townhomes and multifamily dwellings continues to rise throughout the county, with increases of 51 and 67 percent, respectively, between 2000 and 2010. In 2016, townhomes and multifamily dwellings accounted for 28 percent of the county’s housing stock.

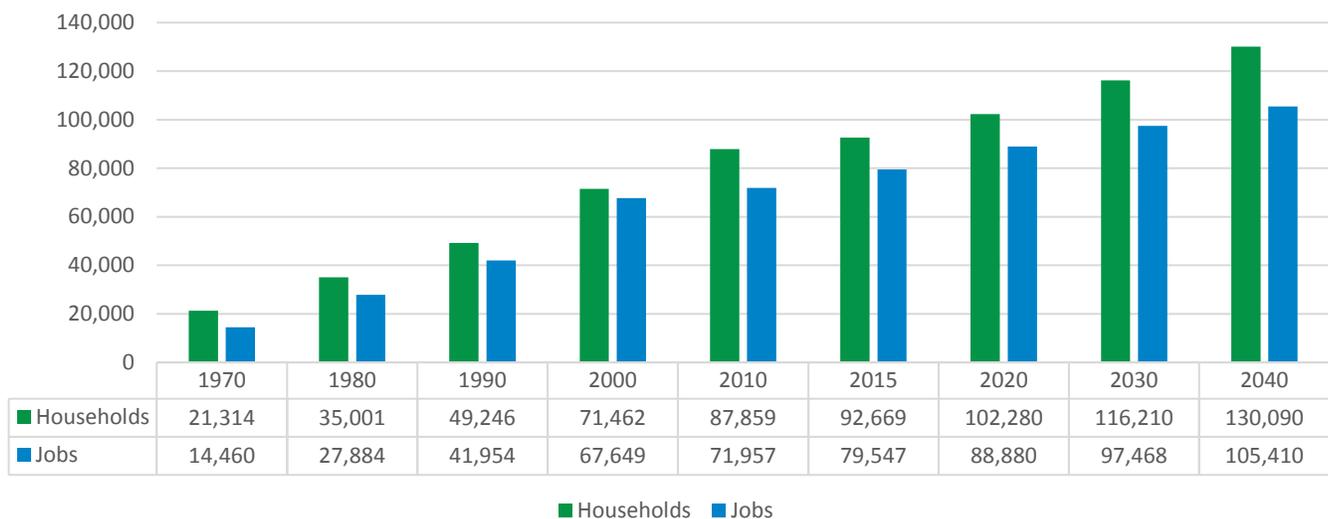
In 2015, 73 percent of the county’s households were families, compared with 64 percent for the Twin Cities Metropolitan Area. The difference is primarily the result of a high number of new families moving into the county, compared to younger singles. “Other Family” includes single parents and unmarried couples with no children.

Table 2: Washington County Household Types, 2015

Location	Non-Family		Family		
	Living Alone	Other (roommates)	Married with Children	Married without Children	Other Family
Washington County	21.8%	5.2%	27.5%	35.7%	9.8%
7-County Metro Area	28.8%	7.7%	22.3%	31.7%	9.6%

Source: 2015 American Community Survey

Figure 6: Washington County Households and Employment, 1970 to 2040



Age and Gender

The male to female ratio in Washington County is fairly even. According to the 2010 U.S. Census, 49.5 of Washington County was male and 50.5 percent was female. The 2015 American Community Survey reported 47.4 percent was male and 52.6 percent was female, representing a slight increase in the gender gap. However, the Metropolitan Council projections do not show a continued increase in the gender gap, with a greater male population in 2040.

The county’s population is aging, mirroring state trends. In 2000, the median age in Washington County was 35.1 years; by 2010 it had increased by 9 percent to 38.2 years. In 2015 the median age was 39.6 years, an increase of 4.5 years since 2000. In 2010 the median age for males was 37.2 and for females it was 39.2.



In 2008, 8.9 percent of the county population was over 65, growing to 13.6 percent in 2015. During the coming decade, between 2020 and 2030, the elderly population in Washington County will grow by nearly 60 percent. According to the Minnesota State Demographer population forecasts, between 2015 and 2040 the population of older Minnesotans will increase by 106 percent. In 2015, residents between the ages of 40 and 64 represented the largest age group, accounting for over 36 percent of the total population. The 2040 population projections align with the national trends of aging population, with residents 65 and over comprising 21 percent of the population (see Figure 7 and Table 3).

Figure 7: Washington County Projected Population by Age Group, 2015 to 2040

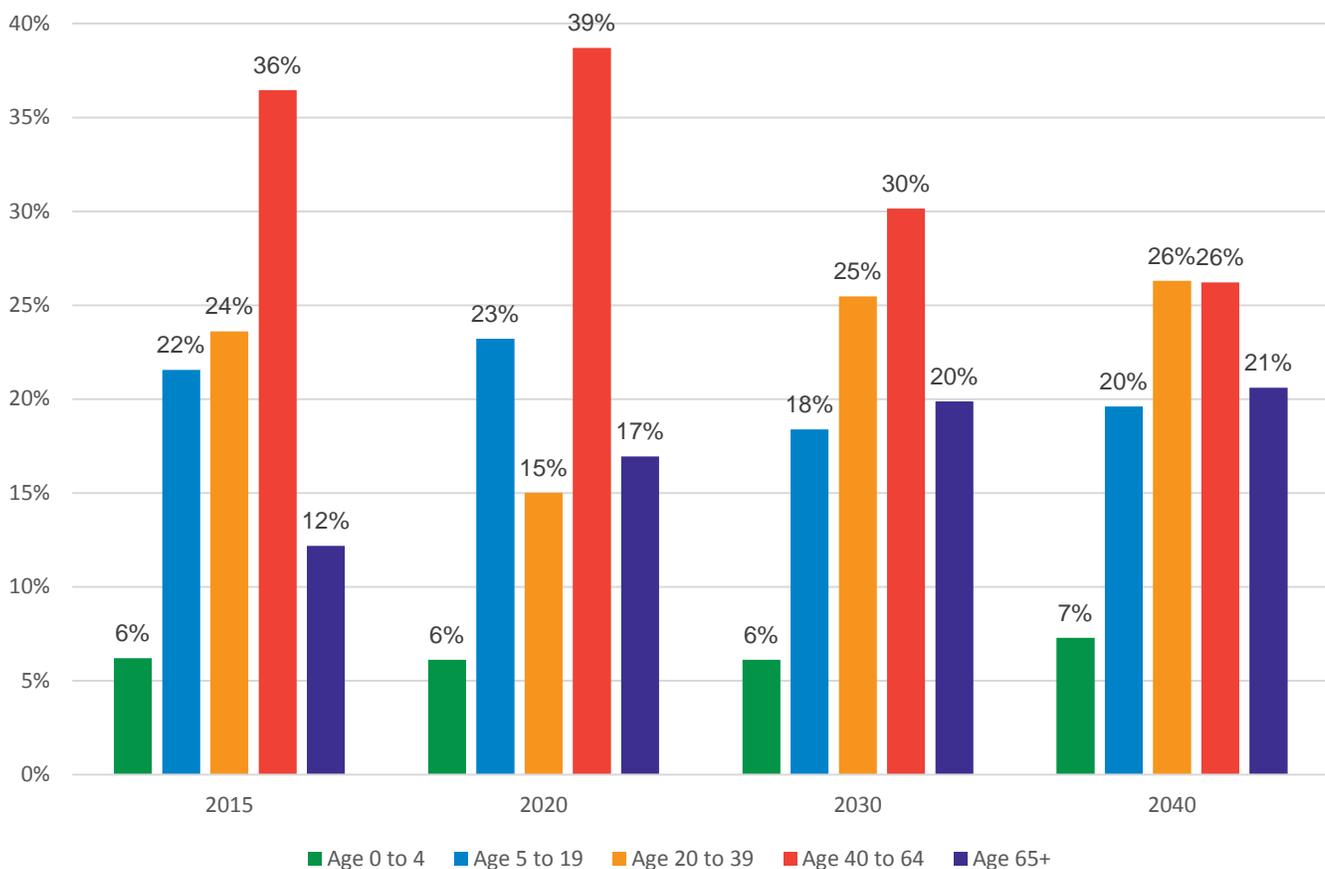


Table 3: Washington County Projected Population by Age, 2015 to 2040

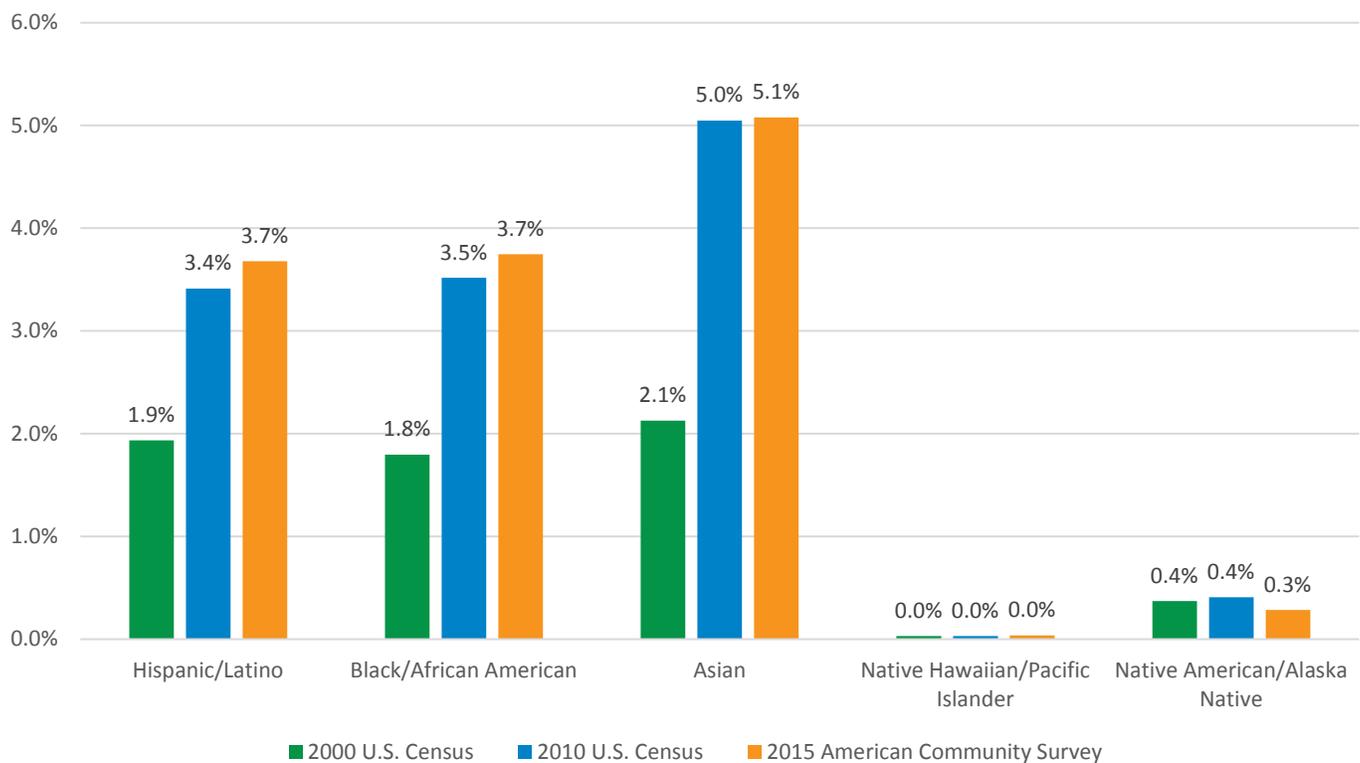
	Estimated Population		Projected Population						2015 to 2040 % Change
	2015		2020		2030		2040		
	Population	% of Total	Population	% of Total	Population	% of Total	Population	% of Total	
Age 0 to 4	15,413	6%	14,951	6%	17,484	6%	22,006	7%	42.8%
Age 5 to 19	53,508	22%	56,756	23%	52,489	18%	59,245	20%	10.7%
Age 20 to 39	58,600	24%	36,732	15%	72,696	25%	79,497	26%	35.6%
Age 40 to 64	90,473	36%	94,640	39%	86,079	30%	79,239	26%	-12.42%
Age 65+	30,246	12%	41,438	17%	56,742	20%	62,309	21%	106.0%
Total	248,240	100%	244,517	100%	285,490	100%	302,296	100%	21.8%

Source: Estimated Population – 2015 American Community Survey Estimate, Projected Population – Minnesota State Demographic Center, March 2017

Ethnic and Racial Diversity

Washington County is becoming more racially diverse. The non-white population doubled from 7.5 percent of the total population in 2000 to 14.3 percent of the total population in 2010. This percentage continues to grow with an estimated non-white population of 17.1 percent in 2015. The non-white population in 2010 was slightly smaller in Washington County (14.3 percent) than in Minnesota (14.7 percent). Figure 8 shows the change in each ethnic group between 2000 and 2015.

Figure 8: Washington County Ethnic and Racial Diversity, 2000, 2010, and 2015



According to the 2010 U.S. Census and the 2015 American Community Survey, the following changes occurred within the county between the year 2010 and 2015:

- Hispanic or Latino (of any race) population increased from 3.4 percent to 3.7 percent of the population.
- Black or African American population increased from 3.5 percent to 3.7 percent of the population.
- Asian population increased from 5.0 percent to 5.1 percent of the population.
- Native Hawaiian and other Pacific Islander remained below 1 percent of the population.
- American Indian and Alaska Native decreased from 0.4 percent to 0.3 percent of the population.

The 2015 American Community Survey reports that 90.8 percent of Washington County residents are English-only speakers in their homes. The remaining 9.2 percent speak a language other than English, including Spanish, other Indo-European languages, Asian, Pacific Islander, or some other language as their primary language at home. The Minnesota Department of Education reports that nearly 50 different languages are spoken in Washington County schools, including Hmong, Spanish, Chinese, and Russian.

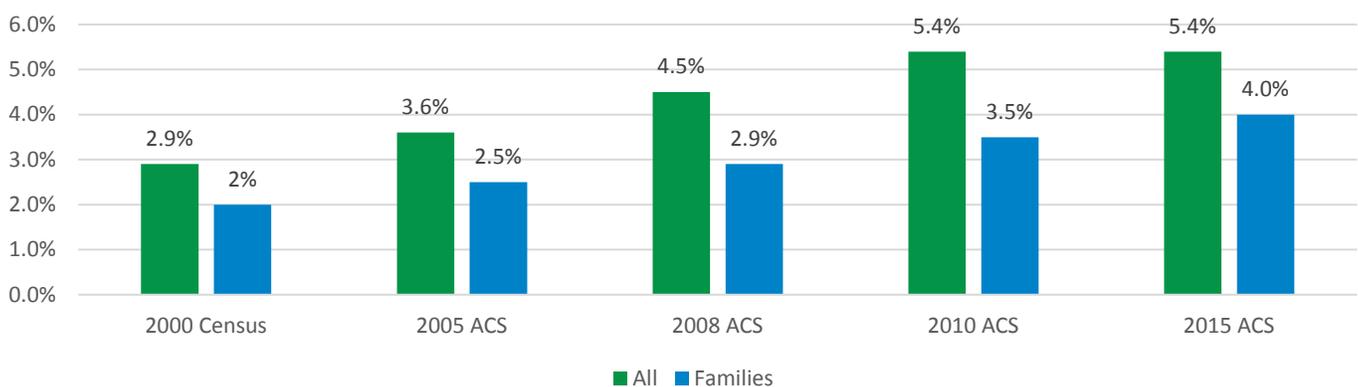
Income and Poverty

Washington County is the third most affluent county in Minnesota based on 2015 household income, after Scott and Carver Counties. Median household income for the county increased 5.8 percent from \$79,109 in 2010 to an estimated \$83,706 in 2015. Minnesota’s median household income increased 7.4 percent from \$57,243 in 2010 to \$61,492 in 2015.

According to the 2010 U.S. Census and 2015 American Community Survey (ACS) Estimates, Washington County had the third highest per capita income in the state in 2015 at \$38,461, behind Carver (\$40,322) and Hennepin (\$38,724) Counties. In 2015, Washington County’s per capita income was above the state average of \$32,157 and the U.S. average of \$28,930. Per capita income includes earnings, assets (interest, dividends, rent), and transfer payments.

Although poverty has increased nationally in the last five years, Washington County continues to have a low poverty rate. The percent of Washington County population below the poverty level remained at 5.4 percent from 2010 to 2015. Washington County continues to maintain a poverty rate lower than the State of Minnesota’s 2015 rate of 11.3 percent. The percent of families below the poverty level experienced a greater increase from 3.5 percent in 2010 to 4.0 percent in 2015, compared to non-families (see Figure 9).

Figure 9: Washington County Poverty Level, 2010 to 2015



Economy

Labor Force and Employment

In 2010, 71,957 Washington County residents were employed according to the Minnesota Department of Employment and Economic Development (MN DEED). MN DEED projects that number to increase by about 46 percent or 33,453 by 2040. The number of residents employed in 2040 is projected to be 105,410, 32 percent of the County’s population.

Between 2000 and 2016, employment increased by an average of 939 people annually. Growth in employment has stabilized in recent years and is projected to sustain at a rate that will add an average of 947 employees per year between 2016 and 2040.

According to MN DEED, the annual average wage for workers working within Washington County in 2016 was \$43,461, an increase of 35 percent from 2010. The annual average wage for workers in the Twin Cities region was \$58,111 in 2016.

The 2017 unemployment rate in Washington County was 3.7 percent, a decrease of 3 percent from 2010. The Washington County unemployment rate has historically remained lower than in the Twin Cities Metropolitan Area, and is currently 0.5 percent lower (see Table 4).

Table 4: Washington County Resident Employment, 1990 to 2017

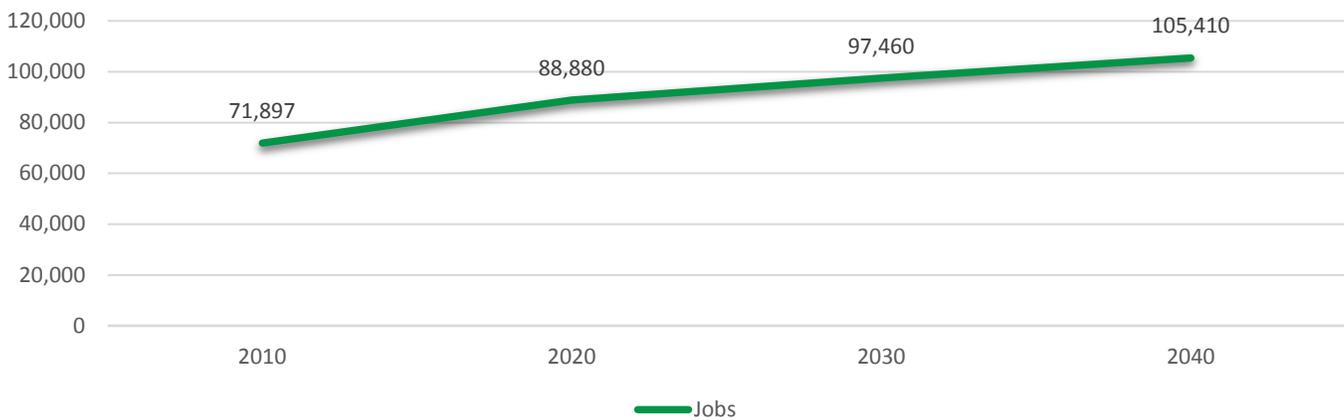
Year	Labor Force	Employment	Unemployment	Unemployment Rate	
				Washington County	Metropolitan Area
1990	82,781	79,691	3,090	3.7%	4.1%
1995	104,642	101,893	2,749	2.6%	3.0%
2000	118,092	115,159	2,933	2.5%	2.7%
2005	125,591	121,213	4,378	3.5%	3.8%
2010	132,046	123,188	8,858	6.7%	7.3%
2017	142,034	137,259	4,775	3.4%	3.9%
Change 2000 to 2010				<i>Source: Minnesota Department of Employment and Economic Development, 2017 Q2</i>	
Number	13,954	8,029	5,925		
Percent	11.8%	7.0%	202.0%		
Change 2010 to 2017					
Number	9,988	14,071	-4,083		
Percent	7.6%	11.4%	-46.1%		

Jobs



The Metropolitan Council projects employment in Washington County to grow by 33,453 jobs in 2040, a 46.5 percent increase from 71,957 jobs in 2010. The number of jobs located in Washington County is projected to grow by nearly 17,000 between 2010 and 2020 (23.5 percent), about 8,600 between 2020 and 2030 (9.7 percent), and approximately 7,900 between 2030 and 2040 (8.2 percent) (see Figure 10). Appendix E contains the Metropolitan Council’s projected employment by community.

Figure 10: Washington County Projected Job Growth, 2010 to 2040



Source: Metropolitan Council

Employment by Industry

The number of employees and average annual wage continue to fluctuate by industry throughout Washington County (see Table 5). MN DEED data indicates that Washington County experienced job growth since 2010 in every industry sector except financial activities. The construction, manufacturing, other services, natural resources/mining, and professional and business services industries all experienced over 20 percent growth. The average annual wage throughout all sectors increased by 16.5 percent between 2010 and 2016. The greatest average wage changes from 2010 to 2016 was in the other services category at 30.4 percent; the wholesale, transportation, and utilities category at 27.7 percent; and the construction industry at 26.4 percent.

Table 5: Washington County Jobs by Industry, 2010 to 2016

Industry	2010			2016			Change	
	# of Jobs	% of Total	Average Wage	# of Jobs	% of Total	Average Wage	Number	Percent
Natural Resource/Mining	655	0.9%	\$31,564	792	1.0%	\$38,740	137	20.9%
Construction	2,741	3.9%	\$49,400	3,476	4.2%	\$62,452	735	26.8%
Manufacturing	7,492	10.6%	\$60,112	9,288	11.3%	\$66,612	1,796	24.0%
W. Trade, T & U*	4,634	6.6%	\$47,268	5,087	6.2%	\$60,372	453	9.8%
Retail Trade	11,510	16.3%	\$22,464	13,448	16.4%	\$25,272	1,938	16.8%
Information	---	---	---	676	0.8%	\$40,664	---	---
Financial Activities	4,712	6.7%	\$60,476	3,812	4.7%	\$67,860	-900	-19.10%
Professional & Business Services	6,662	9.5%	\$51,844	8,019	9.8%	\$64,376	1,357	20.4%
Education & Health Services	16,079	22.8%	\$41,080	19,170	23.4%	\$47,476	3,091	19.22%
Leisure & Hospitality	9,830	14.0%	\$14,248	11,322	13.8%	\$16,952	1,492	15.18%
Other Services	2,543	3.6%	\$19,656	3,102	3.8%	\$25,636	559	22.0%
Government	3,559	5.1%	\$45,760	3,712	4.5%	\$53,716	153	4.3%
Total	70,417	100%	\$38,738	81,904	100%	\$45,136	10,811	15.4%

* Wholesale Trade, Transportation, & Utilities

--- Information not available

Sources: MN Dept. of Employment and Economic Development

Commuting

The mean travel time to work has decreased from 25.8 minutes in 2010 to 25.4 minutes in 2015. In 2015, a majority of workers, 82.5 percent, drove alone to work, while 8.6 percent carpooled, 2.1 percent used public transportation, 2.3 percent used other means, and 4.5 percent worked from home. Based upon U.S. Census Bureau Local Employment-Household Dynamics data for 2014, St. Paul and Minneapolis are the top two workplaces of people who live in Washington County (see Table 6). Woodbury has the greatest number of residents who also work within the County.

Table 6: Washington County Commuting Patterns, 2014

Top 10 workplaces of people who live in Washington County		Top ten residences of people who work in Washington County	
Workplace Location	# of Workers	Residence Location	# of Workers
St. Paul	18,572	Woodbury	6,271
Minneapolis	13,447	St. Paul	4,974
Maplewood	8,847	Cottage Grove	4,256
Woodbury	7,398	Stillwater	3,171
Stillwater	4,158	Oakdale	2,763
Bloomington	3,736	Forest Lake	1,990
Eagan	3,088	Maplewood	1,797
Cottage Grove	3,034	Minneapolis	1,398
Oakdale	2,907	White Bear Lake	1,121
Roseville	2,795	Hugo	1,021
Other	44,331	Other	22,727

Source: 2014 U.S. Census Bureau Local Employment-Household Dynamics



Chapter 3

Goals and Policies

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Executive Summary

The 2040 Comprehensive Plan is structured around core plan elements (i.e., land use, transportation, water resources, parks, trails, and open space, housing, resilience and sustainability, and economic competitiveness) that provide information on existing conditions and assumptions for the future. The 2040 Comprehensive Plan's goals, policies and strategies were developed to help set the stage for future decision making and actions for each of these plan elements. These should serve as the Comprehensive Plan's guiding principles that reflect the County's values and vision for the next twenty years. The 2040 Comprehensive Plan's goals, policies, and strategies are outlined throughout this chapter.

2040 Comprehensive Plan Intent

As part of the plan's public engagement efforts, the intent of the Comprehensive Plan emerged. The plan intent is a broad statement that encompasses the overarching aspirations of the plan. More importantly, this statement reflects the public's desire to maintain the County's unique character.

To accommodate the county's projected population growth of 79,185 people between 2018 and 2040 while incorporating sustainable growth and preserving the natural, cultural, and historic characteristics of the county.

This statement reflects the county's intent while updating the Comprehensive Plan. In that respect, the 2040 Comprehensive Plan Intent statement was used to help shape the overall plan's goals, policies and strategies.

Goals, Policies and Strategies

This chapter is meant to be employed as a tool for decision makers and residents. Therefore, the goals, policies, and strategies have been organized by plan element into a convenient matrix that aligns each goal with underlying policies and strategies. Elements may be duplicative across plan elements, as different county systems must work together to achieve the County's desired image by 2040. Specifically, the Comprehensive Plan goals, policies, and strategies work together to achieve the following:

- To promote the health, safety, and quality of life of residents.
- To provide accessible, high-quality services in a timely and respectful manner.
- To address today's needs while proactively planning for the future.
- To maintain public trust through responsible use of public resources, accountability, and openness of government.

These objectives are carried forward through each of the plan elements' goals, policies and strategies. These are further defined below:

Goals: Goals serve as broad statements for desired outcomes.

Policies: Policies provide specific direction needed to achieve a goal.

Strategies: Strategies provide detailed actions that policy makers can employ to realize the stated policies.



This chapter is meant to serve as a comprehensive collection of goals, policies, and strategies for the entire comprehensive plan. It is intended to be used in conjunction with all the plan elements. However, it is also designed to serve as a stand-alone document that can be referenced without corresponding plan elements. Throughout the entirety of this plan the goals, policies, and strategies specific to each individual plan element will be located at the beginning of each chapter and be replicated exactly as they are found here, in Chapter 3 of the Comprehensive Plan.

Land Use Goals, Policies and Strategies

Land Use Goal 1: Utilize land and related natural, cultural, and water resources in the shoreland and riverways, so they are conserved for future generations.	
Land Use Policy	Land Use Strategy
Regulate land use for the health, safety, and welfare of the residents of Washington County.	Maintain land use regulations that provide for the orderly growth and renewal of the county; allow wise use of the land; protect and conserve the county’s natural resources and ecological systems; and provide for economic stability.
Promote the proper management of natural, historic, and cultural resources for future generations.	Collaborate with other agencies to implement a variety of strategies to protect the groundwater and surface water quality, and sensitive natural features such as wetlands, steep slopes, and native plant communities when making land use decisions.
	Where practical, encourage the extension of sewer and water lines to well advisory areas and areas that have been identified with groundwater contamination.
	Protect groundwater through the Subsurface Sewage Treatment System Ordinance.
	Plan land use patterns that will facilitate groundwater recharge to protect the region’s water supply.
	Follow the Lower St. Croix Riverway land development regulations.
	Observe present floodplain rules while anticipating reduced assistance for flood protection.
	Identify, acknowledge, and seek alternatives to preserve, rehabilitate, and restore important cultural or historic sites, structures, and landscapes during the development process.
	Collaborate with local governments and watershed management organizations when setting their policies and regulations and when making land use decisions.
Support the preservation of natural and open landscapes of the county’s rural areas.	Follow the policies and strategies contained in the Natural Resources and Environmental Protection Plan Chapter.
	Support township land use regulations that allow open space developments whereby residential structures are clustered on small lots, leaving some land undivided for common use by all residents of the development, for lease to a farmer, or for conveyance to a public or a conservancy organization.
	Require adequate buffers from mining operations in order to preserve viewsheds from road corridors.
	Support programs to promote and manage roads that have significant scenic and/or historic value.
	Promote sensitive road design, bicycle-facility planning, signage, and regulations addressing building setbacks, site planning, and clearcutting along roadways designated as scenic.
	Encourage communities to identify important natural areas that will be preserved during the development process.

Conserve long-term land use options.	Regulate land uses and densities adjacent to developing communities to preserve the option for future urban development.
	Gradually expand the urban service area to meet demand.
	Support staged growth areas within communities, orderly annexation agreements, and joint powers agreements developed cooperatively between cities and townships in defined future metropolitan urban service areas.
Encourage sustainable agriculture as a land use and a viable economic activity in the county.	Encourage land use regulations that allow agricultural uses, particularly in prime farmland areas.
	Encourage land use regulations that locate incompatible uses away from agricultural areas to minimize conflicts.
	Take actions to ensure farmers’ abilities to maintain their farms and to provide a variety of farming opportunities.
	Support using sound scientific methods to assess agriculture and turf management impacts to groundwater resources and to develop education and best management practices programs.
Help maintain financially healthy governments through the wise planning of land and public facilities such as roads, parks, trails, and buildings.	Encourage communities to request expansions of the Metropolitan Urban Service Area in a gradual manner based upon analyses of available land, forecasted growth, and the capacity of regional systems.
	Encourage low development densities in rural areas not served by public waste treatment facilities, so as to preclude the need for untimely extension of public sewer or water lines.
	Coordinate county road improvement plans and land uses.
	Provide access to the county road system according to the county access standards.
	During the subdivision and development review process, identify, dedicate, or acquire future trail easements if they are identified on the county master plan system or provide a community link.
	Coordinate the Recreation and Open Space System Plan (see Chapter 7) with land uses and recreational facilities in local communities.
	Plan and site county facilities (e.g., service centers, libraries, roads, and parks) to support designated land uses.
	When possible, identify potential mining sites, and ensure county regulation does not preclude the feasibility of mining as a use.

Land Use Goal 2: Support the growth of attractive urban communities while preserving rural functions and appearances.	
Land Use Policy	Land Use Strategy
Foster a low-density, truly rural land use pattern in areas without public sewer and water.	Support the extension of utilities and expansion of the Metropolitan Urban Service Area to strategically influence development patterns and safeguard the region’s rural character.
Encourage transit-oriented development (TOD), pedestrian-oriented, neotraditional, suburban-style growth that uses land in an efficient manner in locations that connect to transportation and transit systems.	Encourage communities to adopt higher densities and mixed land uses within the Metropolitan Urban Service Area that support multimodal transportation, transit-oriented development.
	Encourage communities to revitalize or expand traditional commercial districts in keeping with their present function and appearance.
	Encourage communities to approve developments that have a pedestrian orientation, civic focus, and preserve historic structures and districts.
	Encourage communities to keep local streets interconnected and relatively narrow so as to disperse and slow traffic.
	Encourage communities to efficiently reuse land through infill development, rehabilitation, and selective redevelopment.
	Review future planned land use designations to ensure that options for high-density development in the county’s planned transitways, transit corridors, and nodes are retained.
Recognize and plan for the county's share of metropolitan growth.	Encourage communities within the Metropolitan Urban Service Area to plan for staged, serviced residential, commercial, and industrial growth to the limits of the area.
Promote land uses throughout the county that encourage active and sustainable living.	Encourage cities to plan residential, commercial, office, and industrial developments that support transit, especially along identified transit corridors.
	Encourage cities and developers to create development patterns, including mixed land uses that provide good pedestrian and non-motorized circulation to provide the opportunities for residents to be more physically active.
Encourage land uses that promote a full spectrum of life cycle housing types for all incomes, ages, and races.	

Land Use Goal 3: Design the land use plan to support economic development.

Land Use Policy	Land Use Strategy
Locate commercial and industrial growth where urban services are available; continue to prohibit commercial and industrial land use in unsewered areas.	Zone commercial and industrial development in areas with urban services and with access to transportation systems capable of supporting the land uses. Encourage the extension of sanitary sewer lines and water mains to previously unserved areas in order to accommodate imminent demand for office, industrial, retail, or service businesses that appear to have potential for significant numbers of jobs and increases in the tax base.
Promote commercial and industrial development in planned clusters such as business parks and mixed-use developments.	Review the Development Code to ensure that it allows for this type of development.
Provide for the removal and processing of sand and gravel, rock, soil, and other aggregate materials vital to the economic well-being of the region, while protecting adjacent land uses from adverse impacts.	Administer the Washington County Mining Regulations.
Support land use patterns that efficiently connect housing, jobs, transportation, transit, and retail and commercial centers.	Support development that accommodates non-motorized travel and provides connections to housing, services, jobs, and open space.

Land Use Goal 4: Work to retain important historic contexts and features, including structures, landscapes, archaeological sites, and pedestrian-oriented village development patterns.

Land Use Policy	Land Use Strategy
Continue to acknowledge the county’s history when planning, preserving, and developing its infrastructure.	Through the environmental review and Section 106 process, follow state and federal laws in protecting historic sites on the Historic Register when designing and siting county sponsored projects such as facilities, roads, parks, and other physical structures. Avoid impacts where possible and mitigate where not. Be sensitive to sites that are not on the National Register but which are historically important locally or are locally designated. Review and update landscaping and maintenance work to include historically-accurate plantings and design features to accommodate use of the grounds by public and private clients. Use information from the Washington County Historic Contexts Study, as well as state and local contexts, as a baseline for evaluating properties. Use historical information and assessments in county planning processes. Investigate opportunities to identify and interpret historic Native American activities in the Washington County park system.

<p>Continue to preserve natural, scenic, open, and agricultural landscapes and encourage preservation of historic sites through land planning activities.</p>	<p>Encourage low-density housing development and site new houses carefully through lot averaging and open space design developments.</p>
	<p>Advocate development that is in keeping with historic town land use patterns.</p>
	<p>Encourage open space developments as a way to preserve historic landscapes.</p>
	<p>Analyze the impact on historical resources during the development process.</p>
	<p>Encourage local governments and others to preserve significant historic sites, such as churches, residences, industrial sites, bridges, railroad depots, archaeological sites, and landscapes.</p>
<p>Provide stewardship of county-owned historic properties.</p>	<p>Consider public and private funding sources to adequately maintain the county’s historic properties.</p>
	<p>Identify opportunities to acquire, preserve, rehabilitate, or restore important cultural or historic sites, structures, and landscapes.</p>
<p>Collaborate with the Washington County Historical Society, cities, and others to promote and interpret county history with events and public information.</p>	<p>Support the interpretation of historic structures and contexts located in county parks.</p>
	<p>Include a historic preservation and stewardship component in all Washington County park master plans.</p>
	<p>Investigate a county signage program along county roads and trails to identify and/or interpret historic sites.</p>
<p>Provide information on historic sites to the appropriate organization as surveys and information are available.</p>	<p>Continue supporting activities at the Washington County Historic Courthouse that foster knowledge and appreciation of the county's heritage.</p>
	<p>Work with the State Historical Preservation Office and local history groups to maintain and provide information on historic sites.</p>
	<p>Help provide information to aid historic preservation.</p>
	<p>Document and evaluate the historical aspects of county owned properties as part of maintenance and development plans.</p>
<p>Encourage communities to preserve historic properties through their planning and preservation efforts.</p>	

Transportation Goals, Policies and Strategies

Transportation Goal 1: Plan, build, and maintain an interconnected and accessible transportation system that considers all users and modes of travel.	
Transportation Policy	Transportation Strategy
Coordinate transportation mobility and choice to meet a diversity of needs while considering appropriate systems levels of service.	Support levels and types of transit service that match specific needs of the community based on ridership forecasts, development patterns, and mobility needs.
	Provide information on availability of transit service to encourage greater use.
	Integrate non-motorized accommodations into the design of roadway and transit facilities to increase access to destinations.
	Adopt a bicycle and pedestrian plan to address county recreation and transportation needs.
Work with partners to identify and coordinate transportation system improvements to accommodate growth and development.	Coordinate with municipalities, the Metropolitan Council, and MnDOT to assign roads to their appropriate functional classification and jurisdiction.
	Balance existing and planned land uses with county goals through transportation planning.
	Identify gaps in trail network and prioritize investments to improve non-motorized access to destinations.
Ensure broad participation in transportation planning and decision making.	Complete annual Capital Improvement Plan (CIP) review process to identify fiscally responsible system improvements that are consistent with county priorities and meet the needs of municipalities.
Support regional planning activities to enhance interagency collaboration and coordination.	Contribute to local, regional, and state transportation coalitions and advisory teams.
	Coordinate with partners, including the Metropolitan Council and Minnesota Department of Natural Resources, to preserve, maintain, and expand the regional and state trail networks.
Pursue federal, state, regional, and local funding opportunities to preserve, maintain, expand, and modernize the transportation network.	Strategically apply for funding to offset county investment needed for the transportation system.

<p>Coordinate with partners to achieve the goals included in the other chapters of the Washington County 2040 Comprehensive Plan.</p>	<p>Identify opportunities to collaborate with intra-county and local partners to achieve Washington County 2040 Comprehensive Plan goals through investments in the transportation system.</p>
<p>Plan, build, and maintain roadways to accommodate existing and future traffic growth.</p>	<p>Design new or reconstructed roads to a 10-ton standard to accommodate truck traffic using the county road system.</p>
	<p>Monitor bridge sufficiency rating to prioritize maintenance, repair, or replacement to address deficiencies.</p>
	<p>Use Cost Participation Policy (#8001) to equitably distribute the costs of transportation projects.</p>
<p>Support land use policies and densities to promote the development of transit-supportive districts to focus transit service and capital investments that align with the county’s transit vision.</p>	<p>Coordinate transit investments with land use and transportation planning.</p>
	<p>Work with local partners to develop land use plans and policies that incorporate transit-oriented development opportunities near identified transit stations and transitway corridors.</p>
<p>Advocate and promote long-term investments in transit including METRO Gold Line, Red Rock Corridor, Rush Line Corridor Extension, and TH 36 Corridor to provide reliable and efficient transit services.</p>	<p>Coordinate with the Metropolitan Council, MnDOT, and municipalities through project development, engineering, and construction of METRO Gold Line to improve transit access and multimodal networks.</p>
	<p>Collaborate with local communities on station planning, park and rides, land use, streetscape, and other transit-related amenities.</p>
	<p>Implement recommendations from county-led transportation and transit studies.</p>
<p>Transportation Goal 2: Preserve and modernize the existing transportation system.</p>	
<p>Transportation Policy</p>	<p>Transportation Strategy</p>
<p>Support pavement preservation program to maintain the structural integrity of and maximize investment in the roadway system.</p>	<p>Use the Pavement Condition Index (PCI) rating to identify system needs.</p>
	<p>Conduct yearly field reviews to visually inspect roadway conditions.</p>
<p>Preserve, protect, and obtain rights of way to accommodate future transportation improvements.</p>	<p>Apply Ordinance for the Management of County Highway Right-of-Way (#188) to keep right-of-way in state of good repair and free from unnecessary encumbrances.</p>

<p>Explore and support emerging technology and information systems to improve planning, building, and maintaining the transportation network.</p>	<p>Consider opportunities to improve infrastructure (e.g., fiber optics and other utilities) in county right-of-way during transportation projects.</p>
<p>Transportation Goal 3: Improve safety and efficient for all users.</p>	
<p>Transportation Policy</p>	<p>Transportation Strategy</p>
<p>Support ongoing safety review process that promotes both proactive and reactive treatments to reduce crashes.</p>	<p>Use Washington County’s Intersection Control Ranking System (ICRS) Annual Report to identify intersections where increased traffic control is justified.</p> <p>Coordinate with partners to improve safety and usability of county roadways when developing safe, effective, and implementable strategies in key locations like near schools and at non-motorized crossings.</p> <p>Develop roadway crossings and trail facilities within county roadway corridors to promote safety for all users.</p> <p>Request engineering and traffic investigations as needed from the Commissioner of Transportation to establish safe and reasonable speed limits upon completion of reconstruction or major alteration of county roadways.</p>
<p>Use traffic management techniques to improve operations, safety, and useful life of the roadways.</p>	<p>Implement Intelligent Transportation Systems to efficiently manage the system, communicate travel information to users, and improve safety.</p> <p>Deploy intersection management strategies to prolong operational lifespan of roadways.</p>
<p>Pursue access management practices to maintain the intended balance of access and mobility on county roadways.</p>	<p>Review development proposals and construction plans for consistency with Access Spacing Guidelines (see page 41) to manage the number and location of public roadways, private roadways, driveways, median openings, roundabouts, non-motorized crossings, and traffic signals.</p> <p>Require consistency with county right-of-way ordinance Access Spacing Guidelines prior to issuing an access permit.</p> <p>Promote access from local roadways to develop and implement corridor-specific access management plans for county roadways to minimize access points on county roadways.</p> <p>Develop memoranda of understanding with communities on these corridors to streamline the project development process and help guide future development consistent with the county’s vision.</p> <p>Review plats to ensure remnant parcels can obtain future access from local roadways.</p>

Transportation Goal 4: Promote positive environmental and health outcomes.	
Transportation Policy	Transportation Strategy
Explore opportunities to improve the environment and encourage physical activity.	Work with local partners to promote land use patterns that enable alternative modes of travel and reduce reliance on the private automobile.
	Identify trail connections to provide links to key destinations.
Include strategies and best management practices related to the environment when planning, building, and maintaining transportation facilities.	Promote techniques to improve quality of water runoff.
	Develop and implement techniques for county roadway maintenance to minimize chemical and particulate runoff.
Prevent, minimize, or mitigate impacts to natural, cultural, and historic features.	Use community-based design to ensure board participation in transportation planning.

Water Resources Goals, Policies and Strategies

Water Resources Goal 1: Manage the quality and quantity of water resources to protect human health and ensure sufficient supplies of clean water to support human uses and natural ecosystems for current and future generations.	
Water Resources Policy	Water Resources Strategy
Lead by example in county operations with regards to water management.	Identify opportunities for water conservation, efficiency and/ or reuse in county facilities, grounds and operations.
	Support development and implementation of a county Energy Plan which includes water efficiency/conservation.
	Continue to review alternatives to using and storing salt for de-icing operations that are protective of public safety and the environment.
	Incorporate Low Impact Development practices and green infrastructure into county led projects and at county facilities.
	Demonstrate nutrient load reduction practices on county properties (i.e., volume control best management practices, reduced fertilizer use, minimized turf areas, use of native vegetation, etc).
Prevent future groundwater contamination by ensuring sound management of solid and hazardous waste within the county.	Maintain solid and hazardous waste regulation through local ordinances.
	Promote best practices for solid waste management through the waste hierarchy. This includes reuse, recycling, organics, and yard waste. See the Resilience chapter for more information.
	Continue to strengthen outreach and education on household hazardous waste disposal options through the use of county environmental center and other facilities/events that are available.
	Continue partnership with Ramsey County through the Recycling and Energy (R&E) Board to collaborate in joint programming and projects and explore new technologies at the R&E Center to produce energy and fuels, make compost or harvest materials for creation of consumer products.
Ensure no-net-loss of the quantity and quality of wetlands in accordance with the Minnesota Wetland Conservation Act.	Avoid wetland impacts, where feasible, in accordance with the Minnesota Wetland Conservation Act and watershed management organization rules.
	Where avoidance is not possible, mitigate wetland impacts in accordance with the Minnesota Wetland Conservation Act and watershed management organization rules, replacing the key functions as determined by local values.
	Restore degraded wetlands to a higher functional level where feasible.
	Work with the Washington Conservation District on implementing the Wetland Conservation Act and Best Management Practices for shoreland and wetland areas during the development process.

<p>Encourage activities to reduce pollutant loading (e.g. nutrients, sediment, and thermal) to lakes, streams, and the St. Croix and Mississippi river basins.</p>	<p>Promote the use of volume control practices for annual pollutant load reduction.</p>
	<p>Support baseline monitoring to assess condition of water bodies in the county.</p>
	<p>Incorporate Total Maximum Daily Load (TMDL) requirements, as applicable, into county planning and construction projects.</p>
<p>Support a coordinated, multifaceted approach to managing subsurface sewage treatment systems (SSTS); including research, education, and regulation in accordance with state rules.</p>	<p>Continue implementing SSTS ordinance in accordance with Minnesota Rules 7080-7083. Update the local ordinance to be consistent with changes in state rules, as needed.</p>
	<p>Locate all new systems where soil capabilities are adequate to provide for proper treatment system installation.</p>
	<p>Conduct a countywide assessment for SSTS to determine levels of risk and inform future decision-making.</p>
	<p>Continue to provide financial assistance for SSTS replacement through the SSTS loan program. Explore additional financial assistance options for residents including local and state grants.</p>
	<p>Strengthen education efforts related to SSTS for homeowners, realtors, and other stakeholders.</p>
	<p>Promote development of community sewer systems in areas with high rates of noncompliant SSTS or where small groups of homes make such systems feasible.</p>
	<p>Promote the reuse of treated wastewater at metropolitan treatment plants for beneficial purposes.</p>
<p>Protect shoreland areas in order to maintain natural habitat and water quality.</p>	<p>Amend the Shoreland Ordinance in accordance with the state shoreland rules. See Land Use chapter for more information.</p>
	<p>Implement and enforce the Buffer Law in accordance with state law.</p>
<p>Implement and enforce a Storm Water Pollution Prevention Program (SWPPP) to reduce pollution created by stormwater runoff in order to protect water quality in the county.</p>	<p>Participate in the East Metro Water Resource Education Program to increase public awareness and understanding of stormwater issues and the impacts of stormwater runoff on water quality.</p>
	<p>Provide training opportunities for county staff in erosion control, best management practices, good housekeeping, and pollution prevention at construction sites.</p>
	<p>Coordinate with other Municipal Separate Storm Sewer (MS4s) to improve implementation efficiency and effectiveness.</p>
<p>Protect land, structures, and natural communities from flooding that exceeds natural water level fluctuations.</p>	<p>Regulate flood- hazard areas subject to periodic inundation causing hazard to life and property, disruption of commerce and governmental services, unsanitary conditions, and interruption of transportation and communication.</p>
	<p>Prevent new building and limit expanding existing structures located in floodplains.</p>

<p>Protect land, structures, and natural communities from flooding that exceeds natural water level fluctuations. <i>(Continued)</i></p>	<p>Amend Floodplain Management Regulations as required by the Federal Emergency Management Agency (FEMA) and MN Rules 6120.5500.</p>
	<p>Participate in the Flood Insurance Program.</p>
	<p>Collaborate with local watershed organizations, local governments, the Minnesota Department of Natural Resources, and the Federal Emergency Management Agency to update and adopt the flood insurance rate maps. These maps are used by insurance and mortgage companies to determine the need for flood insurance on properties within the county.</p>
<p>Support integrated resource management and projects that provide multiple or co-benefits.</p>	<p>Seek opportunities to enhance water quality protection in related projects such as those that promote and improve pollinator habitat, preserve open space, and encourage alternative agriculture practices including cover crops and emerging markets.</p>
<p>Support efforts to slow the spread of Aquatic Invasive Species (AIS).</p>	<p>Continue Local AIS Prevention Aid program (as funds remain available from the State).</p>
	<p>Evaluate results of Local AIS Prevention Aid grant activities annually and encourage grantees to modify their approach, where needed, to most effectively slow the spread of AIS.</p>
	<p>Monitor the latest state and national AIS research, and encourage prospective grantees to implement best management practices to effectively slow the spread of AIS.</p>
<p>Water Resources Goal 2: Protect groundwater and surface water resources through coordination and collaboration with state and local water resource organizations.</p>	
<p>Water Resources Policy</p>	<p>Water Resources Strategy</p>
<p>Facilitate the sharing of groundwater and surface water information and resources through interdisciplinary and intergovernmental work.</p>	<p>Initiate shared projects and conduct joint studies and research initiatives related to water management as funding opportunities arise.</p>
	<p>Provide leadership for the Water Consortium to improve the efficiency and effectiveness of water management within the county.</p>
	<p>Develop collaborative strategies and actions to implement the Washington County Groundwater Plan and annual work plan.</p>
	<p>Support inter-governmental coordination and cooperation in implementing existing and developing new groundwater, surface water, and wetland rules, policies, and programs.</p>
	<p>Implement sound watershed management practices in cooperation and conjunction with state and local government entities engaged in water management programs.</p>

<p>Encourage local governments to consider groundwater and surface water protection when adopting land use plans and zoning ordinances and making land use decisions.</p>	<p>Encourage communities to regulate the siting and permitting of new land development to protect groundwater quality and quantity from degradation and depletion.</p>
	<p>Share technical information with communities so that they may develop effective groundwater policies and plans.</p>
	<p>Encourage use of sound scientific data and understanding in planning, zoning, and land use decisions.</p>
	<p>Encourage communities to develop groundwater protection policies related to the siting and permitting of new commercial and industrial development.</p>
	<p>Encourage communities to establish and enforce standards that prevent ground and surface water contamination.</p>
	<p>Establish and enforce more stringent standards to protect areas of significant groundwater recharge.</p>
<p>Collaborate with state agencies and local communities to promote and support the efficient use of groundwater resources to ensure that drinking water supplies are adequate for projected growth in the county.</p>	<p>Promote local planning and land use patterns that protect groundwater quality and quantity.</p>
	<p>Promote research and water supply planning to provide for sustainable water supplies and, to the extent possible, minimize the loss of flow to surface water features and groundwater dependent natural resources.</p>
	<p>Encourage local units of government to develop and implement water conservation and efficiency plans.</p>
	<p>Support local partners to implement water conservation and efficiency practices and programs.</p>
	<p>Continue to track on local and regional groundwater-surface water interaction issues.</p>
<p>Collaborate with partners including the Minnesota Department of Natural Resources, Minnesota Aquatic Invasive Species Research Center, Washington Conservation District, watershed districts and management organizations, lake associations, and others on AIS activities.</p>	<p>Encourage organizations with similar or overlapping AIS management goals to work together to leverage resources.</p>
	<p>Convene organizations working on AIS education and management efforts annually to highlight the latest research and most effective practices.</p>
<p>Collaborate with partners to build climate resilience through integrated surface and groundwater management. See Resilience chapter for more information.</p>	<p>Promote green infrastructure practices that support resiliency and adaptability to climate events.</p>
	<p>Coordinate with other resilience efforts as described in the resilience chapter.</p>
<p>Collaborate with state and local agencies to involve and educate the public in water resource management.</p>	<p>Participate in the East Metro Water Resource Education Program to increase public awareness and understanding of water issues.</p>
	<p>Support regional education efforts, where feasible, including the Metro Children’s Water Festival, Watershed Partners, and others.</p>

Parks, Trails and Open Space Goals, Policies and Strategies

Parks, Trails, and Open Space Goal 1: Plan, build, and maintain growing network of parks and trails that serve our communities and the greater region.	
Parks, Trails, and Open Space Policy	Parks, Trails, and Open Space Strategy
Prioritize investment in infrastructure and facilities to ensure safe, high quality experiences for park users.	Continue to assess condition of infrastructure and facilities.
	Provide timely and quality maintenance of existing infrastructure, facilities, and equipment.
	Assess, rank and fund new park and trail infrastructure and facilities.
Plan and build the park system to serve the needs of a growing and changing county and region.	Plan and adopt new park master plans; including, Square Lake Special Recreation Feature and Pine Point Regional Park.
	Assess the role of sites not currently a part of the regional or county park system for future inclusion in the park system.
Plan and build the trail system to link our regional parks and connect communities to local and regional amenities.	Plan and adopt trail master plans; including, Central Greenway Regional Trail (central and north segment) and St. Croix Valley Regional Trail (middle segment).
	Adopt a bicycle and pedestrian plan to address county recreation and transportation needs.
	Consider trail investment a priority in developing the capital improvement plan.
	Assess county policy on trail maintenance.
Incorporate principles of public health and sustainability into park and trail planning, operations, and maintenance.	Plan parks and trails to support healthy lifestyle choices.
	Incorporate active living by design in projects to support county health and wellness initiatives.
	Incorporate green infrastructure, pollinator-friendly habitat, sustainable landscaping and public art in projects, where feasible.
	Increase energy efficiency in facilities, operations, and maintenance.
	Whenever feasible, evaluate and implement operational best practices to reduce adverse impact of salt, pesticide, and fertilizer use to natural resources.

Parks, Trails, and Open Space Goal 2: Protect, enhance, and provide access to precious public resources – our land, water, and open space – through conservation and stewardship.

Parks, Trails, and Open Space Policy	Parks, Trails, and Open Space Strategy
<p>Prioritize investment in the protection and management of high quality open space.</p>	Provide for ongoing investment to protect open space through land acquisition programs, such as Land and Water Legacy Program.
	Use Land and Water Legacy Program Conservation Priorities document to guide investment for the conservation of open space.
	Pursue land and right-of-way acquisition within and adjacent to regional parks and trails master plan boundaries.
	Continue partnering to expand open space acquisition and stewardship capacity.
	Develop and implement a plan to manage proper maintenance of conservation easements.
	Assess county policy on public access to protected open space.
	Evaluate strategies to protect agricultural resources and rural character within the open space system.
	Consider development of county conservation areas and greenways
<p>Preserve, conserve, and restore natural resources by implementing sustainable practices that promote biodiversity and healthy ecosystems.</p>	Develop a comprehensive, strategic park natural resource management approach.
	Develop and implement sustainable forest management plans that address wildlife habitat, forest health, and future forest adaptation.
	Develop and implement sustainable agricultural practices on existing cropland fields.
	Develop and implement land management practices that include effective and innovative methods, such as conservation-based grazing.
	Enhance natural areas through active restoration.
	Use integrated pest management practices in invasive species management efforts.
	Mitigate impacts to high-value trees, wetlands, and other natural resources in all projects.
	Collaborate with governmental units and non-governmental organizations on land and water stewardship efforts. Coordinate partnerships to involve the community in the maintenance of parks and open space.

Parks, Trails, and Open Space Goal 3: Provide opportunities for all people to connect to the outdoors by cultivating a welcoming environment, providing robust programming, and building partnerships.	
Parks, Trails, and Open Space Policy	Parks, Trails, and Open Space Strategy
Engage the community in planning, stewardship, and programming through strategic partnerships and communication.	Conduct public engagement that minimizes barriers to participation and seeks input from a broad audience of community members.
	Develop educational opportunities and interpretive tools to spread awareness of County natural resource stewardship and sustainability efforts.
	Adopt a marketing and park visitor services plans to promote county parks, trails, and programs.
	Pursue mutually-beneficial partnerships that increase exposure to park and trail system.
Deliver a broad range of programs that provide opportunities for the public to experience the parks, trails, and open spaces.	Continue to use public-private partnerships in developing park programming.
	Expanding recreational opportunities and programs to grow park use in all seasons.
	Develop programs that provide the opportunity for visitors to connect with the county’s history.
Strengthen equitable usage of parks and trails, across age, income, race, ethnicity, national origin, educational attainment, and ability.	Target demographic groups underrepresented as park users in planning and programming efforts.
	Collaborate with the Metropolitan Council and other organizations on identifying implementable steps to strengthening equity within the parks and trails system.
	Use equity tools, such as Metropolitan Council’s equity lens, to evaluate projects.
Provide efficient and high-quality visitor services through innovation, technology, and trained staff.	Pursue technology upgrades, such as electronic pay stations, that will improve staff efficiency and service.
	Engage with the public on programs, events, and services through social media and other online tools.
	Measure and use visitor experience data to make informed decisions on park services.
	Continue efforts to provide staff with the training and resources to aptly serve an increasingly diverse audience of park and trail users.

Housing Goals, Policies and Strategies

Housing Goal 1: Promote a diverse housing supply to provide residents with a range of housing options.	
Housing Policy	Housing Strategy
Support and assistance to homeless households and those at risk for homelessness.	Assist and counsel homeless or households at risk of homelessness using the housing phone line.
	Coordinate with other metro counties through the Regional Metropolitan Committee regarding homelessness prevention and assistance.
	Actively participate in the Suburban Metropolitan Area Continuum of Care (SMAC) regionalized wait list and utilize a regionalized wait list for homeless beds and referrals.
	Continue to manage this the Family Homelessness Prevention and Assistance Program (FHPAP) in order to provide needed resources within our community.
	Continue to utilize the maximum 15 percent of the annual CDBG grant for crisis assistance and homelessness counseling.
	Participate with other SMAC counties in the Landlord Risk Migration Fund Pilot to see if offering additional incentives to landlords will help in securing more housing opportunities to household that are facing homelessness.
	Explore more cost-effective options to shelter households experiencing homelessness than using a hotel voucher system.
Support and assistance to vulnerable populations.	Continue to maximize use of Housing Support (previously Group Residential Housing) funds for housing programs for people with a disability.
	Continue to maximize use of Elderly Waivers to assist seniors with housing and assisted living expenses.
	Continue to maximize use of Home and Community Based Services (HCBS) programs to assist the people on these programs to use services to maintain their current housing or to assist them with other housing costs such as assisted living or foster care.
	Continue to utilize person-centered planning best practices in ensuring that people with a disability are living and working in the most integrated setting possible.

<p>Support underserved populations to be successful homebuyers and homeowners.</p>	<p>Continue to provide Home Stretch educational workshops for prospective homebuyers.</p>
	<p>Continue to provide one on one professional homebuyer counseling by appointment to prepare households for the mortgage and realty process, including budget counseling.</p>
	<p>Continue to participate in the Minnesota Cities Participation Program to fund Minnesota Housing’s Start-Up first time homebuyer program through the sale of tax exempt bonds.</p>
	<p>Develop a program to fund down payment assistance to households.</p>
	<p>Continue to provide post-purchase counseling to homeowners looking at options to refinance their mortgage.</p>
	<p>Continue to provide one-on-one professional counseling by appointment for homeowners struggling with their mortgage payments looking to avoid foreclosure.</p>
	<p>Refer eligible homebuyers (Woodbury residents) to a city-funded down payment assistance program through Two Rivers Community Land Trust, as well as an affordable homeownership program through Twin Cities Habitat for Humanity.</p>
<p>New construction of senior housing affordable to incomes at or below 30% AMI.</p>	<p>Consider an application for 4% Low Income Housing Tax Credit sub-allocation to encourage senior housing affordable to 60% AMI, prioritizing units serving the lowest income tenants of 30% and 50% Area Median Income (AMI).</p>
	<p>Consider issuing housing bonds to support rental developments serving seniors at 50% and 60% AMI, prioritizing developments at 30% AMI.</p>
	<p>Consider an application for CDBG funds for land acquisition and environmental clean-up related to affordable senior housing.</p>
	<p>Consider an application for HOME Investment Partnership funds to construct affordable senior housing.</p>
	<p>Consider creating Tax Increment Financing (TIF) housing districts with the support of the applicable municipality to increase and diversify property tax base, eliminate blight, support employment, and promote housing diversity through affordable senior housing.</p>
	<p>Strongly consider sponsoring an application to the Metropolitan Council’s Livable Communities Account (LCA) program for affordable senior housing development.</p>
	<p>Consider an application to the GROW Fund financing program to construct housing affordable to 60% AMI, prioritizing units with greater affordability.</p>

New construction of senior housing affordable to incomes at or below 30% AMI. (Continued)	Continue to expand ownership and management affordable housing for seniors ensuring long-term affordability.
	Strongly support allocating Group Residential Housing (GRH) assistance to maintain lower rental rates for seniors.
	Consider project-basing units in affordable senior housing, such as the Shelter Plus Care program as spots are available.
Affirmatively further fair housing actions and activities in Washington County.	Continue to affirmatively further fair housing through active compliance with its fair housing policy.
	Incorporate equal opportunity housing criteria and requirements for all recipients of its housing finance and housing assistance programs.
	Continue to educate homebuyers and homeowners about potential and known real estate scams. Furthermore, continue to counsel victims of foreclosure, lending, closing and real estate fraud and make referrals to pro-bono legal assistance to recover lost costs.
	Continue to be an active participant and contributor to regional fair housing activities.
Housing Goal 2: Ensure that affordable housing options are available to residents and those who work in the county.	
Housing Policy	Housing Strategy
Encourage resident participation and best practices in housing policy development.	Continue to encourage robust public engagement by involving residents in the development of housing, community development and economic development plans and allocation of CDBG and HOME funds.
	Continue to participate or designate an appropriate representative to actively engage in the Minnesota Chapter of National Association of Housing and Redevelopment Officials (NAHRO).
	Continue to be an active member of the Housing Collaborative institute, attending and presenting at monthly regional industry meetings organized by Local Initiatives Support Corporation.
Preservation of publicly subsidized housing.	Prioritize applications for 4% or 9% Low Income Housing Tax Credit sub-allocation which preserve subsidized units through extensions of housing assistance payment contracts and affordability periods.
	Consider issuing housing bonds to preserve units affordable at 50% and 60% AMI, prioritizing developments at 30% AMI.
	Consider an application for HOME investment partnership program funds to preserve affordable housing through acquisition or rehabilitation costs.
	Support use of funds from Minnesota Housing’s Preservation Affordable Rental Investment Fund (PARIF) program to preserve existing affordable rental units.

New construction of general occupancy rental homes at all affordability levels.	Maximize the usage of the 9% Low Income Housing Tax Credit sub-allocation to encourage workforce housing affordable to 60% AMI; prioritizing units serving the lowest income tenants of 30% and 50% AMI.
	Consider issuing housing bonds to support rental developments serving tenants at 50% and 60% AMI.
	Consider an application for CDBG funds for land acquisition and environmental clean-up related to affordable housing at 80% AMI.
	Consider an application for HOME Investment Partnerships program funds to construct housing affordable to 80% AMI.
	Consider creating TIF housing districts with the support of the applicable municipality to increase and diversify property tax base, eliminate blight, support employment, and promote housing diversity through affordable housing.
	Strongly consider sponsoring an application to the Livable Communities Account (LCA) program for affordable housing development.
	Strongly consider supporting an application to Minnesota Housing and its funding partners for affordable rental housing, particularly those paired with CDA resources.
	Consider an application for its gap financing program (i.e. GROW) to construct housing affordable to 60% AMI, prioritizing units with greater affordability.
Continue and expand its ownership and management of affordable housing ensuring long-term affordability.	

Housing Goal 3: Safeguard the physical quality of housing to promote healthy living environments.

Housing Policy	Housing Strategy
Assist lower income homeowners with home repairs.	Allocate a portion (at least 30%) of available Community Development Block Grant (CDBG) funds each program year to continue the Home Improvement Loan Program to assist low and moderate income homeowners maintain and improve their home.
	Refer eligible homeowners to Minnesota Housing’s Fix-Up Fund lenders to assist homeowners with necessary repairs.
Promote the proper maintenance, repair, or replacement of residential subsurface sewage treatment systems.	Provide loans and, when income eligible, grants to mitigate the impact of failing septic systems on the county’s lakes, streams and rivers.

Resilience and Sustainability Goals, Policies and Strategies

Resilience and Sustainability Goal 1: Maintain and improve community preparedness and emergency response capacity to ensure public health and safety.	
Community Vulnerability Policy	Community Vulnerability Strategy
Continue and enhance county and city level all-hazard mitigation and response planning.	Ensure the Washington County All Hazard Mitigation Plan is kept active and ensure local communities are considered eligible for the associated funding sources.
	Encourage all communities within Washington County to maintain an updated all hazards Emergency Operations Plan.
	Partner with local communities and private partners to encourage individual preparedness through educational opportunities.
	Continue to utilize stakeholder involvement in the update and implementation of the Washington County All Hazards Mitigation Plan.
	Promote and implement the goals, objectives, and strategies written within the Washington County All Hazard Mitigation Plan when feasible.
	Incorporate mitigation strategies into other local planning documents, processes, or mechanisms such as Continuity of Operations Plans (COOP), Growth Management Plans, Ordinances, Resolutions, Regulations, and Capital Improvement Plans (CIP).
Recognize and plan for the support of populations with high needs and vulnerabilities to all hazards including extreme weather and climate-related events.	Conduct a county wide climate vulnerability assessment that considers risk factors such as extreme heat events, poor air quality, changes in precipitation, changing ecologies, changing demographics, and psychological impacts.
	Incorporate, when possible, the needs of vulnerable populations such as elderly, low income, medically fragile, disabled, non-English speakers and children within applicable all hazards plans, training, and exercises at the city and county level of government.
	Encourage the inclusion of private partners in the identification and inclusion of vulnerable populations in preparedness planning.

<p>Promote a disaster resistant community infrastructure of housing, utilities, transportation systems, and health care resources able to withstand natural, man-made and economic changes.</p>	<p>Promote mitigation efforts taken within Washington County for communities to reduce vulnerabilities.</p>
	<p>Encourage the collaboration between government agencies and private partners to incorporate mitigation activities for larger scale systems.</p>
	<p>Protect, maintain and improve constructed and natural systems that provide critical infrastructure.</p>
	<p>Consider current and future climate predictions in design of county infrastructure.</p>
<p>Resilience and Sustainability Goal 2: Promote personal and community health for all residents.</p>	
<p>Healthy Communities Policy</p>	<p>Healthy Communities Strategy</p>
<p>Pursue opportunities to address inequities and barriers to health.</p>	<p>Complete Community Health Assessment & Community Health Improvement Plan every five years to address health equity.</p>
	<p>Assess social determinants of health in county services and practices.</p>
	<p>Adopt health in all policies guides.</p>
<p>Support individual and community health behaviors that reduce the risks of chronic disease.</p>	<p>Promote policies and strategies of the county parks, trails and open space to encourage healthy and active lifestyle choices for all ages and abilities (see Parks, Trails and Open Space section).</p>
	<p>Support public and private partnerships that promote and encourage healthy lifestyle choices within the county.</p>
	<p>Adopt steps for access to multi-modal transportation for all residents to encourage physical activity (See Transportation section).</p>
	<p>Support, maintain and enhance county policies related to the reduction in tobacco use and exposure to second-hand smoke.</p>
<p>Encourage practices and activities to achieve healthy food access for all residents.</p>	<p>Support public and private partnerships that promote and encourage healthy food access.</p>
	<p>Adopt steps for access to multi-modal transportation for all residents to support access to healthy foods (See Transportation section).</p>
	<p>Promote small scale food production of healthy foods and county-wide availability.</p>

Resilience and Sustainability Goal 3: Identify, promote, and expand the use of energy efficient practices and renewable energy resources.	
Energy Efficiency & Conservation Policy	Energy Efficiency & Conservation Strategy
<p>Collaborate with public entities, community organizations, businesses within the county, and with other counties to achieve mutual energy goals.</p>	Support cities, townships and schools working on conserving energy, using renewable energy, or taking steps to reduce greenhouse emissions.
	Partner with key stakeholders in the development and implementation of a countywide energy plan.
	Support the use of technologies that increase the use of local energy resources.
	Continue to promote Property Assessed Clean Energy (PACE) loans to finance energy efficiency upgrades and renewable energy installations in commercial buildings.
	Promote equitable access to energy resources for all.
	Continue to work with regional partners to connect and expand options for initiatives such as multi-modal transportation (see Transportation Chapter).
<p>Lead by example in county operations to conserve energy, use renewable energy sources in an effective manner, and take steps to reduce greenhouse gas emissions.</p>	Champion, adopt and implement a countywide energy plan.
	Incorporate energy conservation into existing and new building plans by using material and equipment to conserve energy and reduce greenhouse gas emissions.
	Leverage reduction of non-renewable consumption with renewable energy sources.
Resilience and Sustainability Goal 4: Protect public health and the environment by reducing the amount and toxic character of waste and ensuring proper management of wastes.	
Waste Management Policy	Waste Management Strategy
<p>Minimize land filling through an integrated waste management system in accordance with the state hierarchy of waste reduction, reuse, recycling, composting and waste-to-energy.</p>	Communicate and educate about sound environmental practices related to waste management activities and county programs, services, and resources to waste generators.
	Manage wastes generated by the county in accordance with the Minnesota Pollution Control Agency’s (MPCA) Metropolitan Solid Waste Management Policy Plan, the Washington County Waste Management Master Plan (both are updated every six years), state law and county ordinances, and work with other public entities so that their waste is managed in the same manner.

<p>Minimize land filling through an integrated waste management system in accordance with the state hierarchy of waste reduction, reuse, recycling, composting and waste-to-energy. (Continued)</p>	<p>Continue partnership with Ramsey County through the Recycling and Energy (R&E) Board to collaborate in joint programming and projects, and explore new technologies at the R&E Center to produce energy and fuels, make compost or harvest materials for creation of consumer products.</p>
	<p>Explore ways to increase awareness and develop tools to address health equity and environmental justice in county waste and recycling programs and services.</p>
	<p>Establish solid and hazardous waste and wastewater management policies and programs to include best management practices and implementation plans for proper management, measurable performance goals and objectives, and regular performance and accomplishments reporting.</p>
<p>Lead by example in county operations to develop and implement innovative waste management solutions.</p>	<p>Implement best management practices in waste reduction, reuse, toxicity reduction, and recycling and organics diversion in county-owned and operated facilities.</p>
	<p>Ensure all municipal solid waste generated by county activities is processed and require all public entities to process municipal solid waste generated as a result of their activities.</p>
<p>Identify ways to collaborate with public entities, community organizations and businesses to develop and implement innovative waste management solutions.</p>	<p>Provide technical assistance, grant funding, and networking opportunities to share resources to cities, townships, and schools to make progress in implementing best practices to reinvigorate recycling, increase organics diversion, and refresh waste reduction and reuse opportunities.</p>
	<p>Continue partnership with Ramsey County, through the R&E Board, to assist businesses in organic waste diversion and recycling opportunities.</p>
	<p>Provide technical assistance and outreach to solid and hazardous waste generators to improve compliance to state regulation requirements.</p>

Economic Competitiveness Goals, Policies and Strategies

Five goals with corresponding policies and strategies are established to promote economic competitiveness throughout Washington County. The policies and strategies identified for economic competitiveness collectively respond to the element’s five goals. This comprehensive approach provides an opportunity to utilize the policy or to employ strategies in a manner that supports one or more of the defined goals.

Economic Competitiveness Goals				
Goal 1: Promote and market the quality of life, rich diversity and assets of the county.	Goal 2: Provide resources to help entrepreneurs get started and existing businesses grow.	Goal 3: Be a value-added partner to other public and private entities.	Goal 4: Find ways to help our businesses attract and retain talent and find ways to keep our working residents here in the county.	Goal 5: Promote strong infrastructure, multi-modal transportation and highspeed broadband.
Economic Competitiveness Policy		Economic Competitiveness Strategy		
The private sector is the lead that drive the economy.	The County will work in partnership with the private sector.			
	Help existing businesses grow and entrepreneurs get started.			
The County will not duplicate or replace the work of cities and other public and private partners.	The County will work in collaboration with public and private partners, and will provide leadership where the County can make the most difference when asked.			
	Promote multi-modal transportation, transit and highspeed broadband opportunities that will stimulate economic growth in Washington County.			
Business attraction and business retention are essential policy objectives.	A balanced approach to pursue both of businesses attraction and business retention policy areas is required.			
	Market and promote Washington County, enhancing the efforts currently being implemented by our public and private sector partners.			
The County supports a strong collaborative approach to economic development.	No matter the location, economic development is a benefit to the entire County.			
	Support efforts to ensure a highly skilled workforce and adequate workforce housing.			
Economic Competitiveness Policy		Economic Competitiveness Strategy		
The County supports a strong collaborative approach to economic development. (Continued)		Provide resources to cities, townships and local government economic development authorities located in Washington County. Assist communities and local area chambers of commerce with Business Retention and Enhancement visits when requested.		
The diversity of the County requires an adaptable and open-minded approach.	The distinctive qualities of the County require flexibility.			
	Promote the quality of life and assets of the county including the rich diversity of communities with unique micro-markets.			



Downtown Stillwater and the St. Croix River

Chapter 4 - Land Use



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Executive Summary

The overall purpose of the Land Use chapter is to protect natural, cultural, and water resources along the shoreland, stream, and riverway areas of Washington County. Additionally, the county seeks the continuation of the extraction of valuable mineral resources – while protecting the county’s adjacent land uses and natural, cultural, and water resources.

Local land use plans should help promote Washington County principles: to preserve the existing natural resources, retain existing character, and provide a high quality of life.



Background Information

Washington County land use jurisdiction has changed since the original publication of the 2030 Comprehensive Plan. In 1996 and 2010, Washington County and all of the county townships prepared comprehensive plans. Because these comprehensive plans were consistent with the Metropolitan System Plan, the Metropolitan Council acknowledged they could be implemented.

As Washington County townships have grown, it became increasingly apparent that land use planning and zoning should be directed to the local unit of government – since many issues are local in nature, and the townships have the ability to regulate land use. All townships have comprehensive plans that are consistent with the regional systems, and all have zoning codes in place.

Over the course of 2014-16, Washington County staff and county commissioners met with township representatives, collaboratively reviewed land use plans, and compared zoning codes. The resulting decision determined it was in the best interest of the townships and the county for the townships to assume general land use and zoning responsibilities for their respective jurisdictions, except in those instances where the township and the county have determined that the county will continue to have the following official controls:

- Subdivision
- Lower St. Croix River Bluffland and Shoreland Management
- Official Map
- Shoreland Management
- Mining
- Floodplain
- Subsurface Sewage Treatment Systems (SSTS)

Existing Conditions

Washington County's diverse land use patterns include historic rivertowns and villages along the St. Croix River, rural fringes, exurban residential communities, and growing suburban communities. These areas are interspersed with natural areas, wetlands, lakes, bluffs, and agricultural areas. The variety of developed and open space areas provides a mixture of visual landscapes unique to Washington County.

Mineral Resources

Mining is an important industry for Washington County due to the abundance of sand and gravel deposits, specifically minable bedrock and gravel. Current permitting processes in the county have been able to satisfy the demand during past high-production years, and Washington County is committed to working with the industry to maintain appropriate regulation to meet future growth needs.

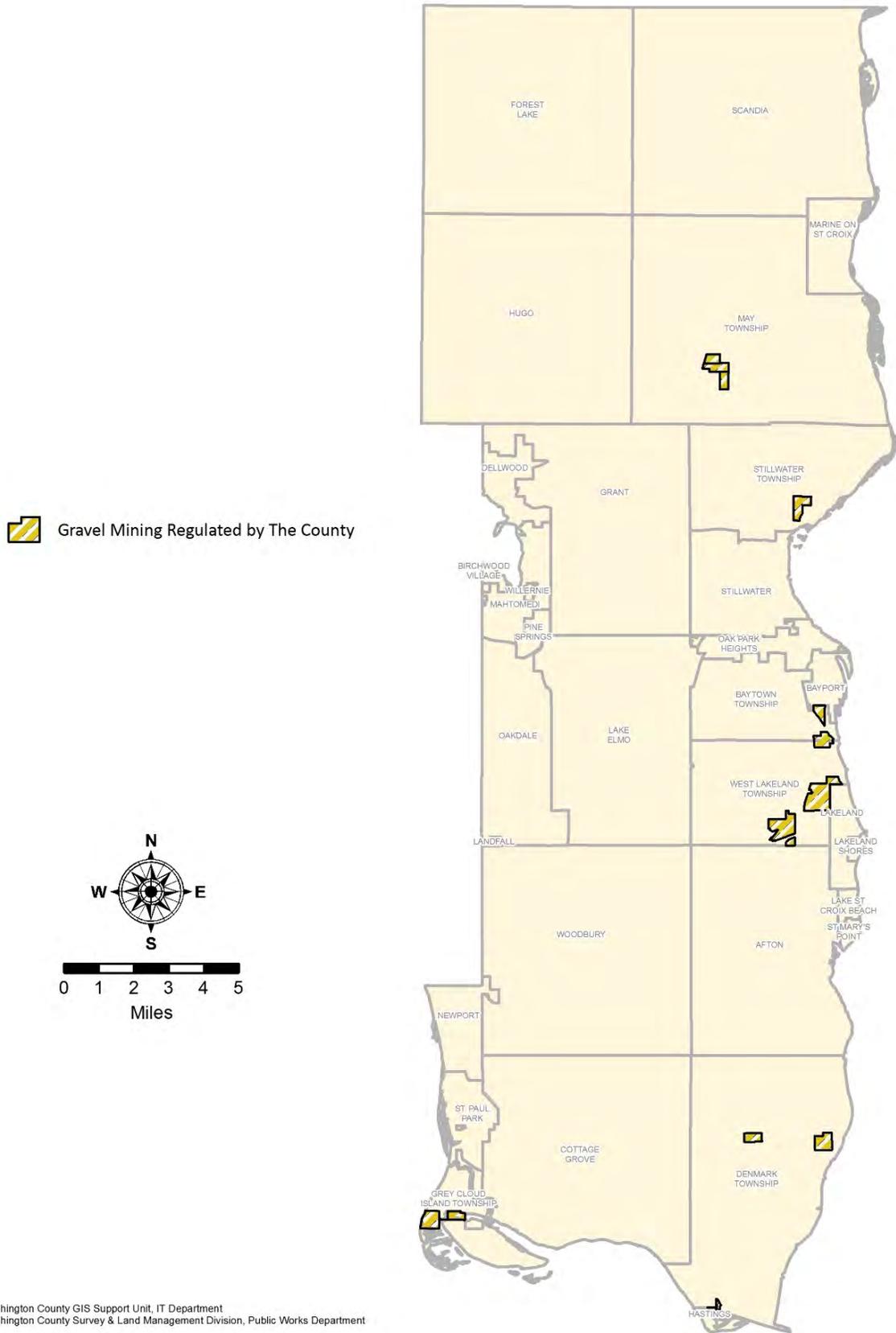
The Minnesota Legislature has directed each local government in the metropolitan area to address issues related to aggregate when such resources are present in the community.

Presently, Washington County regulates nine mining operations in Grey Cloud, Denmark, West Lakeland, Baytown, Stillwater, and May townships (see Figure 1). Other mining operations are located in the cities of Woodbury, Cottage Grove, and Scandia. Materials mined in the county include: gravel, sand, limestone, and rock. Mining activities include, but are not limited to: the recycling of used concrete, asphalt, soil, and aggregate; hot mix asphalt production; and the stockpiling and crushing of aggregate.



There is a need to provide for the economic viability of the removal and processing of sand, gravel, rock, soil, and other aggregate materials vital to the economic well-being of the region – while protecting adjacent land uses and natural resources against adverse impacts. The county will work with land owners and local communities to reserve enough potentially productive aggregate areas from development to meet long-term regional needs. All mining is conducted in accordance with the provisions of the Washington County Mining Ordinance to provide for the orderly, economic, and safe removal and processing of sand, gravel, rock, and soil, including the reclamation of mined sites.

Figure 1: Washington County Mining Operations



Prepared By: Washington County GIS Support Unit, IT Department
Data Source: Washington County Survey & Land Management Division, Public Works Department

Buffer Law Implementation

In 2015, Minnesota enacted a state law aimed at enhancing the protection of Minnesota’s waters. The law is an initiative to implement an important conservation practice called a “buffer” – also known as riparian filter strips, or vegetated land adjacent to a stream, lake, or wetland. These strips of land help keep water clean by filtering out phosphorous, nitrogen, and sediment. Buffer protection maps were completed by the Minnesota Department of Natural Resources (DNR) in 2016, and show all waters in the state that are subject to the new requirements.

Landowners with property within a protected area are expected to comply with the new standards, and work with local soil and water conservation districts for technical assistance, financial assistance options, or development of alternative practices for water protection on their property.

The new law specifies that buffers must be in place on all public waters by November 1, 2017, and on all public drainage systems by November 1, 2018 (see Figure 2). The Minnesota Board of Water and Soil Resources oversees the new law, but the Washington Conservation District is the first point of contact for information about the law, or when noncompliance is identified. If a landowner fails to install buffers on identified waters, penalties may include a fine.

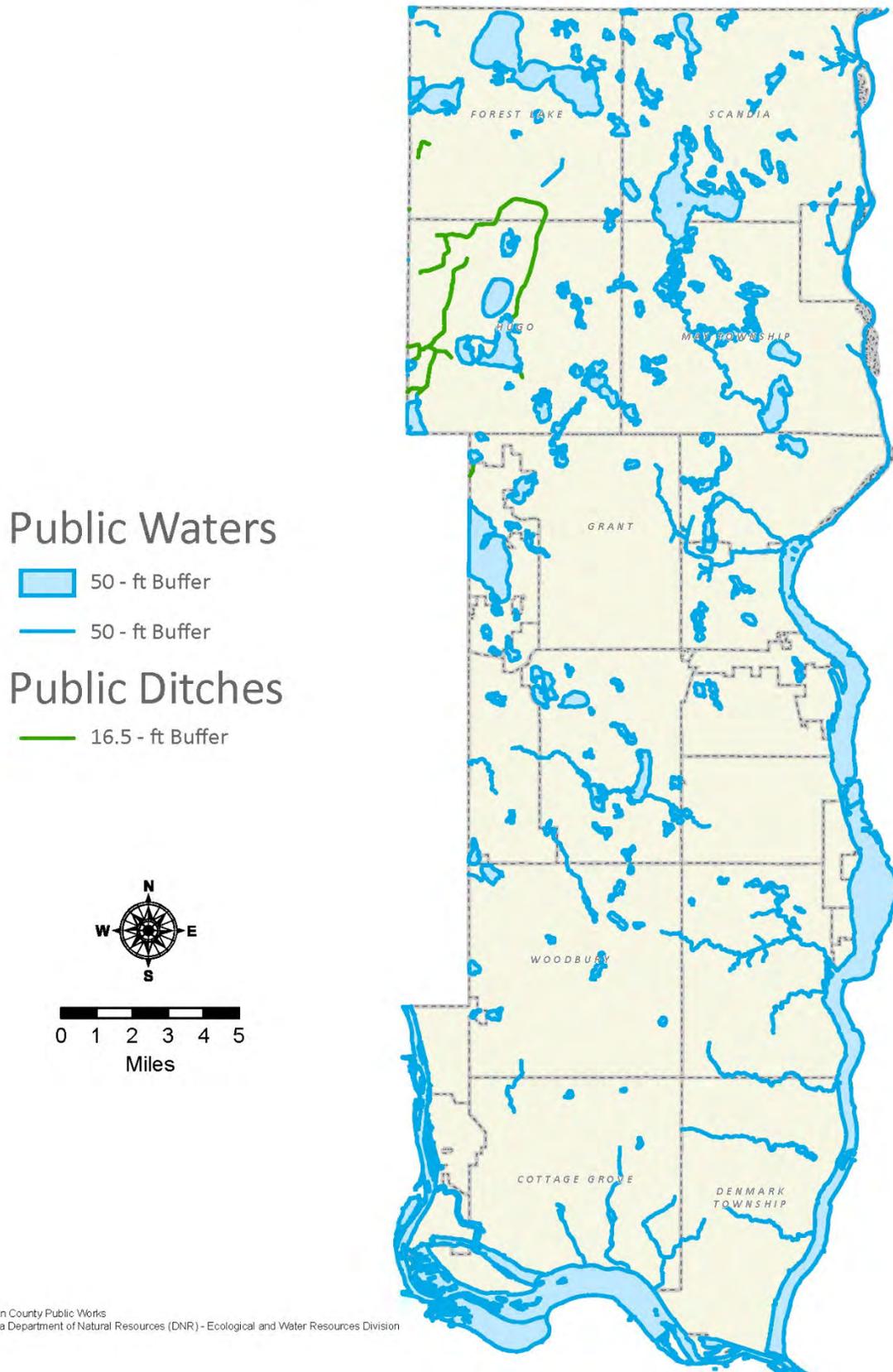
Airports

The Metropolitan Airports Commission (MAC) completed a 2035 Lake Elmo Airport Long Term Comprehensive Plan in September 2016. Major elements of the plan include relocating 30th St. N., and relocating and extending the length of the primary and crosswind runways. MAC has collaborated closely with Washington County’s plans for the relocation and connection of 30th St. N. with Neal Ave., and reflects this consideration in plan alternatives. The plan recommends identifying steps for installation of sanitary sewer and water services at the airport and conducting a cost-benefit analysis for provision of those services.

The plan notes that once the Lake Elmo Airport’s future development plan is finalized, MAC will convene a Joint Airport Zoning Board (JAZB) that will include Washington County, the City of Lake Elmo, Baytown Township, and West Lakeland Township, in order to develop an ordinance that provides a reasonable level of public safety while also facilitating compatible off-airport development.

MAC has adopted the 2035 Preferred Alternative Contours for noise. The Federal Aviation Administration requires the delineation of 70, 65, and 60 decibel noise level (DNL) contours. 55 DNL contour are also required by the Metropolitan Council for airports lying mostly outside of the Metropolitan Urban Services Area.

Figure 2: Buffer Law Protection Waters



Prepared By: Washinton County Public Works
Data Source: Minnesota Department of Natural Resources (DNR) - Ecological and Water Resources Division

Ordinances Under Washington County Jurisdiction

Shoreland Ordinance

The uncontrolled use of shorelands in Washington County affects the public health, safety, and general welfare by contributing to pollution of public waters, and potentially decreasing property value. All lands within the designated shoreland areas of lakes and rivers in the unincorporated areas of the county are governed by the Washington County Shoreland Management Ordinance.



Through the shoreland ordinance, the county regulates the subdivision, use, and development of shorelands of public waters in order to preserve and enhance the quality of surface waters, conserve the economic and natural environmental values of the shorelands, and provide for wise use of waters and related land resources. Public waters are designated as natural environment or recreational development, tributaries, transition rivers, and streams.

St. Croix River Bluffland and Shoreland Management Ordinance

The St. Croix River, in Washington County, is part of the Lower St. Croix National Scenic Riverway. The upper 10-mile stretch of river is classified as a scenic district, while the lower 42 miles from the City of Marine on St. Croix to the City of Prescott are classified as a recreational district. On average, the St. Croix Riverway District extends a quarter-mile out from the river, following the bluffline. In some communities, the Riverway boundary extends well beyond the river and in other places the Riverway boundary is very narrow. The St. Croix River is one of only 201 Wild and Scenic Rivers in North America. It is the only river in Minnesota listed under the Wild and Scenic Rivers Act. Landowners along the river provide the stewardship of the land and water to preserve this natural treasure for future generations.

The riverway is managed jointly by the National Park Service, the Minnesota DNR, and Washington County under MN Rules chapter 6505 (6105.0351 – 6105.0550). This ordinance regulates land development and natural resource management to protect the scenic, natural, historic, cultural, and recreational aspects of the Lower St. Croix Wild and Scenic River Corridor (see Figure 3).

The purpose of the ordinance is to:

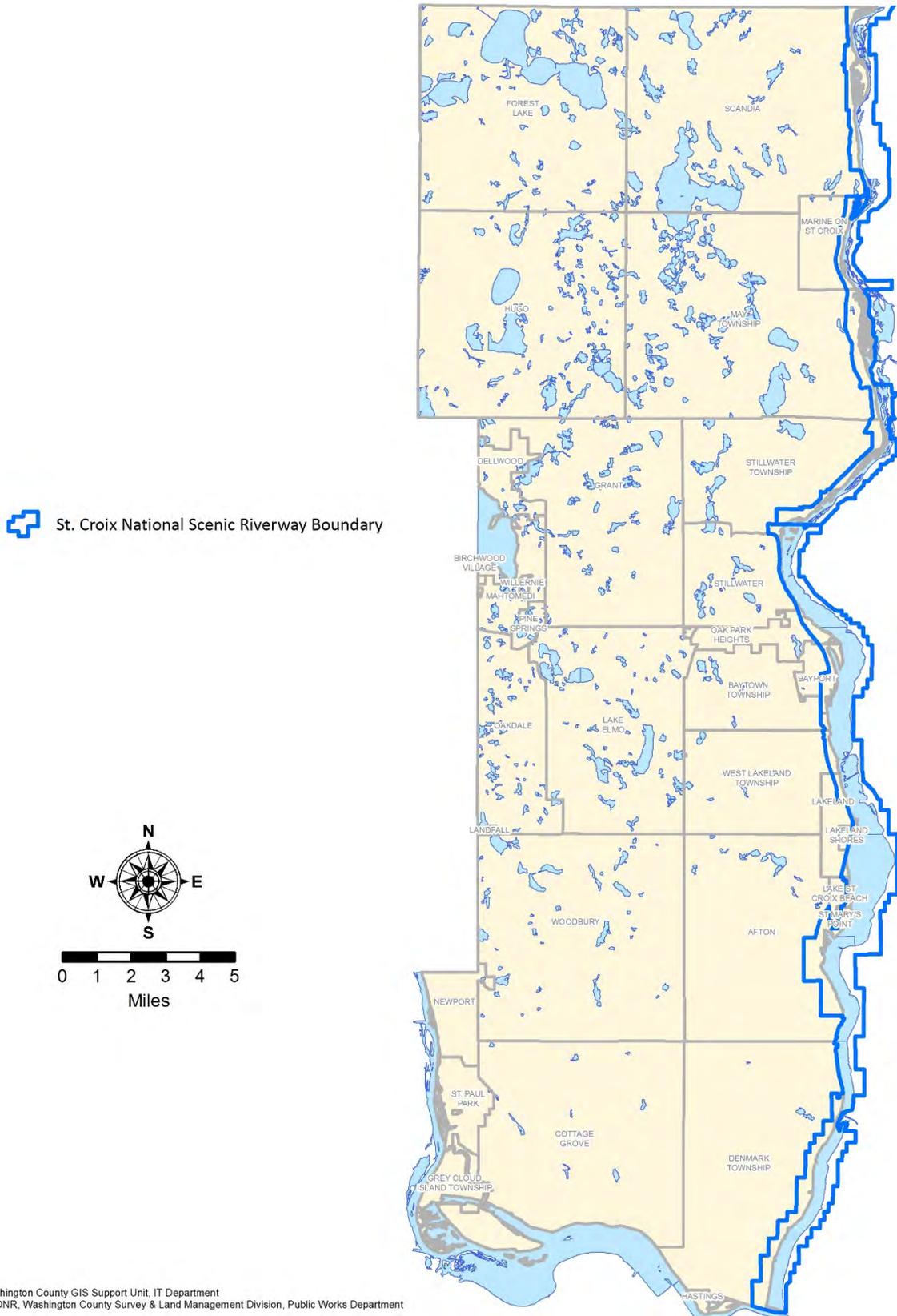
1. Designate suitable land use districts along the bluffland and shoreland of the Lower St Croix River.
2. Regulate the area of a lot, and the length of bluffland and water frontage suitable for building sites.
3. Regulate the setback of structures and sanitary waste treatment facilities from blufflines to protect the existing and/or natural scenic values, vegetation, soils, water, and bedrock from disruption by man-made structures or facilities.
4. Regulate the setback of structures and sanitary waste treatment facilities from shorelines to protect the natural scenic value, floodplain, and water quality.
5. Regulate alterations of the natural vegetation and topography.
6. Conserve and protect the natural scenic values and resources of the river valley and maintain a high standard of environmental quality to comply with Minnesota DNR Standards and Criteria for the Lower St. Croix National Scenic Riverway.

Riverway regulations cover issues concerned with ordinary high water level (OHWL), building setback from bluffline, minimum lot width at building setback line, minimum lot width at water line, minimum lot size, maximum impervious surface, height of structure, water quality, vegetative management, habitat, and earth tone color requirements. Local ordinances may be more restrictive than the Riverway rules, so it is important for landowners to understand local and St. Croix River Bluffland and Shoreland Management Ordinances before investing in plans for existing and new development.

The St. Croix River Association, in collaboration with Washington County, has developed a guide to help explain landowner regulations along the Lower St. Croix Riverway.



Figure 3: St. Croix Wild and Scenic River Corridor



Prepared By: Washington County GIS Support Unit, IT Department
Data Source: MNDNR, Washington County Survey & Land Management Division, Public Works Department

Floodplain Ordinance

Washington County regulates flood hazard areas within those unincorporated areas that are subject to periodic inundation. The floodplain ordinance regulates new development as well as the extension, conversion, or structural alteration of buildings in the floodway, flood fringe, or general floodplain districts (see Figure 5). These regulations prevent or limit building or expanding structures in floodplains in order to protect public health, safety, and general welfare, and to conserve and enhance natural resources by preserving the capacity of floodplains to carry and discharge regional floods.

Washington County participates in the Flood Insurance Program. The Federal Emergency Management Agency Flood Insurance Rate Maps were updated in 2016. These maps are used by insurance companies and mortgage companies to determine the need for flood insurance on properties.



The county uses its Floodplain Ordinance to reduce the severity and extent of flooding by controlling new development as well as the extension, conversion, or structural alteration of existing structures in the Floodway, Flood Fringe, or General Floodplain Districts. Two major regulations pertain to all new development in the floodplain.

1. The minimum lowest floor elevation must be two feet above the 100-year storm event or natural outlet elevation, whichever is greater. Where this is not feasible, the landowner may provide an outlet or mitigate with other acceptable methods.
2. Prior to subdivision approval, the county requires a 100-year flood elevation to be established around all wetlands, lakes, and rivers.

Surface Water

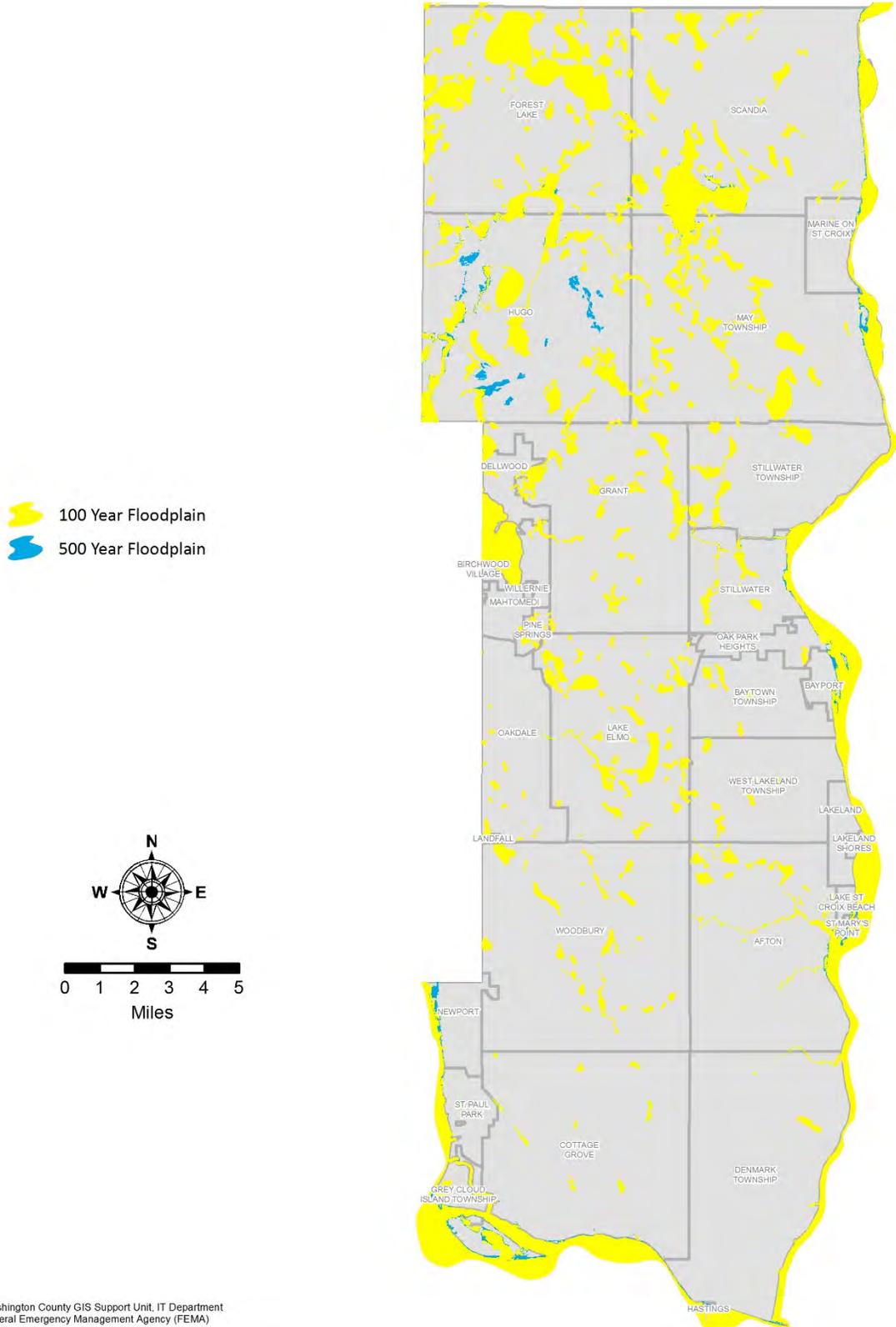
Washington County encourages local land use ordinance which directs surface water to be controlled to reduce erosion and the incidence of flooding. Land use regulations must be in place to control overland runoff, erosion of natural drainage routes and river banks, and obstruction of natural drainage.

The county strongly encourages zoning and other land use controls that will minimize point and nonpoint sources of pollution and require stormwater runoff to be treated to remove pollutants before entering surface waters. Wetlands will be used to pretreat surface water runoff. Wise and efficient use, storage, handling, and disposal of pesticides and fertilizers will be encouraged.

Subsurface Sewage Treatment System (SSTS) Ordinance

This ordinance regulates the design, installation, use, and maintenance of community and subsurface sewage treatment systems to provide for orderly development of areas of the county that are not serviced by central public wastewater systems. See the Water Resource Chapter for more detail on this ordinance.

Figure 5: Washington County Floodplain Areas



Prepared By: Washington County GIS Support Unit, IT Department
Data Source: Federal Emergency Management Agency (FEMA)

Mining Ordinance

Washington County has identified mineral deposits having significant economic potential and discourages encroachment of development in those areas. All mining is conducted in accordance with the county's mining ordinance in order to provide for orderly, economic, and safe removal and processing of sand, gravel, rock, and soil and reclamation of the mined sites. Mining is allowed in commercial, agricultural, and rural residential zones through a conditional-use permit, which establishes conditions to ensure mined areas are restored to existing or planned land use patterns. This approach makes available a large number of high-quality mining sites, while not requiring excessively detailed or prescriptive exclusive use districts or overlay zones.

Official Map Ordinance

Washington County has adopted an ordinance setting up a process to allow the county to designate land needed for future public purposes such as roads, parks, and land use. The county has an ordinance adopting the official map designating the boundaries of the Big Marine Lake Regional Park.

Mississippi River Corridor Critical Area (MRCCA) Plan

The Minnesota DNR has established districts, minimum standards, and criteria to guide land use and development within the Mississippi River Corridor Critical Area (MRCCA), consistent with purpose of Minn. Stat. § 116G.15 (2015). These rules, in effect on January 4, 2017, replace Executive Order 79-19 (1973), which previously guided land use and development. The Metropolitan Council's MRCCA Plan Outline has been consulted to provide guidance for this document.



The MRCCA extends 72 miles from Anoka and Hennepin counties to the southern border of Washington County (see Figure 6). The lands and waters within the MRCCA are to be managed to conserve and protect the existing and potential recreational, scenic, natural, and historic resources and uses for the use and enjoyment of the surrounding region. Open space is to be provided in the open river valley lands for public use and the protection of unique natural and scenic resources.

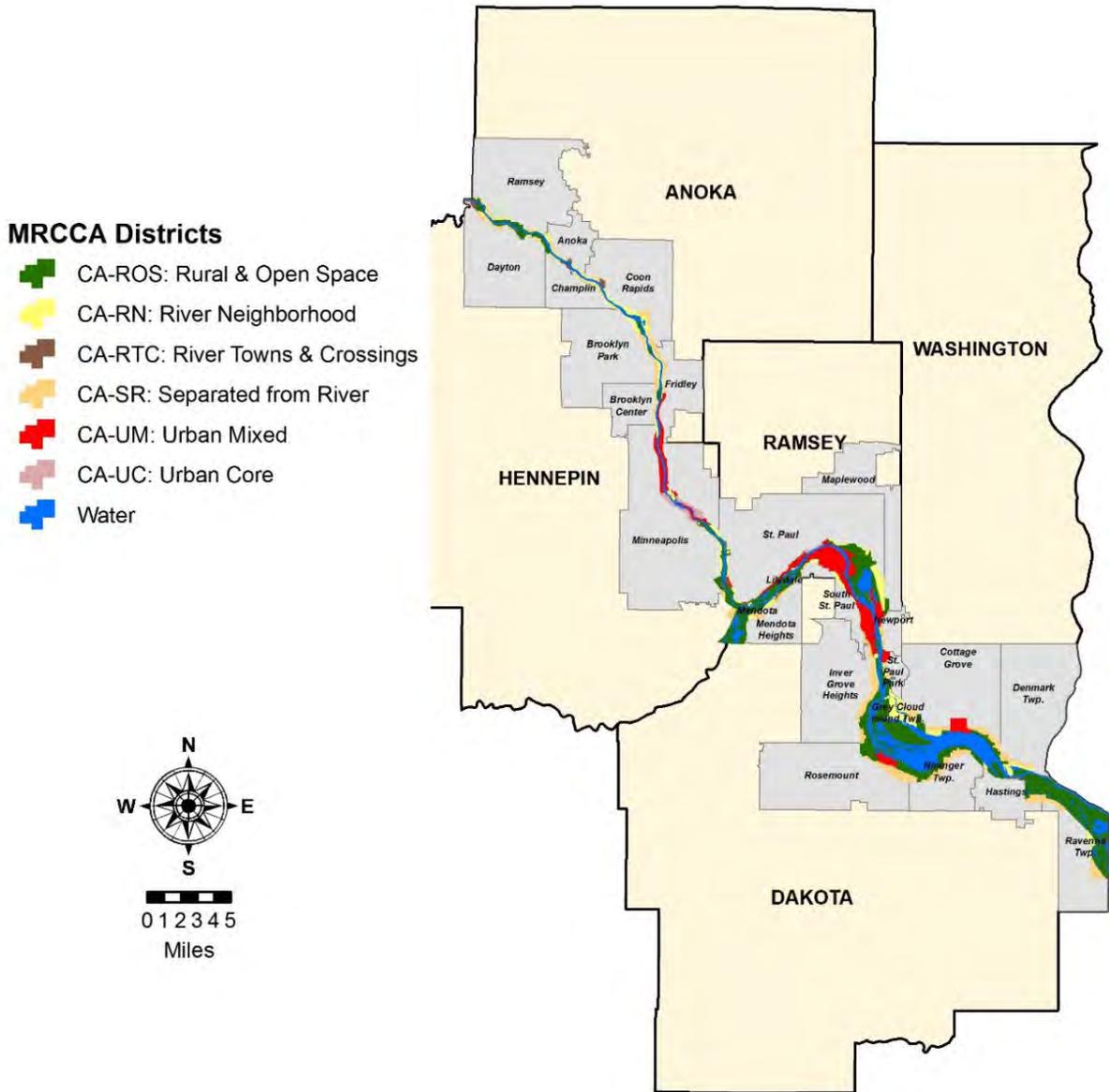
All local governments in the river corridor are required to have a plan that meets the MRCCA requirements, including the establishment of a permit program for vegetation management and land alterations in specific environmentally sensitive areas. Chapter 6 of the Washington County Development Code: Shoreland Management Ordinance, Critical Area Ordinance – does comply with the goals and policies of the comprehensive plan as well as the requirements of federal and state legislation, within 1,000 feet of the Mississippi River. Appendix F includes detailed information regarding the MRCCA and Washington County's role in conservation efforts.

Grey Cloud Island and Denmark townships are within the MRCCA and are classified as a rural and open space, river neighborhood, and separated from river districts. Washington County has land use authority in the shoreline management districts; however, Grey Cloud Island Township and Denmark Township create and administer zoning and land use plans. The shoreland area of Grey Cloud Island Township is zoned as parkland and rural residential. River terraces in this area include bluffs and steep slopes and floodplain that form narrow

corridors along the river and backwater lakes, greatly limiting the development potential. In Denmark Township, the best sites for rural residential development within the MRCCA are already developed. The remaining areas lack good road access or have steep slopes that limit their development potential.

Washington County will continue to collaboratively work in coordination with the townships of Grey Cloud Island and Denmark.

Figure 6: MRCCA Boundary



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: MN Department of Natural Resources

Historic and Cultural Resources

Summary

Washington County, Minnesota, was originally organized as part of the Wisconsin Territory from 1836-1849. It was one of the nine original counties created in the new Minnesota Territory (organized in 1849) and was named for George Washington, first President of the United States. It was in Washington County on May 11, 1858, that the State of Minnesota had its beginning as the 32nd state. Some of the state's oldest cities and towns are located in Washington County.

Washington County's long history has evolved through many eras including Native American habitation, early exploration and fur trade, territorial government and settlement, lumbering, navigation, agriculture, tourism, and suburban housing. Many properties, buildings, and landscapes from these eras remain today. Washington County has been the subject of a number of pre-settlement and archaeological studies and reports, especially in Grey Cloud Island Township and Cottage Grove.

Washington County is home to some of the state's most successful historic preservation programs and restoration projects. The county relies on the efforts of individuals, communities, and the State Historic Preservation Office to assess cultural resources. Federal, state, tribal, and local partnerships work to protect historic properties. This section calls particular attention to historic and cultural resources within Washington County jurisdiction – locations along county roadways, the protected St. Croix Scenic Riverway, or shoreline districts.

Forty-two properties and four districts within Washington County are listed on the National Register of Historic Places. In addition, 137 known archaeological sites are protected by the Office of the State Archaeologist and one cemetery is protected through the Minnesota Private Cemetery Act. Washington County owns and operates the Washington County Historic Courthouse, which was placed on the National Register of Historic Places in 1971 as the oldest standing courthouse in Minnesota.

Washington County does not have a formal historic preservation commission or historic preservation ordinance that regulates historic structures, sites, or districts. However, the county strives to preserve and enhance the character of historic villages and rural areas through its land development process in unincorporated areas. Also, the county evaluates the potential impact on historical and archaeological resources of its capital projects and attempts to avoid or mitigate any potential impacts.

Existing Conditions

Washington County Historic Courthouse - A National Register Site

Washington County owns and operates the Washington County Historic Courthouse, which was placed on the National Register of Historic Places in 1971 as the oldest standing courthouse in Minnesota. The purpose of the Historic Courthouse is to preserve, re-adapt, restore, and interpret this historic landmark for current and future generations. This is accomplished through programs and community events that foster knowledge and appreciation of the county's heritage. [<link to Historic Courthouse section in Parks chapter>](#). Please see the *'Parks, Trails, and Open Space'* chapter for information on the Historic Courthouse's role in the parks system and the *'Goals and Policies'* chapter for policies and strategies that will guide the facility's future.

Historic Resources Protection Framework

National Historic Preservation Act

The National Register of Historic Places is the official list of historic properties recognized by the federal government as worthy of preservation for their significance in American history, architecture, archaeology, engineering, and culture. Authorized by the National Historic Preservation Act of 1966, the National Register of Historic Places is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect America's historical and archaeological heritage. The National Park Service administers the program under the Secretary of the Interior. Listing in the National Register is the first step towards eligibility for National Park Service administered federal preservation tax credits and National Park Service grant programs like Save America's Treasures and Preserve America. National Register sites include districts, sites, buildings, structures, and objects that meet specific criteria.

Properties of national, state, or local significance under private or local/state government ownership may be nominated to be placed on the National Register of Historic Places. Listing in the National Register does not mean that the federal government will acquire the property, place restrictive covenants on the land, or dictate the color or materials used on individual buildings. State and local ordinances, local historical commissions, or laws establishing restrictive zoning, special design review committees, or review of exterior alterations, are also not required as part of the National Register recognition.

National Park Service – Secretary of the Interior Standards

The Secretary of the Interior is responsible for establishing standards for all programs under departmental authority and for advising federal agencies on the preservation of historic properties listed in or eligible for listing in the National Register of Historic Places. The intent of the ten standards for rehabilitation projects are to assist the long-term preservation of a property's significance through the preservation of historic materials and features. The standards pertain to historic buildings of all materials, construction types, sizes, and occupancy and encompass the exterior and interior of the buildings. They also encompass related landscape features and the building's site and environment, as well as attached, adjacent, or related new construction. Washington County projects that involve districts or properties on the National Register of Historic Places follow National Park Service Guidelines for treatment of cultural landscapes.

State Historic Preservation Office

The National Historic Preservation Act of 1966 also provided for a network of historic preservation offices in every state to help carry out the nation's historic preservation program. State statute in 1969 created Minnesota's State Historic Preservation Office (SHPO) to provide statewide leadership. The act requires agencies to protect the physical features and historical character of properties listed on the National Register to seek ways to avoid and mitigate any adverse effects on listed properties before carrying out any undertaking, funding, or licensing an undertaking by other parties. The director of the Minnesota Historical Society serves as State Historic Preservation Officer. The SHPO fulfills its mission to preserve and promote Minnesota history by working to identify, evaluate, register, and protect Minnesota's historic and archaeological properties; encouraging the development of local history organizations and activities; and assisting government agencies in carrying out their historic preservation responsibilities. The SHPO has a program whereby it empowers local groups to more effectively protect historic features. A county, city, or township with a qualifying heritage preservation ordinance and heritage preservation commission may apply to SHPO to become a Certified Local

Government (CLG). CLG status enables the local government to apply for federal matching grants to preserve historic properties. This local-state-federal partnership encourages the integration of historic preservation into local government policy.

Archaeological Sites

The Field Archaeology Act of 1963 created the Office of the State Archaeologist (OSA) to protect known or suspected archaeological sites on non-federal, publicly-owned, or leased land or waters, or on land or waters affected by publicly-funded projects. Among its many duties, the OSA is charged with sponsoring, conducting, and directing research into the prehistoric and historic archaeology of Minnesota; protecting and preserving archaeological sites and objects; disseminating archaeological information through the publication of reports and articles; identifying, authenticating, and protecting human burial sites; reviewing and licensing archaeological fieldwork conducted within the state; and enforcing provisions.

Cemeteries

Minnesota's Private Cemeteries Act (M.S. Chapter 307.08) affords all human remains and burials older than 50 years, and located outside of platted, recorded, or identified cemeteries, protection from unauthorized disturbance. This statute applies to burials on either public or private lands or waters.

Federal Section 106 and State Historic Preservation Requirements

Section 106 of the National Historic Preservation Act requires consideration of the effects of federal, federally-licensed, and federally-assisted projects on historic properties listed on or determined eligible for the National Register. The Advisory Council on Historic Preservation, an independent federal agency, guides this consultation process which is intended to assure that the value of the historic property is considered in project planning.

Minnesota Statutes Chapter 138 requires that state departments and agencies protect the physical features and historical character of properties listed in the National Register by consulting with the Minnesota Historical Society to determine appropriate treatments and seek ways to avoid and mitigate any adverse effects on listed properties before carrying out any undertaking, funding, or licensing an undertaking by other parties.

The Minnesota Environmental Quality Board rules require preparation of an environmental assessment worksheet by the responsible unit of government for any proposed demolition of a property listed on the National Register. Privately funded new construction is not reviewed for impact on historic resources, unless located within the St. Croix Scenic Riverway.

The county is prepared to coordinate with the SHPO and the OSA for plans involving new construction and reconstruction of any county facility. In some cases, the county may need to conduct archaeological and historical investigations prior to commencing a project.

The county currently gathers site-specific historical data for environmental assessments and Section 106 reviews on sites proposed to be impacted by a county capital project, and attempts to avoid or mitigate the impacts to historic structures as much as possible. Some recent studies conducted as part of the environmental and Section 106 review processes provided excellent in-depth survey and analysis of archaeological and/or architectural resources. These include CSAH 18 – East/West in the City of Afton (2010), Hardwood Creek Trail Extension in the City of Hugo (2013), CSAH 4 Improvement Project – Ostrum Trail North/Broadway Street in Marine of St. Croix (2016), and CSAH 18/21 – Downtown Afton (2017).

Washington County Historic Sites

National Register of Historic Places

Forty-four individual properties and four districts within Washington County are listed on the National Register of Historic Places. These are shown on Figure 7 and are described in Appendix G. An additional 22 properties have been evaluated for National Register eligibility by either the SHPO or the National Park Service but are not officially listed on the National Register of Historic Places.

Archaeological Sites

A database of the state's identified archaeological sites, maintained by the OSA, contains 137 archaeological sites located in Washington County.

Cemeteries

Washington County operates one cemetery that is protected under the Private Cemeteries Act. The cemetery is located in a regional park.

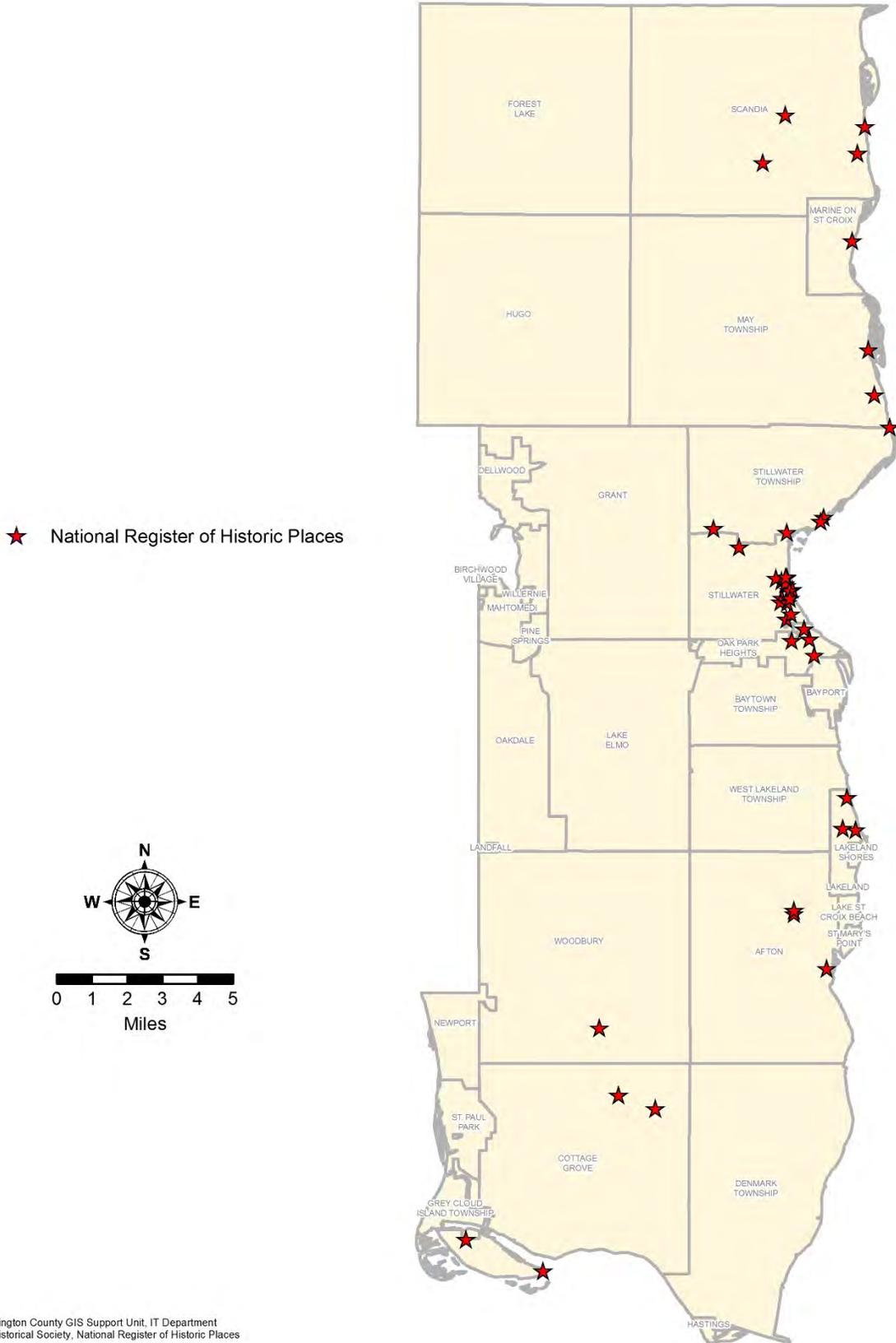
Other Historic Sites

The SHPO has compiled a database of 2,303 sites in Washington County that meet the state standards as a place of historical significance. Appendix H contains a list of the number of sites by community. Documentation on the sites varies from detailed investigations to windshield surveys from the late 1970s.

In addition, the Washington County History Network, a group of volunteers who are interested in history, has compiled a database of 502 historic sites in the county.

The SHPO and Washington County History Network databases have strong coverage in different areas of the county, with some overlap. The SHPO database offers thorough coverage for the Cottage Grove and Stillwater areas, while the History Network database has a stronger focus on Afton, Woodbury, Marine on St. Croix, and Scandia.

Figure 7: National Register of Historic Places Locations in Washington County Map



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: MN Historical Society, National Register of Historic Places

Washington County Historic Contexts

Washington County, with funding from the St. Croix Community Foundation, conducted a historic contexts study in 1999 to create a framework for preservation planning in the county. The study was intended to assist communities and the county in determining the appropriate historic preservation roles and priorities. The study incorporated a number of existing inventories and reports.

Historic contexts, as defined by the Secretary of the Interior’s Standards for Preservation Planning, provide frames of reference that establish the relative significance of cultural resources, and provide a framework for making management decisions about the resources. Historic contexts group information about related types of properties based on a common theme, a defined geographical area, and a specific and defined chronological period. Historic contexts can be developed at any scale, from a single neighborhood to a county or state. Each context includes a narrative describing the general history and characteristics of the context and a list describing the general types of properties that can be expected to be associated with the context. Further, to localize the broad contexts for each community, the study contains a brief history and recommendations for further planning and assessment.

The Historic Contexts Study described the following historic contexts for Washington County:

1. Townsite Development: 1849 –1965.
2. Immigration and Ethnicity: 1838 –1920.
3. County and Township Government and Public Education: 1840 –1960.
4. Tourism and Recreation: 1849 –1969.
5. Agriculture: 1840 –1960.

Washington County is included in three statewide historic contexts:

1. Railroads and Agricultural Development: 1870 –1940.
2. St. Croix Triangle Lumbering: 1830s –1900s.
3. Minnesota’s Tourism and Recreation in the Lake Regions: 1870 –1945.

These historic contexts describe aspects of Washington County’s broadest patterns of development from permanent white settlement in the late 1830s to approximately 1960. Sections on European exploration as well as an overview of suburban growth, transportation, and housing trends in the period 1960–2000 are also included. Some historic contexts, such as the lumber industry, have strong historical narratives but relatively few remaining buildings. Historic contexts, such as agriculture, are applicable to all communities, while tourism and recreation apply primarily to river and lakeshore areas. Some buildings, sites, areas, and communities are included in more than one context.



Historic context studies and preservation planning typically precede more detailed inventory efforts. The National Register and Local Preservation Planning National Register nominations have been prepared for a number of historic properties around the county, most notably in the cities of Stillwater and Marine on St. Croix, where there are historic districts. In 1977, the State Historic Preservation Office conducted a countywide reconnaissance level inventory, which resulted in a multiple property nomination to the National Register.

Local Historic Preservation Activities

Washington County Historical Society

The Washington County Historical Society (WCHS), founded on April 11, 1934, is a private, non-profit educational institution organized to investigate and study the history of Washington County and the State of Minnesota. In doing so, the WCHS:

- Operates two interpretive museums showcasing county heritage.
- Provides educational programs to schools and to the public.
- Assists researchers to document their own, county, and state history.
- Provides expertise to help community groups conserve collections and produce exhibits.
- Investigates and publishes county history.
- Collects and preserves cultural artifacts and documents for future generations.
- Showcases county history through exhibits and displays throughout the county.

The WCHS owns and operates four historic sites; three are buildings that are listed on the National Register of Historic Places.

1. In 1941, the WCHS purchased the Warden's House Museum in Stillwater from the State of Minnesota. It is one of the state's oldest buildings as well as its second oldest continuously operating house museum. The society's research library is now housed in the reconstructed carriage house behind the Warden's House Museum.
2. In 1974, the WCHS leased the Hay Lake School for a museum and, in 1978, purchased it from the Forest Lake School District.
3. In the early 1980s, the Johannes Erickson Log House, adjacent to the Hay Lake School, was donated to the WCHS. It was moved to the Hay Lake School site and restored.
4. In 1978, the WCHS purchased the historic family-owned Boutwell Cemetery west of Stillwater.

Washington County History Network

Most communities do not have current historic property inventories. The amount of local designation and review of building permits for alterations to historic properties varies among the communities. The communities that do have active historic preservation efforts work together as part of the Washington County History Network to promote and support county history with events, brochures, and publications.

The cities of Stillwater, Cottage Grove, and Newport have active Heritage Preservation Commissions and participate in the CLG Program. These communities have been the subject of a number of inventories and historic context studies.

Communities such as Woodbury, Lake Elmo, Afton, Oakdale, Scandia, Mahtomedi, and Denmark Township have historical organizations but no ordinances or other tools to assist in preserving privately-owned historic and cultural resources.

Historic Resources Plan

Washington County has a particularly important role in preserving part of Minnesota's early history in its work as the owner of the state's first courthouse. Historic preservation is also an important element in the county's plans for stewardship related to shoreline and scenic riverway protections, transportation, transit, parks, facilities, accessibility, and access to trail systems. Rehabilitating old buildings instead of demolishing them has important social as well as environmental benefits. Historic preservation can provide educational opportunities allowing new generations to see evidence of previous economies, landscapes, buildings, and social patterns.



Goals, Policies, and Strategies

To guide future decision making and county actions, goals, policies and strategies have been developed specific to the land use element. The following pages outline four goals with corresponding policies and strategies that set the course for the county’s future. Chapter 3, Goals, Polices, and Strategies, also provides the information contained within this section, along with the goals for the other plan elements. Chapter 11, Implementation, provides tools that can be utilized while working to achieve these goals.

Land Use Goal 1: Utilize land and related natural, cultural, and water resources in the shoreland and riverways, so they are conserved for future generations.	
Land Use Policy	Land Use Strategy
Regulate land use for the health, safety, and welfare of the residents of Washington County.	Maintain land use regulations that provide for the orderly growth and renewal of the county; allow wise use of the land; protect and conserve the county’s natural resources and ecological systems; and provide for economic stability.
Promote the proper management of natural, historic, and cultural resources for future generations.	Collaborate with other agencies to implement a variety of strategies to protect the groundwater and surface water quality, and sensitive natural features such as wetlands, steep slopes, and native plant communities when making land use decisions.
	Where practical, encourage the extension of sewer and water lines to well advisory areas and areas that have been identified with groundwater contamination.
	Protect groundwater through the Subsurface Sewage Treatment System Ordinance.
	Plan land use patterns that will facilitate groundwater recharge to protect the region’s water supply.
	Follow the Lower St. Croix Riverway land development regulations.
	Observe present floodplain rules while anticipating reduced assistance for flood protection.
	Identify, acknowledge, and seek alternatives to preserve, rehabilitate, and restore important cultural or historic sites, structures, and landscapes during the development process.
	Collaborate with local governments and watershed management organizations when setting their policies and regulations and when making land use decisions.
	Follow the policies and strategies contained in the Natural Resources and Environmental Protection Plan Chapter.

<p>Support the preservation of natural and open landscapes of the county’s rural areas.</p>	<p>Support township land use regulations that allow open space developments whereby residential structures are clustered on small lots, leaving some land undivided for common use by all residents of the development, for lease to a farmer, or for conveyance to a public or a conservancy organization.</p>
	<p>Require adequate buffers from mining operations in order to preserve viewsheds from road corridors.</p>
	<p>Support programs to promote and manage roads that have significant scenic and/or historic value.</p>
	<p>Promote sensitive road design, bicycle-facility planning, signage, and regulations addressing building setbacks, site planning, and clearcutting along roadways designated as scenic.</p>
	<p>Encourage communities to identify important natural areas that will be preserved during the development process.</p>
<p>Conserve long-term land use options.</p>	<p>Regulate land uses and densities adjacent to developing communities to preserve the option for future urban development.</p>
	<p>Gradually expand the urban service area to meet demand.</p>
	<p>Support staged growth areas within communities, orderly annexation agreements, and joint powers agreements developed cooperatively between cities and townships in defined future metropolitan urban service areas.</p>
<p>Encourage sustainable agriculture as a land use and a viable economic activity in the county.</p>	<p>Encourage land use regulations that allow agricultural uses, particularly in prime farmland areas.</p>
	<p>Encourage land use regulations that locate incompatible uses away from agricultural areas to minimize conflicts.</p>
	<p>Take actions to ensure farmers’ abilities to maintain their farms and to provide a variety of farming opportunities.</p>
	<p>Support using sound scientific methods to assess agriculture and turf management impacts to groundwater resources and to develop education and best management practices programs.</p>
<p>Help maintain financially healthy governments through the wise planning of land and public facilities such as roads, parks, trails, and buildings.</p>	<p>Encourage communities to request expansions of the Metropolitan Urban Service Area in a gradual manner based upon analyses of available land, forecasted growth, and the capacity of regional systems.</p>
	<p>Encourage low development densities in rural areas not served by public waste treatment facilities, so as to preclude the need for untimely extension of public sewer or water lines.</p>
	<p>Coordinate county road improvement plans and land uses.</p>
	<p>Provide access to the county road system according to the county access standards.</p>

<p>Help maintain financially healthy governments through the wise planning of land and public facilities such as roads, parks, trails, and buildings. (Continued)</p>	<p>During the subdivision and development review process, identify, dedicate, or acquire future trail easements if they are identified on the county master plan system or provide a community link.</p>
	<p>Coordinate the Recreation and Open Space System Plan (see Chapter 7) with land uses and recreational facilities in local communities.</p>
	<p>Plan and site county facilities (e.g., service centers, libraries, roads, and parks) to support designated land uses.</p>
	<p>When possible, identify potential mining sites, and ensure county regulation does not preclude the feasibility of mining as a use.</p>
<p>Land Use Goal 2: Support the growth of attractive urban communities while preserving rural functions and appearances.</p>	
<p>Land Use Policy</p>	<p>Land Use Strategy</p>
<p>Foster a low-density, truly rural land use pattern in areas without public sewer and water.</p>	<p>Support the extension of utilities and expansion of the Metropolitan Urban Service Area to strategically influence development patterns and safeguard the region’s rural character.</p>
<p>Encourage transit-oriented development (TOD), pedestrian-oriented, neotraditional, suburban-style growth that uses land in an efficient manner in locations that connect to transportation and transit systems.</p>	<p>Encourage communities to adopt higher densities and mixed land uses within the Metropolitan Urban Service Area that support multimodal transportation, transit-oriented development.</p>
	<p>Encourage communities to revitalize or expand traditional commercial districts in keeping with their present function and appearance.</p>
	<p>Encourage communities to approve developments that have a pedestrian orientation, civic focus, and preserve historic structures and districts.</p>
	<p>Encourage communities to keep local streets interconnected and relatively narrow so as to disperse and slow traffic.</p>
	<p>Encourage communities to efficiently reuse land through infill development, rehabilitation, and selective redevelopment.</p>
	<p>Review future planned land use designations to ensure that options for high-density development in the county’s planned transitways, transit corridors, and nodes are retained.</p>
<p>Recognize and plan for the county's share of metropolitan growth.</p>	<p>Encourage communities within the Metropolitan Urban Service Area to plan for staged, serviced residential, commercial, and industrial growth to the limits of the area.</p>

<p>Promote land uses throughout the county that encourage active and sustainable living.</p>	<p>Encourage cities to plan residential, commercial, office, and industrial developments that support transit, especially along identified transit corridors.</p>
	<p>Encourage cities and developers to create development patterns, including mixed land uses that provide good pedestrian and non-motorized circulation to provide the opportunities for residents to be more physically active.</p>
<p>Encourage land uses that promote a full spectrum of life cycle housing types for all incomes, ages, and races.</p>	
<p>Land Use Goal 3: Design the land use plan to support economic development.</p>	
<p>Land Use Policy</p>	<p>Land Use Strategy</p>
<p>Locate commercial and industrial growth where urban services are available; continue to prohibit commercial and industrial land use in unsewered areas.</p>	<p>Zone commercial and industrial development in areas with urban services and with access to transportation systems capable of supporting the land uses.</p>
	<p>Encourage the extension of sanitary sewer lines and water mains to previously unserved areas in order to accommodate imminent demand for office, industrial, retail, or service businesses that appear to have potential for significant numbers of jobs and increases in the tax base.</p>
<p>Promote commercial and industrial development in planned clusters such as business parks and mixed-use developments.</p>	<p>Review the Development Code to ensure that it allows for this type of development.</p>
<p>Provide for the removal and processing of sand and gravel, rock, soil, and other aggregate materials vital to the economic well-being of the region, while protecting adjacent land uses from adverse impacts.</p>	<p>Administer the Washington County Mining Regulations.</p>
<p>Support land use patterns that efficiently connect housing, jobs, transportation, transit, and retail and commercial centers.</p>	<p>Support development that accommodates non-motorized travel and provides connections to housing, services, jobs, and open space.</p>

Land Use Goal 4: Work to retain important historic contexts and features, including structures, landscapes, archaeological sites, and pedestrian-oriented village development patterns.	
Land Use Policy	Land Use Strategy
Continue to acknowledge the county’s history when planning, preserving, and developing its infrastructure.	Through the environmental review and Section 106 process, follow state and federal laws in protecting historic sites on the Historic Register when designing and siting county sponsored projects such as facilities, roads, parks, and other physical structures. Avoid impacts where possible and mitigate where not.
	Be sensitive to sites that are not on the National Register but which are historically important locally or are locally designated. Review and update landscaping and maintenance work to include historically-accurate plantings and design features to accommodate use of the grounds by public and private clients.
	Use information from the Washington County Historic Contexts Study, as well as state and local contexts, as a baseline for evaluating properties.
	Use historical information and assessments in county planning processes.
	Investigate opportunities to identify and interpret historic Native American activities in the Washington County park system.
Continue to preserve natural, scenic, open, and agricultural landscapes and encourage preservation of historic sites through land planning activities.	Encourage low-density housing development and site new houses carefully through lot averaging and open space design developments.
	Advocate development that is in keeping with historic town land use patterns.
	Encourage open space developments as a way to preserve historic landscapes.
	Analyze the impact on historical resources during the development process.
	Encourage local governments and others to preserve significant historic sites, such as churches, residences, industrial sites, bridges, railroad depots, archaeological sites, and landscapes.
Provide stewardship of county-owned historic properties.	Consider public and private funding sources to adequately maintain the county’s historic properties.
	Identify opportunities to acquire, preserve, rehabilitate, or restore important cultural or historic sites, structures, and landscapes.
Collaborate with the Washington County Historical Society, cities, and others to promote and interpret county history with events and public information.	Support the interpretation of historic structures and contexts located in county parks.
	Include a historic preservation and stewardship component in all Washington County park master plans.
	Investigate a county signage program along county roads and trails to identify and/or interpret historic sites.
	Continue supporting activities at the Washington County Historic Courthouse that foster knowledge and appreciation of the county’s heritage.

Provide information on historic sites to the appropriate organization as surveys and information are available.	Work with the State Historical Preservation Office and local history groups to maintain and provide information on historic sites.
	Help provide information to aid historic preservation.
	Document and evaluate the historical aspects of county owned properties as part of maintenance and development plans.
Encourage communities to preserve historic properties through their planning and preservation efforts.	



Interchange at I-94 and Radio Drive in Woodbury

Chapter 5 - Transportation



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Executive Summary

Washington County Public Works plans, builds, and maintains a transportation network to move people and goods to their destinations. This network includes highways, public transit facilities, and trails, and contributes to the safety and quality of life of residents and visitors. To highlight some of the county's work in transportation, staff have explored new safe and efficient highway design practices, dedicated more resources to enhancing opportunities for community input, implemented innovative environmental management practices, and completed an assessment to understand the transportation needs for older adults and people with disabilities. The county is committed to optimizing all transportation resources for our community.



Transportation is central to how and where people are able to learn, live, play, work, and worship. We hear from community members, through a number of channels, how transportation helps and hinders. During the 2016 Washington County Resident Survey respondents noted ease of travel by public transit as the most problematic issue in Washington County. Residents also noted a likelihood of needing transportation assistance for older adults. As part of the development of this comprehensive plan, community members indicated public transportation, trails, and improved highways and bridges as top needs for the county. Though these community members stated they travel mostly by car, they indicated a need for additional transit and bicycle resources.

This input from residents and other partners, combined with trends impacting the industry, are guiding changes in how staff work on transportation. Trends affecting transportation are:

- Mobility
- Technology
- Regional Resource
- Limited Funding

Mobility

Mobility is a measure of the ease of travel, and focuses on the efficient movement of people and goods. Historically, Washington County has worked towards a balance of access and mobility in our highway and non-motorized transportation network. Demographic changes of who lives in Washington County and where they live is changing the conversations related to access and mobility and how we invest in our transportation system. Some changes include:

- Employees with limited transportation options seek good paying jobs at businesses located in various locations in the county and region.
- Older adults are living in our communities in greater number.
- People with disabilities are moving to communities throughout the county requiring additional transportation resources to meet their needs.
- Population growth in the region means there are more people to move within the county and throughout the metropolitan area.
- Residents are using modes other than a private automobile to get to their destinations.

Residents, employers, and other stakeholders look to the county as a resource to help connect people to the goods and services they need to thrive. Washington County is committing resources to more modes of travel,

supporting specialized needs for members of our community, and collaborating with more partners (both within and outside the county) to plan, build, and maintain a robust and resilient transportation network.

Technology

Advances in technology are already shaping our transportation system and how travelers move throughout communities. Some technologies may help fix transportation challenges but contribute to others. The introduction of autonomous vehicles, as an example, may provide a flexible transportation option for people without access to a car or transit. However, these vehicles are expected to increase the amount of traffic on our transportation network, which could require dedicating more resources to maintaining roads. Technology innovations will be key to keeping our county moving forward. Also, these innovations will impact how we plan and construct our transportation network. It is difficult to forecast what solutions will be implemented because of the rapid pace of innovation. Washington County will continue to explore and support new technologies to improve transportation and the county as a whole.

Regional Resource



The regional transportation network is increasingly multimodal (i.e., includes many modes of travel) and interconnected. Many parts of Washington County's transportation system are growing in regional significance. One example is the 2017 opening of the St. Croix Crossing Bridge in Stillwater. This bridge is a significant transportation investment for both Minnesota and Wisconsin. Though the project is not owned or operated by Washington County, the investment is changing how people move through the county in a way that hasn't been seen since the introduction of the interstate system. Another example is the METRO Gold Line transitway, which will likely be the first bus project in the region to operate in a dedicated lane. The METRO Gold Line will contribute to a growing regional transit system that connects Washington County with destinations such as the central business districts in Saint Paul and Minneapolis, Minneapolis-St. Paul (MSP) International Airport, and employers as far away as Eden Prairie. For these reasons, the Washington County transportation system is a regional resource.

Limited Funding

Limited funding—namely federal and state—has been dedicated to the expansion and preservation of the transportation network. Limited funding coincides with population growth and the need to invest in our system to compete within the region and as a region with other locations in the United States. The county system is part of a network providing connections for users to complete the first and last portion of their trip. Also, lack of federal and state funding results in a metropolitan highway system and transportation network that is no longer able to carry current, let alone future, demand. As a result, travelers rely on local systems that struggle to keep pace when funding systems have not been structured to accommodate the increasing use of current local resources and the need to invest in other means of travel. Washington County is working to deliver an interconnected, multimodal transportation system under these financial constraints, which requires more collaboration with local and regional partners to leverage available resources.

Addressing these trends will require collaborating with our many partners to deliver the transportation systems our stakeholders want. The commitment to working with partners to deliver community-based designs has not changed since the previous comprehensive plan. Solutions to transportation problems are as varied as the

communities in the county. Washington County has increased the number of staff and resources available to work with residents, businesses, municipalities, and other stakeholders to bring forward projects that meet the diverse needs of our communities.

The following Existing Conditions section addresses many aspects of the transportation system including roads, transit, aviation, freight, non-motorized resources (e.g., walking and bicycling), as well as expected travel patterns throughout the county. The Transportation Plan section provides guidance to county officials and staff to respond to stakeholder needs to plan, build, and maintain our transportation network for the next 20 years and beyond.

Existing Conditions

To accurately identify future transportation needs and prepare a plan to meet those needs, the county studied the existing condition of the transportation resources and the travel behavior of current users. This analysis included examining functional classifications, jurisdiction, traffic volumes and capacity deficiencies, system continuity, safety, river crossings, scenic roads, freight, railroads, airports, transit systems and corridors, and non-motorized facilities.

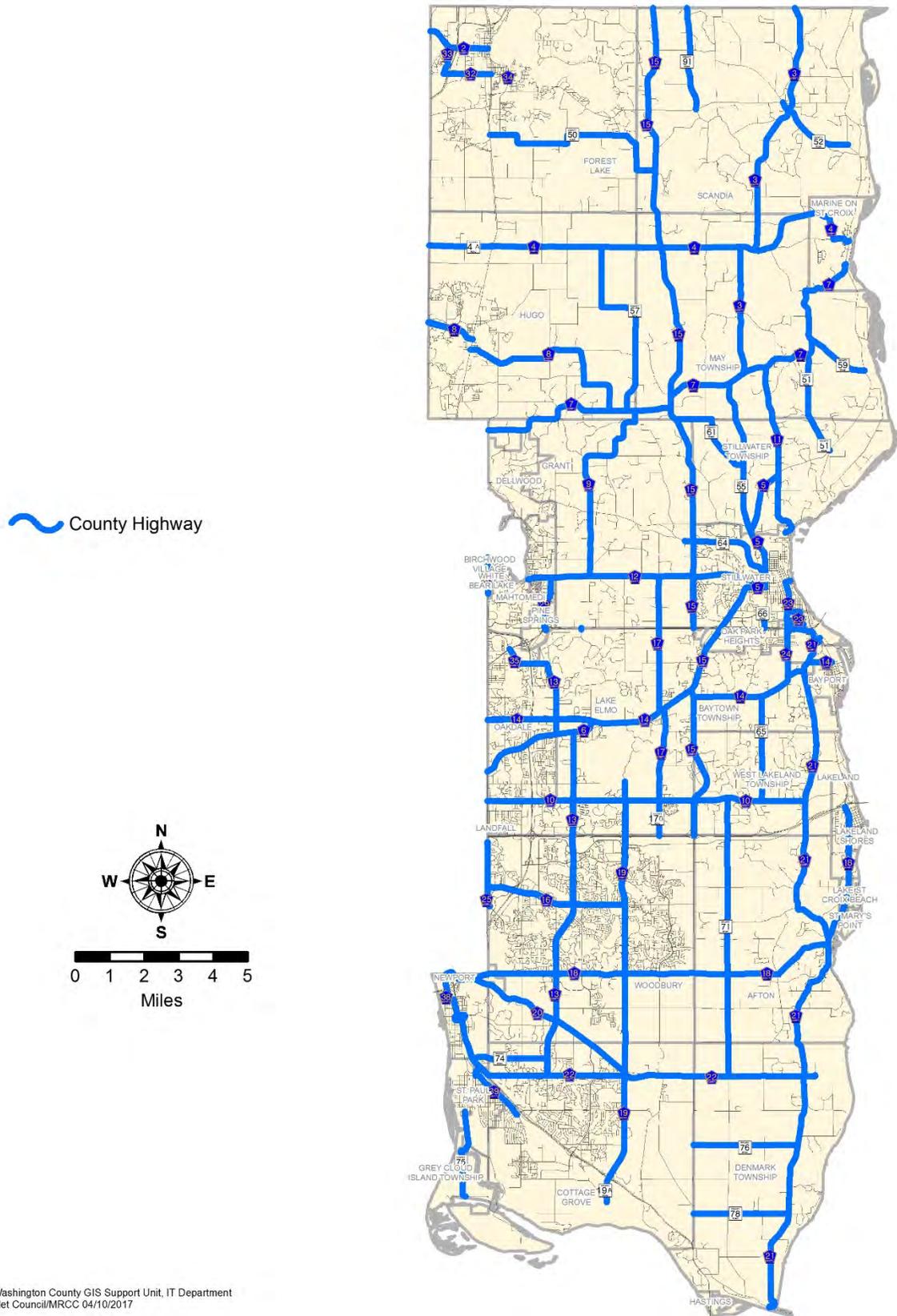
Roadways

Maintaining a safe and reliable highway system is a core responsibility of the county. The county's highway infrastructure, along with state and local roads, forms a seamless and integrated network that supports local and regional travel. The highway system also supports alternative transportation modes, such as buses, bicycles, and pedestrians. Washington County contains approximately 2,195 centerline miles of highways, which includes all state, county, and local roads. Washington County is responsible for 282 centerline miles of highway (see Figure 1). Centerline mileage is the distance measured along the center line of the roadway. It does not include the number of lanes for each roadway.

Functional Classification

The functional classification defines a roadway's purpose, use, and the attributes necessary for it to provide safe and efficient movement of vehicles. The Metropolitan Council's 2040 Transportation Policy Plan (2040 TPP) establishes a functional classification system for roadways based on the transportation service provided (i.e., degree of mobility) and the relationship to adjacent land uses (i.e., degree of access). This system creates a hierarchy of roadways that provide direct access to local streets, collect traffic from local streets, and distribute traffic to the regional highway system. Each roadway type is critical to providing a roadway network that meets the needs of all users. For example, if an area lacks a robust collector roadway system, then the principal and minor arterial roadway system will not only need to provide mobility for those moving through the area, but also direct access to adjacent land uses. This may result in roadways that serve too many functions and have safety and capacity problems. Figure 2 shows the relationship of mobility to access for each functional classification.

Figure 1: Existing County Highways



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Met Council/MRCC 04/10/2017

Figure 2: Relationship of Mobility to Access



Below is a general description of each of the four classifications in the Functional Classification System. Appendix D of the 2040 TPP provides more information on the functional classification criteria. The functional classification and corresponding mileage of each roadway is shown in Figure 3.

Principal Arterials

Principal arterials typically have the highest traffic volumes and are considered part of the metropolitan highway system. These highways are intended to connect metropolitan centers of regional importance with one another, including major business concentrations, important transportation terminals, and large institutional facilities.

They are typically spaced three to six miles apart in developed and developing areas and six to twelve miles apart in rural areas. The principal arterial highways in Washington County are all owned and operated by the Minnesota Department of Transportation (MnDOT). They include Interstates 94, 494/694, and 35, and Trunk Highways (TH) 8, 36, and 61. Proposed interchanges at TH 36 and Hadley Avenue and TH 36 and CSAH 15 will provide safer and efficient connections to principal arterials.

Minor Arterials

Minor arterials place a priority on mobility and higher average travel speeds, while providing managed access to the local system. These highways connect important locations within the county to the metropolitan highway system. In addition, they connect locations within the metropolitan urban service area to cities and towns outside of the metropolitan region and freestanding cities to each other. Minor arterial highways are typically spaced one-half to one mile apart in developed areas and one to two miles apart in developing areas. Within Washington County, minor arterial highways are mostly owned and operated by MnDOT as Trunk Highways or by the county as County State Aid Highways (CSAH). Examples of these highways in Washington County are TH 96, CSAH 2 (Broadway Avenue), CSAH 15 (Manning Avenue), CSAH 16 (Valley Creek Road), and CSAH 22 (70th Street South). The Metropolitan Council has established subcategories for minor arterials including expander, reliever, connector, and augments.

Collectors

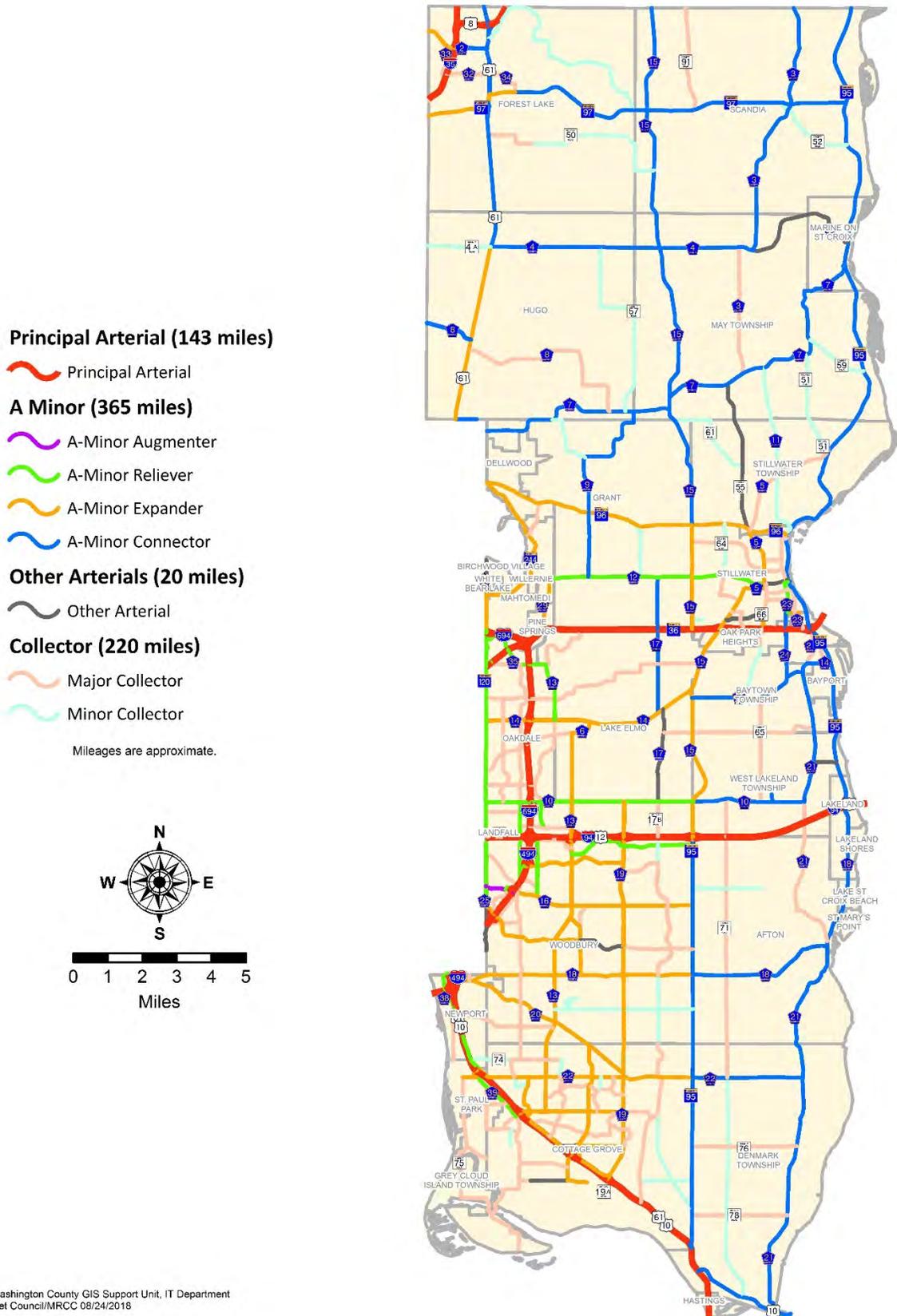
Collectors serve shorter trips and allow more direct access from local streets and driveways. These collect and distribute traffic to the arterial system from neighborhoods as well as commercial and industrial areas. Collectors are typically spaced one-fourth to three-fourths mile apart in developed areas and one-half to one mile apart in rural areas. The collectors in Washington County are owned and operated by the county, cities, and townships. Examples of collectors are North Shore Trail, County Road (CR) 57 (Keystone Ave N), CSAH 35 (Hadley Avenue), and 30th Street North. The Metropolitan Council further defines collectors as either major or minor collectors.

Local Streets

Local streets connect blocks within residential neighborhoods and land parcels within commercial and industrial developments. They serve short trips typically at low speeds favoring land access over mobility. Local streets occur every block in urban areas but may be spaced up to one mile apart in rural areas. Local streets are owned and operated by cities and townships.

See Figure 3 for a map of roads by functional classification.

Figure 3: Existing Roadway Functional Classification



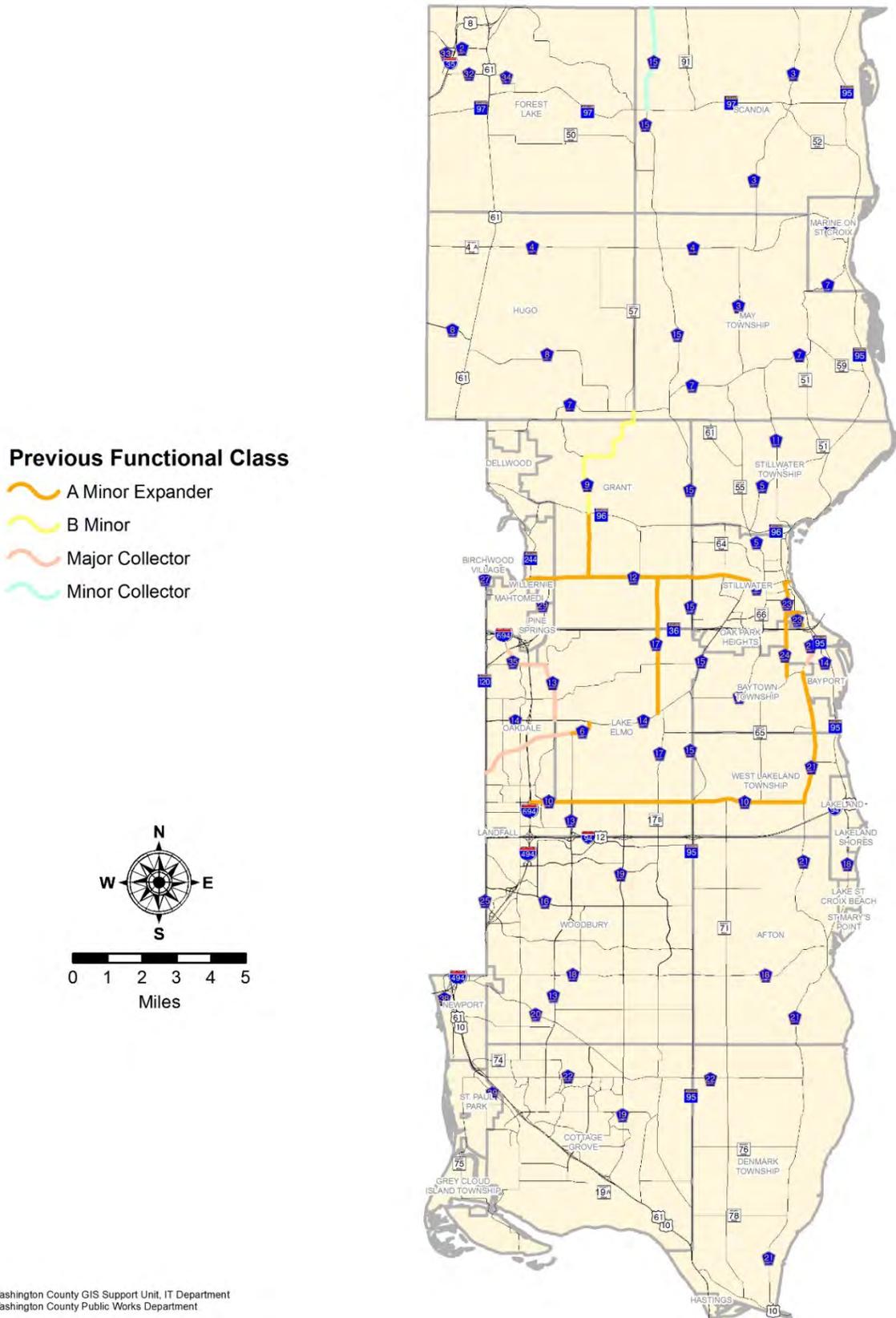
Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Met Council/MRCC 08/24/2018

Functional Classification Changes since 2030 Comprehensive Plan

The following is a list of functional classification changes completed since the 2030 Washington County Comprehensive Plan. (see Figure 4)

- Changed to A Minor Connector
 - CSAH 6 from CSAH 5 and TH 120 (2011)
 - CSAH 9 from CSAH 7 and CSAH 12 (2011)
 - CSAH 10 from CSAH 15 and CSAH 21 (2011)
 - CSAH 12 from TH 244 and CSAH 5 (2011)
 - CSAH 15 from 204th St N and TH 97 (2011)
 - CSAH 17 from CSAH 12 and CSAH 14 (2011)
 - CSAH 21 from CSAH 14 and CSAH 10 (2011)
 - CSAH 21 from TH 95 to CSAH 14 (2014)
 - CSAH 23 from CSAH 24 and TH 36 (2011)
 - CSAH 24 from TH 36 and CSAH 14 (2011)
- Changed to A Minor Reliever
 - CSAH 10 between I-694 and CSAH 15 (2011)
 - CSAH 13 from CSAH 35 to TH 5 (2014)
 - CSAH 23 & 24 between Highway 95 and TH 36 (2011)
 - CSAH 35 from TH 36 to CSAH 13 (2014)
- Changed to Major Collector
 - CSAH 23 from CSAH 24 to CSAH 26 (2014)
 - CSAH 26 from CSAH 24 to CSAH 21 (2014)

Figure 4: Functional Classification Changes since 2030 Comprehensive Plan (2008)



Prepared By: Washington County GIS Support Unit, IT Department
Data Source: Washington County Public Works Department

Existing Jurisdiction

Highways are also classified by the level of government that is responsible for operating and maintaining the roadway. The jurisdiction is directly related to the functional classification and the design type. The federal government, which has jurisdiction over the interstate highway system, has delegated its authority for operating and maintaining that system to the state with oversight provided by the Federal Highway Administration (FHWA). Highways that serve regional, inter-county, and statewide transportation needs are owned and maintained by the State of Minnesota or the county. Highways that provide connections to major activity locations within the county and to the metropolitan highway system are typically owned and maintained by the county or cities. In general, streets that serve local access needs are owned and maintained by the local government.

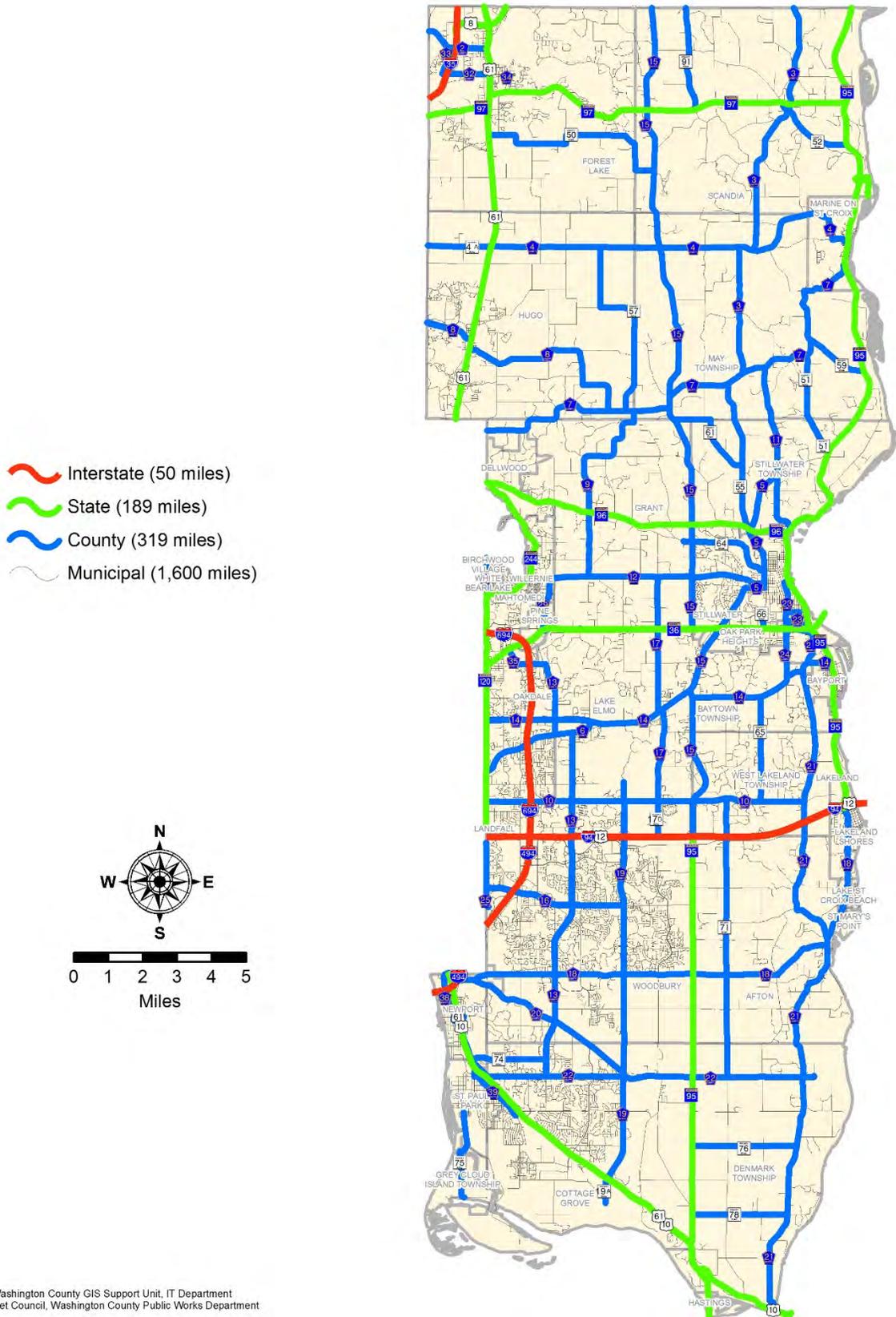
Jurisdictional changes are prompted by factors such as new land development and redevelopment or significant changes in the roadway system. Figure 5 shows the existing jurisdiction and current mileages. Over the past 10 years, 10 jurisdictional changes have occurred to better align the responsible level of government with the functional classification of the roadway (see Figure 6).

Jurisdictional Changes since 2030 Comprehensive Plan (2008)

The following is a list of jurisdictional changes completed since the 2030 Washington County Comprehensive Plan.

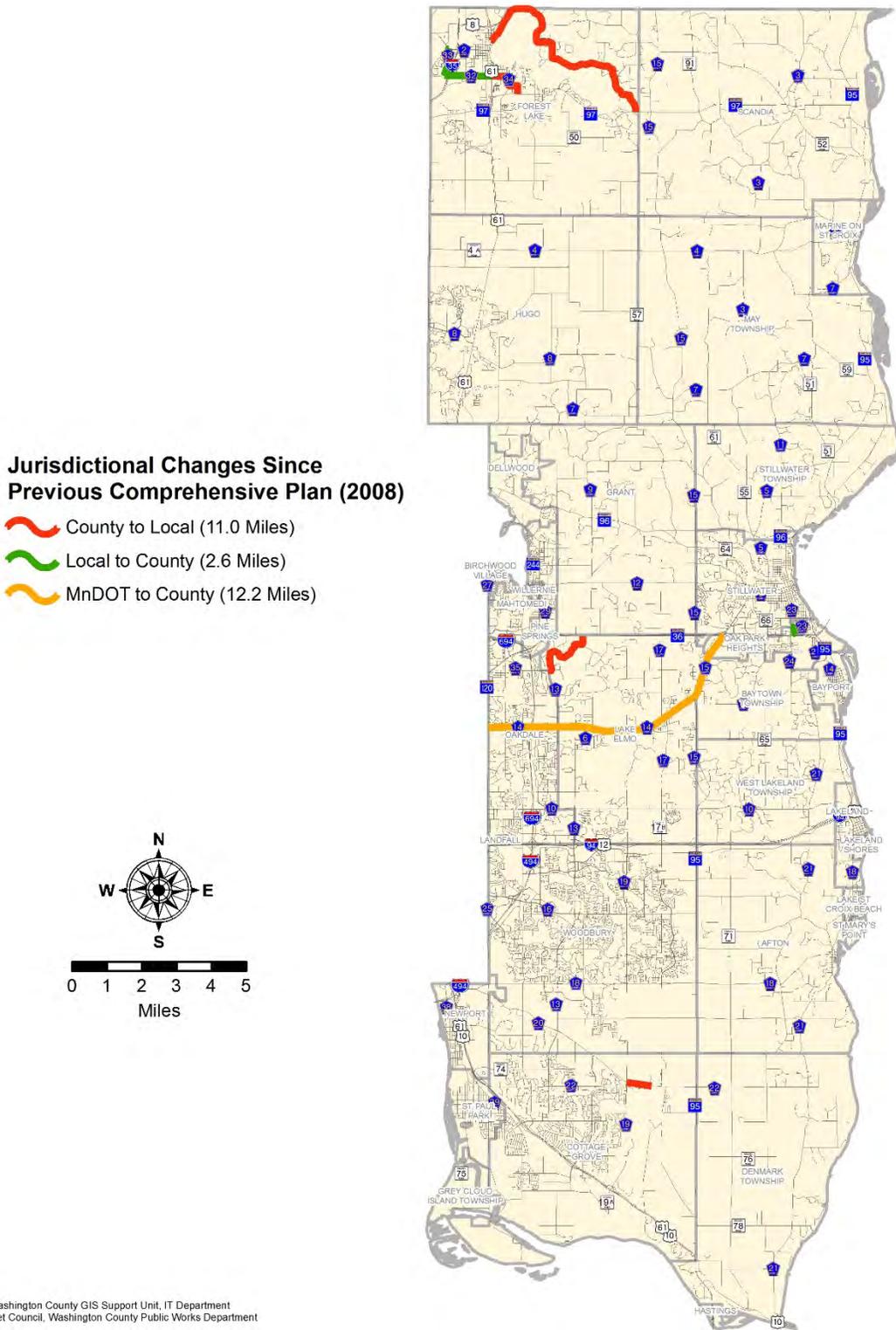
- Jurisdiction Changes from Local to County
 - CR 62 (62nd St N) between CSAH 24 (N Osgood Ave) and Panama Ave
 - CR 63 (Oxboro Ave N) between CR 62 (62nd St N) and 60th St N
 - CSAH 32 (220th St N, 11th Ave SW) between CSAH 33 (Everton Ave N) and TH 61
 - CSAH 33 (Everton Ave N) between CSAH 2 (W Broadway Ave) and CSAH 32 (220th St N, 11th Ave SW)
- Jurisdiction Changes from County to Local
 - Old 70th St S between CSAH 19 (Innovation Road) and CSAH 22 (70th St S)
 - CSAH 2 (North Shore Trail) between TH 61 and TH 97
 - CSAH 34 (11th Ave SE, South Shore Drive, SE 15th Ave, SE 11th St) between TH 61 and TH 97
 - CR 13B (DeMontreville Trail)
- Jurisdiction Changes from State to County
 - CSAH 14 (formerly TH 5) between TH 120 and CSAH 15 (Manning Ave)
 - CSAH 15 (formerly TH 5) between CSAH 15 (Manning Ave) and TH 36

Figure 5: Existing Jurisdiction



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Met Council, Washington County Public Works Department

Figure 6: Jurisdiction Changes Since Previous Comprehensive Plan (2008)



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Met Council, Washington County Public Works Department

Traffic Volumes and Capacity Deficiencies

Volume to Capacity Ratio

The ratio of traffic volume to roadway capacity (v/c ratio) provides a measure of congestion along a roadway segment. It can help determine where roadway improvements, access management, transit services, or demand management strategies could be implemented. It does not, however, provide a basis for determining the need for specific intersection improvements. Congestion on the roadway system is determined to exist when the v/c ratio approaches or exceeds 1.0.

Table 1 shows the typical planning-level average daily traffic (ADT) capacity volume thresholds for each facility type. These volume thresholds are based on guidelines from the Highway Capacity Manual, discussions with the Metropolitan Council, and professional engineering judgment. The maximum capacity of any roadway design (v/c = 1) is a theoretical measure that can be affected by its functional classification, traffic peaking characteristics, access spacing, speed, intersection node geometry, and other roadway characteristics. A segment of roadway is said to be “approaching capacity” when the observed average daily traffic (ADT) equals or exceeds 85 percent of ADT (v/c > 0.85).

Table 1: Planning Level Roadway Capacities by Facility Type

Roadway Type ¹	Planning Level Daily Capacity ² (ADT)	Approaching Capacity (85% ADT)
Two-lane undivided urban	10,000	8,500
Two-lane undivided rural	12,000	10,200
Three-lane (two-lane with turn lanes)	22,500	19,125
Four-lane undivided urban	20,000	17,000
Five-lane urban (four-lane with turn lanes)	32,000	27,200
Four-lane divided rural	38,000	32,300
Four-lane expressway (no signals)	60,000	51,000
Four-lane freeway	80,000	68,000
Six-lane freeway	120,000	102,000

This chart is intended for use as an approximation for planning purposes.

¹The terms urban and rural describe typical section design (e.g., curb and gutter for urban and ditch drainage for rural), not geographical areas.

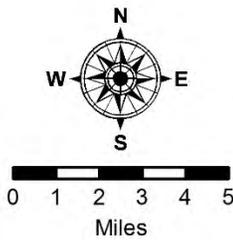
²Turn lanes may be needed for high speeds at 7,000 ADT.

The 2017 traffic volumes and existing number of lanes are presented in Figures 7 and 8 respectively.

Figure 7: 2017 Traffic Volumes

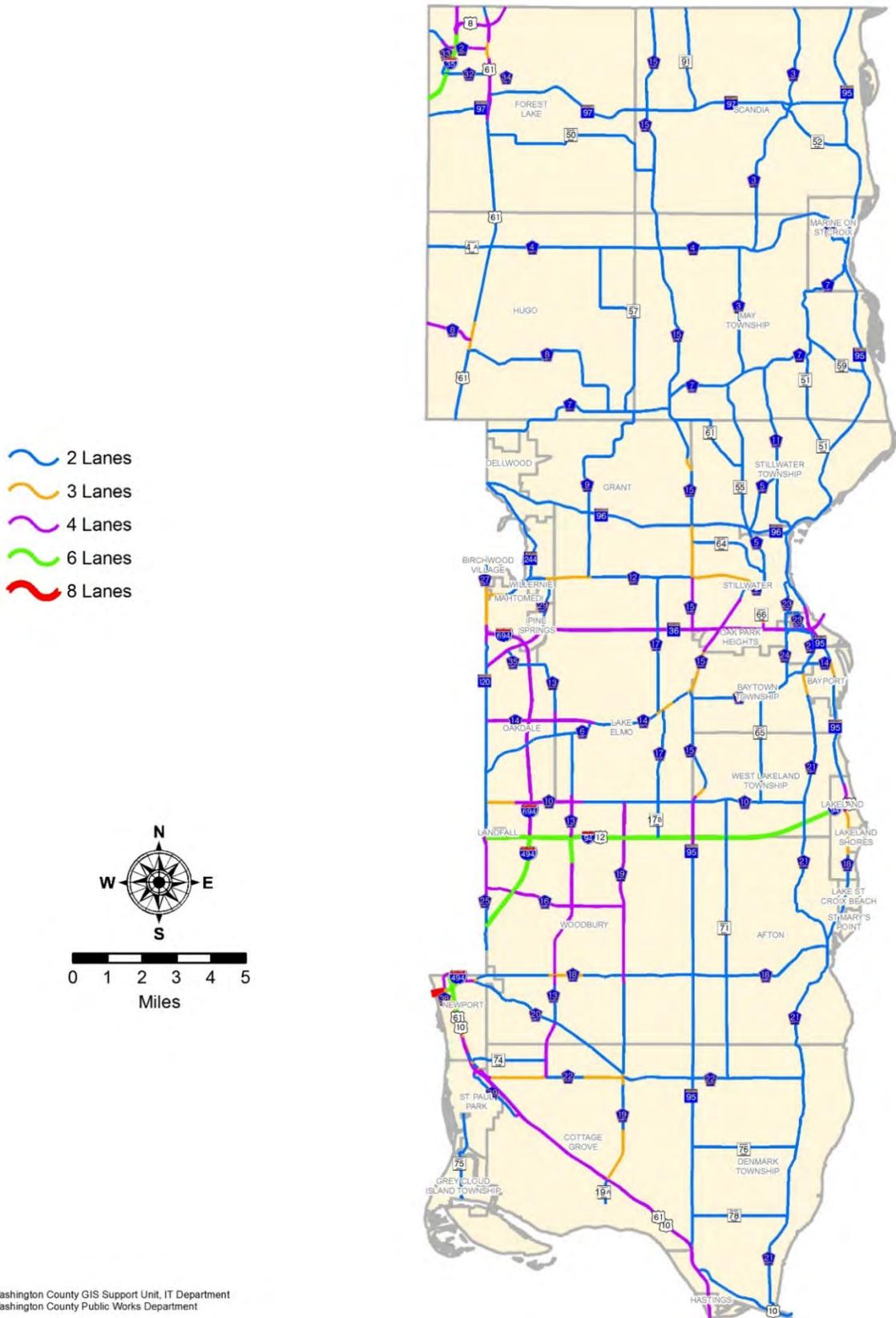
2016 Annual Average Daily Traffic (AADT)

- 5 - 8000
- 8001 - 15000
- 15001 - 30000
- 30001 - 60000
- 60001 - 176000



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: MnDOT (segments), Washington County Public Works (points)

Figure 8: 2017 Roadway Lanes



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Washington County Public Works Department

Roadway Congestion

Existing capacity deficiencies were identified by comparing existing ADT volumes to the thresholds in Table 1. This methodology does not account for traffic conditions that do not fit the average daily traffic criteria (e.g., weekend travel, holiday travel, special events) because they tend to produce atypical congestion and different congestion levels. Also, the methodology does not take into account factors such as geometric conditions at the intersection nodes, potential peaking characteristics, or directional flow disparities. These features can greatly impact the order of magnitude of the deficiency (i.e., there is no deficiency or the deficiency is greater than what the ADT indicates). Despite its limitations, this methodology is widely accepted and applicable for transportation planning purposes.

Figure 9 presents the current capacity issues on highways in Washington County. Highway segments, having observed volumes exceeding their design capacity, are shown as red lines. Roadway segments “approaching capacity” (v/c ratio between 0.85 and 1.0) are shown as yellow lines.

State System Mobility Improvements

The most recent 20-Year Minnesota State Highway Investment Plan (MnSHIP), adopted in 2017, guided the development of the Metro District 10-year Capital Highway Investment Plan (CHIP) (2018-2027). Major investments listed in the 10-Year CHIP that impact Washington County are the I-35/I-35E/I-35W Pavement and Bridges and I-94/I-494/I-694 System Interchange Improvements projects.

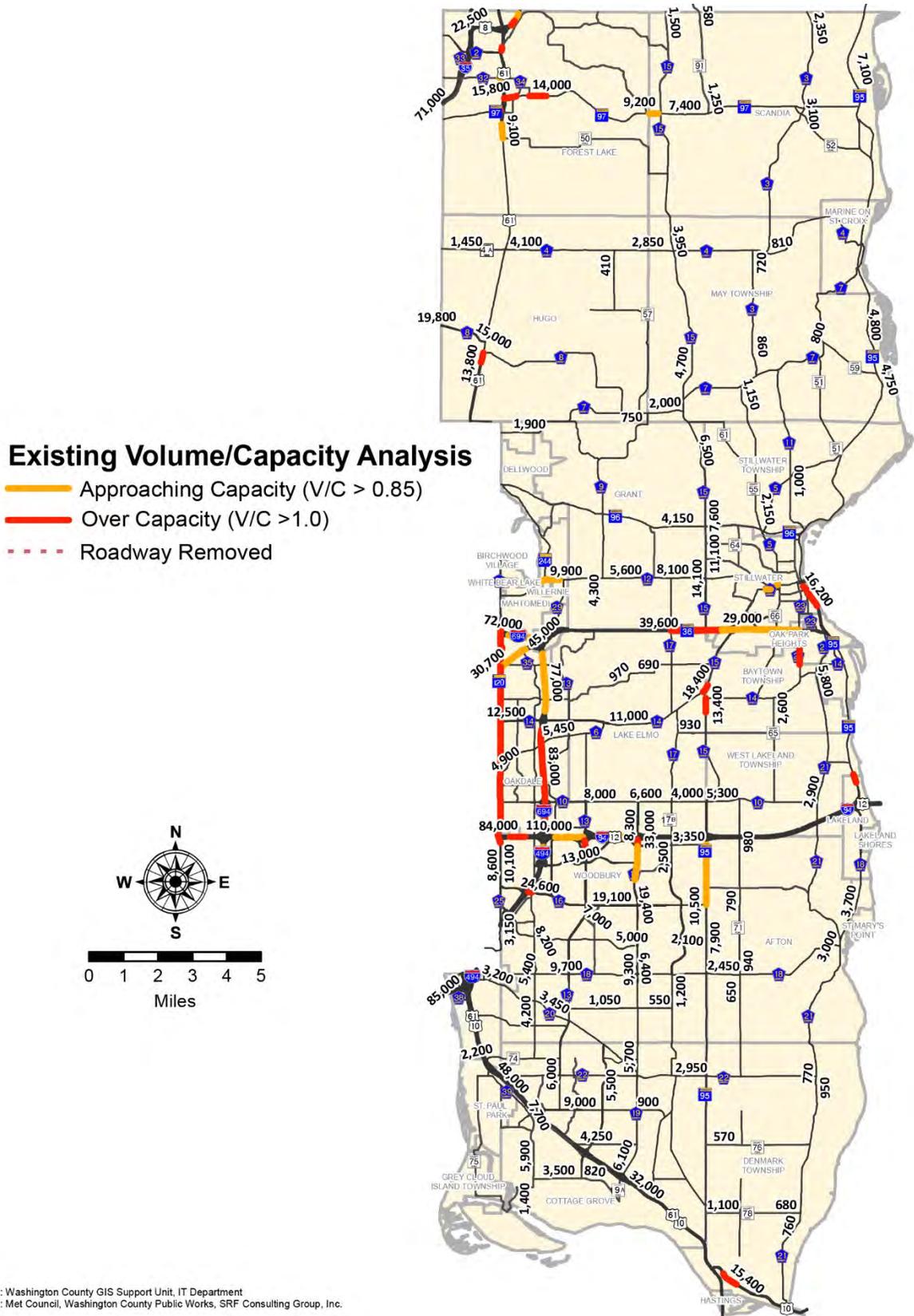
Funding for Twin Cities’ mobility investments ends in 2023. However, the National Highway System (NHS) and non-NHS system received additional funding for pavement projects, including TH 36 from I-35W to Stillwater, and I-94 from Woodbury to Minnesota-Wisconsin border. Interchange projects at TH 36 and Hadley and TH 36 and Manning Avenue have been funded and approved. However, the available funding is not sufficient to meet regional mobility investment needs. For example, an interchange project at TH 36 and TH 120 has been approved but not funded. The proposed interchanges at I-35E and CR 4 and TH 36 and CSAH 17 have not yet received approval or funding. If new revenues become available, MnDOT will continue to invest in operations and maintenance in the metropolitan area to address the backlog of priority projects.

System Continuity

Some highways have discontinuous alignments with opportunities for more logical connections. The following is a list of opportunities for improving travel continuity in Washington County through realignment or connection of roads. See Highway System Summary map (see Figure 30).

- East-west corridor between I-494 and TH 95 (Manning Ave), south of I-94 and north of CSAH 18 (Bailey Road) in Woodbury and Afton.
- Access to I-35 from Washington County Road 4A and Anoka County Road 140 in Hugo and Lino Lakes.
- North-south connection between the south end of CSAH 25 (Century Avenue) and CSAH 18 (Bailey Road) in Woodbury.
- North-south Manning Ave N connection between CSAH 15 (Manning Ave N) and TH 36.
- East-west connection between CSAH 19 and the lower Grey Cloud Island.

Figure 9: 2017 Congestion



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Met Council, Washington County Public Works, SRF Consulting Group, Inc.

Safety

A comprehensive, system wide and data-driven analysis was conducted for crashes occurring from 2013 to 2015 within Washington County. It followed the guidance in the Minnesota Strategic Highway Safety Plan and the Toward Zero Deaths program to reduce fatal and life-changing (also considered incapacitating) injury crashes. This analysis acknowledged that, while the total number of severe crashes may be significant, the actual number of severe crashes occurring at any given location is very low.

The findings and conclusions of the crash analysis are summarized below.

- A total of 107 fatal and incapacitating injury crashes occurred on all roadways within the county (31 fatal and 76 incapacitating injury crashes).
- A total of 28 fatal and incapacitating injury crashes occurred on the Washington County roadway system (6 fatal and 22 incapacitating injury crashes).
- The following types of fatal and incapacitating injury crashes occurred most frequently on the county roadway system:
 - lane departure crashes including head-on crashes and run off road crashes (particularly on the right side of the roadway)
 - intersection-related crashes including right angle crashes
 - motorcycle crashes
 - crashes involving pedestrians and bicyclists.

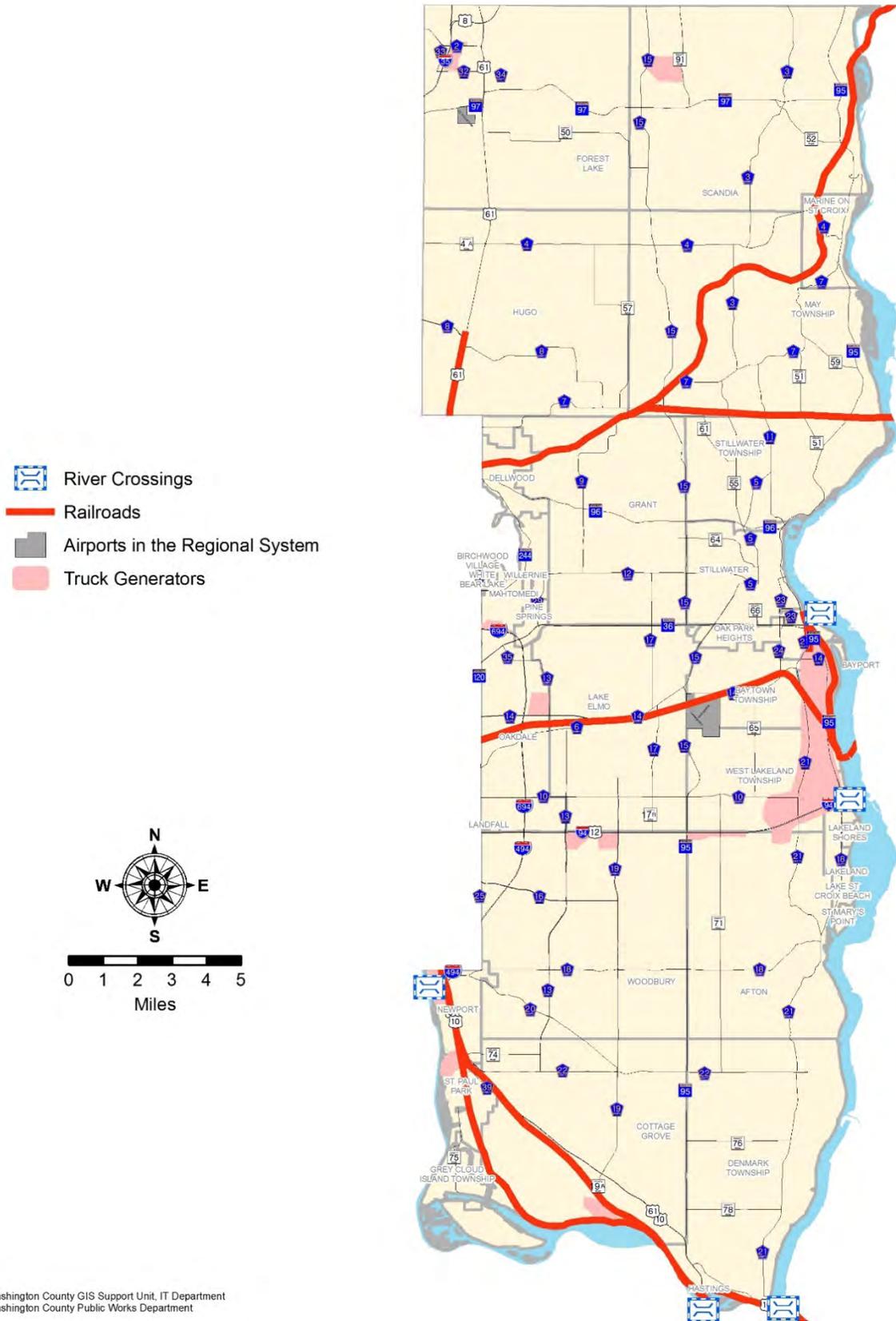
More information about highway safety can be found in Washington County's *County Highway Safety Plan* (2013).

River Crossings



Because Washington County is bounded on the east by the St. Croix River and on the southwest by the Mississippi River, river bridge crossings are critical components of the transportation system. The ability to adequately serve the needs of the transportation system is crucial. All active river bridge crossings are on the state highway system and not directly under county control. The TH 36 St. Croix Crossing Bridge at Stillwater, the I-94 bridge at Lakeland, and the TH 10 bridge at Point Douglas in Denmark Township all cross the St. Croix River. The I-494 Wakota Bridge at Newport and the TH 61 bridge at Hastings cross the Mississippi River. Figure 10 shows the river bridge crossing locations in the county.

Figure 10: Airports, Railroads, Truck Generators, and River Crossings



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Washington County Public Works Department

Scenic Byways and Natural Preservation Routes

The Scenic Byways and Natural Preservation Route designations could be regarded as overlay designations that distinguish roads that have special scenic, historic, cultural, or natural characteristics.

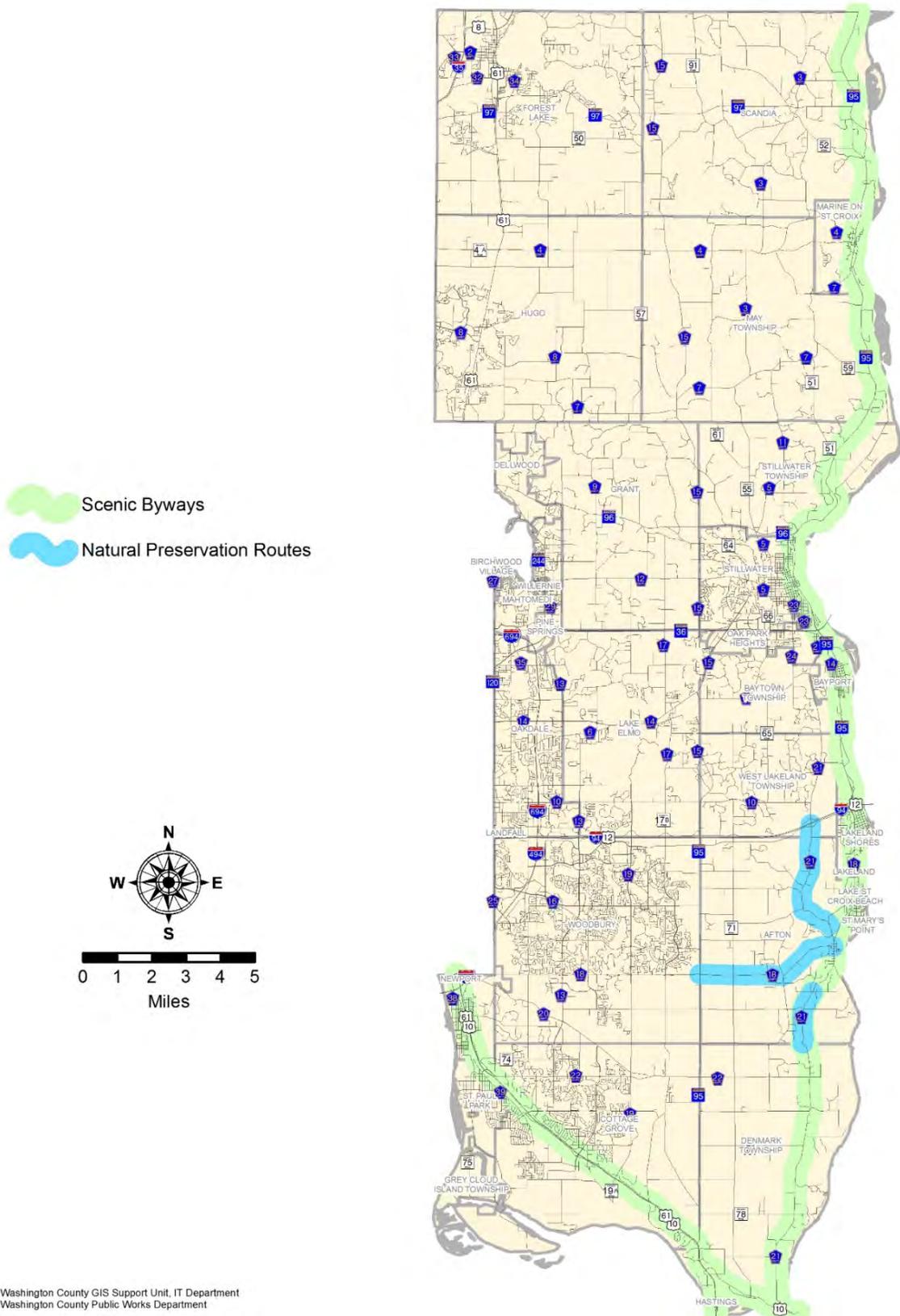
Scenic Byways

The Federal Intermodal Surface Transportation Equity Act of 1991 (ISTEA) created a National Scenic Byways Program to designate and protect roads that provide an enjoyable travel experience. The St. Croix Scenic Byway parallels the St. Croix River along CSAH 18 and 21 south of I-94, along TH 95 north of I-94 in Washington County, and then continues north through Chisago and Pine Counties north to Pine City. The Great River Road runs along TH 61 and TH 10 in the southwestern portion of the county (see Figure 11).

Natural Preservation Routes

CSAH 21 and the east-west section of CSAH 18 within the City of Afton are designated as Natural Preservation Routes. This designation within Minnesota's County State Aid Highway system allows roadway designs to be more compatible with their natural surroundings than would typically be allowed under state-aid standards. The purpose of this alternative design is to protect the unique scenic or environmental characteristics along CSAH roads, while still allowing necessary improvements (see Figure 11).

Figure 11: Scenic Byways and Natural Preservation Routes



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Washington County Public Works Department

Freight

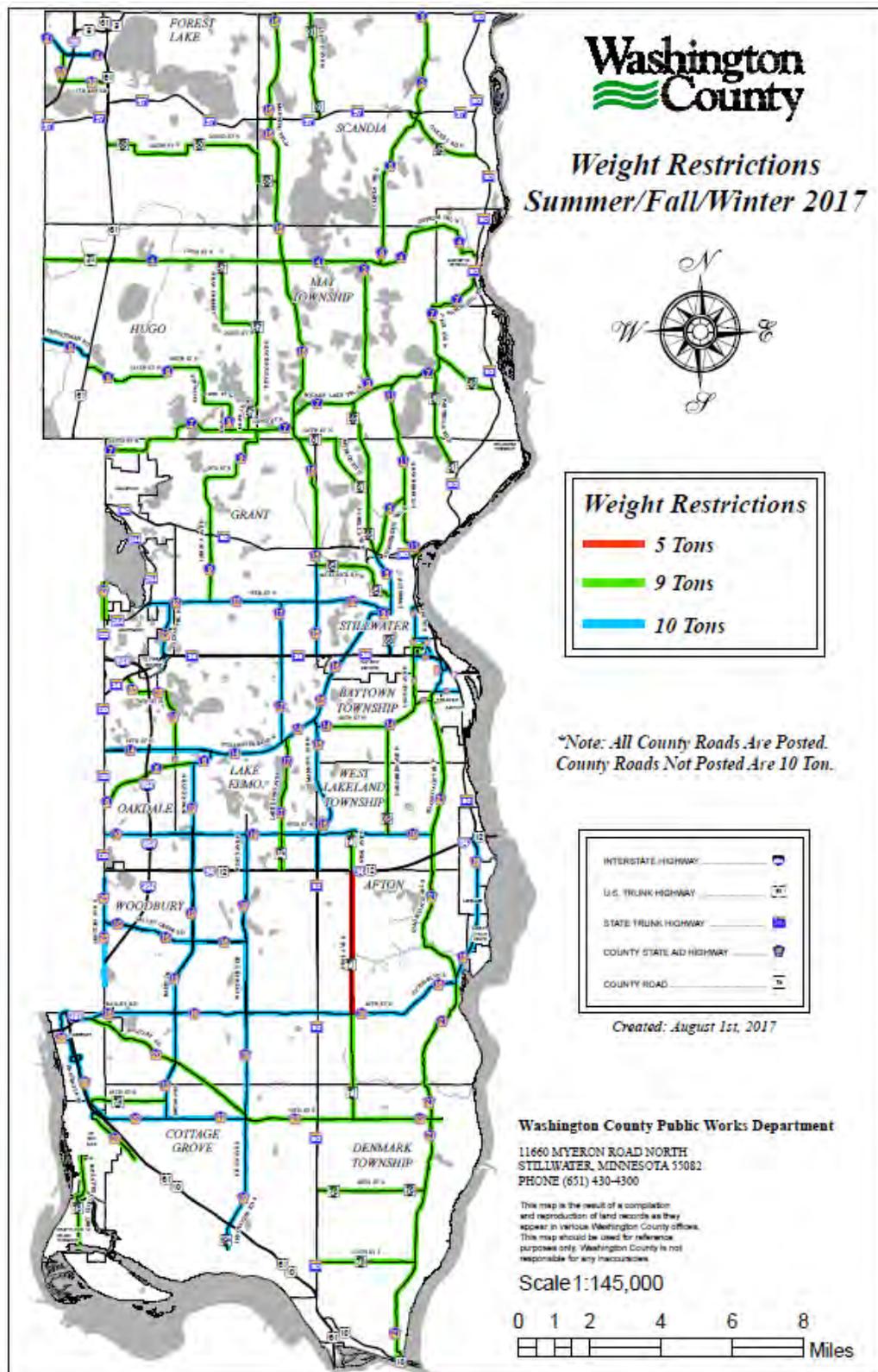
Trucking

Commercial trucking is a primary mode of transportation for the movement of goods within and through the county. Washington County highways are designated trucking routes, designed, and constructed to accommodate and support the transport of freight by truck. The sites that generate significant truck volumes are listed below and are shown on Figure 10.

- 4Front Technology + Office Campus near CSAH 13 (Ideal Ave N).
- Aggregate Industries in Grey Cloud Island Township.
- Andersen Windows in Bayport.
- Federal Express truck terminal in Mahtomedi near I-694 and TH 120 (Century Avenue).
- Gravel quarries along CSAH 21 (Stagecoach Trail) from 30th Street North to Division Street.
- Industrial Park in Cottage Grove.
- Jamaica Avenue truck terminal in Cottage Grove.
- Refinery in Newport near TH 61 and CSAH 22 (70th Street South).
- Truck terminal in Afton near I-94 and CR 71 (Neal Avenue).

With the exception of the gravel quarries and aggregate industries, these major truck generators have close proximity and access to the state trunk highway system, thereby reducing their impact on county and local roads. See Figure 13 for heavy commercial average annual daily traffic (HCAADT) volumes. See Figure 12 for weight restrictions for freight traffic on Washington County roadways.

Figure 12: Washington County Weight Restrictions



Weight Restrictions

The majority of county roadways have weight restrictions of either 9 or 10 tons. The one exception is MN 95 in Afton between I-94 and CSAH 18 with a restriction of 5 tons. Roadways without restrictions serve as primary thoroughfares through the county. Examples are I-94, I-494, I-694, TH 36, and MN 96.

Railroads



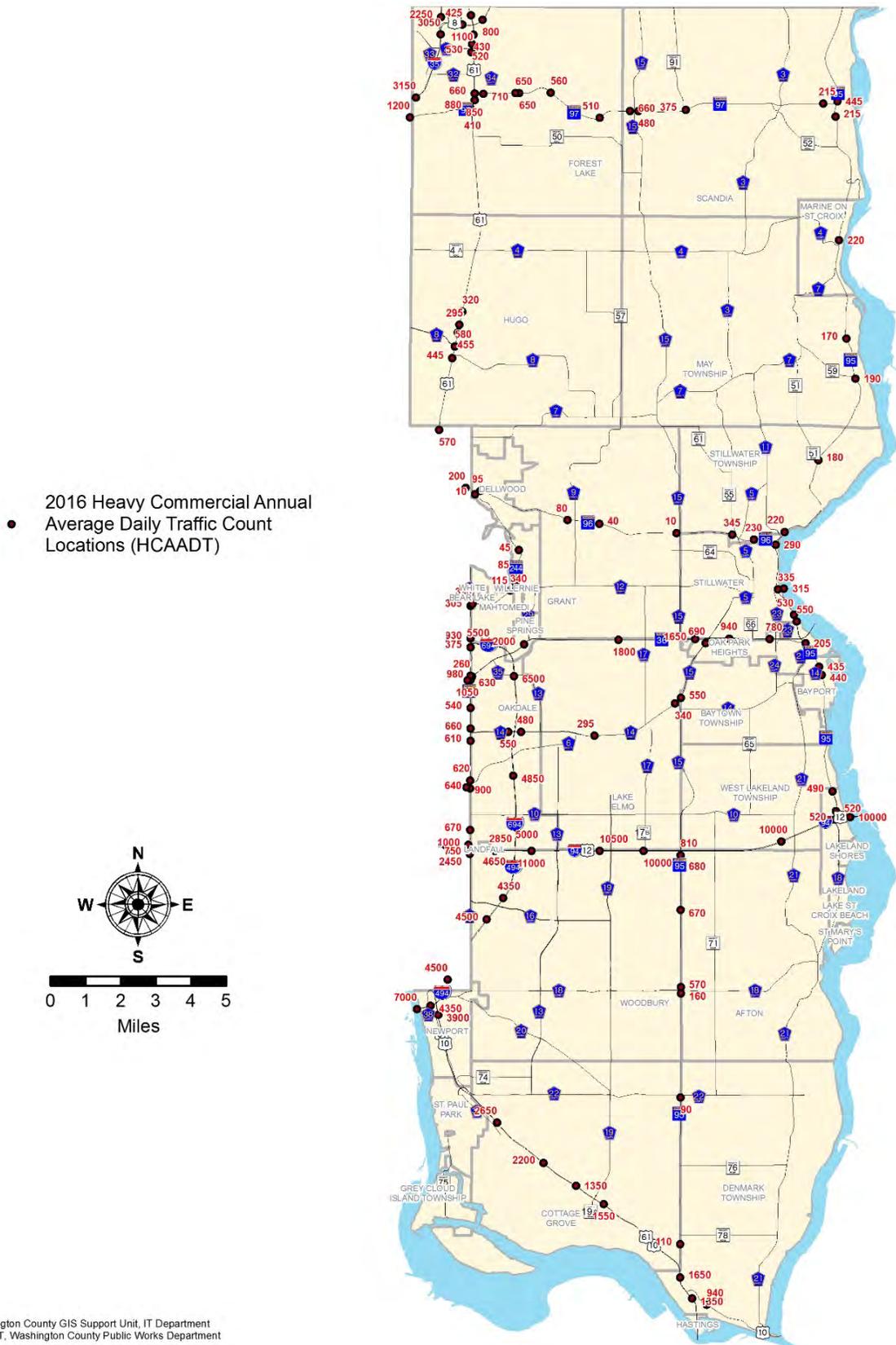
Railroads are a significant element in the country's transportation system, moving freight to and between ports and major urban areas. The East Metro Area accommodates 5 percent of the total national freight rail volume every day, and much of this freight passes through Washington County. Railroads impact land use, the physical and social environment, and other components of the

transportation system. Figure 10 shows the location of the five railroads that operate in Washington County, which are Burlington Northern Santa Fe (BNSF), Canadian National (CN, former Wisconsin Central), Canadian Pacific (CP, former Soo Line), Minnesota Commercial (MNNR), and Union Pacific (UP).

Freight Facilities

Intermodal facilities are locations where bulk commodities are transferred from rail to other modes of transportation. MnDOT's intermodal facilities database lists one major freight rail transloading terminal in Washington County. This facility is an auto reloading terminal in Cottage Grove where automobiles are transferred from rail cars and onto trucks for regional distribution. Washington County is in close proximity to major intermodal facilities in Saint Paul and Minneapolis on the BNSF, CP, and UP railroad systems. These facilities connect the greater Twin Cities region with national and international markets.

Figure 13: 2016 Heavy Commercial Average Annual Daily Traffic (HCAADT)



Aviation

Commercial aviation service to national and international destinations is available through the Minneapolis-St. Paul (MSP) International Airport. Business and private aviation service is available at the St. Paul Downtown Airport, which is also known as Holman Field. Washington County also is served by two publicly-owned airports located within the county, Lake Elmo and Daniel DePonti Airports. Figure 10 shows the location of the airports within the county. There are no radio beacons and other air navigation aids within Washington County. In 2016, Washington County amended its 2030 Comprehensive Plan, removing land use authority for aviation in West Lakeland Township and Baytown Township. Both communities have adopted Washington County Development Code or a version similar to the document. Future responsibility falls to the local communities in collaboration with the Metropolitan Airports Commission (MAC) to evaluate, address and establish policies and land use regulations (Zoning) related to land use compatibility issues, preventative land use measures and corrective land use measures.

Lake Elmo Airport

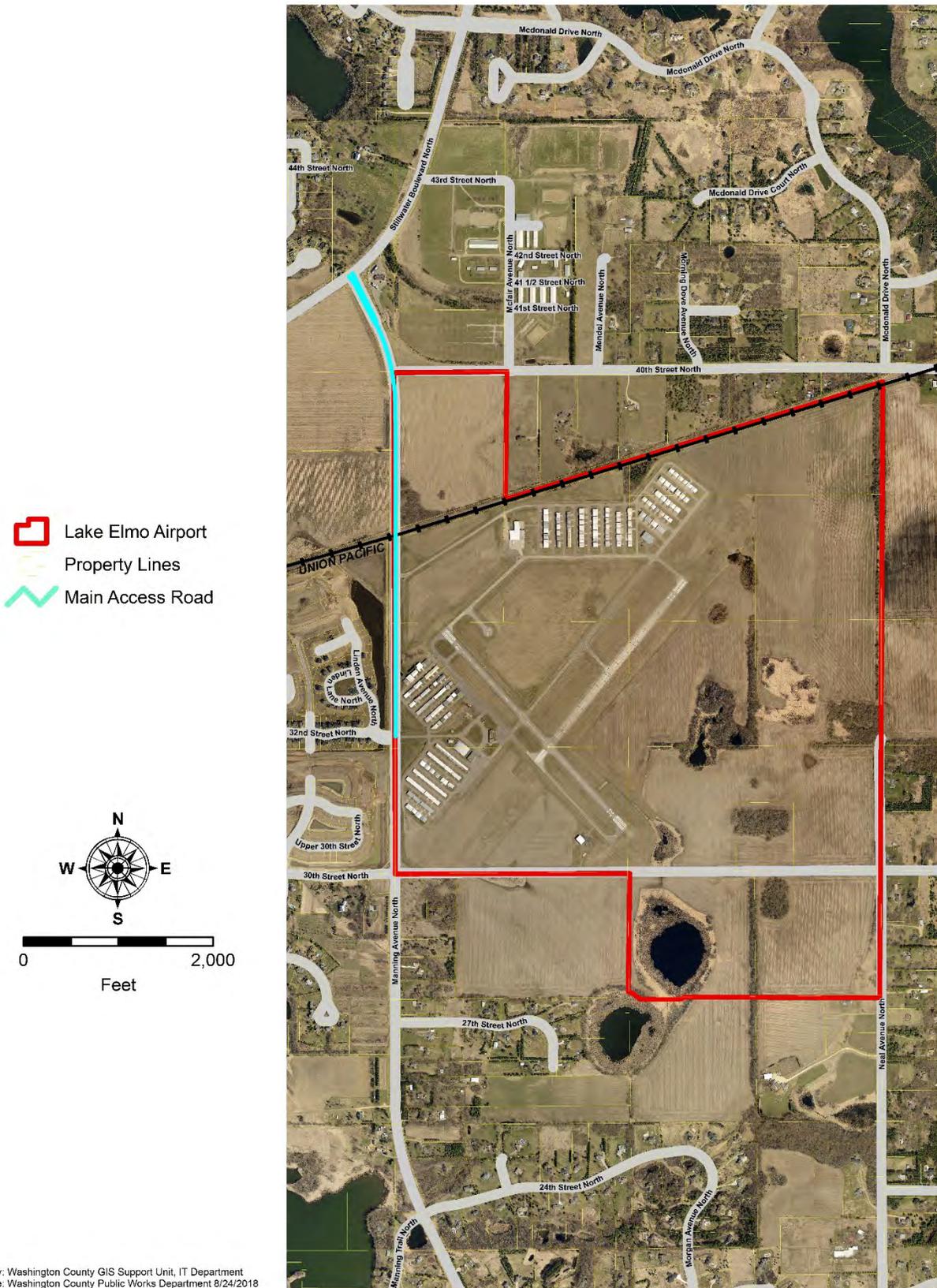
Lake Elmo Airport is a general aviation airport owned and operated by the Metropolitan Airports Commission (MAC). The airport is located on 640 acres in Baytown and West Lakeland Townships and bordered by the City of Lake Elmo. The Metropolitan Council classifies it as a Minor Airport and serves as a Complimentary Reliever to the MSP International Airport. Its uses are for air taxi, business aviation, flight training, personal use, recreation, and military purposes. The airport facility consists of two main building areas and operational and maintenance buildings, and two paved runways, one of which is equipped with medium intensity runway lights. Lake Elmo Airport has two non-precision instrument approaches that can be used during inclement weather conditions. The first is a Non-Directional Beacon (NDB) approach to Runway 04 (crosswind runway) and the second is a GPS approach to Runway 32 (primary runway). The airport has more than 100 hangar structures. Figure 14 identifies the property lines and access roads for Lake Elmo Airport.

The Metropolitan Airports Commission (MAC) completed a 2035 Lake Elmo Airport Long Term Comprehensive Plan in September 2016. Major elements of the plan include realignment of 30th Street North and relocation and extension of the primary runway and an extension to the crosswind runway. The MAC has collaborated closely with Washington County on the plan to relocate 30th Street North and to connect it with Neal Avenue, which is reflected in the plan alternatives. The plan recommends identifying steps for installation of sanitary sewer and water services at the airport and conducting a cost-benefit analysis for provision of those services.

The plan notes that once the Lake Elmo Airport's future development plan is finalized, MAC, in accordance with Minnesota Statutes Chapter 360, will convene a Joint Airport Zoning Board (JAZB) that will include Washington County, the City of Lake Elmo, Baytown Township, and West Lakeland Township, in order to develop an airport zoning ordinance that provides a reasonable level of public safety while also facilitating compatible off-airport development. This process may result in a zoning ordinance recommendation to the MnDOT Office of Aeronautics that deviates from the state's Model Zoning Ordinance. It is envisioned that the airport zoning ordinance developed by the JAZB will replace the existing Airport Overlay District currently in place per the Washington County Development Code and incorporated into township zoning ordinances.

The MAC has adopted the 2035 Preferred Alternative Contours for noise, shown in Figure 15. The figure shows the 70, 65, and 60 decibel noise level (DNL) contours required by the FAA. It also shows the 55 DNL contour required by the Metropolitan Council for airports lying outside of the Metropolitan Urban Services Area. Figure 14 also shows model state safety and runway protection zones in addition to the noise contours for the development proposed in MAC's 2035 Long-Term Comprehensive Plan. The model state safety zones are shown for reference purposes only and are not currently in effect at Lake Elmo Airport.

Figure 14: Lake Elmo Airport Property Lines and Airspace Zones



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Washington County Public Works Department 8/24/2018

Figure 15: Lake Elmo Airport Airspace Zones, RPZs, and Noise Contours



Note: Model State Safety Zones shown are currently undergoing revisions by MnDOT. Revisions are anticipated to be submitted to the MN Legislature during a future session.

Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Metropolitan Airports Commission, 2017 Aerial

Daniel Deponti Airport, Forest Lake

The Daniel Deponti Airport is owned and operated by the City of Forest Lake, and is also a general aviation airport. The airport consists of a single 2,725-foot paved runway on approximately 180 acres. Take-offs and landings at the airport are accomplished by visual approach; no instrument approach procedures are currently available. The Daniel Deponti Airport will play an expanding role in the regional aviation system by providing both local and non-local general aviation facilities and services. The FAA has identified this airport as a potential reliever airport in the future. Figure 16 identifies the property lines and access roads for Daniel Deponti Airport.

Seaplane Operations

Special state rules regulate seaplane operations on all public waters in the Twin Cities Metropolitan Area. In Washington County, seaplane operations are permitted on Big Carnelian Lake, Big Marine Lake, Clear Lake, Forest Lake, Lake Elmo, Oneka Lake, the Mississippi River, and the St. Croix River. On White Bear Lake, seaplane operations are permitted, but with additional restrictions on weekend and holiday operations.

Transit

Meeting the transportation needs of Washington County residents requires a complete transportation system incorporating a variety of transportation modes. Affordable and convenient transit is an essential characteristic of urban and suburban communities. The growing demand and opportunity for convenient and reliable transit service is fueled not only by the aging of the county's population but also by its increasing diversity, growth, and densification. Providing convenient, reliable, and robust transit service can play a vital role in supporting mobility, access, and economic development.

Transit Market Areas

The 2040 TPP identifies five transit market service areas within the Twin Cities Metropolitan Area. Market areas represent expected demand for transit and are determined by population, employment, vehicle availability, and land uses. Table 2 shows the Metropolitan Council's recommended service options for each market area. Existing Washington County transit service delivery is generally consistent with these guidelines. Highly developed areas of Washington County, including portions of Woodbury and Oakdale, are primarily in Market Area III. Cottage Grove is in Emerging Market Area III. Developing areas are primarily in Market Area IV, including parts of the TH 61 Corridor between White Bear Lake and Forest Lake, Lake Elmo, Woodbury, and Cottage Grove. Rural areas are primarily in Market Area V. Freestanding Town Centers in or near Washington County are Forest Lake, Hastings, and Stillwater. See Figure 17 for a map with Transit Market Areas for Washington County.

Table 2: Transit Market Area Service Options

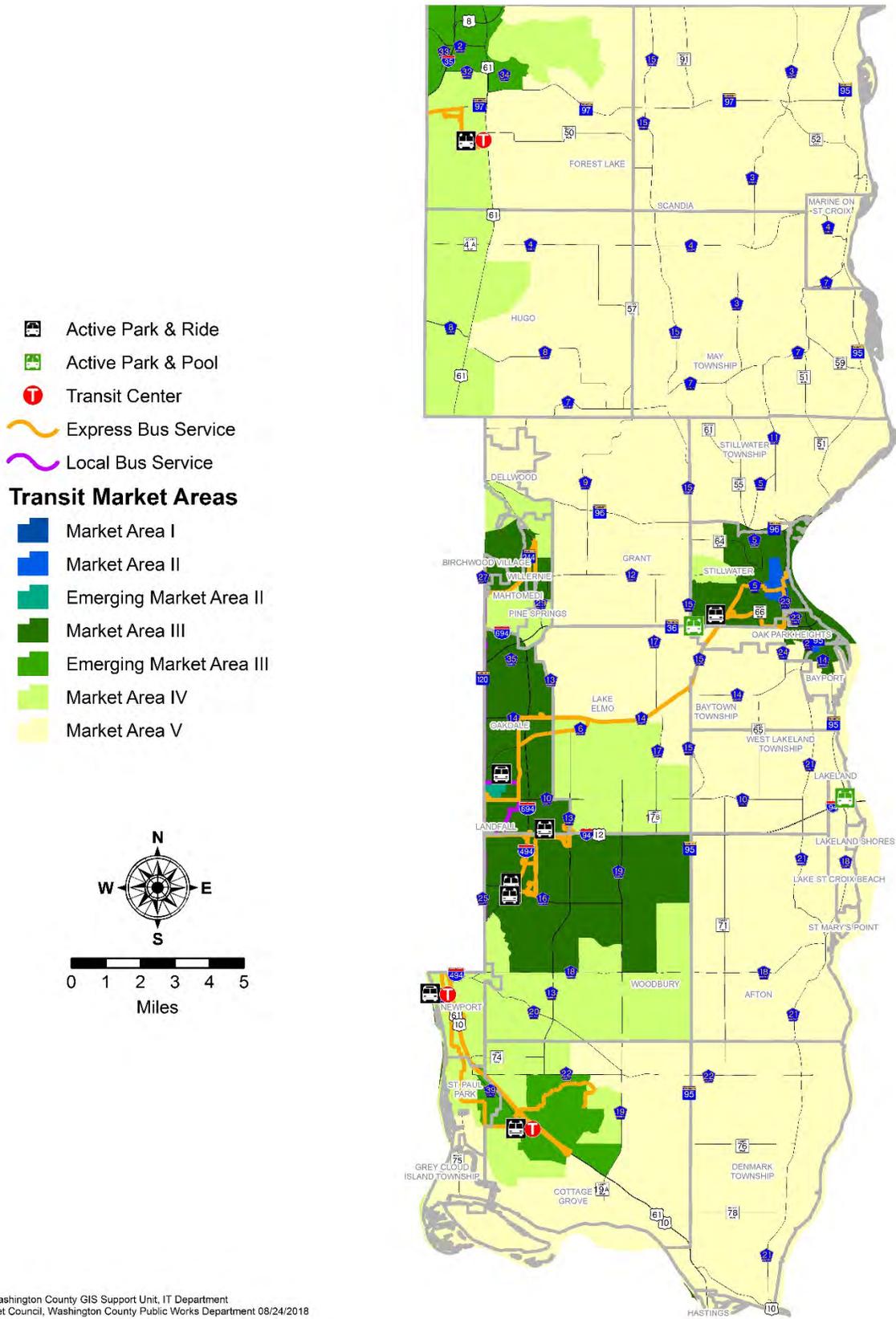
Transit Market Area	Suggested Service Type
Area I	Market Area I has the potential transit ridership necessary to support the most intensive fixed-route transit service, typically providing higher frequencies, longer hours, and more options available outside of peak periods.
Area II	Market Area II can support many of the same types of fixed-route transit as Market Area I, although usually at lower frequencies or shorter service spans.
Area III	Transit service in this area is primarily commuter express bus service with some fixed-route local service providing basic coverage. General public dial-a-ride services are available where fixed-route service is not viable.
Area IV	General public dial-a-ride services are appropriate in Market Area IV. The low density development and suburban form of development presents challenges to fixed-route transit.
Area V	General public dial-a-ride service may be appropriate here, but due to the very low-intensity land uses these areas are not well-suited for fixed-route transit service.
Freestanding Town Center	<p>Freestanding Town Centers are areas that historically grew independently of Minneapolis and Saint Paul and are still separated from the urban and suburban areas of the metro by rural land.</p> <p>Because of their concentrated downtowns laid out in a traditional urban form, these areas have a Transit Market Index value that would indicate Market Area III or higher. However, their relatively small population and land area, as well as their distance from other transit-supportive land uses, limits the potential for local fixed-route transit.</p>

Source: Metropolitan Council 2040 Transportation Policy Plan, Appendix G

Fixed-Route Transit

The Metropolitan Council’s Metro Transit and Metropolitan Transportation Services (MTS) provide the fixed-route transit service in Washington County, including express, local, and reverse commute. Existing fixed-route service transit service is shown in Figure 17.

Figure 17: Transit Market Areas and Existing Fixed Route Transit Service



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Met Council, Washington County Public Works Department 08/24/2018

Express Service

Express service operates during peak periods and serves commuters living in the suburbs and working in the downtowns of Minneapolis and Saint Paul. Table 3 lists Metro Transit’s express routes operating in Washington County. Each of the commuter corridors is a candidate for fixed-guideway transit, discussed later in this chapter.

Local Service

Local service provides trips within a community or to adjacent communities throughout the day. Metro Transit Routes 70 and 74 terminate at the county border. Metro Transit Route 219 connecting Maplewood Mall to the Sun Ray Transit Center via Century Avenue serves the City of Landfall. The remainder of the county is not served by local bus service. See Table 3.

Reverse Commute Service

Reverse commute service serves residents of the central cities who use transit to travel to suburban employment centers. These routes typically operate during peak hours and travel in the opposite direction of the peak hour express routes. Metro Transit provides reverse commute service to Washington County communities on Routes 294, 351, and 361. See Table 3.

Table 3: Washington County Fixed Route Service

Corridor/Communities	Route	Description
Express Service		
Interstate 35W	275	Forest Lake—Running Aces—St. Paul
	288	Forest Lake—Minneapolis
TH 36	270	Mahtomedi—Maplewood—Minneapolis
	294*	Stillwater—Oakdale—St. Paul
Interstate 94	350	Maplewood (Century Ave)—St. Paul
	351*	Woodbury—St. Paul
	353	Woodbury—St. Paul—Minneapolis
	355	Woodbury—Minneapolis
	375	Oakdale—Minneapolis
Highway 61/Red Rock	361*	Cottage Grove—St. Paul
	364	St. Paul Park—Newport—St. Paul
	365	Cottage Grove—Minneapolis
Local Service		
St. Paul—Maplewood	70	Sunray—Burns Ave—W 7 St—St. Clair Ave
Minneapolis—St. Paul—Maplewood	74	Sunray—E 7 St—W 7 St—Randolph—46 St
Maplewood—White Bear Lake—N St. Paul—Oakdale—Landfall—St. Paul	219	Sunray—Hadley Ave—Century Ave—Maplewood

*Routes providing limited reverse commute service.
Source: Metropolitan Council

Demand Responsive Transit

Demand responsive transit service in Washington County is provided by the Metropolitan Council’s Metropolitan Transportation Services (MTS) and consists of complementary services that are compliant with the Americans with Disabilities Act (ADA) and general public dial-a-ride services.

Metro Mobility

Metro Mobility provides demand responsive service for certified riders with disabilities that prevent them from using the regular route system. ADA-compliant Metro Mobility service operates within $\frac{3}{4}$ mile of local fixed routes (excluding peak hour express service). This service area varies due to changes in fixed routes between weekday and weekend service. Service, while not ADA-compliant, is also provided for riders with disabilities in communities apart of the metro area Transit Capital Levy District. See Figure 18 for the Metro Mobility service area.

Transit Link

Transit Link is the Twin Cities' dial-a-ride minibus or van service for the general public, where regular route transit service is not available. Transit Link serves all communities and is available to all residents within Washington County (see Figure 17).

Transit Facilities

Transit facilities are mapped on Figure 17.

Park-and-Ride Facilities

Nine park-and-ride facilities anchor Metro Transit’s express bus service in Washington County. The majority of these facilities are joint-use lots. Forest Lake Transit Center, Newport Transit Station, and the Cottage Grove Park-and-Ride serve only transit purposes. Table 4 shows the capacity and usage at each facility in 2016.

Table 4: 2017 Washington County Park and Ride Capacity and Usage, January 2018

Facility	City	Capacity	Usage	Utilization
Christ Episcopal Church	Woodbury	100	59	59%
Cottage Grove Park-and-Ride	Cottage Grove	525	278	53%
Forest Lake Transit Center	Forest Lake	308	114	37%
Guardian Angels Catholic Church	Oakdale	415	336	81%
Newport Transit Station	Newport	150	29	19%
St. Croix Valley Recreation Center	Stillwater	100	40	40%
Walton Park	Oakdale	58	29	50%
Woodbury Theatre	Woodbury	550	433	79%
Woodbury Lutheran Church	Woodbury	90	87	97%
Total		2,296	1405	65%

Source: 2017 Annual Regional Park-And-Ride System Report

Forest Lake Transit Center

The Forest Lake Transit Center is located near Washington County’s Headwaters Service Center off TH 61 south of Forest Lake. The transit center is served by Metro Transit Routes 275 and 288 (express bus service to downtown Saint Paul and Minneapolis respectively). Forest Lake Transit Center could be a stop for Rush Line Corridor connector bus service between Forest Lake and White Bear Lake.

The transit center also serves at a trailhead for the Hardwood Creek Regional Trail. Restrooms and a water fountain are available for trail users.

Newport Transit Station

The Newport Transit Station is located in the southwest corner of I-494 and TH 61. It features a climate-controlled waiting area and 150 free parking spaces. The station opened in December 2014 and was designed to accommodate all types of enhanced transit service within the Red Rock Corridor (see page 35), including bus rapid transit. Route 364 and Route 365 (express bus to downtown Saint Paul and Minneapolis respectively) serve Newport Transit Station.

Park-and-Pool Facilities

Park-and-pool facilities (see Figure 17) serve people who participate in an organized carpool activity; they are not served by regular-route transit. Two Metro Transit park-and-pool lots are located within Washington County, both in the northern half of the county. Table 6 shows the capacity and usage for these facilities in 2016.

Table 5: Washington County Park-and Pool Capacity and Usage, January 2018

Facility	City	Capacity	Usage	Utilization
TH 36 & CSAH 15 (Manning Avenue)	Grant/Stillwater	15	1	7%
I-94 & TH 95	Lakeland	79	17	22%
Total		94	18	19%

Source: 2017 Annual Regional Park-And-Ride System Report

Transit Advantages

Transit advantages are physical features that provide a travel time advantage over automobiles using the same facility, thereby increasing the attractiveness of transit. These include bus-only shoulders, high occupancy vehicle lanes, and ramp meter bypasses. Bus-only shoulders are the only form of transit advantage within Washington County. They are located on TH 36 west of I-694. Bus-only shoulders allow buses to use the highway shoulder to bypass automobiles in the general flow of traffic during heavily congested times. Washington County is not included in Tier 3 MnPASS Expansion meaning no high-occupancy vehicle (HOV) lanes are planned for the county.

Transitways

The Washington County Regional Railroad Authority (WCRRA) is the Washington County government entity charged with the preservation and improvement of local rail service for agriculture, industry, and passenger traffic and provides for the preservation of abandoned rail right-of-way for future transportation uses. WCRRA staff have the biggest role in the regional transit network through the development of several proposed transitways. Washington County leads two joint powers boards overseeing the development of the METRO Gold Line (previously known as the Gateway Corridor) and the Red Rock Corridor. Additionally, the county is a member of the Rush Line Corridor Task Force.

Though Washington County does not have land use control near each of the proposed station areas, staff work with local partners to guide for residential and commercial development to meet the activity levels needed to support the level of service expected with each transitway. Using activity level guidelines from the 2040 TPP, county staff will work with cities to complete station area planning activities that include guiding for a higher intensity of development than is typical in these communities and supporting other modes of travel to station area such as access by walking or bicycling. More information about station area planning can be found on the website for the transitways listed below.

Described below and shown on Figure 31 are the four Washington County transitways included in the 2040 TPP.

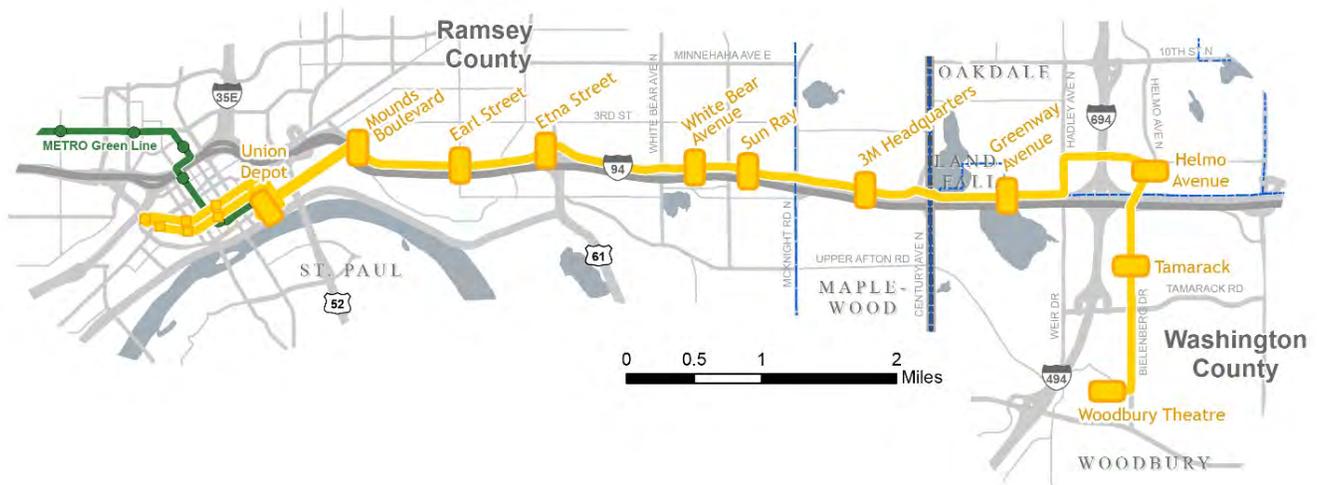
METRO Gold Line

METRO Gold Line (previously known as the Gateway Corridor) is a proposed bus rapid transit line that would run next to I-94 for about nine miles in an exclusive lane on or next to Hudson Road and 4th Street, down Helmo

Avenue in Oakdale to Bielenberg Drive in Woodbury. The service will connect Union Depot in downtown Saint Paul with the Woodbury Theater Park-and-Ride in Washington County. The exclusive bus lanes would not be added to Interstate 94 but will be part of a separate bus-only system. Figure 19 shows the Locally Preferred Alternative (LPA) alignment and station locations.

Washington County has jointly led the development of the METRO Gold Line through the work of the Gateway Corridor Commission. The five cities along the corridor will complete advanced station area planning in 2018. The project officially entered the Federal Transit Administration’s Capital Investment Grant program in January 2018 and is included in the 2040 TPP Current Revenue Scenarios. The county, along with many other project partners, will collaborate with Metropolitan Council on project development, engineering, and construction, which is expected to be operational in 2024. See <https://www.metrotransit.org/gold-line-project> for more information.

Figure 19: METRO Gold Line Locally Preferred Alternative

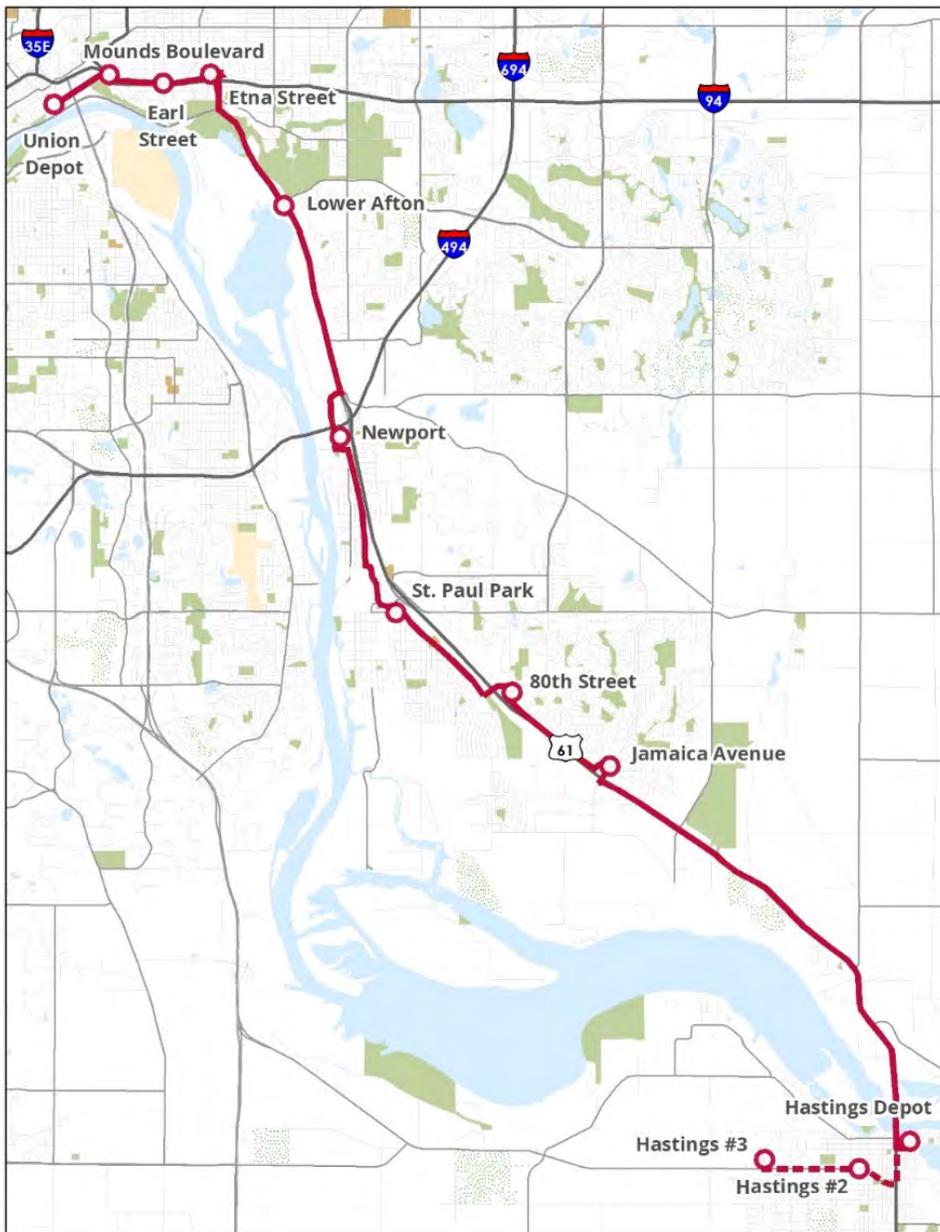


Red Rock Corridor

The Red Rock Corridor is a proposed 20-mile transitway connecting the Twin Cities’ southeastern suburbs to Saint Paul and Minneapolis. The transitway will originate in Hastings and stop in Cottage Grove, Newport and Saint Paul’s Battle Creek neighborhood before connecting to the Saint Paul Union Depot. Riders can access many destinations from Union Depot using other transit service like express buses, local buses, and METRO Green Line. Figure 20 shows the proposed alignment and station locations for BRT service.

An Implementation Plan, completed in 2017, outlined a phased approach presenting near-term and long-term recommendations to incrementally build transit service in the southeast metro. Near-term strategies include expanding local and express bus service in the corridor and working with cities on transit-supportive land use plans. Long-term strategies focus on working with cities to implement transit-supportive land use plans and monitoring corridor ridership for potential service improvements including full build out of BRT service. An implementation date for BRT service has not been selected. The Red Rock Corridor is not included in the 2040 TPP Current Revenue Scenario Transitways. However, it is included in the Increased Revenue Scenario. See www.redrockcorridor.com for more information.

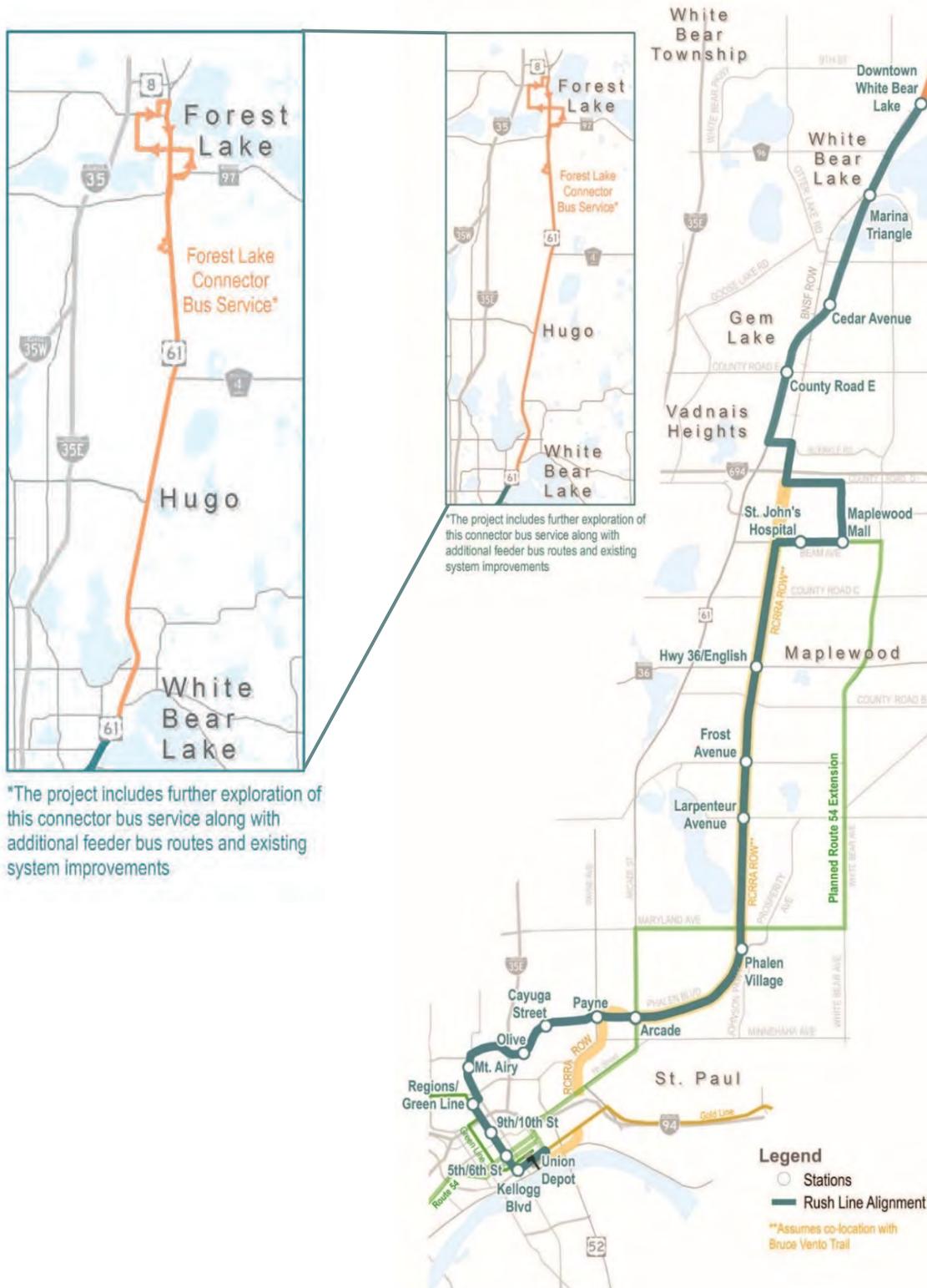
Figure 20: Red Rock Corridor Proposed Bus Rapid Transit Alignment and Station Locations



Rush Line Corridor

The Rush Line Corridor is an 80-mile travel corridor between Saint Paul and Hinckley. A pre-project development study completed in 2017 analyzed bus and rail transit alternatives between Forest Lake and Union Depot in Saint Paul. The Locally Preferred Alternative is dedicated BRT from Union Depot to White Bear Lake (see Figure 21 for a map of the Locally Preferred Alternative). The analysis included a review of potential connecting local bus service to Forest Lake, which will be further explored as planning for the Rush Line Corridor continues. The corridor is included in the current revenue scenario in the TPP and will be approved in the near future. Despite this any extension into Washington County is not included in the current revenue scenario of the TPP. See www.rushline.org for more information.

Figure 21: Rush Line Corridor Locally Preferred Alternative



Trunk Highway 36 Corridor

The TH 36 transitway runs from Stillwater to Minneapolis along TH 36. Planning for TH 36 has not yet begun and the corridor is not included in the 2040 Current Revenue Scenario Transitways. However, the corridor is included in the Increased Revenue Scenario.

Non-Motorized Facilities

Washington County operates trail corridors that serve both recreational and transportation purposes. In addition to bicycle commuters, these trails are commonly used by walkers, runners, recreational bicyclists, inline skaters, and, on some trails, cross-country skiers and snowmobilers. Where separated trails do not exist, paved shoulders provide an option for non-motorized travel.

According to the Met Council's community designations, Washington County contains urban, suburban, suburban edge, emerging suburban edge, diversified rural and rural residential communities. Each classification brings unique needs for pedestrians. Urban areas are typically well connected via sidewalks and other trails. Safety is critical in the implementation of pedestrian infrastructure. Many suburban areas have access to walking trails and sidewalks. However, despite access, many trails contain gaps and are not efficient modes of transport. Rural areas are mostly absent of trails and largely require vehicle access to travel. Some rural communities have access to trails largely used for recreational purposes.

Regardless of community type there is a need for local bicycle and pedestrian facility improvements. This is especially true over physical barriers such as freeways, railroad corridors, rivers, and streams on both a regional (RBTN) and local scale.

Chapter 7, Parks, Trails, and Open Space, describes existing regional trails, planned regional trails, and search corridors in Washington County. In addition to the regional trails, many county road rights-of-way contain trails that provide mobility within the community, and access to the greater network of local, regional, and state trails. Figure 10 (see page 40) shows the planned and existing trail system for Washington County.

Existing Non-Motorized Transportation System

The existing non-motorized transportation system accommodates pedestrians and bicycles, and the trail network is spread throughout the county and is owned and operated by various agencies, such as Washington County, the Minnesota Department of Natural Resources (MnDNR), and local municipalities. Most of the 505 miles of trails accounted for in a memo documenting Washington County's trail network (see Appendix I) are bituminous (e.g., pavement), concrete, and natural surfaced trails.

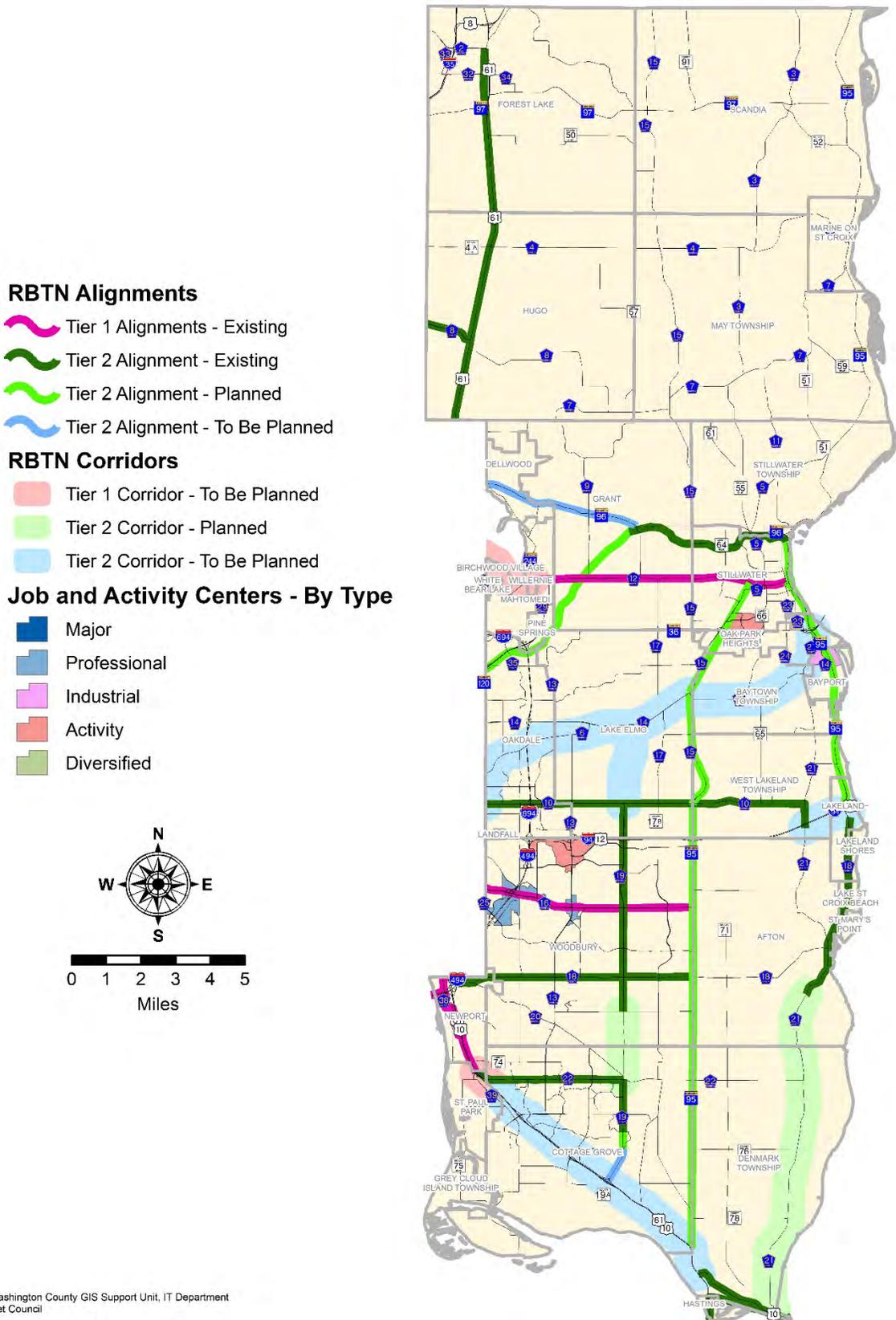
The county itself maintains nearly 28 miles of trails located within the boundaries of regional park systems. Based on the available data, nearly 60 percent of trails (459 miles) are located within three communities (i.e., Cottage Grove, Stillwater, and Woodbury) and 4 percent (18 miles) is owned by the MnDNR. This system will continue to expand over time with approximately 180 trails currently being planned within the county (see page 40 of Chapter 7).

Regional Bicycle Transportation Network (RBTN)

The county and local trail network is further supported and enhanced by the Regional Bicycle Transportation Network (RBTN), which is identified as part of the 2040 TPP. The RBTN helps define the region's key bikeways and trail connections, and how they work together to serve regional transportation trips by bicycle. The RBTN is also used to help determine future infrastructure investments. RBTN corridors and alignments are identified within the network. RBTN corridors identify high priority corridors for future trail development. RBTN alignments identify high priority alignments that include existing infrastructure. The RBTN alignment network identified in Washington County provides connections between the cities of White Bear Lake and Forest Lake (via the Hardwood Creek Regional Trail), Pine Springs to the Pine Point Regional Park (via the Gateway State Trail), with a spur connecting to Stillwater (Brown's Creek Trail). This trail, which is owned by the MnDNR, continues further west and connects Washington County with Saint Paul and Minneapolis. Another portion of the RBTN traverses east-to-west along Bailey Road in Woodbury, connecting Washington County with other regional bike routes, such as the Mississippi River Trail Bikeway, as well as Saint Paul and Minneapolis. A total of 10 RBTN corridors are identified within the county. Washington County's RBTN alignments and corridors are shown in Figure 22. The need for local bicycle and pedestrian improvements to provide connections over major barriers such as freeways, railroads, rivers and streams will be analyzed in the Washington County Bicycle and Pedestrian Planning process.

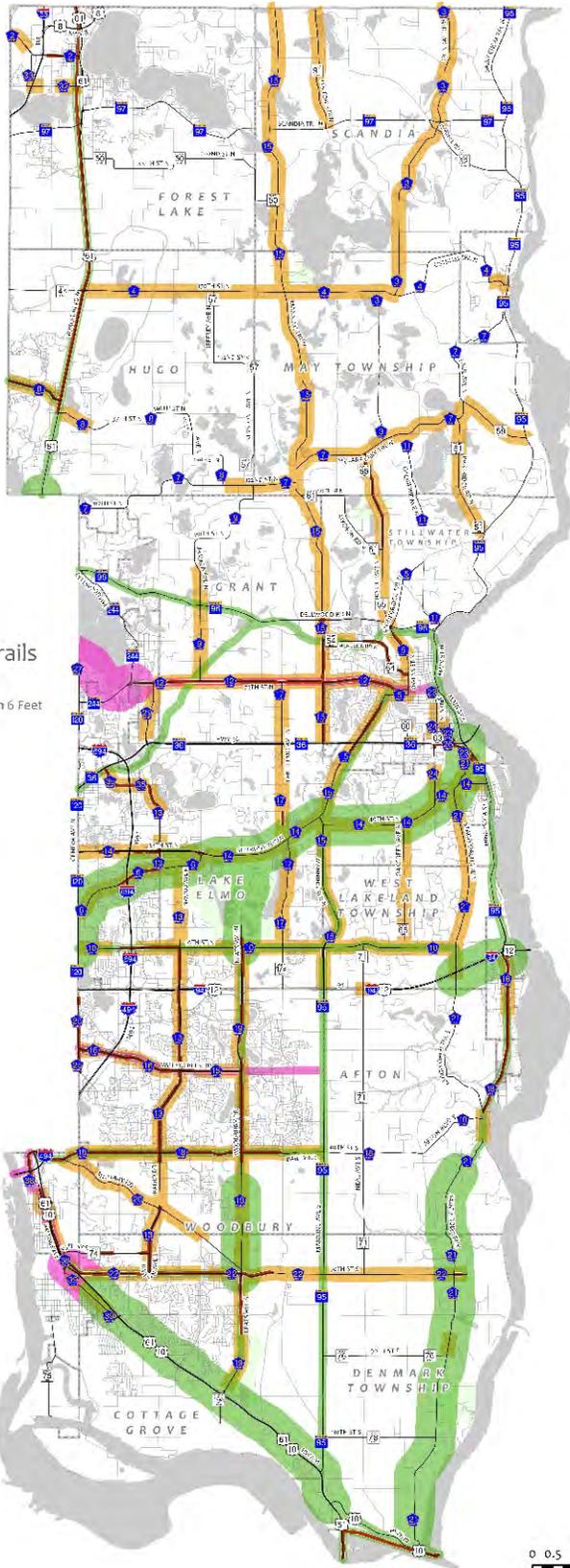
The RBTN network was expanded with the opening of the new St. Croix Crossing Bridge in 2017. This allows cyclists and pedestrians to safely access the St. Croix Crossing Loop trail and bike trails in Wisconsin. Washington County local bicycle network with the RBTN Alignments and Corridors are identified in Figure 23.

Figure 22: Regional Bicycle Transportation Network (RBTN) and Employment and City Centers



Prepared By: Washington County GIS Support Unit, IT Department
Data Source: Met Council

Figure 23: Regional Bicycle Transportation Network (RBTN) and Washington County Shoulder Trails



County Shoulder & Trails

- Road Separated Paved Trail
- Shoulder Widths Greater Than 6 Feet

RBTN

Alignments

- Tier 1 Alignment
- Tier 1 Corridor Center
- Tier 2 Alignment
- Tier 2 Corridor Center

Corridors

- Tier 1 Corridor
- Tier 2 Corridor

MAP DATE: 08/20/2018 2:00 PM
 COUNTY: WASHINGTON COUNTY
 PROJECT: TRANSPORTATION PLAN
 DRAWN BY: J. HARRIS
 CHECKED BY: J. HARRIS



Management Tools

Access Management

Access management guidelines are used to enhance safety and maintain the capacity and mobility of important transportation corridors. They balance these needs with the ability to access private property. Standardized guidelines communicate the expectations of the permitting agencies to the developer, landowner, or organization that is requesting access to the highway. The guidelines promote responsible access practices such as:

- Using existing access points.
- Providing adequate spacing to separate and reduce conflicts.
- Supporting indirect access rather than direct access on arterial routes.
- Aligning operations with the functional classification.

Washington County’s access spacing guidelines are shown in Table 6. These guidelines are similar to the MnDOT standards, but differ in details to address the unique needs of county highways. These guidelines guide decisions about the proper location and type of access to the county highway system as development or redevelopment occurs adjacent to county highways or when county highways are widened or reconstructed.

Minimizing unnecessary access to county highways allows for turning movements to be consolidated to locations where improvements such as turn lanes, traffic signals, and roundabouts can mitigate traffic conflicts. Therefore, in addition to these spacing guidelines, other principles of access management are employed:

- Access to county highways is managed via a permit process, as enabled by the county’s Right-of-Way Ordinance and state statutes.
- The county may require a permit for change in use of an existing access.
- The county may require parcel access occur solely via adjacent streets that are not county highways.
- The county may limit highway access to one access point per property, parcel, or operation.
- The county may require a shared access point with an adjacent parcel.
- The county may stipulate that parcel access must occur at a particular location where sight distance is optimal.
- As a condition of access permit approval, the county may require removal of other pre-existing access points, and may also require the applicant to mitigate the traffic safety and operational impacts of the proposed new access through the installation various highway improvements including turn lanes, traffic signals, or roundabouts.

Table 6: Washington County Access Spacing Guidelines

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

Right-of-Way Acquisition Strategies

When future expansion or realignment of a roadway is proposed, but not immediately programmed, agencies should consider right-of-way acquisition strategies to reduce costs and maintain the feasibility of the proposed improvement. The most common strategies used to preserve right-of-way for future construction include advance purchase, eminent domain, planning and zoning, and official mapping. Before implementing any right-of-way preservation programs, local agencies should weigh the risks of proceeding without environmental documentation prior to purchase. If environmental documentation has not been completed, agencies risk preserving a corridor or parcel that has associated environmental issues.

Advanced Purchase

One of the best ways to preserve right-of-way is to purchase it. Unfortunately, agencies rarely have the necessary funds to purchase right-of-way in advance, and the public benefit of purchasing right-of-way is not realized until a roadway or transportation facility is built. Typically, local jurisdictions use other corridor acquisition methods prior to roadway construction and then purchase the right-of-way at the time of design and construction.

Eminent Domain

Public agencies can acquire lands by eminent domain, including quick-take and condemnation actions, if good faith negotiations are not successful. The use of eminent domain is used only when other negotiations to acquire property have failed, and is guided by Laws of Minnesota, Chapter 214.

Planning and Zoning

Jurisdictions with planning and zoning authority have a number of tools for preserving right-of-way for transportation projects. These tools include:

Zoning: If the property is in a very low-density area (e.g., agricultural district), local agencies should try to maintain the existing zoning classification. A lower zoning classification limits the risk for significant development to occur before funding becomes available for highway construction.

Platting and Subdivision Regulations: Local platting and subdivision regulations give jurisdictions the authority to consider future roadway alignments during the platting process. Communities can regulate land development to influence plat configuration and the location of proposed roadways. In most instances, planning and engineering staff work with developers to develop a plat that accommodates the landowners' and developers' desires and conforms to a long-term community vision and/or plans. Communities can require right-of-way dedication as part of the platting and subdivision process.

Transfer of Development Rights: Some jurisdictions allow increased development densities on portions of the parcel if the developer transfers right-of-way to the jurisdiction for the future roadways needed by the development. This enables the developer to get the same number of lots or units and also enables the jurisdiction to obtain the needed right-of-way.

Official Mapping

A jurisdiction can adopt an official map that identifies the centerline and right-of-way needed for a future roadway. After a public hearing, the jurisdiction can incorporate the official map into its thoroughfare or

community facilities plan. The official mapping process allows agencies to control proposed development within an identified area and to influence development on adjacent parcels. If an affected property owner requests to develop their property, jurisdictions have six months to initiate acquisition of the property to prevent its development. If not purchased, the owner is allowed to develop in conformance with current zoning and subdivision regulations. The official mapping process should only be used for preserving key corridors in areas with significant growth pressures. In some cases, official mapping of key parcels/corridors may increase the agency's ability to find sources of funds to purchase at-risk parcels.

Cost Participation Policy

Washington County's Cost Participation Policy (#8001) determines the appropriate division of cost in funding cooperative highway projects, traffic signals, and bridge construction projects with MnDOT, municipalities, and other agencies. For highway and bridge projects, the cost splits differ for cities with populations greater than 5,000 and for those with populations less than 5,000. The primary purpose for this difference is the absence of direct State Aid funding to municipalities with less than 5,000 residents. The policy also guides the county's cost participation when communities use Tax Increment Financing (TIF) and for jurisdictional changes or turnbacks.

Pavement Condition Index

Through the Pavement Management System, the county monitors the condition of the highway surface of every segment of the county system. The Pavement Condition Index (PCI) is used to determine the surface quality of the pavement; it is a 100-point scale with 100 being the smoothest pavement. Pavement smoothness is widely recognized as important for user satisfaction and long-term performance of the roadway, and can affect road noise. A smoother pavement provides a more comfortable ride for the motorist or bicyclist. A highway free of cracks and potholes requires less maintenance and is expected to have a longer life expectancy. The county has established the minimum PCI threshold to be 40, which is included in county's annual performance measurement review process, with an average PCI of 72 for the overall system. Highway segments that have a PCI below this rating are targeted for pavement rehabilitation in the county's Capital Improvement Program.

Intersection Control Ranking System

The Intersection Control Ranking System (ICRS) guides the prioritization of traffic control changes at intersections on county highways. Increased traffic control typically includes installation of an all-way stop or a traffic signal, construction of a roundabout, or some other intersection geometric improvement. The report provides a clear and documented process for prioritizing and making decisions on intersection improvements based on need. The evaluation criteria include traffic signal warrants contained in the Minnesota Manual on Uniform Traffic Control Devices (MnMUTCD) and intersection crash history. Intersections are included in the ICRS by either a recommendation by county staff based on experience or through a request by a local community. The most recent ICRS annual report is available on Washington County's website.

Transportation Plan

A well planned, designed, constructed, and maintained transportation system is one of the factors in making Washington County a great place to live, work, and play today and tomorrow. To accurately forecast transportation needs to 2040, Washington County examined the transportation system, including a review of the functional classification system, jurisdictional changes, current and historic traffic volumes, existing and

projected capacity deficiencies, and programmed roadway improvements. The county also performed a systematic analysis of the transit system, including the various transit providers, their routes and service priorities, and transit centers. Lastly, the county provided a high-level review of non-motorized transportation needs. This section describes the identified needs of the future transportation system and establishes goals and policies to address those needs.

Future Transportation Needs

Roadways

Proposed Functional Classification

The roadway functional classification system provides guidelines for designing a roadway network for safe and efficient movement of people. The functional classification defines a roadway's purpose and use and assists in evaluating operations. It is crucial, when soliciting federal funds, that the roadway is correctly classified so that it competes with roadways having similar characteristics.

No functional classification changes are proposed at this time.

Proposed Jurisdictional Changes

Factors that are considered when determining potential jurisdictional transfers include historical practices, legal requirements, type of trips served (purpose and length), funding, traffic volumes, access controls, maintenance issues, and functional classification. Figure 24 shows the candidate roadways within the county for changes in jurisdiction. The changes represent a closer alignment between the level of government owning and maintaining the roadway and the manner in which the roadway functions to meet local, county, regional, or statewide needs.

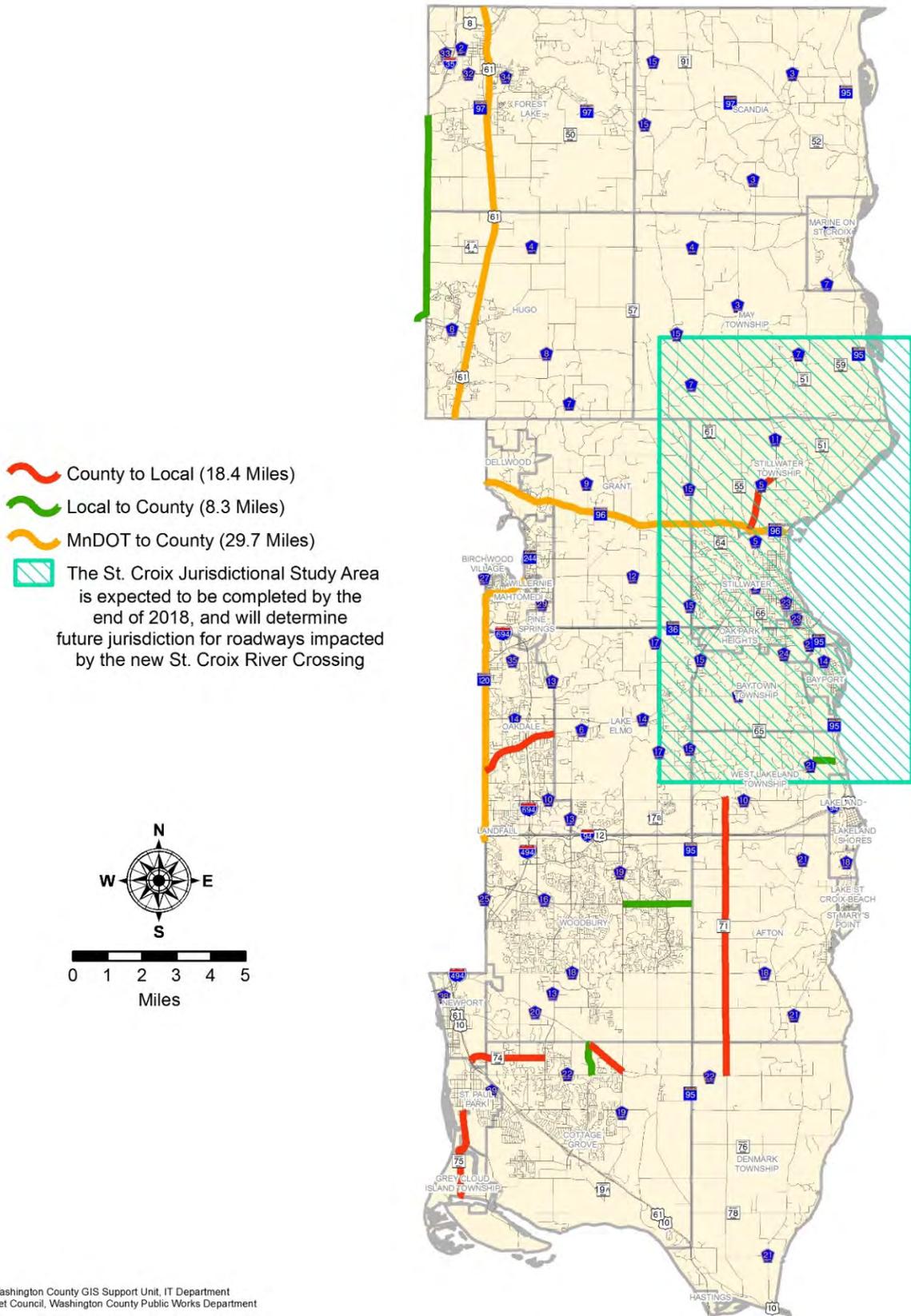
Table 7 lists the recommended changes and shows the approximate roadway mileage for each roadway segment. Washington County is recommending a transfer of 29.7 miles from MnDOT to Washington County, 8.3 miles from local to Washington County, and 18.4 miles from Washington County to local, for a total net gain of 19.6 miles in county jurisdiction.

The St. Croix Valley Jurisdictional Study is underway at the time of the development of this comprehensive plan. The study will determine future roadway jurisdictions for roadways impacted by the new St. Croix River Crossing and its associated regional highway improvements. More jurisdictional changes may be made in the near term in addition to those listed in Table 7. The study is expected to be completed at the end of 2018. Results will be available on the county's website.

Table 7: Candidate Jurisdictional Changes

Roadway	From	To	Local Community	Length (miles)
MnDOT to Washington County				
TH 61	South county line in Hugo	North county line in Forest Lake	Hugo, Forest Lake	12.1
TH 96	West county line	TH 95	Dellwood, Grant, Stillwater Township, Stillwater	9.0
TH 120 (1)	Woodbine Ave	TH 244	Maplewood, Oakdale, North St Paul, Mahtomedi, White Bear Lake	7.2
TH 244	TH 120	CSAH 12	Mahtomedi, White Bear Lake	1.3
Total Miles				29.7
Local to Washington County				
Jamaica Avenue S	CSAH 20	CSAH 22	Cottage Grove	0.9
Valley Creek Rd	CSAH 19	TH 95	Woodbury	2.0
22nd St N	CSAH 21	TH 95	West Lakeland Township	0.7
Elmcrest Ave N	TH 97	CR 8	Forest Lake, Hugo	4.7
Total Miles				8.3
Washington County to Local				
CSAH 20	Jamaica Avenue S	CSAH 19	Cottage Grove	1.2
CR 71	CSAH 22	CSAH 10	Afton, West Lakeland Township, Denmark Township	8.1
CR 74	Hastings Av	CSAH 13	Newport, Cottage Grove	2.2
CR 75	105th Street S	14th Ave	St Paul Park and Grey Cloud Island Township	2.6
CR 6	TH 120	CSAH 13	Oakdale	2.4
CR 5	CSAH 11	TH 96	Stillwater Township	1.8
Total Miles				18.4

Figure 24: Candidate Jurisdictional Changes



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Met Council, Washington County Public Works Department

2040 Forecasts and Capacity

Year 2040 Base Traffic Model

The 2040 traffic model projects the traffic forecasts for the county's roadways. The traffic forecasts are an essential analytical tool to approximate the ability of the road system to handle planned future development. The model uses community land use plans and development objectives to project 2040 population, household, and employment data for sub-areas of the county called Traffic Analysis Zones (TAZs). Appendix L contains a summary of the methodology used to develop the traffic forecasts and Appendix J contains the data, and Appendix K a map, of the TAZs.

The traffic forecast model takes into account future planned and programmed improvements identified in MnDOT's 2018-2040 Transportation System Plan, Washington County's 2018-2022 Capital Improvement Program (CIP) (see Figure 32), and the 2040 TPP. Various roadway projects are currently under construction or programmed for completion in the next few years. These were considered part of the future roadway system because they will likely be in place during the 2040 planning horizon. Other projects in the planning stage have been identified as needed improvements but funding has not yet been allocated. These projects were not included in the future roadway system because the timeline for implementation is uncertain. Appendix M contains a list of roadway improvements that were included in the 2040 base traffic model.

The 2040 base traffic volume forecasts were prepared using the socio-economic data, existing roadway lanes, and programmed roadway improvements. 2040 Forecast Traffic Volumes are shown on Figure 25.

Future (Year 2040) Capacity Deficiencies

A planning-level analysis, performed to identify locations where capacity problems are expected to occur in the planning horizon, identified county roadway segments where 2040 projected traffic volumes are expected to exceed the capacity of the roadway. It identified additional county roadway segments where 2040 project traffic volumes would approach the capacity of the roadway. Figure 26 shows the projected capacity deficiencies.

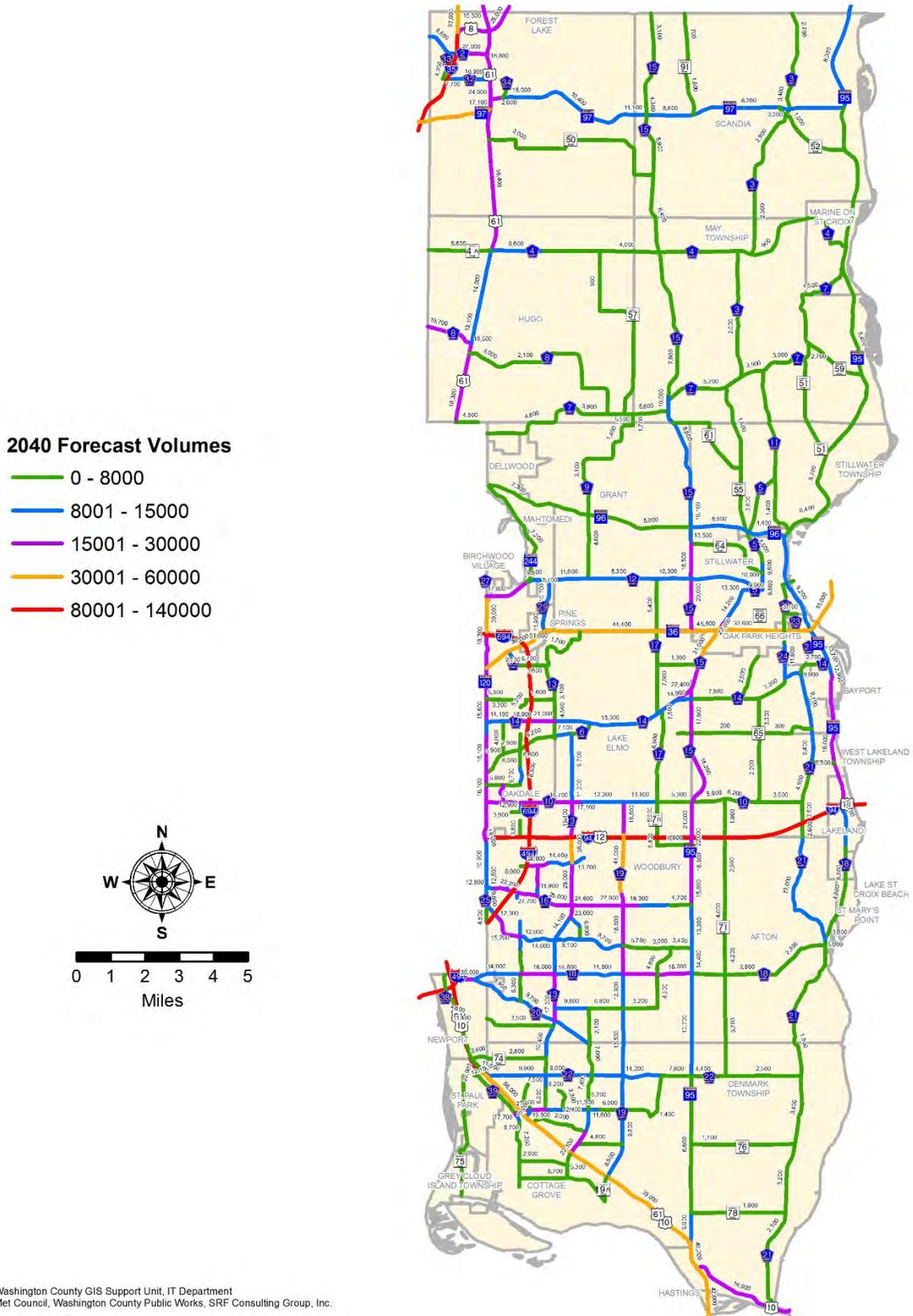
System Continuity

Some highways have discontinuous alignments or are not able to connect to logical destinations because of environmental features, development patterns, and jurisdictional boundaries. The following areas have been identified as opportunities for improving travel continuity through realigning roadways, connecting across county boundaries, or accessing a freeway.

- East-west corridor between I-494 and TH 95 (Manning Ave), south of I-94 and north of CSAH 18 (Bailey Road) in Woodbury and Afton.
- Access to I-35 from Washington County Road 4A and Anoka County Road 140 in Hugo and Lino Lakes.
- North-south connection between the south end of CSAH 25 (Century Avenue) and CSAH 18 (Bailey Road) in Woodbury.
- North-south Manning Ave N connection between CSAH 15 (Manning Ave N) and TH 36.
- East-west connection between CSAH 19 and the lower Grey Cloud Island.

System continuity improvement opportunities are shown in Figure 30.

Figure 25: 2040 Forecast Traffic Volumes



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Met Council, Washington County Public Works, SRF Consulting Group, Inc.

Right-of-Way Preservation

Right-of-way is a valuable public asset that must be managed in a way that preserves its intended function while serving the greatest public good. Many roadway improvements and other uses (e.g., placement of utilities and trails) require adequate right-of-way be maintained or secured. To ensure the ability to grow and expand our transportation system to meet anticipated growth and community needs, the county has established proposed right-of-way guidelines by functional classification and the future facility type of the roadway (see Table 8). Right-of-way widths may vary based on the community’s desire for trails on both sides of the road, landscaping, and placement and number of private and public utilities.

Figure 27 shows the right-of-way requirements for the county roadway system. Use of these guidelines during the right-of-way acquisition or preservation process will reduce costs and streamline project development.

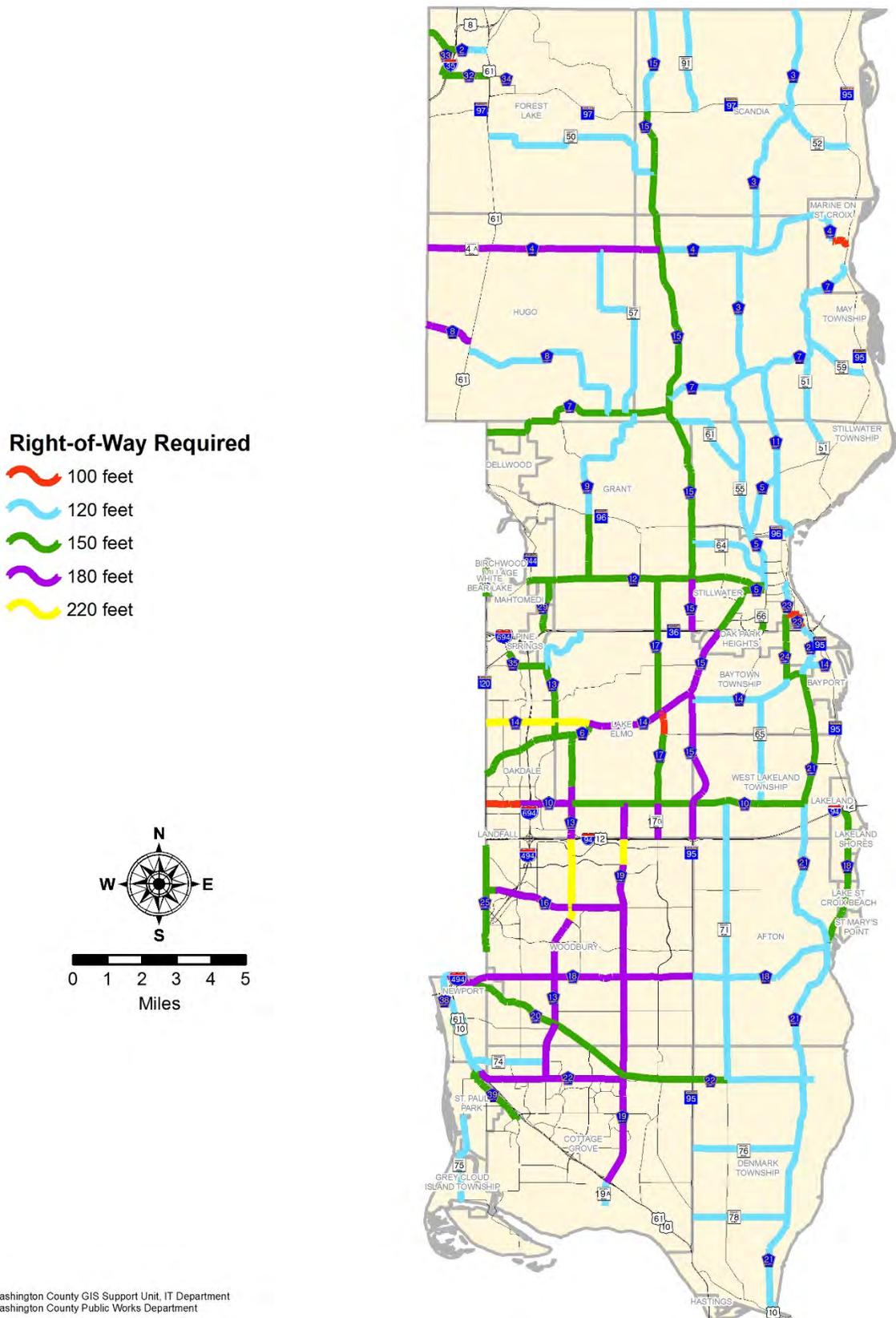
Table 8: Minimum Right-of-Way Widths for Washington County Roads*

Functional Classification	Right-of-Way Width**	Future Facility Type
Minor Arterial	220 feet	6-lane divided
	180 feet	4-lane divided
	150 feet	3-lane undivided
	120 feet	2-lane urban
Collector	150 feet	3-lane undivided
	120 feet	2-lane undivided
	100 feet	2-lane undivided, urban
<i>* Widths are total width of corridor and assume the road is centered in the corridor. ** Due to particular development conditions, physical features of the site or highway corridor, special traffic control needs, or other conditions, Washington County may require more right-of-way width than shown in these guidelines.</i>		

The following cross section (see Figure 28) demonstrates how a roadway width of 180 feet may be used to accommodate multimodal uses. This image is only an example. The design and construction of county roadway will vary from the image below based on localized needs.

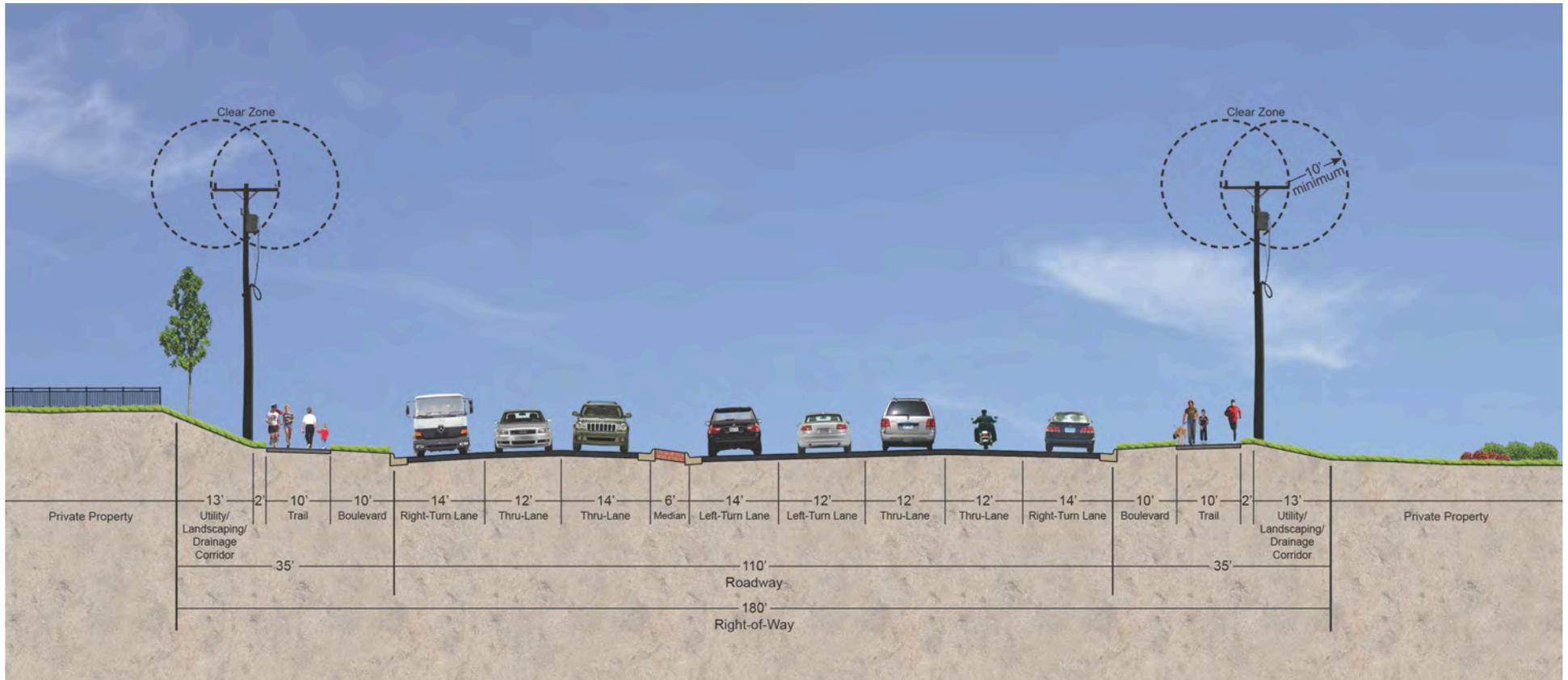
The availability of right-of-way will be a criterion for ranking a project’s readiness to be built. Where right-of-way must be acquired, it will be acquired under the provisions of the county’s Cost Participation Policy (#8001). The Management Tools (page 41) section of Existing Conditions contains information regarding right-of-way preservation methods.

Figure 27: Right-of-Way Widths Required



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Washington County Public Works Department

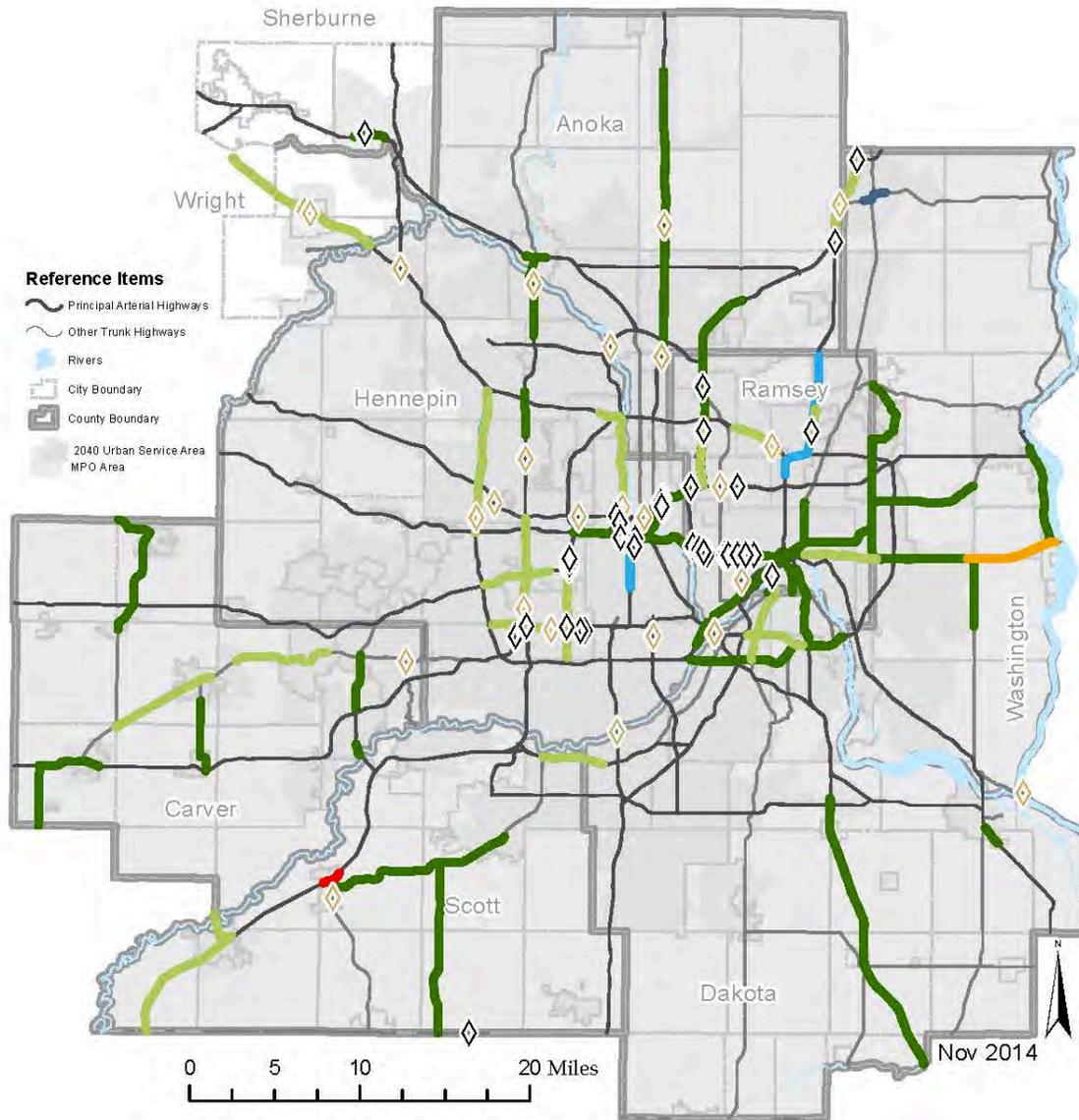
Figure 28: Right-of-Way 180 FT Cross Section



Regional Planned Infrastructure Projects

There are several planned pavement, bridge, and roadside infrastructure projects in Washington County as identified in the 2040 TPP (see Figure 29).

Figure 29: 2040 Planned Pavement, Bridge, and Roadside Infrastructure Projects



Identified Pavement, Bridge, and Roadside Infrastructure Projects* 2015 - 2024 (Projects 2025 - 2040 TBD)

- ◇ 2015-2018 TIP Bridges
- ◇ 2019 - 2024 Bridges
- ◇ 2015-2018 TIP Pavement
- Orange wavy line: Roadside Infrastructure
- Red wavy line: Roadside Infrastructure / Safety
- Green wavy line: 2019 - 2024 Pavement Projects
- Blue wavy line: 2015 - 2018 Pavement / MnPass
- Dark blue wavy line: 2015 - 2018 Pavement / Safety

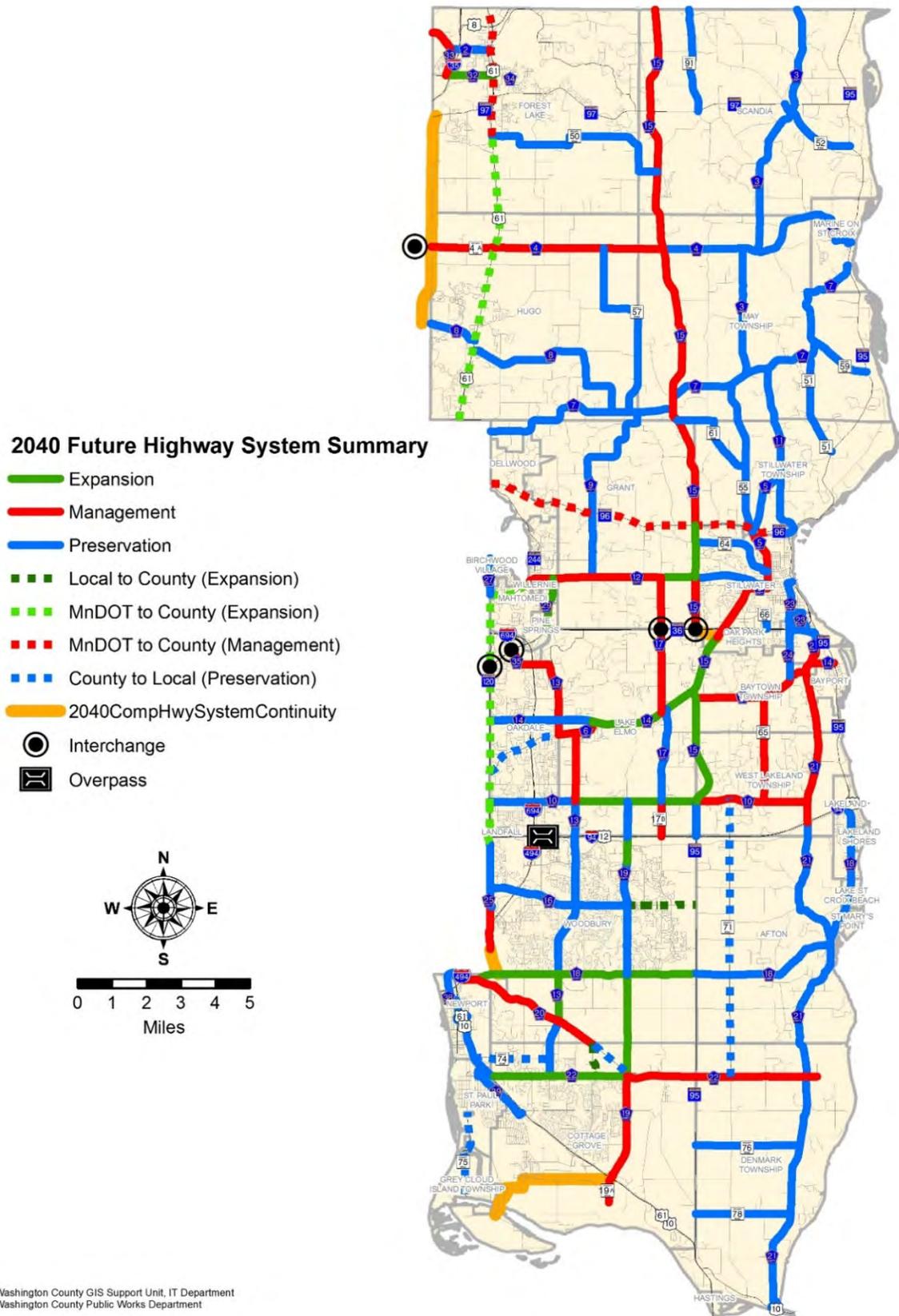
*Not intended to represent all projects until 2040. Includes only those projects identified by May 2014. Subject to change and amendment.

2040 Highway System Needs Summary

The future long-term needs of the county's highway system are shown on Figure 30 and summarized below.

- **Jurisdictional changes:** Includes roadways that are candidates for transfer of ownership, maintenance, and operations. Transfer agreements will be negotiated for each roadway.
- **Preservation:** Includes crackseal, sealcoat, overlay, cold in-place recycling, and minor drainage improvements. These improvements focus mainly on improving the roadway surface and drivability of the roadway
- **Management:** Includes reconstruction of the roadway with no added through lanes. These improvements could include access management improvements, construction of turn lanes, horizontal and vertical curve corrections, and the installation of traffic signals, roundabouts or other intersection treatments.
- **Expansion:** Includes reconstruction with added through lanes, access management, and installation of traffic signals, roundabouts, or other intersection treatments.
- **Interchange:** Includes new or reconstructed interchange or overpass.

Figure 30: 2040 Highway Summary



Prepared By: Washington County GIS Support Unit, IT Department
Data Source: Washington County Public Works Department

Safety

The *County Roadway Safety Plan (CRSP, 2013)* was prepared as part of a statewide highway safety planning process to assist counties to proactively submit low-cost systematic safety projects for MnDOT to consider for Highway Safety Improvement Program funding. The CRSP identified at-risk locations and low-cost safety improvements with the goal to reduce severe crashes in Washington County. A list of potential safety projects was developed after conducting a crash analysis, which covered crashes from 2007-2011. Washington County crash data compared to statewide averages was overrepresented in the following emphasis areas

- Young drivers (under 21)
- Drug and alcohol-related
- Unbelted vehicle occupants
- Lane departure crashes
- Intersection crashes

The most effective method to encourage safe driving behaviors for the first three emphasis areas (young drivers (under 21), drug and alcohol related, and unbelted vehicle occupants) is through enforcement and education. Education combined with enforcement can sustain changes in driver behavior. Washington County collaborates with partners on education and enforcement efforts, and participates in regional road safety coalitions.

For the lane departure and intersection crashes, there were no specific locations where a cluster of severe crashes occurred. Therefore, instead of identifying potentially expensive projects at relatively few locations, the plan identified an estimated \$8 million in proactive, low-cost safety improvements such as 3-lane conversion, curve signing, turn lanes, and access management projects. Table 9 provides a high-level summary of the infrastructure-related safety projects identified in the CRSP. More details on these projects can be found in the CRSP located on the Washington County website. The CRSP will be updated periodically to ensure infrastructure projects reflect roadway safety priorities.

Table 9: County Roadway Safety Plan Infrastructure-Related Safety Projects

	Number of Locations	Estimated Implementation Costs
Urban Locations		
Red Light Confirmation Lights and Access Management	4 corridors	\$982,000
Pedestrian Improvements (Countdown Timers, Advanced Walk, Medians, Curb Extensions and Sidewalks)	1 corridor	\$50,000
Conversion to Two Way Left Turn Lane	5 corridors	\$201,925
Rural Locations		
Rural Segments Projects	28 corridors	\$5,725,089
Rural Curve Projects	143 curves	\$711,965
Rural Intersection Projects	17 intersections	\$266,400
TOTAL PROACTIVE PROJECTS		\$7,937,379

Source: Washington County Roadway Safety Plan, 2013

Transit

Providing convenient, reliable, and robust transit service can play a vital role in supporting mobility, access, and economic development in Washington County. The several types of transit services discussed below include express bus, local bus, demand responsive, mobility management, transitways, and park-and-ride facilities. Transit advantages and station area planning are tools available to encourage transit ridership, and are also discussed in more detail in this section.

Express and Local Bus Services

The Metropolitan Council's Metro Transit and Metropolitan Transportation Services (MTS) provide the fixed-route transit service in Washington County, including express, local, and reverse commute. More information on current transit services can be found in the Existing Conditions section of this chapter (see page 26).

Express Bus Service

Express bus services will continue to be a focus of the transit system in Washington County. County residents who work in either downtown Minneapolis or downtown Saint Paul are the primary market for downtown-oriented express bus services. Current use figures provide a baseline from which future demand can be estimated. Future express bus ridership by county residents is expected to increase due to growth in population, future employment growth in downtown Minneapolis and Saint Paul, and a likely increase in mode split. Future expansion of express bus services will depend on transit ridership and the continued development of transit infrastructure, including park-and-ride facilities and transit advantages.

Local Bus Service

Although local transit service is desirable, the density and land use character in the county makes the delivery of local service economically challenging. The grid-like pattern of local routes that is effective in central cities does not match well with suburban land use and roadway network. The current strategy for meeting local transit service demand in Washington County is through demand responsive service. However, this service is not typically considered an economical way to attract transit riders who have a choice in how they travel because of the high per-ride costs and limited service hours.

A more practical option for providing local service may be through local circulator networks with coverage in the developed areas of the county. A local network could focus on a community transit center, which could serve as the timed transfer point for two to four local circulator routes.

Washington County could also be served by route deviation service, which combines the accessibility features of dial-a-ride service with the scheduled reliability of fixed-route service, and is thus able to attract commuters and other users who would not generally consider dial-a-ride service. A route-deviation service could provide a viable alternative to fixed-route bus service in Stillwater, Woodbury, and other communities that are designated as Transit Market Areas III and IV (see pages 26 for more information on Transit Market Areas).

There are currently no local circulator or route deviation services available and none planned for Washington County.

Demand Responsive Transit Service

Americans with Disabilities Act (ADA) complementary demand responsive (also known as dial-a-ride) services are federally mandated and provided by the Metropolitan Council. Future demand for demand responsive transit service will be tied to the number of residents that are dependent upon transit for their transportation.

Demand response transit can also be considered for other transit-dependent populations. Although hard to predict, the number of transit-dependent residents can be estimated by the number of residents over 65 years of age. Even though people over 65 continue to drive for many years, the need for local and demand responsive transit services rises with age. Older adults (65 years and older) are the fastest growing age group in Washington County. This population is expected to increase 150 percent between 2010 and 2040 (from 24,984 to 62,309). This means that Washington County has a growing need for service and resources—including transportation services—that target older adults. General public dial-a-ride services are usually only provided in areas not served by local bus service.

Mobility Management

Mobility management strategies are designed to maximize resources through collaboration and coordination of transit providers and human service agencies, with a focus on meeting user needs and pooling resources. Mobility management strategies are intended to improve service and reduce operating costs through interagency coordination. For those most dependent on transit—older adults, people with disabilities, youth, people with lower incomes, and some Veterans—the lack of transportation options in Washington County is a significant issue. In 2018, the county completed an assessment of transportation needs for people most dependent on transit. The aim was to describe existing conditions and identify available transportation services. The study prioritized a series of strategies that can be implemented within the short term. The Tier 1 strategies the county could consider to improve transit services are:

- General purpose dial-a-ride: increase use of transit service requiring advanced scheduling.
- Community circulator: local transit for shopping, commuting, and participating in community activities.
- Site-specific shuttle: connections for the beginning and end of an individual trip to get to major employers, institutions, or retail destinations.
- Subsidized taxi or ride-hailing service: implement program for use of vouchers or subsidies for taxis and other transportation services.
- Volunteer driver program: explore opportunities for volunteer reimbursement and driver incentives.
- Travel information and referral services: compile and provide travel information and referral services, conduct countywide educational marketing campaign.
- Trip brokerage: centralizing the scheduling of transportation services to maximize efficient use of resources and provide more choices for consumers.

More information on mobility management can be found in the *Washington County Transit Needs Study*, and available on the county's website.

Transitway Development

Washington County has four transitways: METRO Gold Line, Red Rock Corridor, Rush Line Corridor, and the TH 36 Corridor (see Figure 31). More information on each transitway including project website addresses can be found in the Existing Conditions section.

METRO Gold Line

The METRO Gold Line is a planned nine-mile bus rapid transit (BRT) route that will connect Saint Paul, Maplewood, Oakdale, and Woodbury. Buses operating mainly in dedicated lanes will serve 10 new stations offering new opportunities for residents, employees, and businesses. The frequent, all-day service will travel both directions, seven days a week to connect the eastern suburbs with the growing regional transit system via Union Depot in downtown Saint Paul.

METRO Gold Line service is forecasted to carry an estimated 8,000 people daily by year 2040. One-fifth of zero car households in the Twin Cities are located in cities along the route. The service will help provide access to 522,000 people and 301,000 jobs by 2040.

A station area planning process will be completed at the end of 2018. The current geography of the station areas in Washington County is suburban with a mix of light-industrial. The transit-oriented development plans will help improve each community's access to jobs, housing, shopping, and recreation to enhance quality of life for people of all ages, abilities, and incomes. Project Development will take place between 2018 and 2019 followed by Engineering in 2020 and 2021. The METRO Gold is anticipated to be operational in 2024.

Red Rock Corridor

The Red Rock Corridor underwent an Alternatives Analysis Update (AAU) in 2014 that reviewed the findings from the 2007 Alternatives Analysis study. While much of the AAU recommendations were confirmed to still be optimal, the AAU identified BRT as the alternative best able to improve accessibility and connectivity for corridor residents and businesses through all-day, bi-directional service. The Implementation Plan completed in 2017 suggested that expanding bus service in the corridor is one of the first steps towards building a stronger transit base for eventual BRT service in the corridor. Short-term strategies focus on building transit ridership in the corridor through improved local bus service. Long-term strategies concentrate on introducing BRT service to the corridor once transit ridership reaches regional benchmarks.

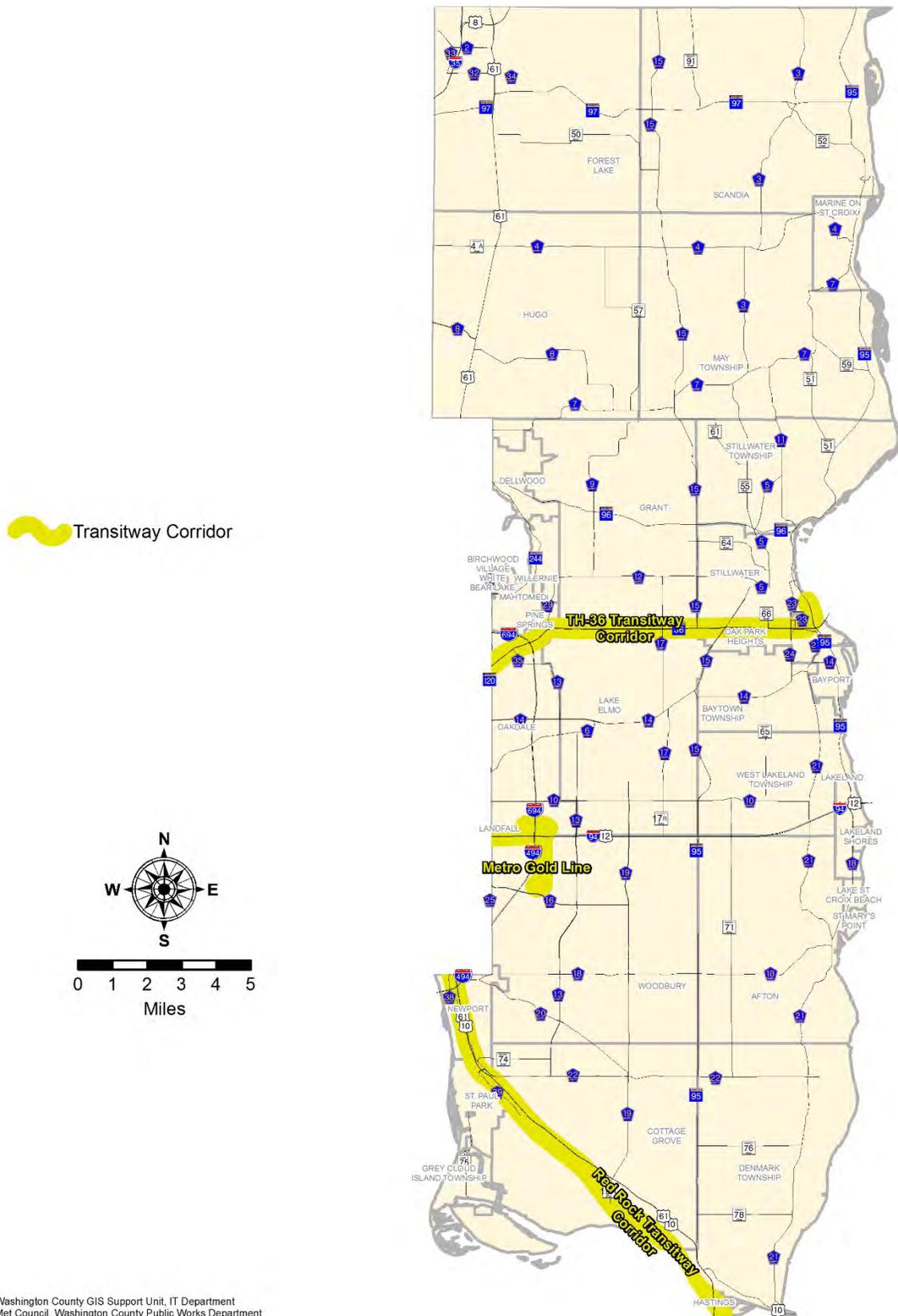
Rush Line Corridor

The Rush Line Corridor is an 80-mile travel corridor between Saint Paul and Hinckley. A pre-project development study completed in 2017 analyzed bus and rail transit alternatives between Forest Lake and Union Depot in Saint Paul. The Locally Preferred Alternative is dedicated BRT from Union Depot to White Bear Lake. The analysis included a review of potential connecting local bus service to Forest Lake, which will be further explored as planning for Rush Line continues. Washington County will participate in planning efforts that focus on extending local bus service along TH 61 to Forest Lake as development for the Rush Line Corridor continues.

TH 36 Corridor

The 2040 TPP includes the TH 36 Corridor as a corridor in need of further analysis for transit improvements. Limited bus service operates in the TH 36 corridor. There are no immediate plans to examine expanded transit service in this corridor.

Figure 31: Future Transitway Corridors



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Met Council, Washington County Public Works Department

Park-and-Ride Facilities

Park-and-ride facilities are an integral part of providing express bus service and are a critical component of fixed guideway transit. Future park-and-ride facilities should be accessible to residents driving to the lots, to major freeways for quick access by bus, and by trails and other non-motorized accommodations. Along identified transitway corridors, park-and-ride lots will be used first to support express bus operations. However, as transitways are developed, these lots will most likely become transit stations supporting fixed guideway transit and an integral part of the land use development surrounding the lot.

Development of METRO Gold Line facilities will add or expand three park-and-ride lots that serve Washington County residents: Sun Ray Station in Saint Paul (new), Helmo Avenue Station in Oakdale (new), and an expanded Woodbury Theatre park-and-ride (existing).

In addition to the facilities planned for METRO Gold Line, Metro Transit is also working with a developer to construct a 550 stall facility in Lake Elmo near the intersection of I-94 and Manning Avenue by the end of 2018. This lot once open is expected to attract users that would otherwise park at Guardian Angels Catholic Church in Oakdale.

Transit Advantages

Planning, development, and implementation of bus-only shoulders, ramp-meter bypasses, and high occupancy vehicle (HOV) lanes are primarily the responsibility of MnDOT and the Metropolitan Council. According to Metro Transit, the region now has 300 miles of bus-only shoulders. The only bus-only shoulders in Washington County are on TH 36 west of Interstate 694 to the county border. No ramp meter bypasses or HOV facilities are planned within Washington County. Possible transit advantages will be explored through the planning and development of additional transit services.

Station Area Planning

One of the key factors in providing for an efficient and robust transit system is to create an environment that brings potential riders, shoppers, and businesses closer to the proposed transitway. Transit-oriented development (TOD) is a term that is used to represent several design principles that emphasize the interrelationship of transit facilities and the surrounding land-use pattern. TOD is characterized by transit service, compact development, mixed use developments, pedestrian-oriented design, and intermodal facilities. Each TOD differs depending on the priority placed on each characteristic.

Planning for TOD is primarily the responsibility of the cities where land use and zoning authority resides. Cities can apply TOD in areas that can support a robust transit service while providing attractive areas for people to live, work, and shop. However, the county can lead or contribute to station area planning processes to support transit ridership along the five transitway corridors in the county.

Examples of TOD in Washington County include Newport Transit Station and the METRO Gold Line Bus Rapid Transit-Oriented Development (BRTOD) study. The Newport Transit Station is a cornerstone of the City of Newport's redevelopment plans as a transit-oriented gateway to the city. Residential use was added to the station area by way of a 42-unit apartment building, which was fully leased by its opening in 2017. Potential future uses of the remaining land surrounding the transit station include residential, office, or commercial

spaces that complement the investment made in this transit station. This development is the result of station area planning completed for the Red Rock Corridor in 2009 and 2016.

The METRO Gold Line Bus Rapid Transit-oriented Development (BRTOD) Study, which is expected to be completed by the end of 2018, focuses development in the ½ mile around stations to include a mix of housing, office, retail, and other amenities within a walkable and bike-friendly neighborhood. BRTOD planning will help improve each community's access to goods and service while also supporting transit ridership. The BRTOD plans will:

- Help communities define their own vision for a vibrant, transit-supportive station area.
- Make it easier for people to walk, bike, or drive to BRT stations.
- Enable communities to maximize economic development around BRT stations.
- Identify infrastructure investments and policy changes to support each city's desired outcomes.

Through its involvement in transitway coalitions, Washington County supports and encourages local communities to plan for TOD along the five planned transitway corridors in the county. Washington County-led projects will consider development plans consistent with transit-supportive densities as outlined in the 2040 TPP.

Stakeholders currently involved in BRTOD are: Washington and Ramsey Counties, St. Paul, Maplewood, Landfall, Oakdale, and Woodbury. The needs and community vision for each station area varies, thus the BRTOD planning activities range from a full scale Planned Unit Development (PUD), to pedestrian and bicycle evaluation plans, and agency coordination with the development community.

Non-Motorized Facilities

Non-motorized facilities consist mainly of off-road trails and paved shoulders along county roads, which provide opportunities for both recreational use and transportation to key destinations. Enhancing these non-motorized facilities, as part of the overall transportation system, is a key element to providing a transportation system that is sustainable, links destinations and attractions, and encourages healthy and active lifestyles. Facilities should include connections within neighborhoods, between neighborhoods, to activity centers, to other regional trail facilities, and to transit facilities. This forms a seamless integration to be able to use this transportation mode to meet travel needs. Much of the neighborhood connectivity occurs at the local level in land use planning of neighborhoods and commercial areas. This planning lays the foundation for how the community provides ease of access to these areas and supports walking and bicycling.

The regional trail system in the metropolitan area is like the road system, with regional and local components. The regional component consists of trails in the regional trail system, run by park implementation agencies such as Washington County, and state administered trails. Washington County, as an implementation agency, is responsible for owning and operating regional trails, which provide recreation and transportation opportunities for all users. Additionally, Washington County works with other agencies to identify opportunities to connect to the local trail and sidewalk networks and to key destinations.

The regional and local trail network is also supported and enhanced by the Regional Bicycle Transportation Network (RBTN), which is identified as part of the 2040 TPP. The RBTN helps to define the region's on-street bikeways and off-street trail connections, and how the system works together to serve regional transportation trips by bicycle.

Many county roads not currently identified as part of the regional trail system have separated trails or wide shoulders for biking. Washington County has plans to expand this network as well. New trails will be considered as part of road projects, where appropriate, and will be guided by our Cost Participation Policy (#8001). Additionally, the county will undertake a bicycle and pedestrian plan to identify gaps and barriers in, and identify opportunities to improve our trail network and provide multimodal connections to transit and key destinations.

More information related to the trail network is provided in the Parks, Trail, and Open Space Chapter (see page 39) including a map of the county's proposed trail system (see Figure 10).

Implementation

Five-Year Capital Improvement Program

The purpose of the county's Capital Improvement Plan (CIP) is to recognize and address county needs through long-term planning and balanced investment in supporting public infrastructure. To ensure that this commitment is viable and achievable, appropriate capital improvement factors will be given significant consideration in developing a CIP that addresses county priorities and serves the needs of the county over the next five years.

The Road & Bridge CIP includes projects such as construction of transportation infrastructure, transit projects, pavement improvement projects, railroad crossing improvements, right-of-way acquisition needed for transportation projects, safety improvements, traffic signals, etc.

The CIP is updated annually, and the latest plan available on Washington County's website.

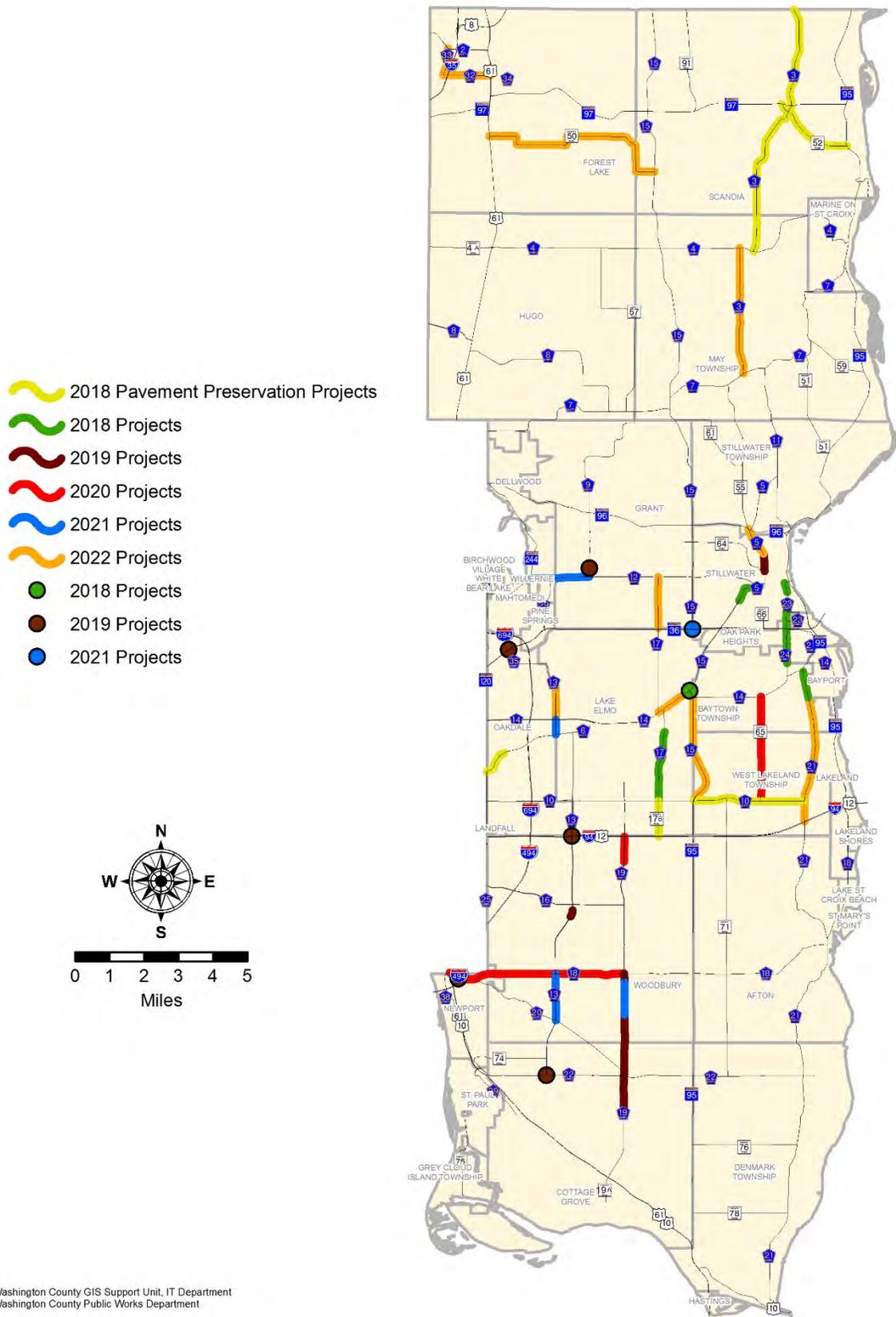
Figure 32 shows the transportation projects contained in the county's 2018-2022 Capital Improvement Program.

Priority Actions

- Design and construct projects included in the capital improvement program (CIP).
- Prioritize intersections with operational or safety issues through the annual Intersection Control Ranking System (ICRS) report.
- Implement projects identified in the County Roadway Safety Plan.
- Work with communities to better align the county highway system with the appropriate level of government through jurisdictional studies such as the Southwest Arterial Study and St. Croix Valley Jurisdictional Study.
- Coordinate with communities on development proposals adjacent to county roadways.
- Collaborate with communities to develop access management plans for specific county roadways.

- Coordinate with the Metropolitan Council, MnDOT, and municipalities through project development, engineering, and construction of METRO Gold Line.
- Participate in the transitway corridor coalitions.
- Adopt a county-wide bicycle and pedestrian plan.
- Update cost participation policy.
- Develop and implement maintenance policy.

Figure 32: 2018-2022 Road and Bridge Capital Improvement Program (CIP)



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Washington County Public Works Department

Goals, Policies, and Strategies

To guide future decision making and county actions, goals, policies and strategies have been developed specific to the transportation element. The following pages outline four goals with corresponding policies and strategies that set the course for the county’s future. Chapter 3, Goals, Polices, and Strategies, also provides the information contained within this section, along with the goals for the other plan elements. Chapter 11, Implementation, provides tools that can be utilized while working to achieve these goals.

Transportation Goal 1: Plan, build, and maintain an interconnected and accessible transportation system that considers all users and modes of travel.	
Transportation Policy	Transportation Strategy
Coordinate transportation mobility and choice to meet a diversity of needs while considering appropriate systems levels of service.	Support levels and types of transit service that match specific needs of the community based on ridership forecasts, development patterns, and mobility needs.
	Provide information on availability of transit service to encourage greater use.
	Integrate non-motorized accommodations into the design of roadway and transit facilities to increase access to destinations.
	Adopt a bicycle and pedestrian plan to address county recreation and transportation needs.
Work with partners to identify and coordinate transportation system improvements to accommodate growth and development.	Coordinate with municipalities, the Metropolitan Council, and MnDOT to assign roads to their appropriate functional classification and jurisdiction.
	Balance existing and planned land uses with county goals through transportation planning.
	Identify gaps in trail network and prioritize investments to improve non-motorized access to destinations.
Ensure broad participation in transportation planning and decision making.	Complete annual Capital Improvement Plan (CIP) review process to identify fiscally responsible system improvements that are consistent with county priorities and meet the needs of municipalities.
Support regional planning activities to enhance interagency collaboration and coordination.	Contribute to local, regional, and state transportation coalitions and advisory teams.
	Coordinate with partners, including the Metropolitan Council and Minnesota Department of Natural Resources, to preserve, maintain, and expand the regional and state trail networks.
Pursue federal, state, regional, and local funding opportunities to preserve, maintain, expand, and modernize the transportation network.	Strategically apply for funding to offset county investment needed for the transportation system.

<p>Coordinate with partners to achieve the goals included in the other chapters of the Washington County 2040 Comprehensive Plan.</p>	<p>Identify opportunities to collaborate with intra-county and local partners to achieve Washington County 2040 Comprehensive Plan goals through investments in the transportation system.</p>
<p>Plan, build, and maintain roadways to accommodate existing and future traffic growth.</p>	<p>Design new or reconstructed roads to a 10-ton standard to accommodate truck traffic using the county road system.</p>
	<p>Monitor bridge sufficiency rating to prioritize maintenance, repair, or replacement to address deficiencies.</p>
	<p>Use Cost Participation Policy (#8001) to equitably distribute the costs of transportation projects.</p>
<p>Support land use policies and densities to promote the development of transit-supportive districts to focus transit service and capital investments that align with the county’s transit vision.</p>	<p>Coordinate transit investments with land use and transportation planning.</p>
	<p>Work with local partners to develop land use plans and policies that incorporate transit-oriented development opportunities near identified transit stations and transitway corridors.</p>
<p>Advocate and promote long-term investments in transit including METRO Gold Line, Red Rock Corridor, Rush Line Corridor Extension, and TH 36 Corridor to provide reliable and efficient transit services.</p>	<p>Coordinate with the Metropolitan Council, MnDOT, and municipalities through project development, engineering, and construction of METRO Gold Line to improve transit access and multimodal networks.</p>
	<p>Collaborate with local communities on station planning, park and rides, land use, streetscape, and other transit-related amenities.</p>
	<p>Implement recommendations from county-led transportation and transit studies.</p>
<p>Transportation Goal 2: Preserve and modernize the existing transportation system.</p>	
<p>Transportation Policy</p>	<p>Transportation Strategy</p>
<p>Support pavement preservation program to maintain the structural integrity of and maximize investment in the roadway system.</p>	<p>Use the Pavement Condition Index (PCI) rating to identify system needs.</p>
	<p>Conduct yearly field reviews to visually inspect roadway conditions.</p>
<p>Preserve, protect, and obtain rights of way to accommodate future transportation improvements.</p>	<p>Apply Ordinance for the Management of County Highway Right-of-Way (#188) to keep right-of-way in state of good repair and free from unnecessary encumbrances.</p>
<p>Explore and support emerging technology and information systems to improve planning, building, and maintaining the transportation network.</p>	<p>Consider opportunities to improve infrastructure (e.g., fiber optics and other utilities) in county right-of-way during transportation projects.</p>

Transportation Goal 3: Improve safety and efficient for all users.	
Transportation Policy	Transportation Strategy
Support ongoing safety review process that promotes both proactive and reactive treatments to reduce crashes.	Use Washington County’s Intersection Control Ranking System (ICRS) Annual Report to identify intersections where increased traffic control is justified.
	Coordinate with partners to improve safety and usability of county roadways when developing safe, effective, and implementable strategies in key locations like near schools and at non-motorized crossings.
	Develop roadway crossings and trail facilities within county roadway corridors to promote safety for all users.
	Request engineering and traffic investigations as needed from the Commissioner of Transportation to establish safe and reasonable speed limits upon completion of reconstruction or major alteration of county roadways.
Use traffic management techniques to improve operations, safety, and useful life of the roadways.	Implement Intelligent Transportation Systems to efficiently manage the system, communicate travel information to users, and improve safety.
	Deploy intersection management strategies to prolong operational lifespan of roadways.
Pursue access management practices to maintain the intended balance of access and mobility on county roadways.	Review development proposals and construction plans for consistency with Access Spacing Guidelines (see page 41) to manage the number and location of public roadways, private roadways, driveways, median openings, roundabouts, non-motorized crossings, and traffic signals.
	Require consistency with county right-of-way ordinance Access Spacing Guidelines prior to issuing an access permit.
	Promote access from local roadways to develop and implement corridor-specific access management plans for county roadways to minimize access points on county roadways.
	Develop memoranda of understanding with communities on these corridors to streamline the project development process and help guide future development consistent with the county’s vision.
	Review plats to ensure remnant parcels can obtain future access from local roadways.
Transportation Goal 4: Promote positive environmental and health outcomes.	
Transportation Policy	Transportation Strategy
Explore opportunities to improve the environment and encourage physical activity.	Work with local partners to promote land use patterns that enable alternative modes of travel and reduce reliance on the private automobile.
	Identify trail connections to provide links to key destinations.

<p>Include strategies and best management practices related to the environment when planning, building, and maintaining transportation facilities.</p>	<p>Promote techniques to improve quality of water runoff.</p>
	<p>Develop and implement techniques for county roadway maintenance to minimize chemical and particulate runoff.</p>
<p>Prevent, minimize, or mitigate impacts to natural, cultural, and historic features.</p>	<p>Use community-based design to ensure board participation in transportation planning.</p>



Banks of the St. Croix River

Chapter 6

Water Resources



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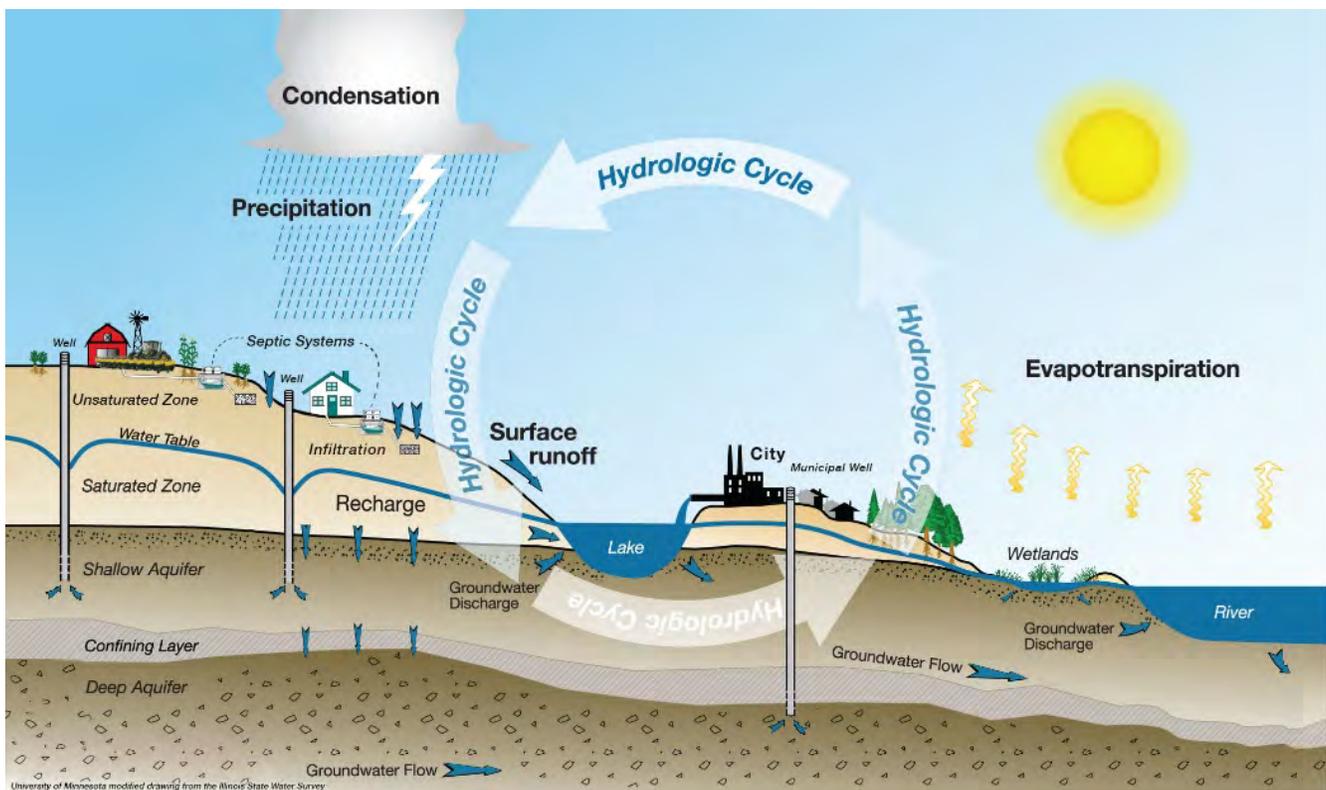
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Executive Summary

Washington County recognizes that groundwater and surface water are one of its most valuable natural resources, and has made a strong commitment to understanding this resource. Our surface, groundwater, and wastewater systems are connected through the water cycle (see Figure 1). The water cycle describes how water evaporates from the surface of the earth, rises into the atmosphere, cools and condenses into rain or snow in clouds, and falls again to the surface as precipitation. Some of that precipitation runs off into surface water, and some percolates into the ground to replenish groundwater systems. As humans have developed and altered the natural landscape, with the mindset to simply move water away from buildings, structures, and roadways, the cycle has been interrupted. In recent years, this mindset has shifted, with local, regional and state agencies all working together to try and mimic the natural cycle and restore balance to the system. In addition, our climate and precipitation patterns are changing. Within the county and the state, the frequency of precipitation and high intensity storms is increasing. Integrated water management is critical as management our water resources continues going forward.

Figure 1: The Water Cycle



High quality drinking water, healthy streams and lakes, fish habitat, rare plants, and economic vitality all depend on protecting and conserving water resources. Water availability can impact our natural systems, and the ability for the county to continue to grow and support development and housing. The county has played and continues to play a leadership role in water management, and natural resource management as a whole. It has allocated a

significant amount of resources to planning and collaboration using the Washington County Groundwater Plan as a guide.



Washington County promotes holistic management of groundwater and surface water resources and strives to work with local and state agencies to maintain a safe and abundant supply of water resources.

The county also recognizes that management of our water resources is directly tied to larger natural resource objectives. Many practices that improve or protect water quality also achieve co-benefits for wildlife, habitat, pollinators, general open space preservation, and recreation opportunities. It is important to recognize and support these connections, both through implementation of a comprehensive plan, as well as other county plans and programs. An example of this type of project is the Grey Cloud Crossing project in Grey Cloud Island Township. This project, a joint partnership between the county, South Washington Watershed District, and the state, primarily constructed in 2017, will improve water quality, restore fish and plant habitat and natural shoreline, provide new recreation opportunities, as well as improve public safety during potential flood events.

The following chapter plan summarizes existing conditions related to surface water, water supply, and wastewater; and discusses the structure for managing these resources across multiple agencies and levels of government. The goals, policies, and strategies have been identified in the following section and in Chapter 3. It is also of note that many additional strategies can be found in the county's [Groundwater Plan](#).

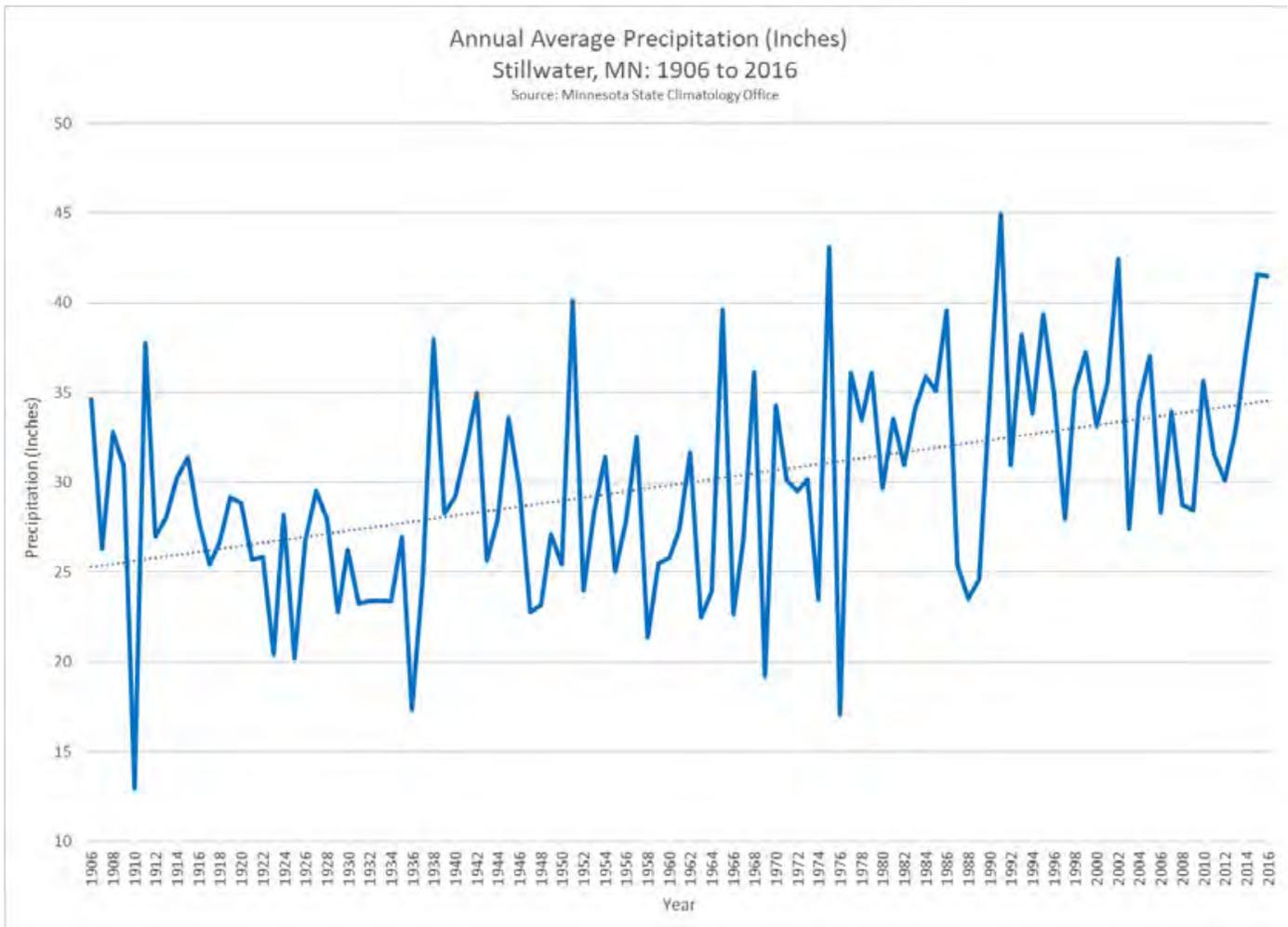
Existing Conditions

Climate and Precipitation

The county lies in the northern mid-continental region of North America and exhibits a climate of warm humid summers and cold dry winters. The climate is influenced by three major elements: polar air masses originating in Canada, subtropical air masses originating in the Gulf of Mexico, and variable air masses from the Pacific regions. The region experiences marked short, near and long-term climatic variations in temperature and precipitation. In this region, the amount of precipitation considerably exceeds the amount of evaporation resulting in abundant surface water resources and groundwater recharge.

The average annual precipitation for Washington County (near Stillwater) is 33.94 inches. This represents a 30-year average (1987–2016) based on data from the Minnesota Department of Natural Resources (DNR). The Washington Conservation District (WCD) recalculates this average every year. Figure 2 shows the long-term precipitation since 1891. Average precipitation quantities are increasing. On a statewide basis, Minnesota's precipitation patterns are changing. From 1895–1959, annual precipitation decreased about 0.2" per decade, while from 1960-2016, annual precipitation increased 0.5" per decade. From a regional perspective, the upper Midwest has seen a 37 percent increase in heavy precipitation events from 1928–2012. Seven of the fifteen Minnesota "mega rain events" have occurred since 2002. These changes in rain events create challenges to water resource management. These are discussed throughout this chapter and in other plan elements such as transportation and resilience.

Figure 2: Historical Precipitation in Washington County – 1906-2016



Surface Water

The county is covered by two major watershed areas. Two-thirds of the county is in the Lower St. Croix watershed and one-third is in the Mississippi River-Twin Cities watershed. There are 36 minor watersheds throughout Washington County. Surface waters cover about ten percent of Washington County's 424 square miles. The majority of the county's surface waters consist of lakes and wetlands, and most are located in the northern half of the county.

Rivers and Streams

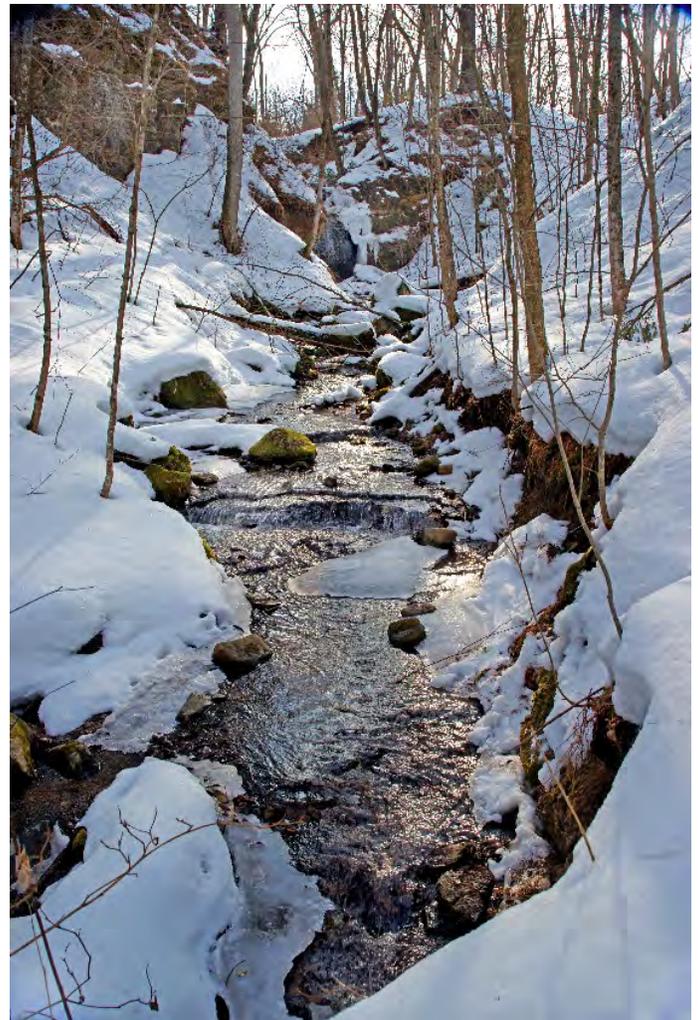
The St. Croix River drains the eastern portion of the county and forms the entire eastern border of the county. In 1968, the United States Congress dedicated the St. Croix River as a National Scenic Riverway, in recognition of its “outstandingly remarkable scenic, recreational, and geologic values.” In 1972, it added the lower reaches of the river that flow through Washington County to the designated Riverway. The National Park Service and the Minnesota and Wisconsin Departments of Natural Resources manage the Riverway. The National Park Service has land acquisition authority north of Stillwater. The state of Minnesota regulates uses within the Riverway

south of Stillwater. The National Park Service adopted a Cooperative Management Plan and Environmental Impact Statement for the Lower St. Croix National Scenic Riverway in 2002 that:

- Preserves and protects the Riverway’s ecological integrity, unimpounded condition, natural and scenic resources, and significant historic resources.
- Accommodates a diverse range of recreational opportunities that do not detract from the exceptional natural, historic, scenic, and aesthetic resources.
- Provides an environment that allows the opportunity for peace and solitude.
- Provides an opportunity for the education and study of the geologic, historic, ecological, and aesthetic values to further enhance stewardship of the river.

Small streams and springs flow into the St. Croix River, draining upland lakes. Brown's Creek, Valley Branch, and Trout Brook are the St. Croix River's largest tributaries with their headwaters in Washington County.

The Mississippi River drains the western portion of the county and forms the southwestern border of the county. In 1988, the United States Congress designated the length of river flowing through the Twin Cities Metropolitan Area from Dayton to just south of Hastings as the Mississippi National River and Recreation Area (MNRAA). This part of the river provides an array of activities and benefits including recreation and education, tourism, transportation, and natural habitat. The National Park Service prepared a management plan to: help communities manage the river corridor’s resources in order to preserve and enhance the environmental values; enhance opportunities for outdoor recreation; conserve and protect the scenic, historical, cultural, natural, and scientific values; and provide for commercial use consistent with the purpose of MNRAA designation. Two important tributaries to the Mississippi River have their headwaters in the county: Rice Creek originates at the outlet of Clear Lake, in the City of Forest Lake, and drains the northwestern part of the county; and Battle Creek originates in Woodbury and flows west to the Mississippi River.



Washington County has many intermittent streams that depend on snowmelt and rain water rather than groundwater for their flow. Streams with permanent flows are spring-fed for the most part. Storm sewers control runoff in urbanized areas, and drainage ditches in historically agricultural areas have replaced some naturally existing streams. Groundwater discharges maintain flows in the major rivers that have their flows augmented by precipitation and runoff.

Lakes

Washington County has 186 lakes that are ten acres or larger, the largest being Forest, Big Marine, White Bear, and Lake St. Croix. Many of the larger lakes were once resort and vacation spots that are now home to year-round residential development. Figure 3 shows the major water bodies in Washington County.



Many of the cleanest lakes in the Twin Cities Metropolitan Area are in Washington County while some of the region's most polluted lakes are also in Washington County. Water quality trends are variable throughout the county depending on location, amount of development, agriculture, and other factors.

Many lakes are connected to groundwater, by providing recharge, discharge, or flow through. Figures 4 and 5 show lake classifications for the northern and southern halves of the county, with respect to surface-groundwater connection. These classifications were determined through a series of studies on surface and groundwater interaction from 2003 and 2005.

Water Quality

Many state and local agencies manage and monitor lake water quality. Volunteers for the Metropolitan Council's Citizen Assisted Monitoring Program (CAMP) monitor many lakes. Water management organizations and some communities use staff, volunteers, consultants, and the Washington Conservation District (WCD) to conduct water-quality monitoring. The WCD, watershed districts, and volunteers monitor more than 80 lakes throughout the county. In addition, the WCD and watershed districts monitor more than 40 streams, rivers, and stormwater sites for water quality and flow. Monitoring results and analysis are summarized in annual reports including ranking, grading, and water quality trends for each lake. Water quality trends are developed to aid in the long-term analysis of possible impacts to receiving waters. The WCD monitors the water clarity, dissolved oxygen, temperature, and nutrients on a monthly or bi-monthly basis in priority lakes. Nutrient data and measured discharge are used to determine total phosphorus and total suspended solids loads for the subwatershed at each monitoring station. Figure 6 shows monitoring activity and water quality ratings by lake. The data was provided by the Washington Conservation District and the Rice Creek Watershed District. These ratings use a system developed by the Metropolitan Council that grades all water bodies (deep lake, shallow wetland, and stormwater ponds) in a like manner. Other grading methods are available. For example, Valley Branch Watershed District uses a performance-based system that sets goals for each water body and uses data to determine how well the water body is meeting its goal.

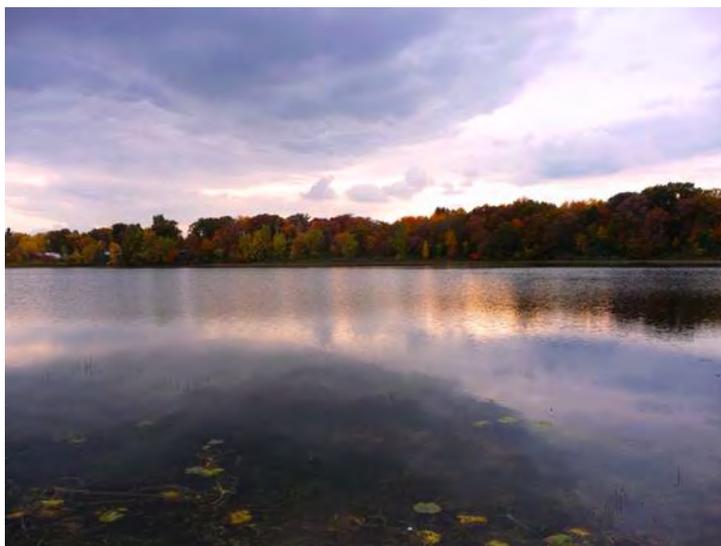
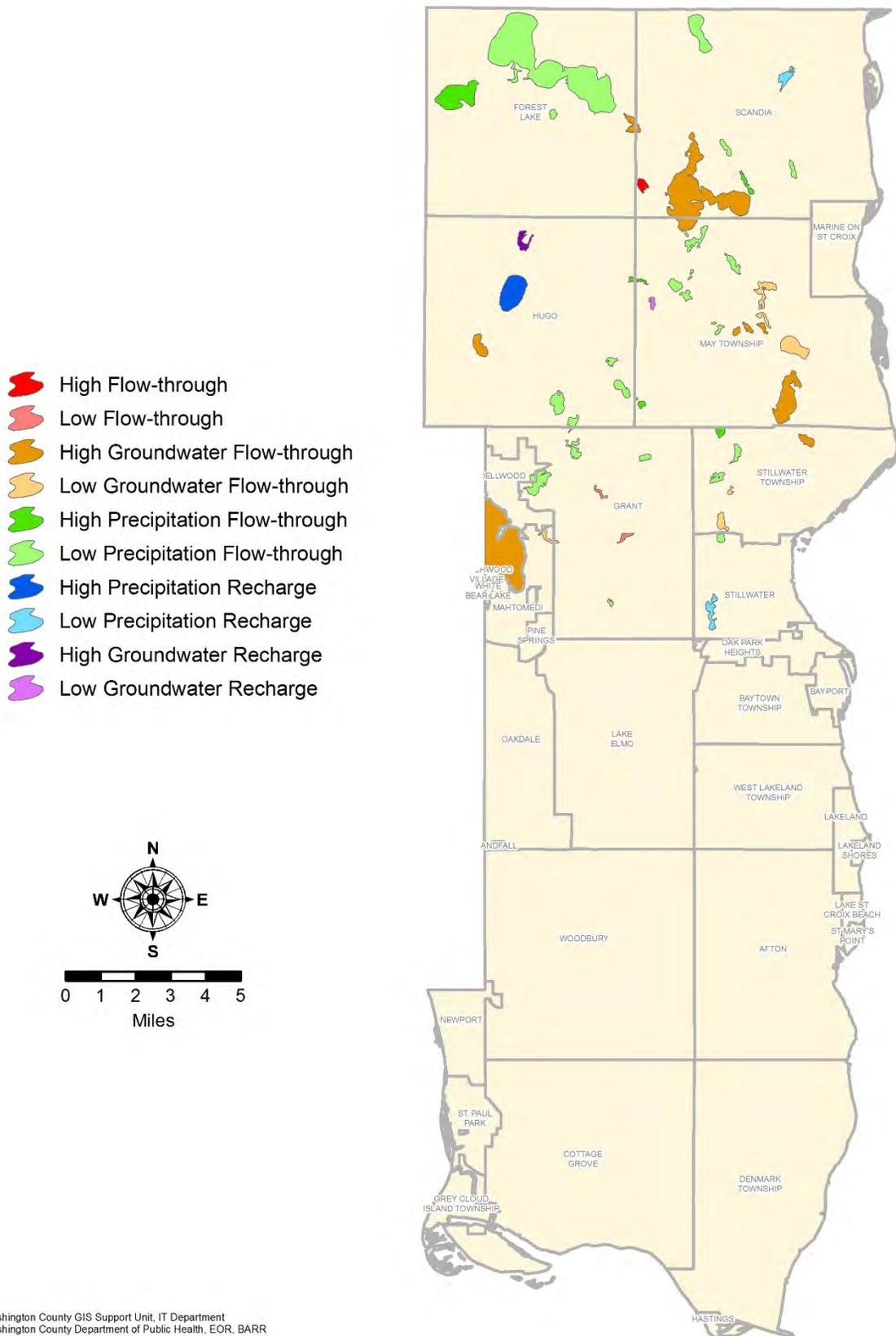
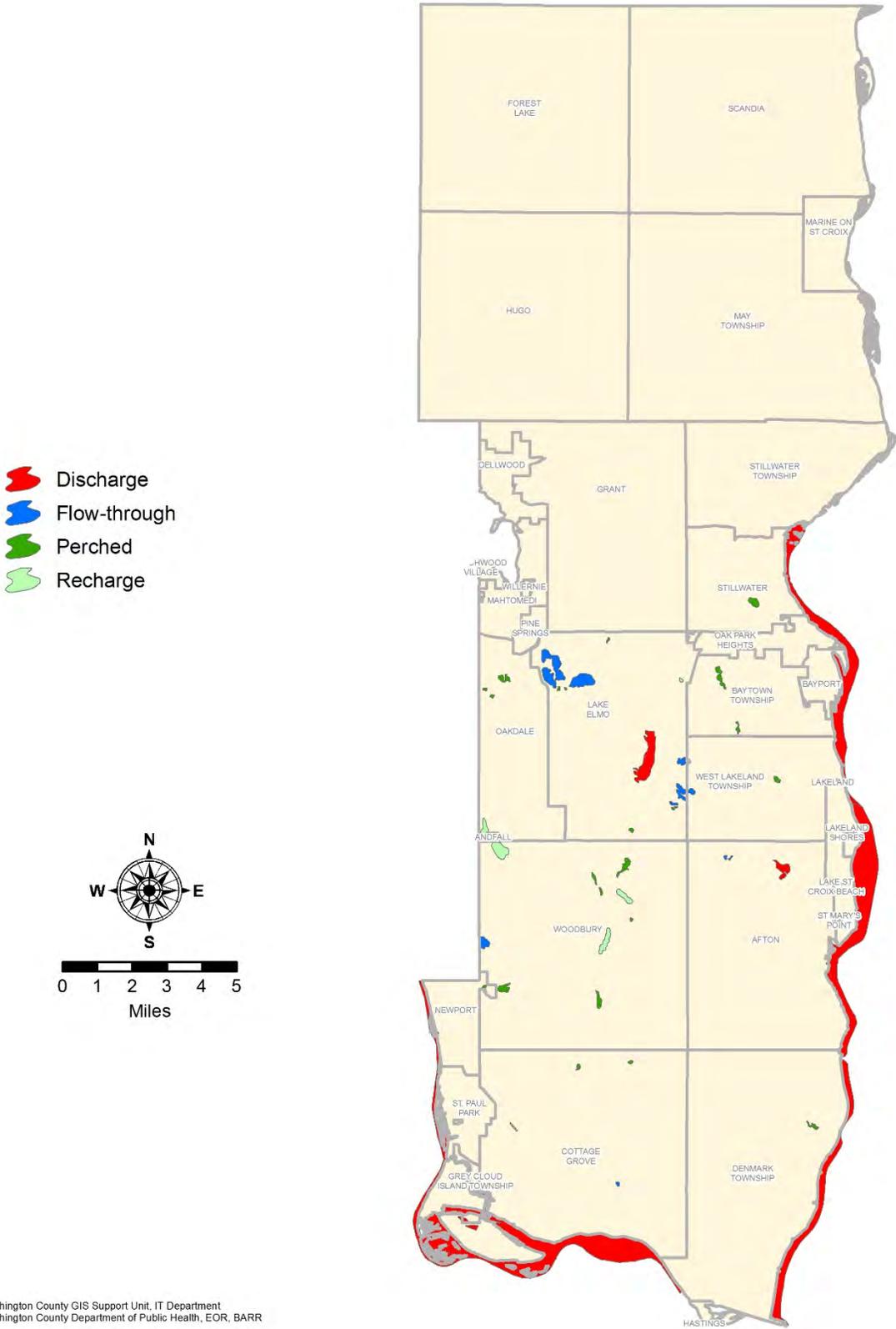


Figure 4: Lake Classifications - Northern Washington County



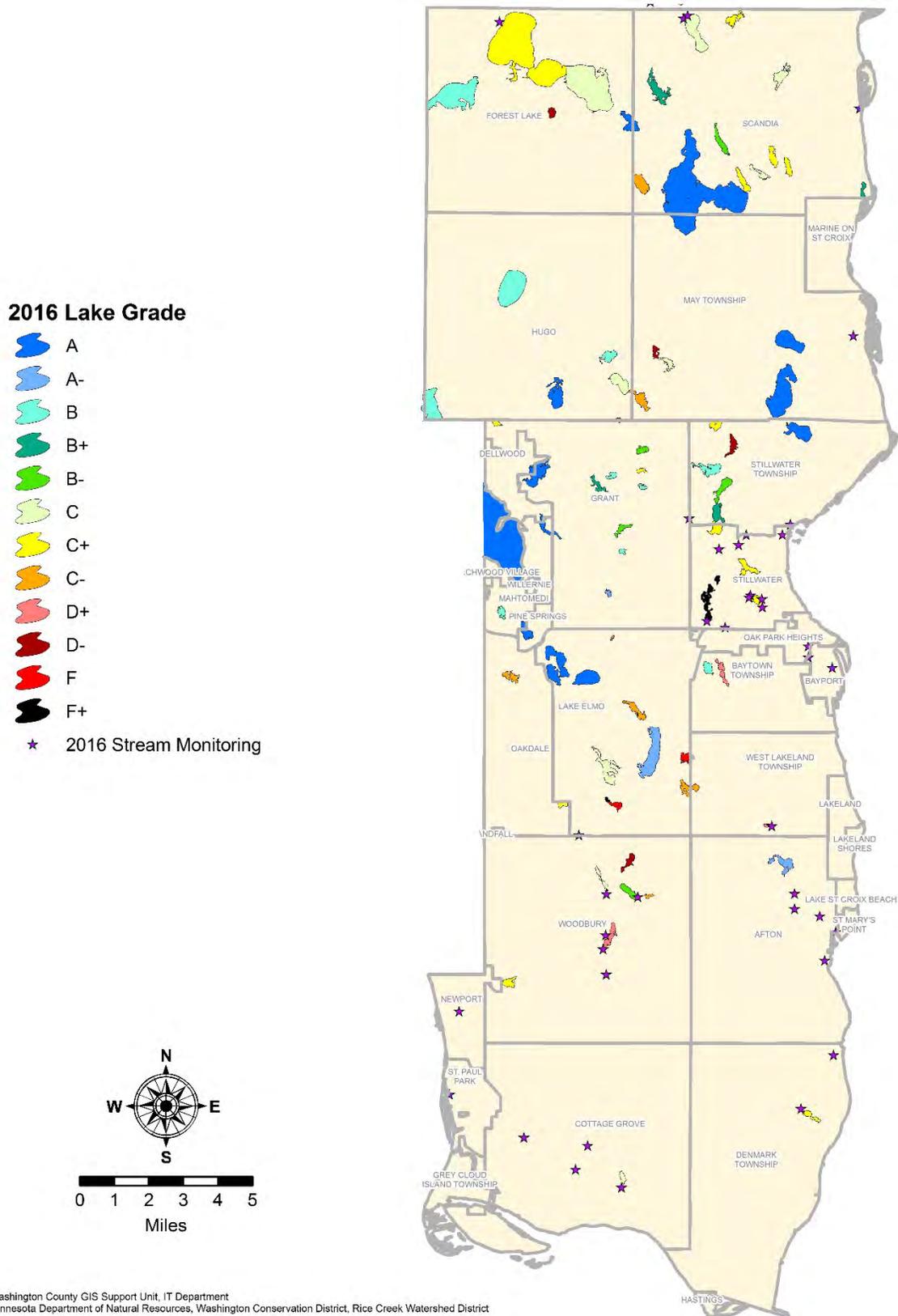
Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Washington County Department of Public Health, EOR, BARR

Figure 5: Lake Classifications - Southern Washington County



Prepared By: Washington County GIS Support Unit, IT Department
Data Source: Washington County Department of Public Health, EOR, BARR

Figure 6: Water Quality Ratings



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Minnesota Department of Natural Resources, Washington Conservation District, Rice Creek Watershed District

The federal Clean Water Act requires states to adopt water quality standards to protect surface waters from pollution. These standards define how much of a particular pollutant can be in the water and still meet standards for designated uses, such as drinking water, fishing, and swimming. The standards are set for a wide range of pollutants, including bacteria, nutrients, turbidity, and mercury. Section 303(d) of the Clean Water Act requires states to publish and update a list of waters that are not meeting one or more of the water quality standards. The list, known as the 303(d) Impaired Water List, is created by the Minnesota Pollution Control Agency. Minnesota's Impaired Waters List, first published in 1992, is updated periodically. See Appendix N for the list of impaired water bodies from the 2016 proposed list. There is a proposed list available for 2018, which was not included because it was submitted to EPA in April 2018. Figure 7 shows the impaired waters in the county, based on the 2016 list. A total of 65 waterbodies in Washington County are impaired, including Bald Eagle Lake and Rice Creek, which are technically listed in Anoka County. That does not include those impaired for mercury or Polychlorinated biphenyls (PCBs) in fish tissue, which accounts for another 28 impaired waters designations. Mercury and/or PCBs in fish tissue is typically caused by air deposition and is therefore handled through statewide plans.

The Clean Water Act requires states to take specific steps to address the impaired waters, including:

- Evaluate impaired water to determine sources of pollution and the amount of reduction needed to restore the waters.
- Implement corrective measures to meet Total Maximum Daily Load pollutant reduction goals and restore waters to standards. The inventory of impaired waters determines the timing for when a Total Maximum Daily Load (TMDL) study must be completed.

To implement the Clean Water Act, the MPCA implements a watershed approach to restoring and protecting water quality, by conducting intensive monitoring and assessments in each of the 80 major watersheds, every ten years. The Lower St. Croix is slated for intensive monitoring in 2019; the Mississippi River (Twin Cities) is slated for monitoring in 2020. This intensive watershed monitoring then allows MPCA and local agencies to complete Watershed Restoration and Protection Strategy (WRAPS) reports, and a TMDL study if appropriate, for impaired waterbodies. A number of TMDL studies have been completed in Washington County, along with a select number of WRAPS reports.

Even the cleanest lakes in the county will be susceptible to pollution as the county's population grows. Some of the more common water pollution problems include excess nutrients, suspended sediments, and mercury contamination.

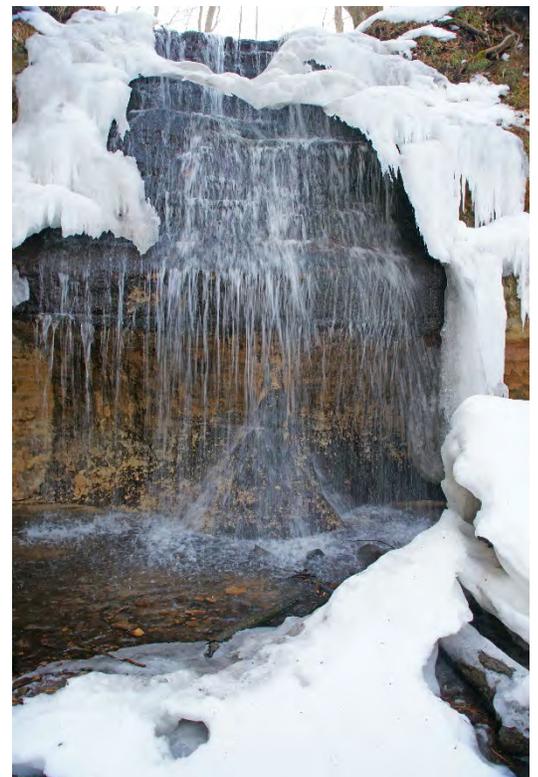
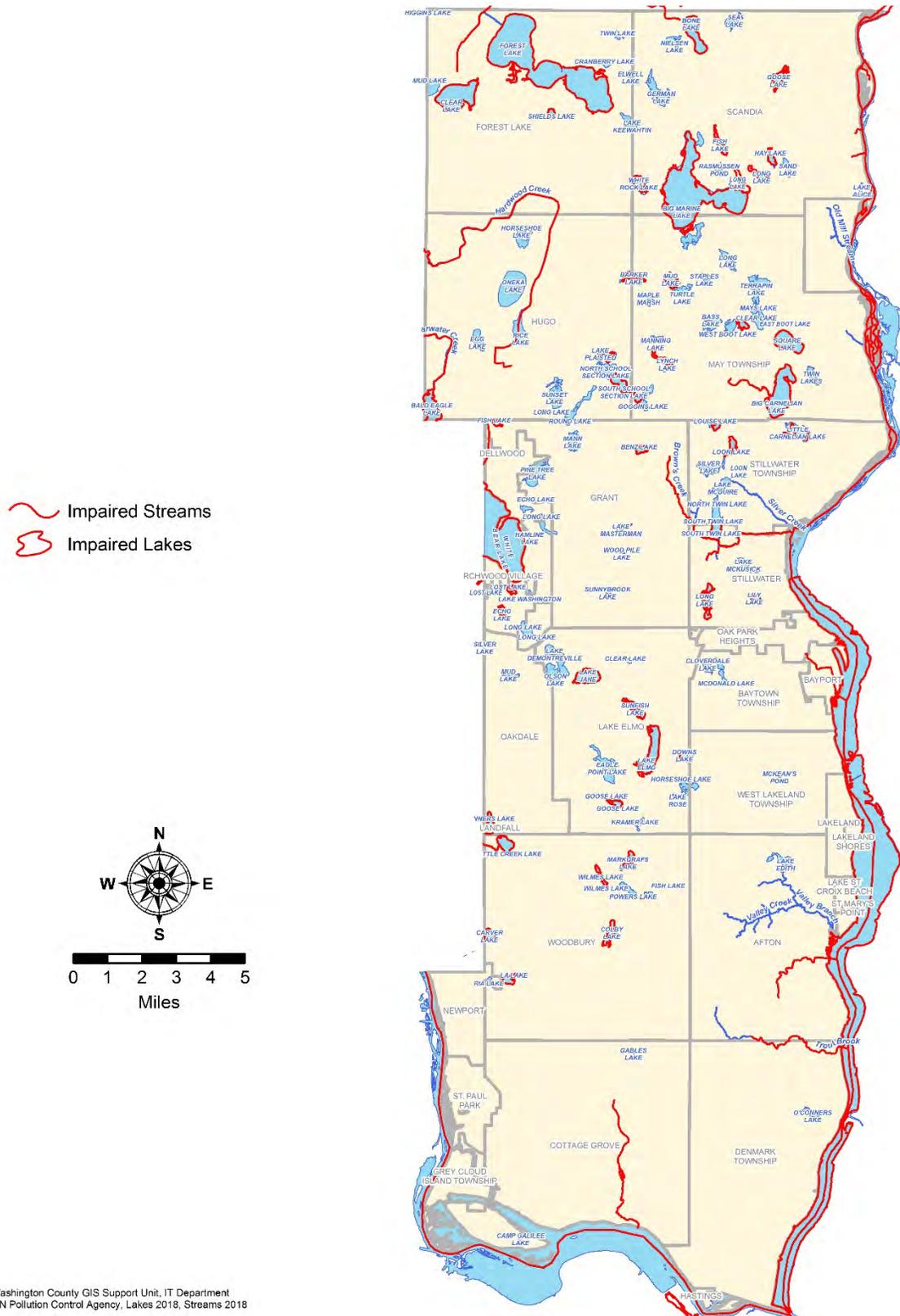


Figure 7: Impaired Waters in Washington County



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: MN Pollution Control Agency, Lakes 2018, Streams 2018

A contaminant of growing concern in Washington County and across the Twin Cities Metro area is chloride. Salts, such as sodium chloride and magnesium chloride, are widely used to de-ice roads, parking lots, driveways, and sidewalks. Chloride has been shown to have detrimental effects on aquatic ecology. The storage and application of de-icing salts creates the potential for surface water and groundwater pollution. During winter, snow removal concentrates road salt and sand in ditches and in snow removal stockpiles. Spring melting results in the release of runoff contaminated with chloride and trace metals. The polluted runoff may contaminate surface water or infiltrate into the groundwater. Unprotected road salt storage sites also pose a risk to water quality by allowing rain and melting snow to leach contaminants into groundwater. Covered and lined facilities will eliminate groundwater contamination from stockpiled road de-icing materials. Limiting de-icing compound use or using less environmentally damaging products will reduce the level of contamination spread during de-icing operations. There are currently five waterbodies in the county listed as impaired for chlorides, but many others are trending upwards. A 2013 MPCA report revealed that 30 percent of metro wells exceed chloride levels. While chloride concentrations in Washington County wells generally do not exceed the secondary drinking water standard, temporal trend analyses conducted annually by MPCA has found that chloride concentrations increased in 11 of the 16 wells that had sufficient data.

Thermal pollution is another issue that may impact Washington County lakes and streams. Stormwater moving across urban landscapes warms the water and increases the temperature in receiving water bodies. Warm water can hold less dissolved oxygen than cold water, thereby reducing oxygen levels in urban water bodies. Cold water fish, such as trout, require stream temperatures below 20 degrees Celsius/68 degrees Fahrenheit; long-term or sudden increases in temperature can harm the fish populations. In addition, these cold-water streams face additional impairment challenges. A portion of Brown's Creek (from 110th Street to the St. Croix River) does not meet the State's water quality standards and is impaired for aquatic life due to lack of cold water fish assemblage and high turbidity. Through the stressor identification process, the primary stressors to the biota in the impaired reach of Brown's Creek were identified as high suspended solids and high temperatures.

Volume control practices that increase infiltration and transpiration will minimize runoff of warmed waters to surface water features, as well as filter water of excess nutrients and other contaminants. Minimal Impact Design Standards (MIDS) represent the next generation of stormwater management in Minnesota. The emphasis today is on keeping the raindrop where it falls in order to minimize stormwater runoff and pollution and preserve natural resources. Low Impact Development (LID) is an approach to stormwater management that mimics a site's natural hydrology as the landscape is developed, and preserves and protects environmentally-sensitive site features such as riparian buffers, wetlands, steep slopes, valuable (mature) trees, floodplains, woodlands, and highly permeable soils. Adapting and using LID approaches offers multiple benefits including minimizing and reducing the amount of pollution reaching our lakes, rivers, and streams and helps to recharge groundwater resources.

Aquatic Invasive Species

Washington County also has many lakes that are infested with aquatic invasive species (AIS). Twenty-one lakes (and two rivers) are on the Minnesota Department of Natural Resources' Infested Waters List, including those affected by Eurasian watermilfoil (Alice, Big Marine, Bone, Camp Galilee, Clear, Colby, DeMontreville, Elmo, Forest, Horseshoe, Jane, four Long lakes, Mud, Olson, Powers, Sunset, White Bear, and Wilmes lakes; Mississippi and St. Croix rivers), flowering rush (Forest Lake, Mississippi River), zebra mussels (Forest and White Bear lakes; Mississippi and St. Croix rivers); and bighead, grass and silver carp (Mississippi River).

In 2014, the Minnesota State Legislature passed MN Statute 477A.19 Aquatic Invasive Species Prevention Aid providing counties with \$10 million annually with the amount designated for each county based on the number of watercraft trailer launches and watercraft trailer parking spaces. As of 2017, Washington County has 24 watercraft trailer launches and 353 watercraft trailer parking spaces, resulting in a 2018 allocation of \$136,065.

Washington County has run a competitive request for proposals process since the program's onset to award funds to entities focusing on AIS prevention projects that align with the Minnesota State Management Plan for Invasive Species (2009). The county has also used a portion of the funds available to contract directly with the Washington Conservation District for countywide AIS prevention, including watercraft inspections, monitoring for zebra mussels, and public outreach and education activities.

Wetlands

Prior to European settlement, wetlands covered over 14,000 acres of the county. Less than half remain today. Figure 8 shows their location. Much of the wetland loss was attributed to wetland draining for agricultural purposes prior to the 1970s and urban development in more recent decades.

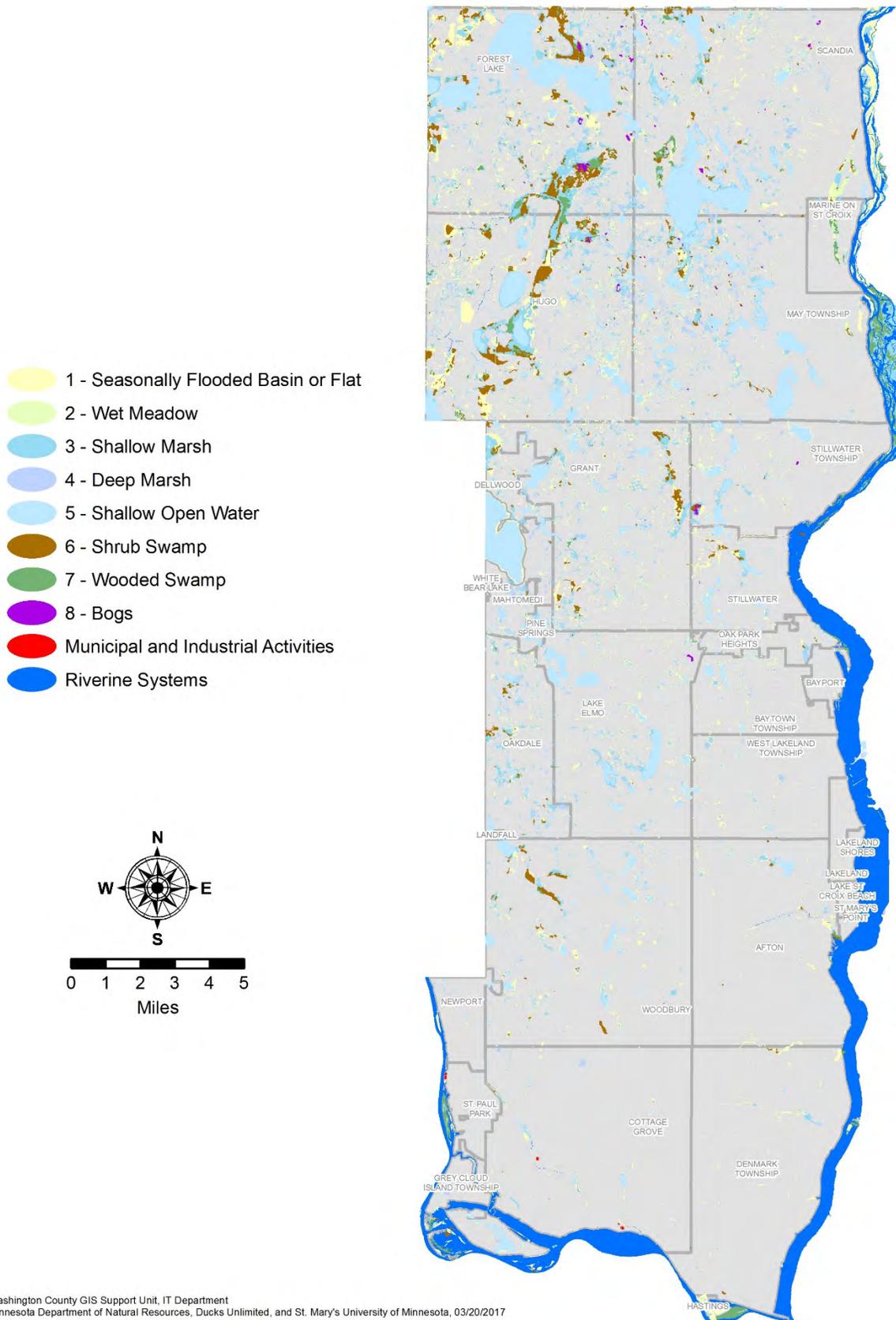
Wetlands fulfill many functions including filtration of surface water, infiltration for groundwater recharge, flood attenuation, wildlife habitat, aesthetics, recreation, and spatial separation between other land uses. As part of their wetland management planning process, the county's watershed districts have placed an ecological value on those functions and have adopted regulations to protect or enhance those values.

The Minnesota Department of Natural Resources regulates wetlands on the 1985 Public Waters Inventory (PWI). The PWI (which includes lakes, rivers, major streams, and ponds) lists 399 type 3, 4, and 5 wetlands that are either over 10 acres in unincorporated areas or two and one-half acres in the incorporated areas of the county.

The National Wetlands Inventory (1992) and the MLCCS (2004-07) also compiled wetland information countywide. Most watershed management organizations have compiled more localized and detailed inventories and functional assessments. These inventories may include wetlands that are not on the PWI.

The federal Clean Water Act initiated wetland protection. The state followed with passage of the Wetland Conservation Act (WCA) in 1991 that set the state wetland protection policy. The state act strives to "achieve no net loss in the quantity, quality, and biological diversity of Minnesota's existing wetlands," as well as to promote restoration of formerly impacted wetlands. This law requires avoidance of direct and indirect impacts that would destroy or diminish wetlands and replacement of wetland values where avoidance is not feasible or prudent. The WCA applies to all wetlands except those under the jurisdiction of the Minnesota DNR. The WCA provides for the local governmental units to administer the law. Most municipalities in Washington County have accepted the authority or have delegated it to a watershed district. Washington County participates in the WCA review process via the Washington Conservation District, as per statutory mandate and voluntary cooperative agreements.

Figure 8: Washington County Wetlands



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Minnesota Department of Natural Resources, Ducks Unlimited, and St. Mary's University of Minnesota, 03/20/2017

Water Supply

Groundwater supplies 100 percent of the drinking water for residents and businesses of Washington County. Although Washington County has substantial reserves of high quality groundwater, groundwater is a finite resource and contaminants have been found above the established health risk limits in some locations. Both the presence of this contamination, along with increased water withdraw, have the potential to impact not just natural systems, but also projected and planned population growth in the county.

The county has 13 municipal water suppliers, serving about 80 percent of residents. Public water supplies are regulated by Minnesota Department of Health (MDH) under the Safe Drinking Water Act and are tested regularly for contaminants. Each public water supply well must maintain a Drinking Water Supply Management Areas (DWSMA) (see Figure 9). The remaining 20 percent of county residents, or about 50,000 people, are served by private wells. The exact number of private wells is not known, but can be estimated at around 17,000. Figure 10 shows well locations based on the Minnesota Well Index. This dataset is maintained by MDH. Private well owners are responsible for their own testing and maintenance. The county maintains a fee-for-service well testing program and encourages residents to follow MDH guidance to test annually for coliform bacteria and nitrates. A recent MDH survey indicates that a large percentage of private well owners do not test their well at the frequency recommended by MDH. In addition, a recent vulnerability assessment conducted by MDH has found that hundreds of private wells within Washington County are located in areas that may be vulnerable to flooding during extreme precipitation events. This will become important as the county plans for changing climate and weather patterns and demonstrates the continued need to educate and support private well owners.

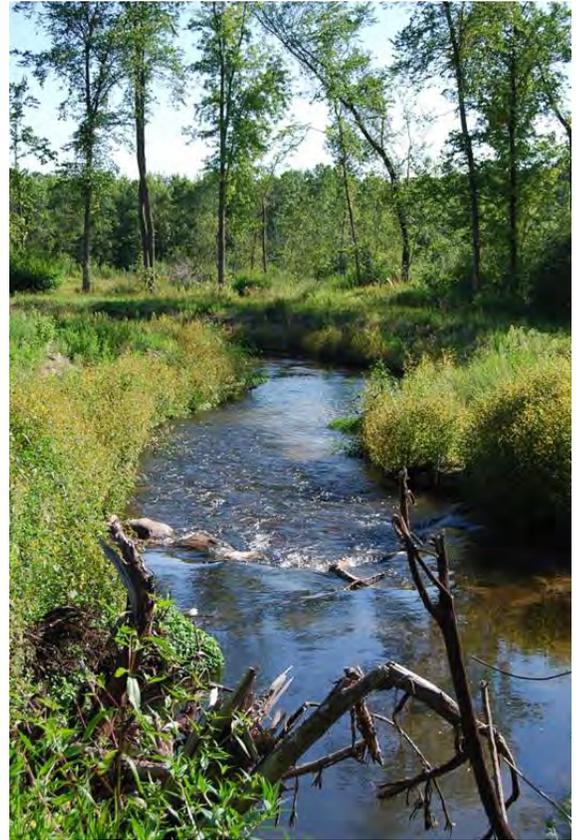
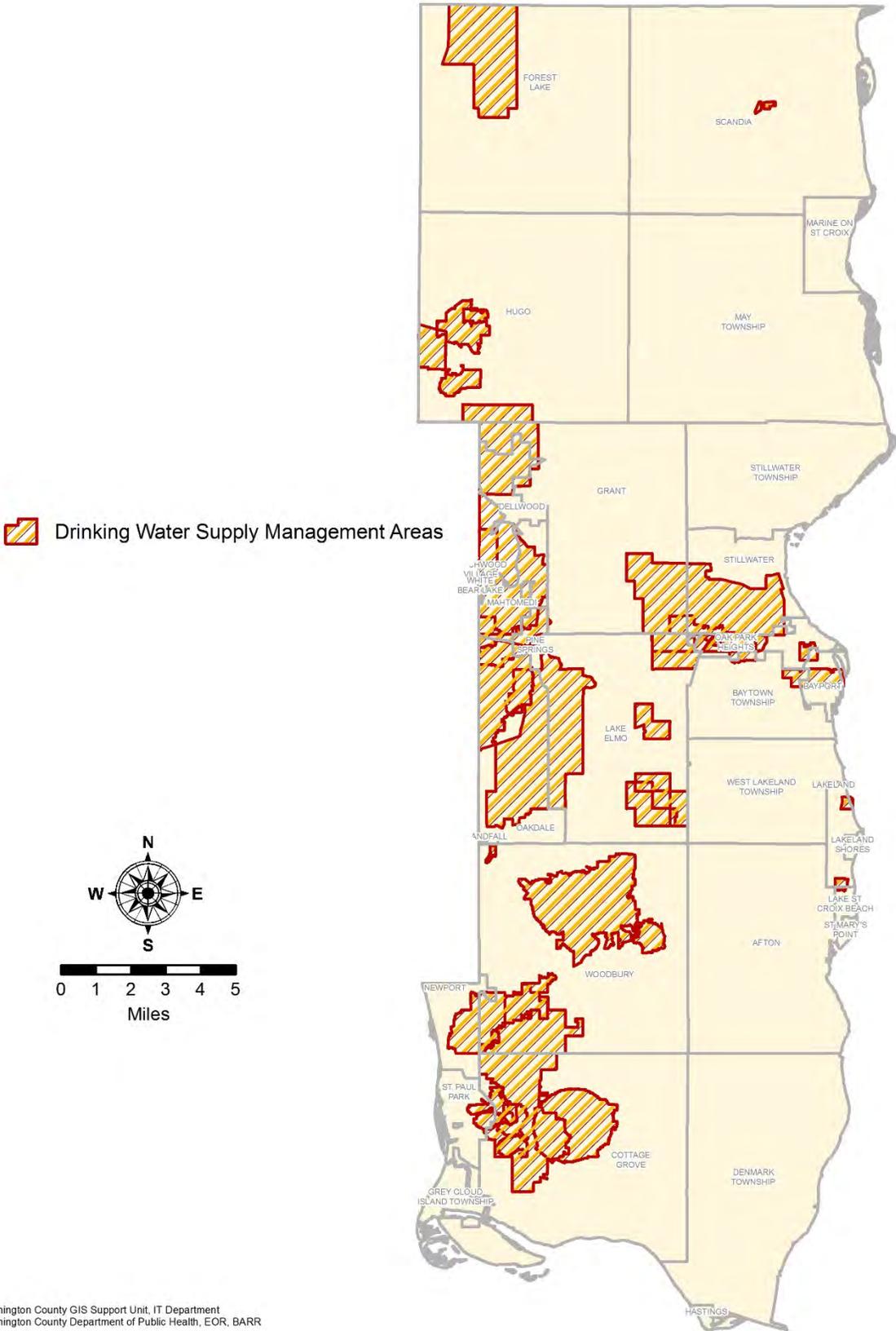
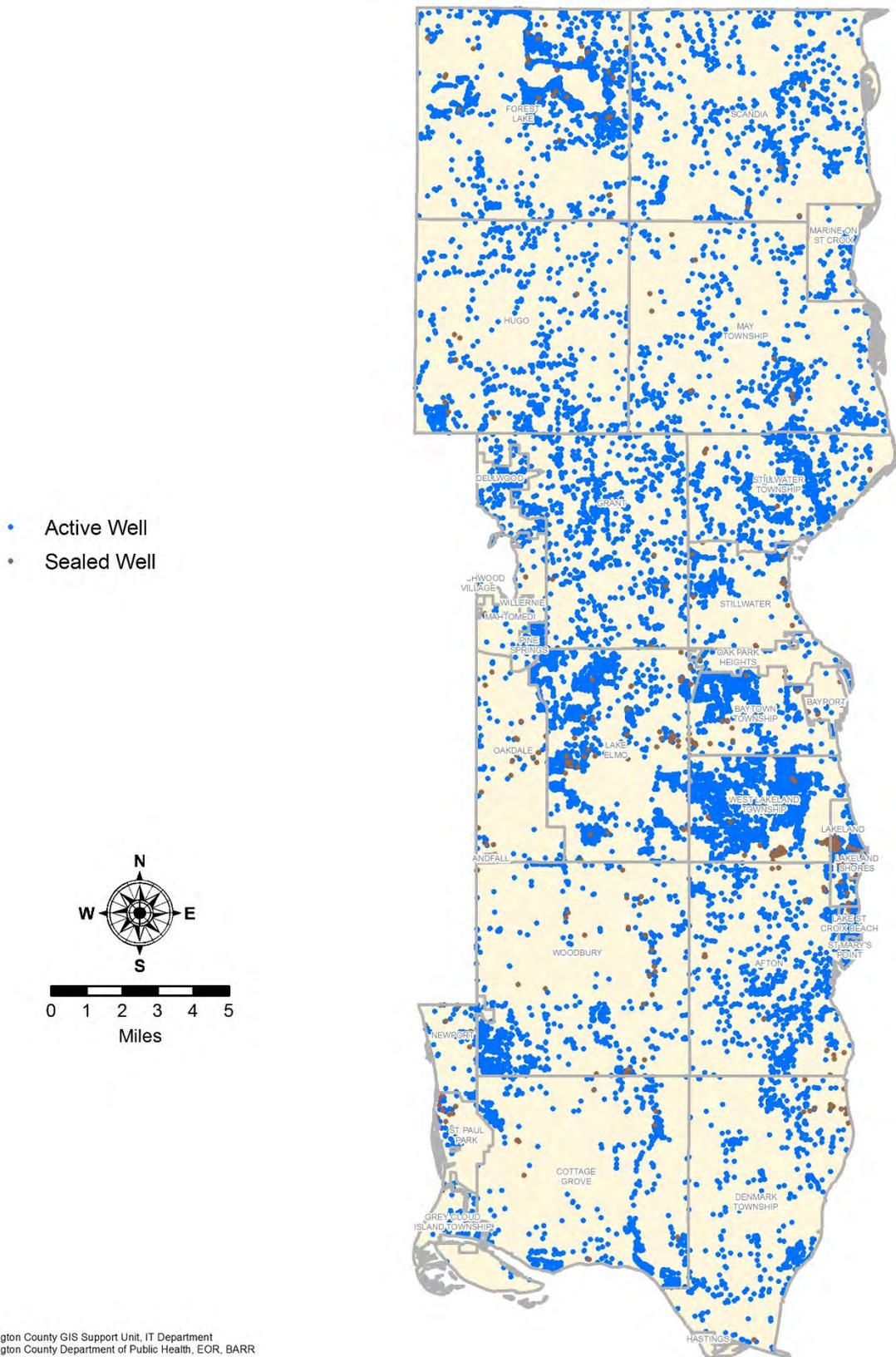


Figure 9: Drinking Water Supply Management Areas



Prepared By: Washington County GIS Support Unit, IT Department
Data Source: Washington County Department of Public Health, EOR, BARR

Figure 10: Private Well Locations



Prepared By: Washington County GIS Support Unit, IT Department
Data Source: Washington County Department of Public Health, EOR, BARR

Groundwater Geology

The type and density of land use and the geologic conditions of an area determine the likelihood of the groundwater quality and quantity to be affected by human actions. In 2016, an updated Geologic Atlas Part A was completed for the county by the Minnesota Geological Survey. This data analysis and resulting maps and shapefiles provide valuable geologic information about the county.

The surficial geology of the county is characterized by a thin layer of glacial drift material over extensive bedrock formations. Most of the county has less than 150 feet of drift material, and approximately one-quarter of the county area has less than 50 feet of drift material. The Anoka Sand Plains in the northwest and the karst geology in the south are especially vulnerable to contamination.

Four bedrock aquifer hydrostratigraphic units are found beneath the county. The units vary in thickness, porosity, permeability, and water quality. The principal bedrock groundwater sources used by communities, well owners, and industries are the Prairie du Chien limestone, which is composed of the Shakopee and Oneota formations, and the Jordan sandstone aquifers. Other bedrock aquifers include the St. Peter sandstone, the Tunnel City group and Wonewoc sandstone, and the Mt. Simon-Hinckley sandstone formations. Three bedrock hydrostratigraphic units function as major aquitards.

Figure 11 shows a geologic cross section of the county at three different points. Figure 12 indicates bedrock geology.

Figure 11: Geologic cross sections of Washington County

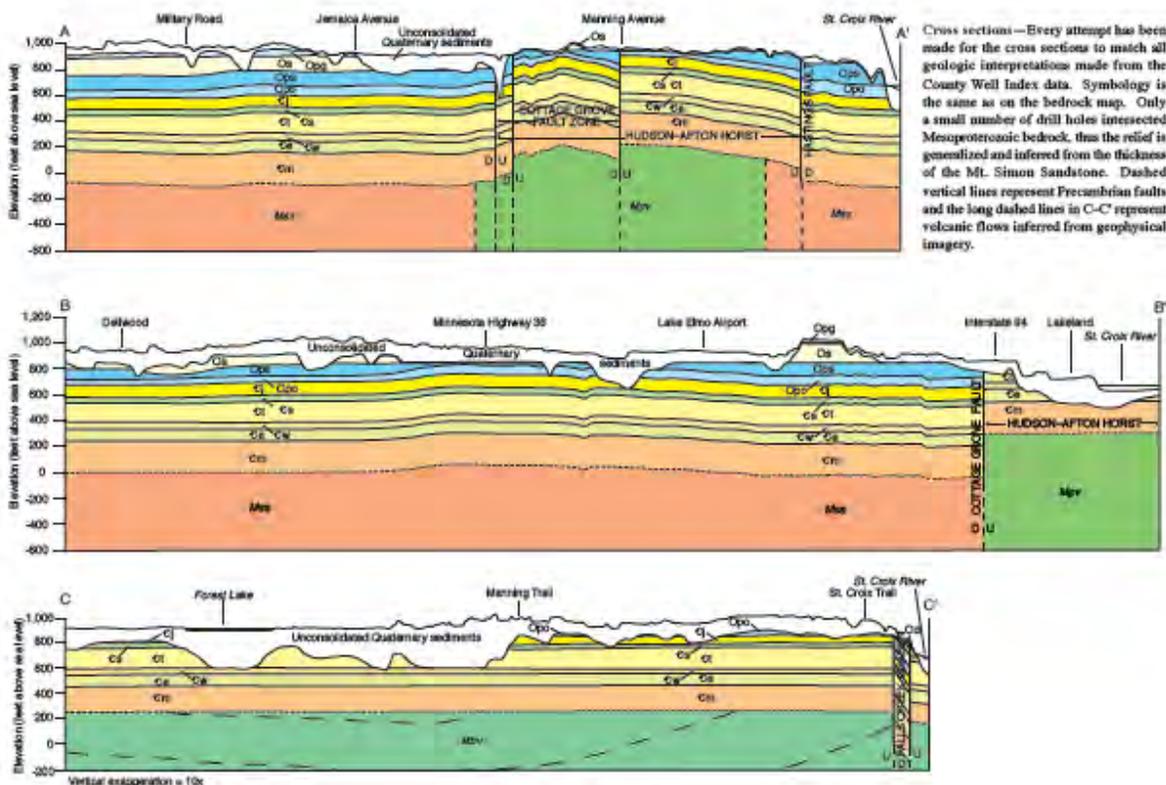
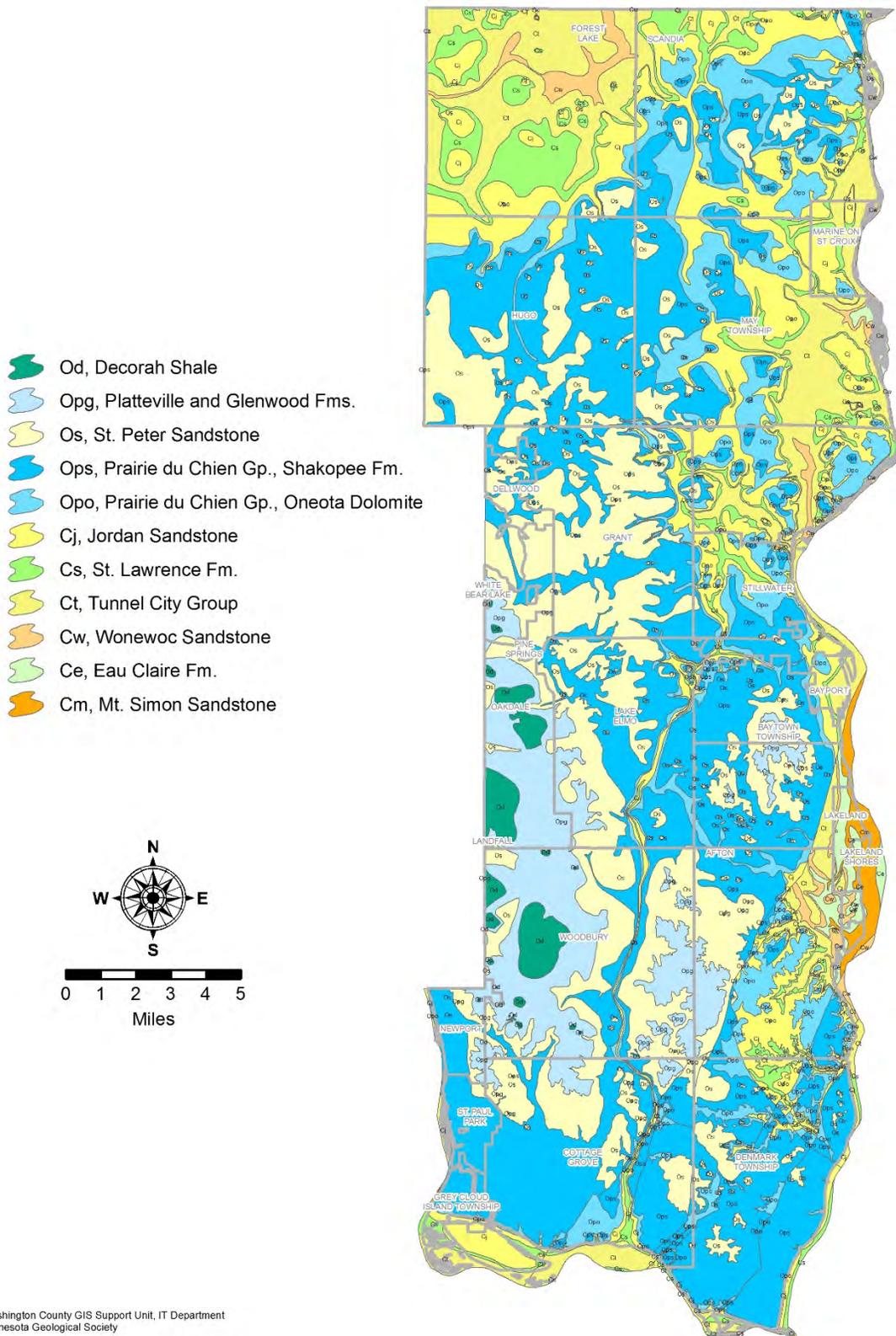


Figure 12: Bedrock geology in Washington County



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Minnesota Geological Society

Figure courtesy of Minnesota Geological Survey, Washington County Geologic Atlas, Bedrock Geology, Plate 2.

Groundwater Quantity

Historically, the region's aquifers have had abundant water to serve the population. However, the amount of water available in the future may be limited before aquifers are completely depleted. The three main factors affecting groundwater abundance are:

- The volume of replenishment to or recharge of aquifers from rainfall and snow melt
- The volume of groundwater pumped out of aquifers
- The volume of groundwater naturally discharged to lakes, wetlands, and streams

Impervious surfaces associated with land development will impair the natural ability of precipitation to infiltrate into aquifers, thereby reducing recharge water and stream base flow. The volume of groundwater pumped out of aquifers to meet the household, commercial, and industrial needs of a growing population depletes the resource. Groundwater quantity in Washington County is also impacted by contamination (discussed at length in the following section). Given these concerns, it is important for the county and partners to use water in an efficient manner.

Long term projection in water demand for the county shows that at current usage and per capita rates, some areas within the county will see drawdown of the aquifer. In addition, there are a number of water features that are either groundwater dependent or otherwise linked to groundwater. Examples include Valley Creek in Woodbury and Afton, and White Bear Lake, which is along the western border of the county, that could be impacted by groundwater use. White Bear Lake has been the subject of litigation with regards to groundwater withdrawals and their impacts on the lake. The status of that lawsuit and its impact on Washington County communities, particularly those within close proximity to the lake, continues to evolve. In 2017, a Ramsey County judge ordered review of groundwater withdrawal permits within 5 miles in the lake, and ordered the DNR to direct affected communities to explore surface water sources as an alternate water supply. The county continues to monitor this lawsuit and the potential impacts to communities and proposed development. According to Minnesota DNR appropriations data, there were 322 active permits for groundwater withdrawal in 2015, reporting 11.1 billion gallons of groundwater used. The largest permits issued in the county are for pollution containment (see existing groundwater contamination for more information), followed by municipal wells. Looking at just public water suppliers, overall water use was down 376 million gallons, comparing average water use from 2004–2009 and 2010–2015. It's important to acknowledge that the precipitation patterns in a given year can also impact the amount of water used. 2014-2016, for example, have been much wetter. The average over four year periods of millions of gallons drawn by public water supplier is shown in Figure 13. The yellow line represents the average annual gallons drawn in 2015 for all of the thirteen communities. The larger the community, the more water used.

Figure 13: Average Gallons Drawn/Year by Public Water Supplier (1,000 gallons)

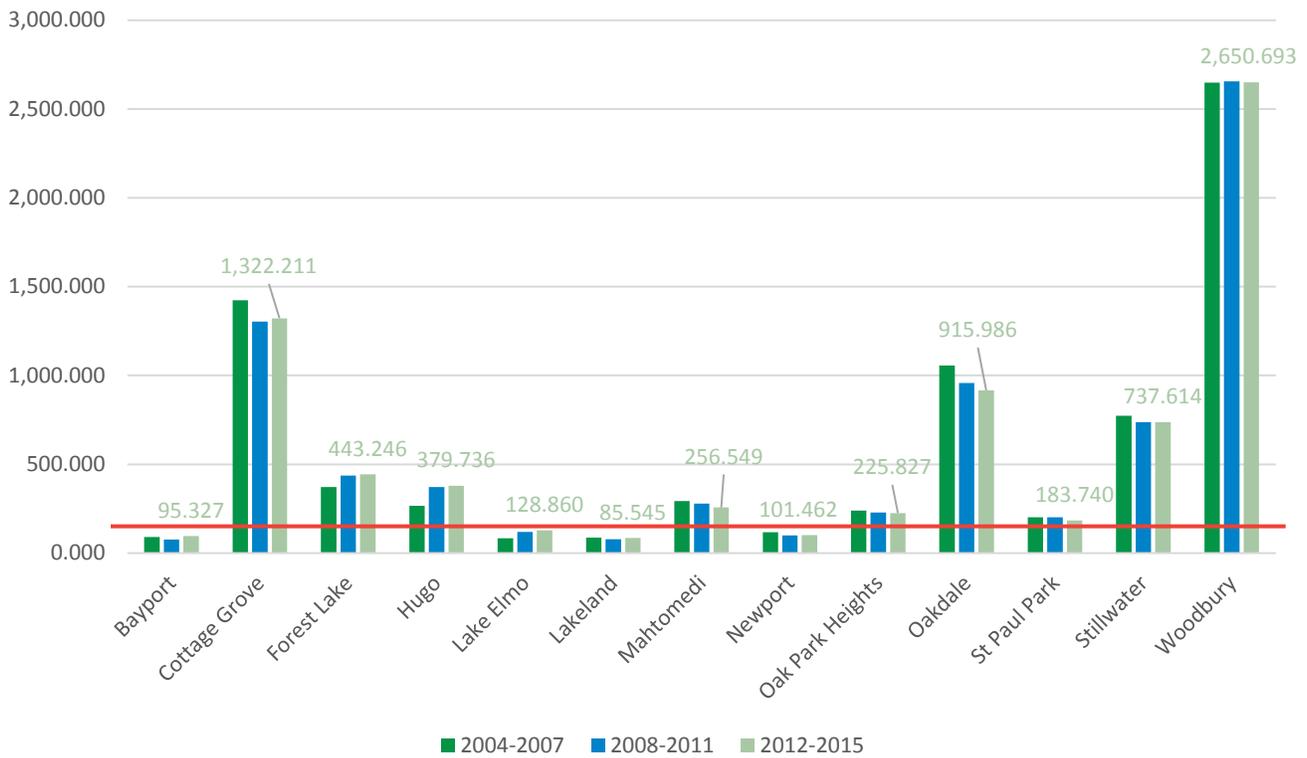


Figure 14 shows overall use for each city from 2009–2015. This number ranges from city to city, and can be impacted by cities who have a large industrial or commercial facility that utilizes a significant amount of water.

Figure 14: Public Water Supplier Draw (gallons per capita per day)

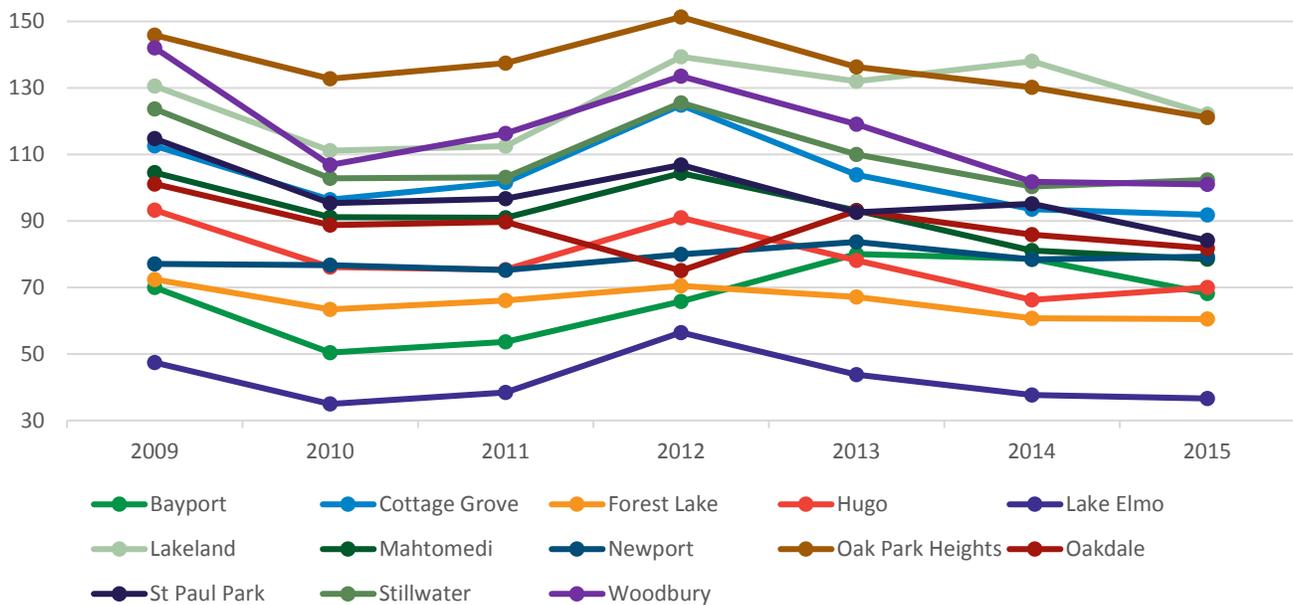
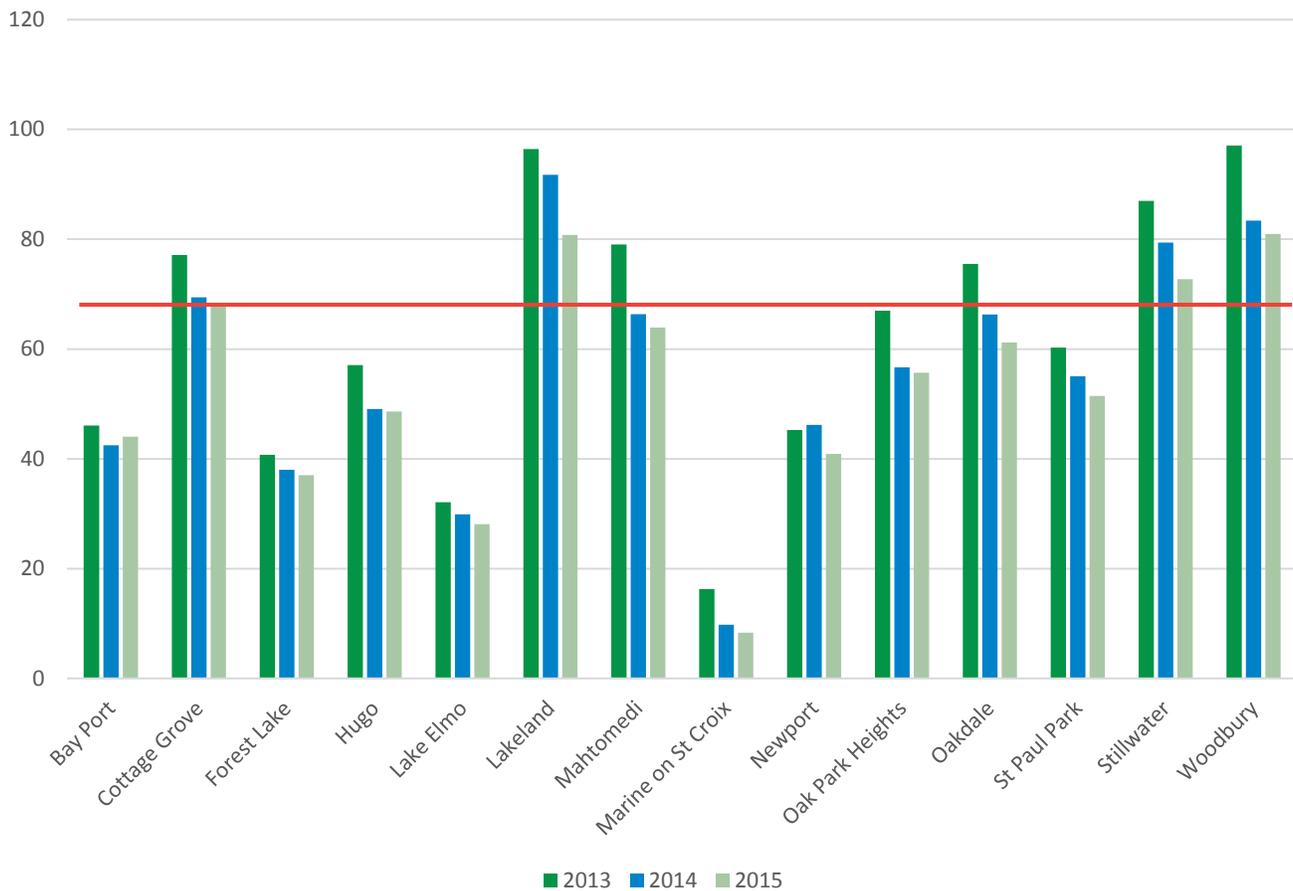


Figure 15 shows residential per capita use among public water suppliers from 2009–2015. The Minnesota DNR recommends 75 gallons per day for residential use, as set in the Groundwater Management Area plan. In general, newer cities that have larger home lots and homes with irrigation systems are more likely to exceed this recommended per capita usage.

Figure 15: Residential Gallons per Day per Capita



Many communities within the county are taking active steps to reduce per capita water usage. They are collaborating with each other and with regional and state partners to address regional groundwater issues. This includes studying opportunities for water efficiency and alternative water supplies; promoting water efficiency and conservation efforts through education, rebate programs, and other means; and implementing water reuse projects. The county promotes and supports water efficiency and water conservation efforts through Groundwater Plan implementation.

Multiple communities share the region’s aquifers. It will take a coordinated effort to develop sustainable groundwater management in order to balance the recharges to the resource with discharges from the resource.

Groundwater Quality

Due to the geologic conditions of the county, most of the county’s groundwater reserves are highly sensitive to contamination. If not protected, they could become unusable as a source of potable water.

The fundamental factor to contaminant movement in groundwater is the hydrogeology of an area. Shallow bedrock, high water tables, and rapid infiltration rates all contribute to groundwater sensitivity and are all commonly found in the county.

The 1990 *Washington County Geologic Atlas* identifies approximately 97 percent of the water-table system and 82 percent of the Prairie du Chien-Jordan aquifer as having a moderately-high to very-high sensitivity to contamination. The term “sensitivity” is commonly used to describe the general potential for an aquifer to become contaminated. The Minnesota Geological Survey measures relative sensitivity as the “time required for a contaminant to move vertically from the land surface to an aquifer.” Shorter travel time means greater sensitivity.

Figure 16 shows the sensitivity of the water table aquifer to contamination. Table 1 defines the time it would take for a contaminant to travel from the surface to the water table aquifer.

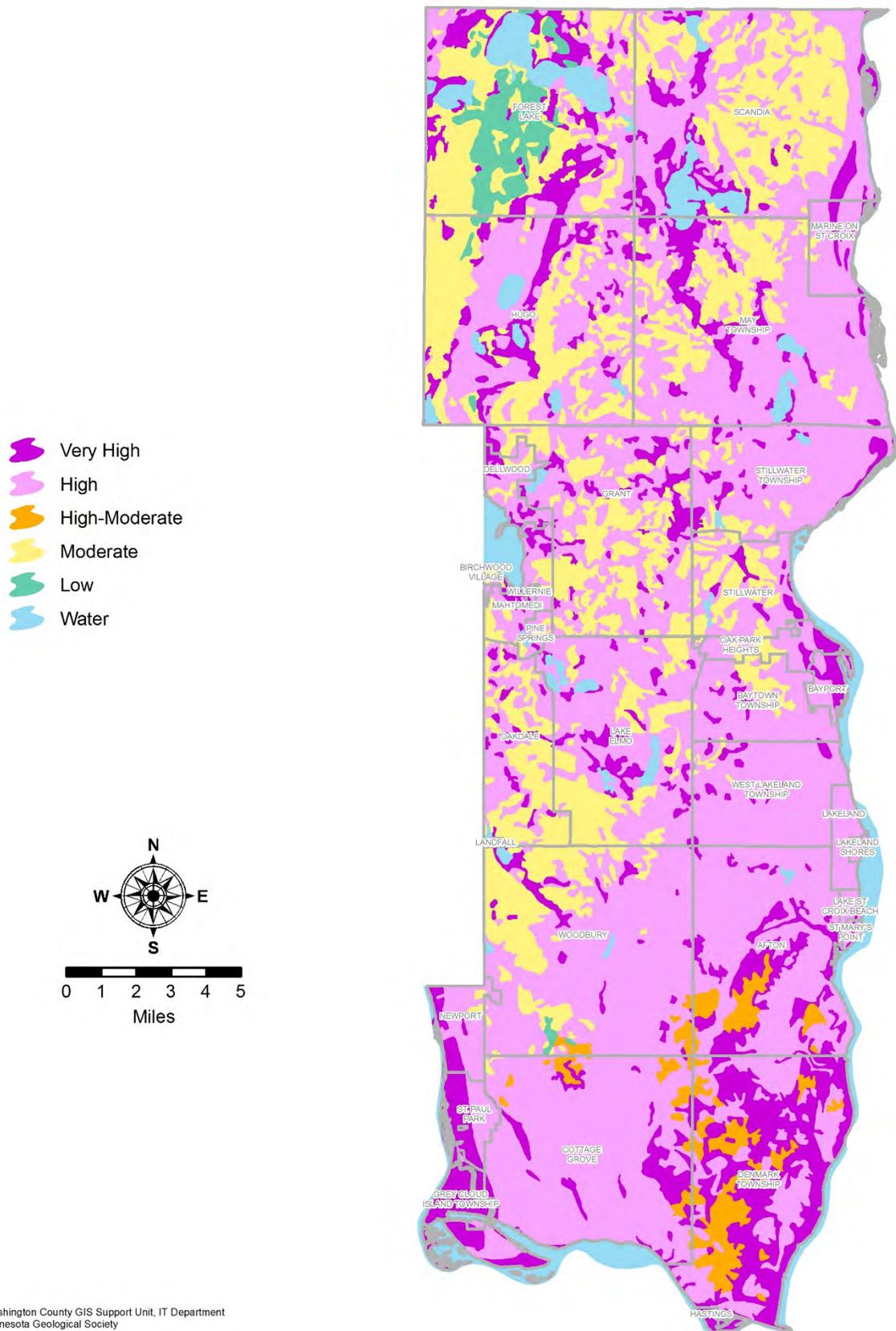
Table 1: Contaminant Travel Time

Rating	Time to Reach Groundwater
Very – High	Hours to Months
High	Weeks to Years
High-Moderate	Years to One Decade
Moderate	Years to Decades
Low-Moderate	Not for Decades
Low	Decades to Centuries
Very Low	Centuries

An updated sensitivity analysis, known as Part B of the Geologic Atlas, is currently in progress at the Minnesota DNR.

While groundwater is of high quality throughout the northern half of the county, past land use practices have contaminated groundwater that is used for drinking or other uses. In these areas, there are added financial and social costs to manage the affected water supply. Sources of groundwater contamination include residential, commercial, and industrial waste disposal; landfills; leaking petroleum tanks; non-functioning septic systems; and fertilizer/pesticide inputs.

Figure 16: Water Table Pollution Sensitivity



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Minnesota Geological Society

Washington County has contaminants above the established health risk limits in a number of aquifers. The groundwater contamination is generally of two types:

- Contamination resulting from volatile organic or inorganic chemicals leaching from past legal and illegal waste disposal practices and leaking underground storage tanks.
- Parts of the county where nitrates have been found at levels considered too high for certain sectors of the population due to land use practices and sensitive geologic conditions.

The following sections will describe several groundwater quality issues within Washington County.

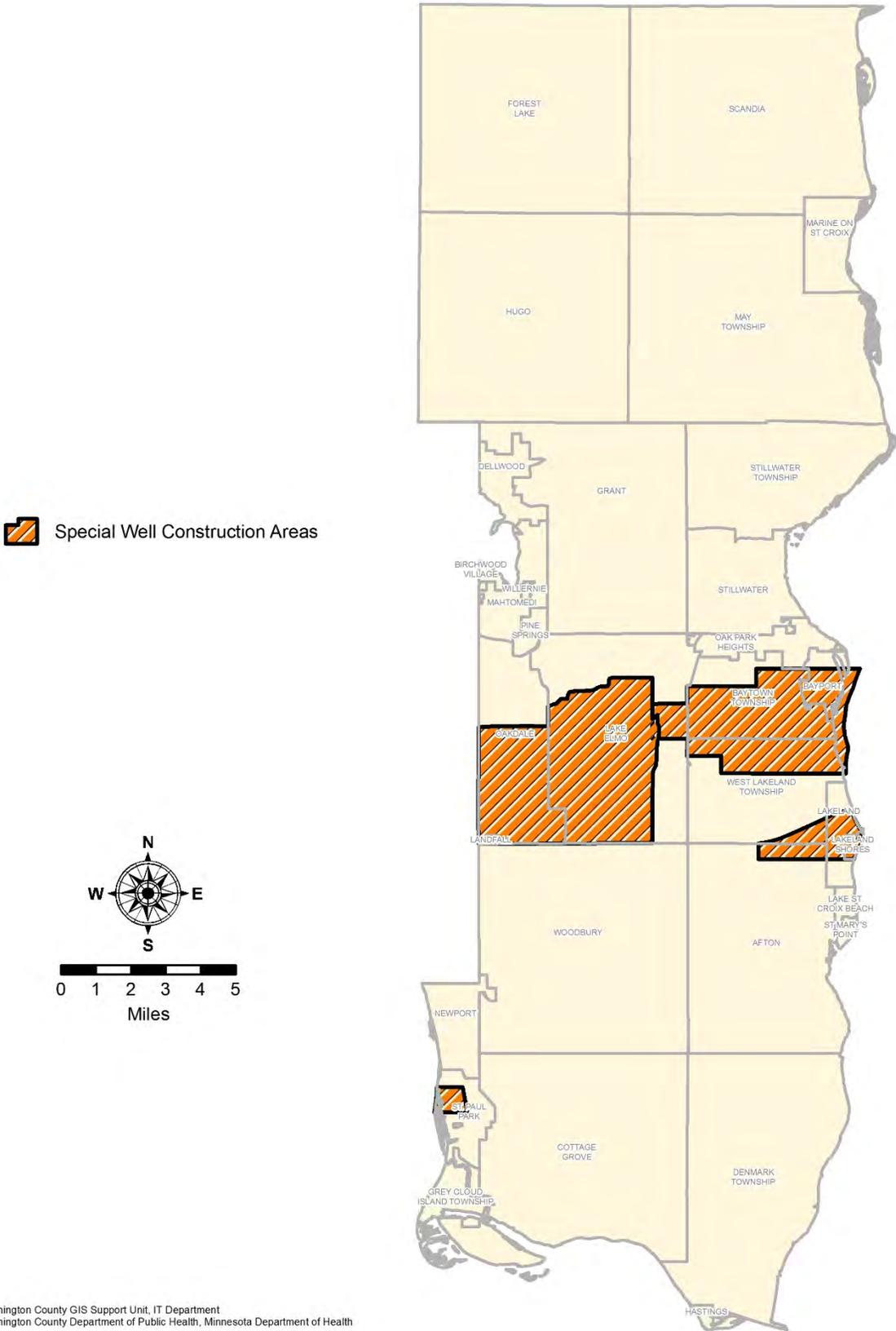
Special Well and Boring Construction Areas

The MDH declares a Special Well and Boring Construction Area (SWBCA), sometimes called a well advisory, for areas where contaminants are found at a level that poses public health risks. The purpose of a SWBCA is to inform the public of potential health risks in areas of groundwater contamination, provide for the construction of safe water supplies, and prevent the spread of contamination due to the improper drilling of wells or borings. The SWBCA designation provides for controls on the drilling or alteration of public and private water supply wells, and monitoring of wells in an area where groundwater contamination has, or may, result in risks to the public health.

Washington County has four SWBCAs (see Figure 17). A brief description is provided below, and more information on the SWBCAs is available in the county Groundwater Plan, as well as on the MDH website.

- **Lake Elmo/Oakdale:** The Lake Elmo/Oakdale SWBCA was established in 1993 due to Volatile Organic Compound (VOC) at the Washington County Landfill near Lake Jane in Lake Elmo. Perfluoroalkyl substances (PFAS) contamination was also discovered at the landfill site and downstream wells. PFAS is described further below. Municipal water supply and private wells are impacted.
- **Lakeland/Lakeland Shores:** On December 16, 1987, the MDH issued a SWBCA for portions of Lakeland and Lakeland Shores due to VOCs. Many residents with affected private wells have been connected to the Lakeland municipal water system.
- **Baytown/West Lakeland Townships:** The Baytown SWBCA is due to Trichloroethylene, also known as trichloroethene or TCE, and impacts hundreds of private wells and one municipal supply. Several hundred private well owners are on treatment systems provided by the state.
- **St. Paul Park/Newport:** Designated in 1997, this VOC plume is related to activities from several industrial sites including the Ashland Refinery. There are no private well impacts by this SWBCA, as it is in a fairly developed area.

Figure 17: Special Well and Boring Construction Areas in Washington County



Prepared By: Washington County GIS Support Unit, IT Department
Data Source: Washington County Department of Public Health, Minnesota Department of Health

Perfluoroalkyl Substances

In addition to the SWBCAs within the county, there is widespread contamination in the southern half of the county from perfluoroalkyl substances (PFAS), otherwise known as perfluorochemicals or PFCs. Figure 18 shows the extent of the PFAS plume, as of September 2017. PFAS contamination originates primarily from three sources in the county: the Lake Jane Landfill in Lake Elmo, 3M Oakdale disposal site, and 3M Woodbury disposal site. Remediation efforts are underway by 3M, and are led by the Minnesota Pollution Control Agency (MPCA), who also work very closely with the MDH regarding testing of private and public wells. The 3M remediation site in Woodbury maintains the single largest withdrawal permit in the county, where 1.25 billion gallons of water is pumped annually to a treatment plant, where it is used and discharged into the Mississippi River.

After PFAS contamination was initially discovered, a number of private wells were issued well advisories, and a treatment plan was constructed to treat the City of Oakdale's water supply. In August 2016, the Federal Environmental Protection Agency (EPA) issued new health advice which triggered additional testing of private and public wells. In the spring of 2017, MDH updated their own Health Based Values (HBVs) for PFAS compounds. The new HBVs are significantly lower than previous levels, in order to be protective of the most vulnerable populations. As a result of the new EPA and MDH health advice, as of September 2017, a total of 659 well advisories have been issued for PFAS. 450 of those advisories were issued since August 2016, after the new EPA and MDH advice. These private wells are located in the communities of Lake Elmo, West Lakeland Township, Cottage Grove, St Paul Park, Woodbury, Afton, Denmark Township, Grey Cloud Island Township, and Maplewood. Of the well advisories issued, over 200 homes in Lake Elmo have been connected to city water, with the remaining well owners issued bottled water and/or a carbon filter to remove the chemicals. All of these wells are undergoing treatment to make water supplies safe for residents. Figure 19 shows well advisories for private wells, related to PFAS contamination.

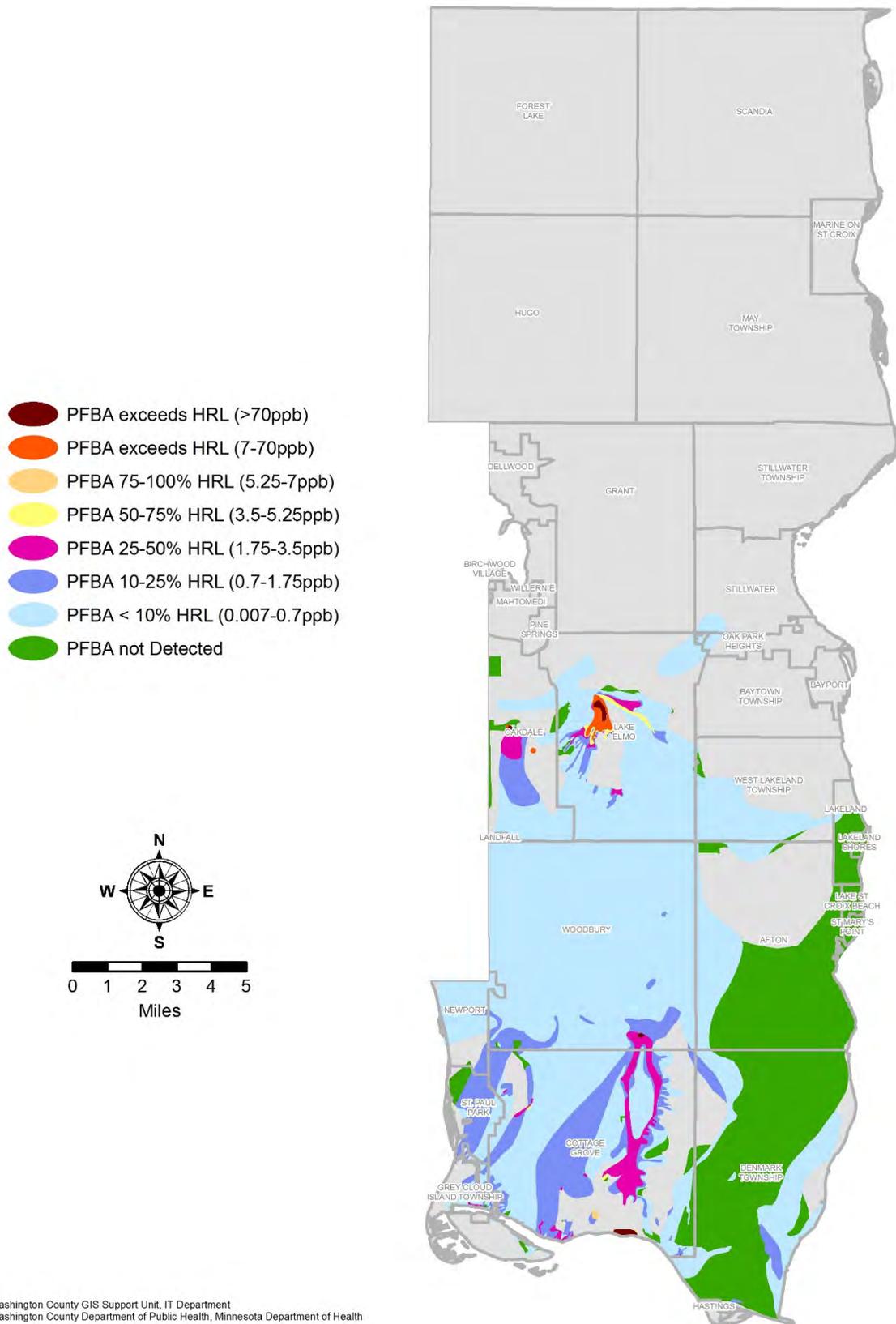
In addition to private wells, the updated MDH advice for PFAS has triggered additional actions for some public water suppliers within the county. There are currently four community public water supplies that have individual wells above the new MDH health-based guidance: Oakdale, Woodbury, Cottage Grove, and St. Paul Park. All of these cities put in place interim measures to manage their public water supply systems to provide drinking water at or below the new MDH health-based guidance. These measures included shutting off the most highly contaminated wells and relying on wells that are clean or have lower levels of PFCs. Cottage Grove wells were impacted the most, and in the summer of 2017, the city instituted a temporary watering ban in order to construct treatment systems that would bring their supply system back under the MDH advice. MDH continues to work with the MPCA to sample both public and private wells, and provides regular updates to county staff on testing results, well advisories, and other pertinent information.

The State of Minnesota sued 3M for natural resources damages in 2010. The case was settled in Hennepin County court on February 20, 2018. The settlement amount of \$850 million will be used to enhance the quality, quantity and sustainability of the drinking water in the east metro, in order to ensure clean drinking water supply to residents and business in the east metro to meet current and future needs. This may include alternative drinking water supplies (including new or relocated wells), water treatment (both public and private), water conservation, open space acquisition, and groundwater recharge. A second priority for the settlement money is "projects that restore and enhance aquatic resources, wildlife, habitat, fishing, resource improvement, and recreational opportunities in the east metro." The county will continue to monitor and participate in discussions related to use of these funds in our communities.

Nitrates

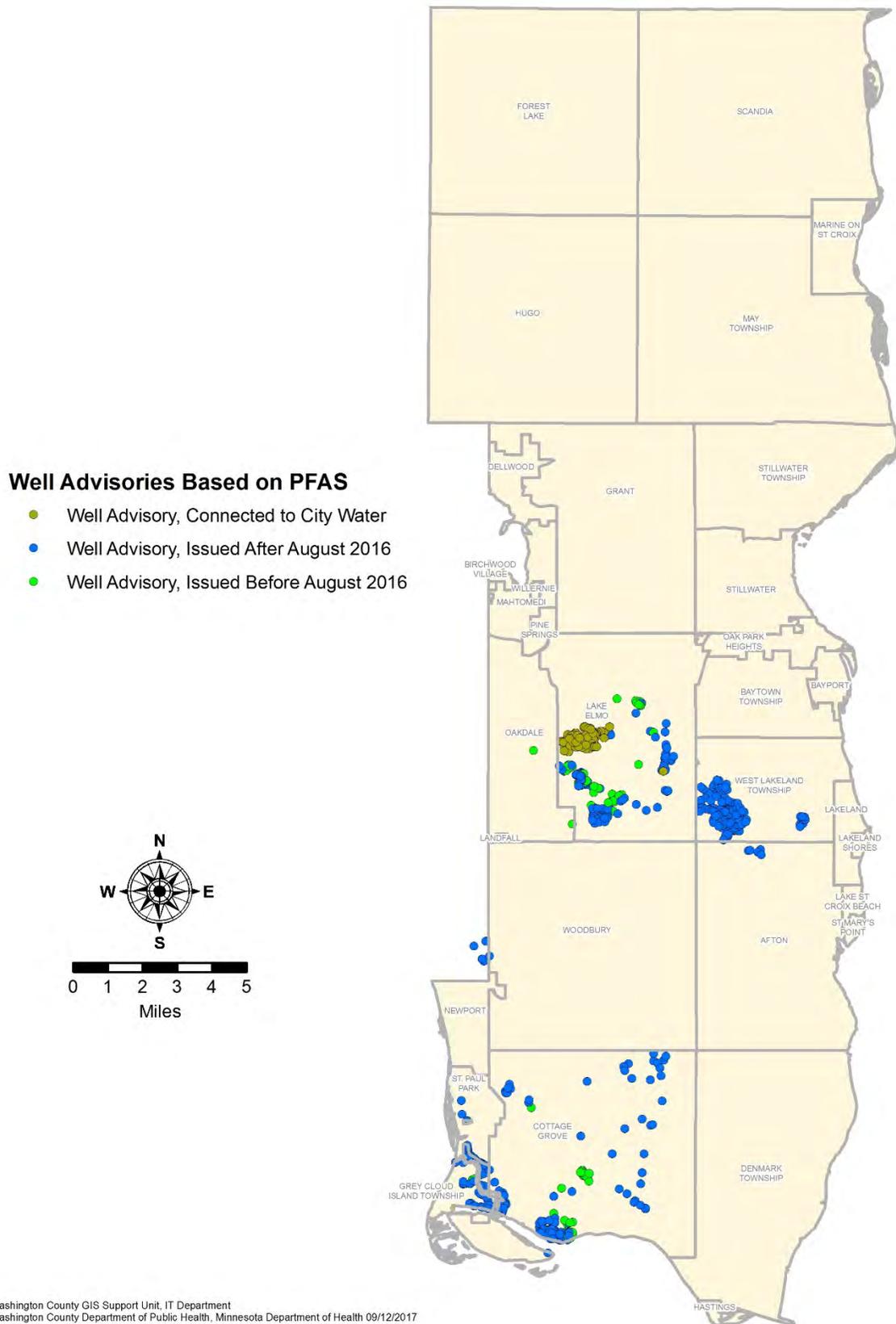
In addition to contamination from VOCs and PFAS, some areas in the county have high concentrations of nitrates in groundwater. Nitrates are a public health concern for babies under the age of 6 months and those with compromised immune systems. Nitrate pollution is primarily a result of current or past agricultural practices (from application of nitrogen fertilizers), animal operations, or non-compliant septic systems. Both Denmark Township and Cottage Grove have high concentrations of nitrates in private wells – where over 10 percent of private wells exceed the current health risk level of 10mg/L. The county continues to work with the Washington Conservation District and the Minnesota Department of Agriculture to promote best practices that will reduce future nitrate pollution, as well as educating private well owners about the importance of testing for nitrates.

Figure 18: Extent of PFAS Plume in Washington County



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Washington County Department of Public Health, Minnesota Department of Health

Figure 19: Well Advisories Related to PFAS Contamination in Washington County



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Washington County Department of Public Health, Minnesota Department of Health 09/12/2017

Wastewater

Proper treatment and management of wastewater reduces health risks to humans and animals and reduces the threat of contamination to surface and groundwater. In urban areas of the Twin Cities, including Washington County, homes and buildings are connected to the Metropolitan Urban Service Area (MUSA) sewer system and wastewater treatment plants (WWTP). Figure 20 shows the projected areas for the MUSA within Washington County, which serves about 80 percent of county residents. Table 2 shows adopted community forecasts for Households and Employment. In lower density, rural settings, where the MUSA does not extend, homes and businesses must rely on subsurface sewage treatment systems (SSTS), commonly called septic systems, to manage and treat wastewater. In Washington County there are approximately 17,000 SSTS, spread out over a large geographic area. A properly designed, installed, and functioning SSTS effectively treats wastewater and decreases introduction of bacteria, viruses, and other disease causing organisms into groundwater. As an added benefit SSTS also take groundwater pumped for human uses and recharge it directly to the local water table.



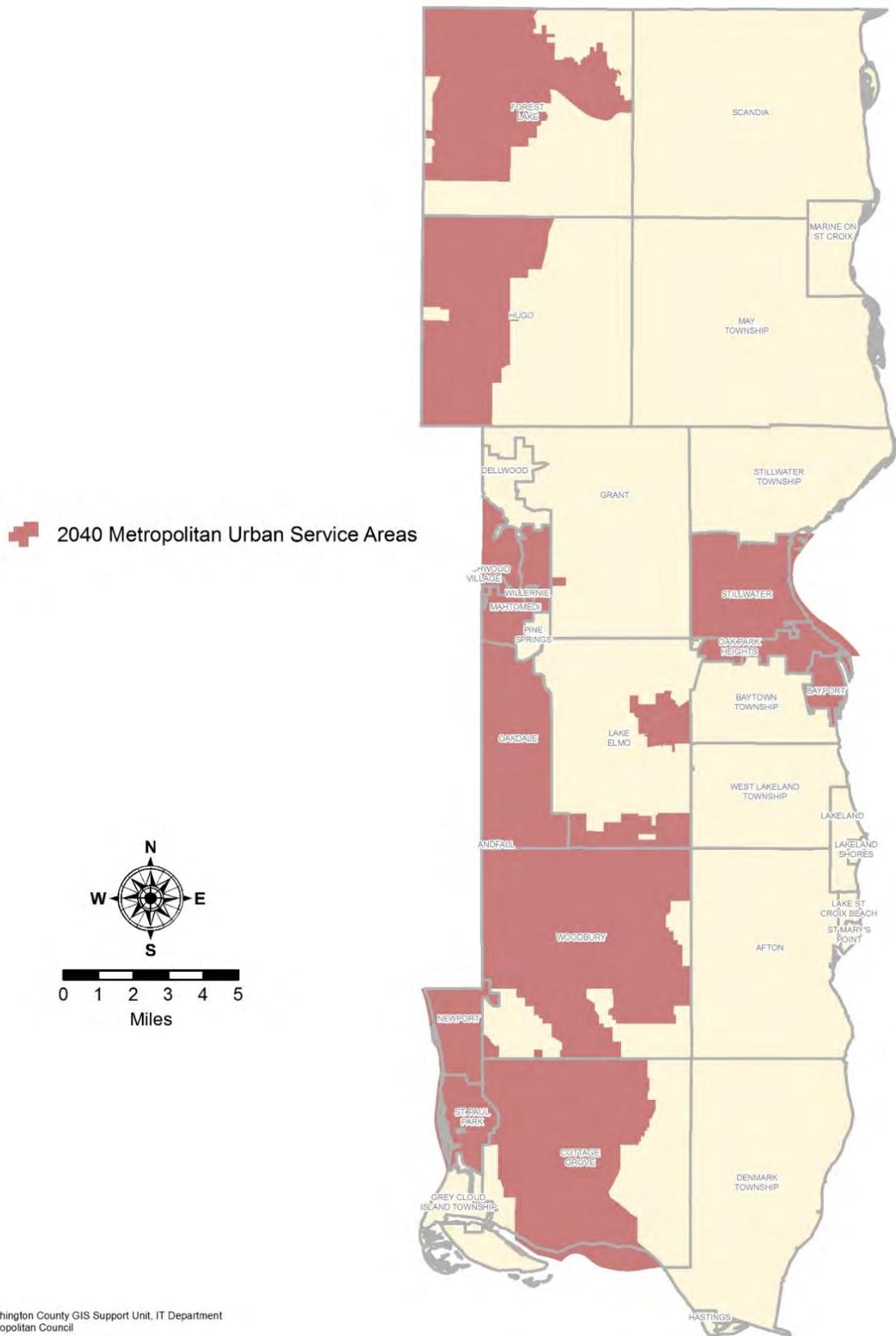
While an SSTS can be an efficient means of treating wastewater in rural areas, a failing or poorly maintained SSTS has the potential to contaminate groundwater and surface water with a variety of contaminants, including nitrates, coliform bacteria (E Coli), and phosphorus. A failing SSTS system often does not have the required vertical separation distance from the point it is discharging wastewater and the water table, bedrock, or another limiting feature. These systems do not adequately treat wastewater and must be upgraded or replaced.

Subsurface sewage treatment systems serve approximately 48,000 county residents, and treat an average of 3.6 million gallons of wastewater a day. This is equivalent to the amount of wastewater created by the communities of Stillwater, Oak Park Heights, and Bayport, which are served by a central wastewater treatment plant where treated water is discharged from one point. In contrast, with decentralized, individual SSTS use there are thousands of discharge points each having the potential to contribute pollution and groundwater contamination. Just as a WWTP can and must be operated and maintained to prevent surface water contamination, the thousands of SSTS in the county must be properly maintained and operated to prevent surface and groundwater contamination.

To ensure proper installation, operation, and maintenance of subsurface sewage treatment systems Washington County administers Ordinance #XXX, last revised in June 2018. The SSTS Ordinance is codified in the county's Development Code as Chapter 4. The ordinance has been reviewed by MPCA and is compliant with State Rules 7080-7083. This ordinance provides the basis for the county's SSTS program including requirements for: compliance inspections of existing systems, permitting and inspection of new systems, site review, maintenance requirements, and operating permits for advanced treatment systems (Type IV). The county is responsible for implementing the ordinance in all but one city. In addition to compliance with state rules, the county's ordinance and SSTS program has the following components which are stricter than state rules:

- At least every three years, SSTS owners must have the tank maintained, which includes inspection for leaks and pumping.
- Prior to sale of a property the septic system must be inspected for compliance with county requirements to treat wastewater and protect groundwater, public health, and the environment.
- A system that fails compliance inspection is required to be replaced or brought into compliance within six months.

Figure 20: Projected Areas for the Metropolitan Urban Service Area in Washington County



Prepared By: Washington County GIS Support Unit, IT Department
Data Source: Metropolitan Council

- When a system is found to be an imminent public health threat, the health threat must be abated within 10 days and the system shall be replaced or brought into compliance within 90 days.
- Septage pumped from SSTs is disposed of in a municipal WWTP, or by land spreading under an approved permit, which is regulated under the ordinance.
- All SSTs regulated under the county ordinance include a system management plan.

Table 2: Washington County Population, Household and Employment Forecasts

	2010	2020	2030	2040
	238,136	268,410	299,130	330,200
Percent Increase*	--	7%	11%	10%
	87,859	102,280	116,210	130,090
Percent Increase*	--	10%	14%	12%
Employment	87,859	102,280	116,210	130,090
Percent Increase*	--	16%	6%	12%

*Percentages rounded to the nearest whole number.

Source: U.S. Census Data for 1970-2010, Metropolitan Council estimates for 2010, 2015, 2020, 2030 and 2040.

The county uses a central database to track maintenance, permitting, and compliance inspections of SSTs. Figure 21 shows the location of all the SSTs systems in the county. This dataset comes from maintenance records for SSTs, not permitted systems, and is the best data available.

In unsewered areas, the county ensures that 10,000 square feet of suitable soil treatment area exists on each new lot. Beyond that requirement, the county does not regulate land use except in shoreland and floodplain areas of townships (see Land Use chapter). With regards to conditions under which private community treatment systems (package plants) would be allowed, the county does not have land use authority and therefore does not regulate allowable land uses and residential densities. Private community systems may be developed and overseen by the county, provided they meet the conditions of the county’s ordinance for midsize sewage treatment systems (MSTS). Systems larger than 10,000 gallons per day (large sewage treatment systems or “LSTS”) are permitted by the MPCA, and the county does not have any regulatory oversight of those systems. Figure 22 shows the location of MSTS and LSTS systems within the county, regulated by either the county or the MPCA.

In terms of “nonconforming systems or systems with problems,” the county’s Ordinance requires compliance inspections at the time of property transfer. SSTs are inspected by third party licensed inspectors, and compliance reports are then verified by county staff, who ultimately determine the timeframe for upgrading non-compliant systems. Figure 23 shows orders for non-compliance that have been issued from 2012-2017. It is important to note that all of these systems have been ordered replaced, in which case they have already been replaced or are in the process thereof, following timelines in county ordinance. In 2017, the county launched a multi-year effort to conduct a countywide risk assessment for SSTs. This includes both gathering older permit

records from cities who may have permitted SSTS in the past, as well as analyzing available SSTS and groundwater data to determine risk levels throughout the county. The risk assessment will be a tool for the county, cities, and townships to make decisions with regards to SSTS and sewer.

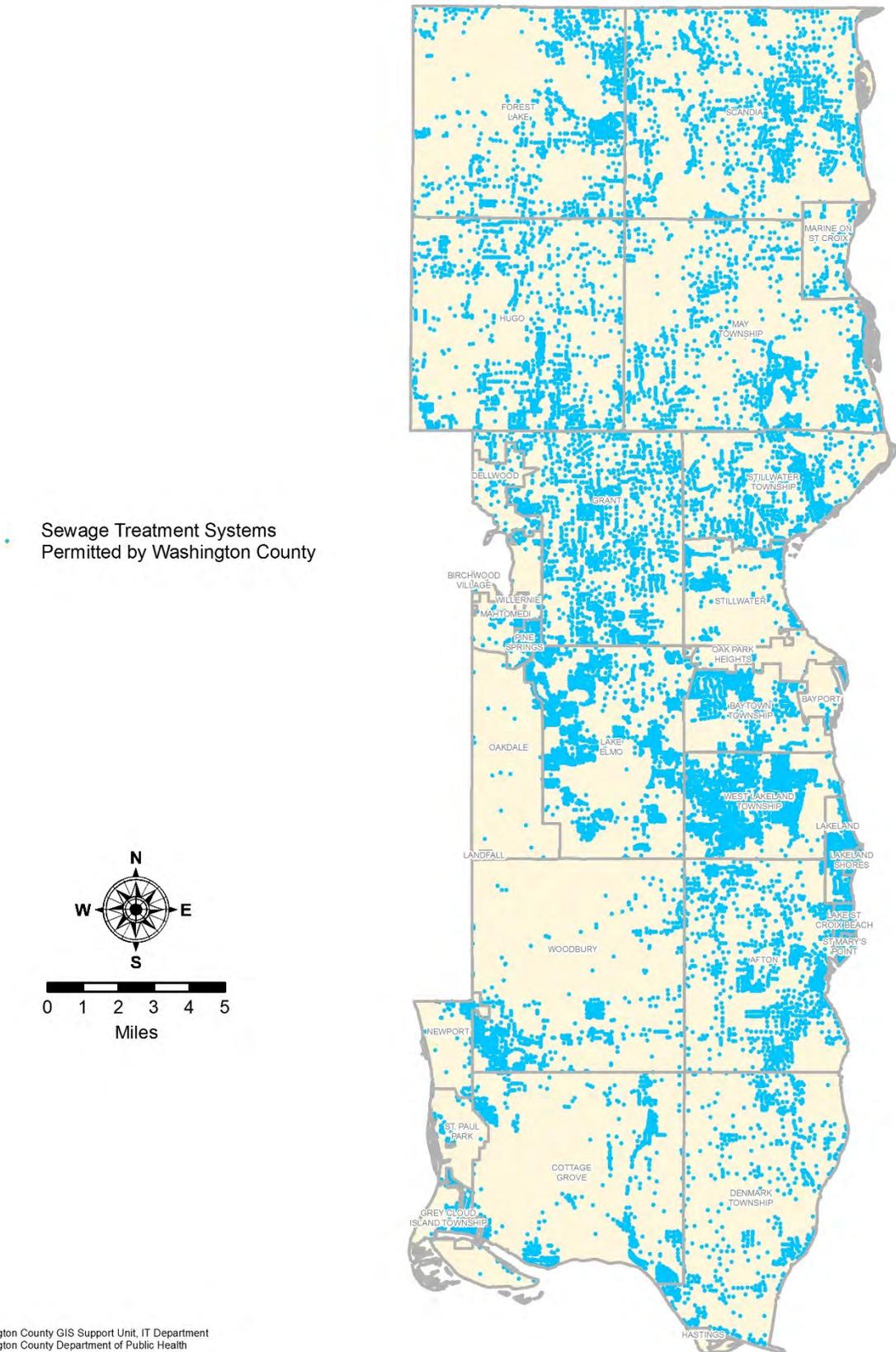
Areas with bedrock near the surface, steep slopes, wet or periodically flooded areas, or soils with slow percolation rate have severe limitations for the installation of subsurface sewage treatment systems. These soils are present throughout the county. Bedrock within three feet of the surface can be encountered along the St. Croix River and in other scattered areas of the county. Soil treatment systems which are placed too close to fractured bedrock do not adequately treat sewage effluent. In these areas, sewage may move through the rock and enter wells without receiving sufficient filtration to remove the chemical and bacteriological contamination.

Wet soils are in abundance throughout the northern half of the county. These soils are periodically flooded or have a high-water table. Ponding after heavy rains may persist for several weeks or longer in the spring. These soils generally have a high seasonal water table. SSTS can be problematic in these areas because the sewage effluent is unable to move into the saturated soil. The sewage will either back-up into the residence or seep to the surface of the ground.

Steep slopes are common in the county, especially in the St. Croix River Valley. Slope is a soil property that affects the difficulty in layout and construction as well as the risk of erosion, lateral seepage, and the down slope flow of effluent. Washington County restricts the types of SSTS on land with slopes exceeding 12 percent.

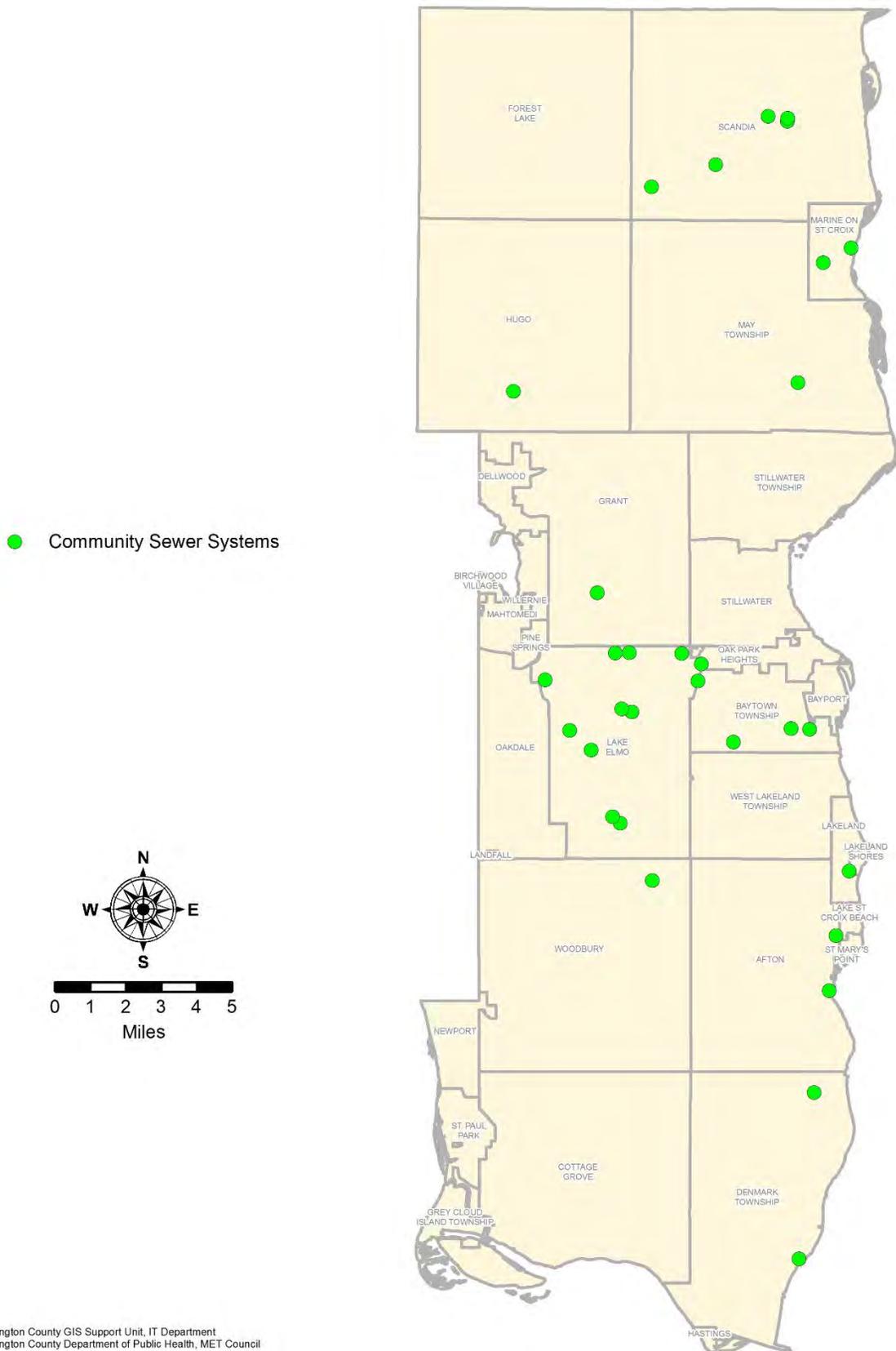
Soils with slow percolation rates are prevalent in the northern half of the county. Slow percolation rates indicate soils that require careful attention to ensure the system is adequately sized to accept the required design flow and not exceed the maximum soil loading rate.

Figure 21: SSTS System Locations in Washington County



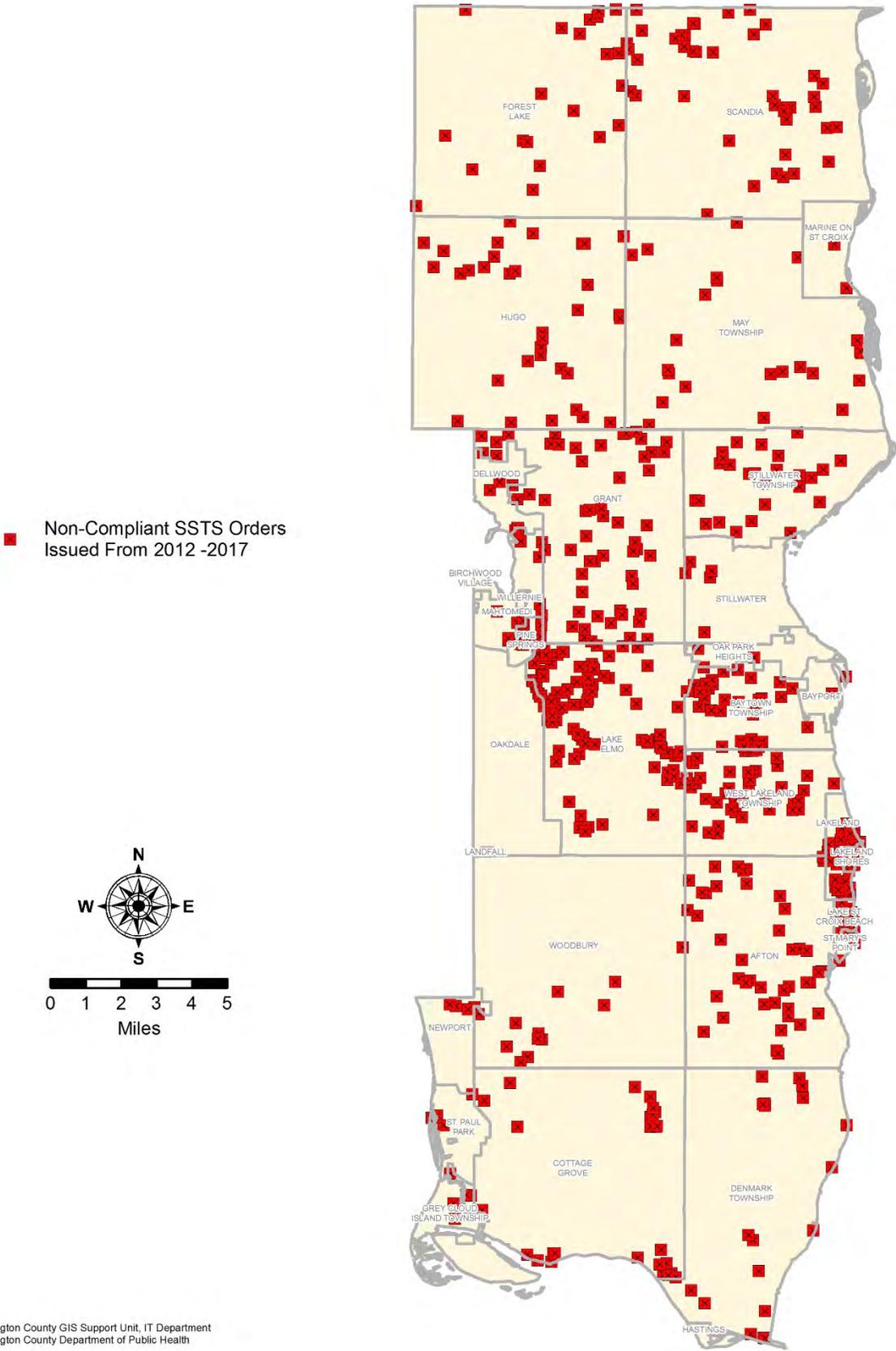
Prepared By: Washington County GIS Support Unit, IT Department
Data Source: Washington County Department of Public Health

Figure 22: Community Sewer Systems in Washington County



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Washington County Department of Public Health, MET Council

Figure 23: Non-compliance SSTS Orders Issued from 2012 - 2017



Prepared By: Washington County GIS Support Unit, IT Department
Data Source: Washington County Department of Public Health

Water Management

Washington County Groundwater Plan

Washington County, through the Department of Public Health and Environment (PHE), implements a state approved Groundwater Plan (Plan). Authorized in Minnesota Statute 103.255, groundwater planning authority was granted to metro counties in 1987. First adopted in 2003, the county board of commissioners approved an updated Plan in September 2014. The updated Plan is organized around various issues related to groundwater quality and quantity, and goes into much greater detail than is provided in this comprehensive plan, both in terms of existing conditions, and implementation strategies. The Groundwater Plan can be found at: <https://www.co.washington.mn.us/DocumentCenter/View/794>.

Watershed Management Organizations

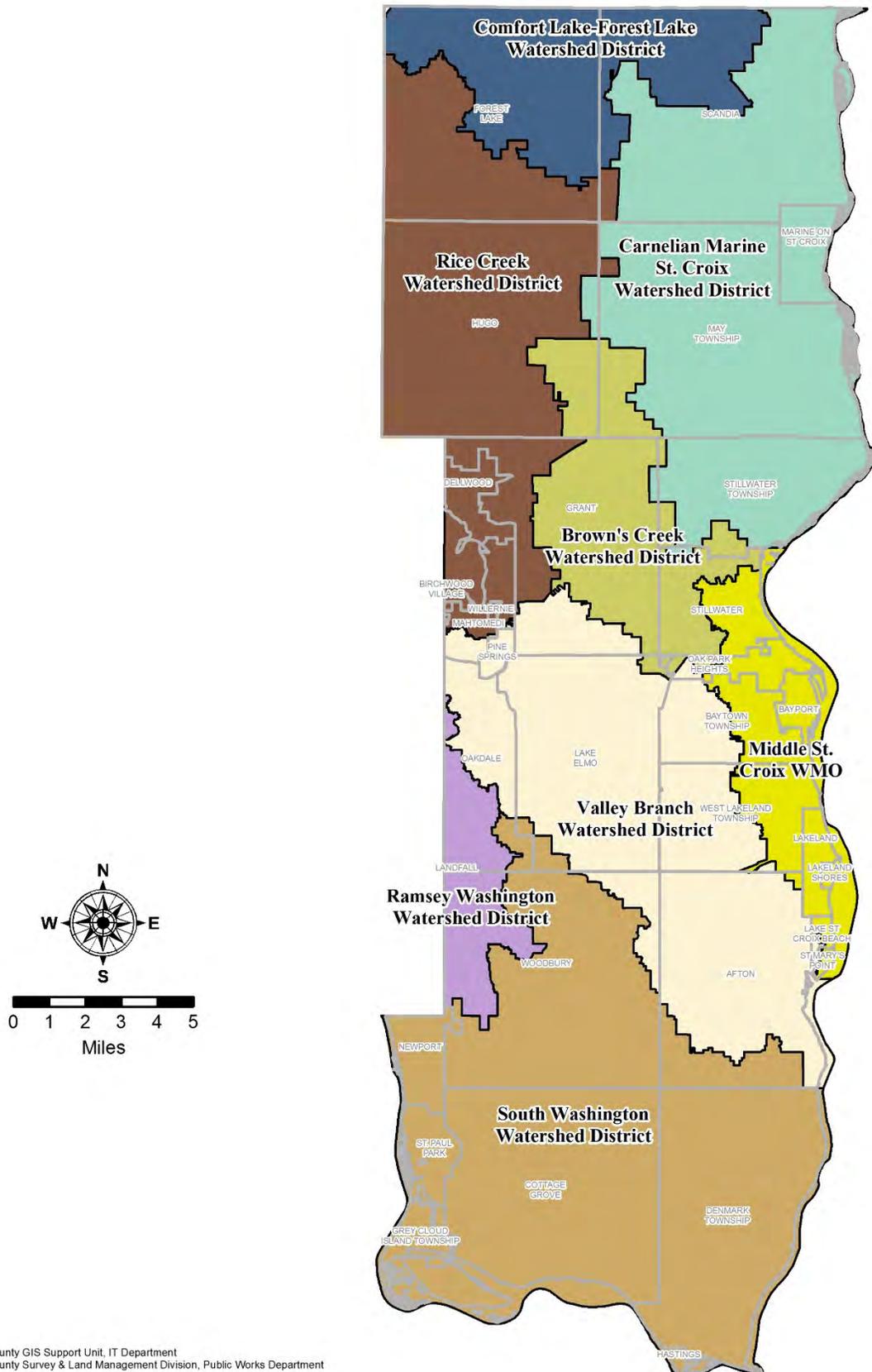
In the Twin Cities Metropolitan Area, the watershed management organizations (WMOs) are responsible for surface water management planning, implementation, and enforcement. Washington County has defined its role in surface water management as one of providing leadership and oversight, including appointing watershed district board members, providing fiscal oversight and accountability, facilitating cross-jurisdictional coordination on common issues, managing special projects, and staffing the Washington County Water Consortium.

The county currently has eight watershed organizations that cover the entire county. Seven are watershed districts (WDs), whose managers are appointed by the county board of commissioners. One is a joint powers watershed management organization (WMO). See Figure 24 for a map of watersheds in the county, and Appendix O for a short description of each. The watersheds provide long-term protection for surface and groundwater resources.

The broad statutory goals and objectives of these organizations are to:

- Preserve and improve the quality and quantity of water and natural resources.
- Educate residents about the value of water resources and their potential impacts on its functions and values.
- Use sound scientific water management approaches, technologies, and methods to develop a uniform, integrated approach to water management within a rapidly changing and urbanizing area.
- Maximize groundwater recharge as a means of maintaining drinking water supplies, preserving base flows in groundwater-dependent natural resources, and limiting discharges of stormwater to downstream receiving waters.
- Maintain, enhance, and restore, where possible, the functions and values of existing areas and wetlands.
- Provide water level and floodplain management.
- Assure that the integrity of the watershed is preserved for future generations.

Figure 24: Watershed Organizations in Washington County



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Washington County Survey & Land Management Division, Public Works Department

Washington Conservation District

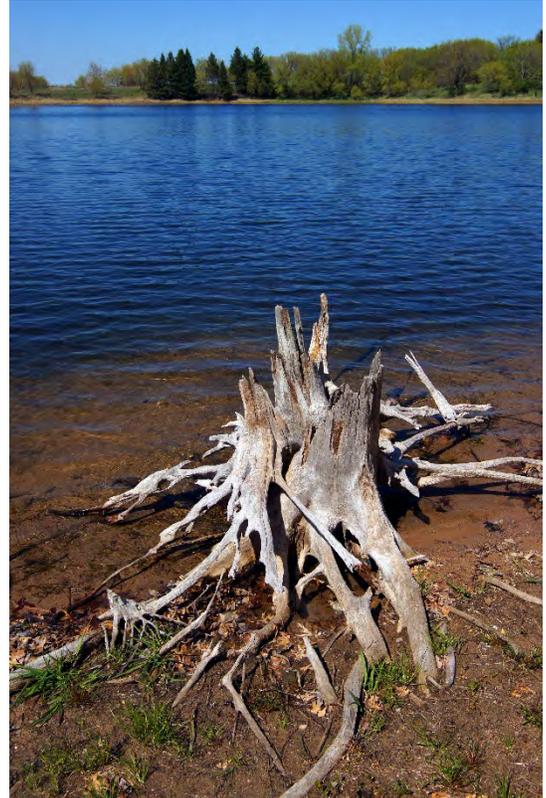


The Washington Conservation District (WCD) is a special purpose local unit of government dedicated to managing soil and water resources in Washington County under the direction of a five-member elected board. The mission of the organization is to enhance, protect, and preserve the natural resources of Washington County through conservation projects, technical guidance, and educational services to citizens and local governments.

The state's soil and water conservation policy (MN State Statute 103C.005) encourages land occupiers to conserve soil, water, and natural resources through partnerships with the state and others, including such things as controlling erosion and reducing damage caused by floods.

The WCD implements the following programs through funding from the state and partnerships with Washington County, watershed management organizations, and other agencies:

- Water monitoring and other resource assessments, including implementing a County Baseline Monitoring Program and supporting multiple total maximum daily load (TMDL) projects.
- Wetland Conservation Act (WCA) technical assistance.
- Education and outreach, including providing staff support for the East Metro Water Resource Education Program.
- Best management practice technical assistance, including administering the State Cost-Share Grant Program and working with watershed organizations to plan, design, and install water quality erosion control and habitat improvement projects in urban and rural portions of the county.



Washington County Water Consortium

The county convened the Washington County Water Consortium to work on surface and ground water issues that cross local governmental boundaries. The consortium, which has been meeting since 2001, was a result of a Water Governance Study completed in 1999. The consortium is an ad hoc organization of representatives from watershed districts, joint powers agreement water management organizations, cities and townships, the Washington Conservation District, county departments, and state and regional natural resource agencies. It serves as a forum to exchange information and to work on projects that increase the efficiency and effectiveness of water management in the county. The Water Consortium has completed projects such as a standardized chart of accounts, guidelines for standardizing watershed district rules, adjustments to watershed district boundaries, a countywide ground water monitoring network, groundwater studies, and a countywide water resource education program.

Groundwater Management Area

Washington County is fully within the North and East Metro Groundwater Management Area (GWMA), designated by the Minnesota DNR. The North and East Metro GWMA includes all of Washington County, all of Ramsey County, and a portion of Anoka and Hennepin Counties. The GWMA Plan will guide the DNR's efforts to manage groundwater appropriations sustainably in this area over the next five years. The Plan establishes sustainability goals to help appropriation permit holders plan for their future water use. Washington County participates on the advisory team for the GWMA.

One Watershed One Plan and Watershed-Based Funding

In 2017, the Lower St. Croix Watershed, which covers approximately two-thirds of the county, began a collaborative planning effort under the Board of Water and Soil Resources (BWSR) One Watershed One Plan initiative. The goal of this planning process is to organize and develop focused implementation plans on watershed boundaries in non-metro areas of the state. For the Lower St. Croix Watershed, which covers both metro and non-metro areas, this effort includes 17 local units of government including counties, soil and water conservation districts, and watersheds. In addition, in 2017 BWSR also announced a pilot program for Watershed-Based funding, which will shift funding for water quality projects away from competitive Clean Water Fund grant funds to an allocation based formula that follows county boundaries in the metro, and One Watershed One Plan boundaries in the non-metro. The county is tracking on both of these funding efforts.

Land and Water Legacy Program

Through its Land and Water Legacy Program, Washington County has continued preserving some of the county's most precious remaining natural resources. The LWLP acquires land and interests in land to improve water quality of rivers, lakes, and streams; protect drinking water sources; purchase parkland; preserve wetlands and woodlands; and help protect land along water bodies from development. More information on this program is available in the Parks, Trails and Open Space chapter.



Goals, Policies, and Strategies

To guide future decision making and county actions, goals, policies and strategies have been developed specific to the water resources element. The following pages outline two goals with corresponding policies and strategies that set the course for the county’s future. Chapter 3, Goals, Polices, and Strategies, also provides the information contained within this section, along with the goals for the other plan elements. Chapter 11, Implementation, provides tools that can be utilized while working to achieve these goals.

Water Resources Goal 1: Manage the quality and quantity of water resources to protect human health and ensure sufficient supplies of clean water to support human uses and natural ecosystems for current and future generations.	
Water Resources Policy	Water Resources Strategy
Lead by example in county operations with regards to water management.	Identify opportunities for water conservation, efficiency and/ or reuse in county facilities, grounds and operations.
	Support development and implementation of a county Energy Plan which includes water efficiency/conservation.
	Continue to review alternatives to using and storing salt for de-icing operations that are protective of public safety and the environment.
	Incorporate Low Impact Development practices and green infrastructure into county led projects and at county facilities.
	Demonstrate nutrient load reduction practices on county properties (i.e., volume control best management practices, reduced fertilizer use, minimized turf areas, use of native vegetation, etc).
Prevent future groundwater contamination by ensuring sound management of solid and hazardous waste within the county.	Maintain solid and hazardous waste regulation through local ordinances.
	Promote best practices for solid waste management through the waste hierarchy. This includes reuse, recycling, organics, and yard waste. See the Resilience chapter for more information.
	Continue to strengthen outreach and education on household hazardous waste disposal options through the use of county environmental center and other facilities/events that are available.

<p>Ensure no-net-loss of the quantity and quality of wetlands in accordance with the Minnesota Wetland Conservation Act.</p>	<p>Avoid wetland impacts, where feasible, in accordance with the Minnesota Wetland Conservation Act and watershed management organization rules.</p>
	<p>Where avoidance is not possible, mitigate wetland impacts in accordance with the Minnesota Wetland Conservation Act and watershed management organization rules, replacing the key functions as determined by local values.</p>
	<p>Restore degraded wetlands to a higher functional level where feasible.</p>
	<p>Work with the Washington Conservation District on implementing the Wetland Conservation Act and Best Management Practices for shoreland and wetland areas during the development process.</p>
<p>Encourage activities to reduce pollutant loading (e.g. nutrients, sediment, and thermal) to lakes, streams, and the St. Croix and Mississippi river basins.</p>	<p>Promote the use of volume control practices for annual pollutant load reduction.</p>
	<p>Support baseline monitoring to assess condition of water bodies in the county.</p>
	<p>Incorporate Total Maximum Daily Load (TMDL) requirements, as applicable, into county planning and construction projects.</p>
<p>Support a coordinated, multifaceted approach to managing subsurface sewage treatment systems (SSTS); including research, education, and regulation in accordance with state rules.</p>	<p>Continue implementing SSTS ordinance in accordance with Minnesota Rules 7080-7083. Update the local ordinance to be consistent with changes in state rules, as needed.</p>
	<p>Locate all new systems where soil capabilities are adequate to provide for proper treatment system installation.</p>
	<p>Conduct a countywide assessment for SSTS to determine levels of risk and inform future decision-making.</p>
	<p>Continue to provide financial assistance for SSTS replacement through the SSTS loan program. Explore additional financial assistance options for residents including local and state grants.</p>
	<p>Strengthen education efforts related to SSTS for homeowners, realtors, and other stakeholders.</p>
	<p>Promote development of community sewer systems in areas with high rates of noncompliant SSTS or where small groups of homes make such systems feasible.</p>
	<p>Promote the reuse of treated wastewater at metropolitan treatment plants for beneficial purposes.</p>

Protect shoreland areas in order to maintain natural habitat and water quality.	Amend the Shoreland Ordinance in accordance with the state shoreland rules. See Land Use chapter for more information.
	Implement and enforce the Buffer Law in accordance with state law.
Implement and enforce a Storm Water Pollution Prevention Program (SWPPP) to reduce pollution created by stormwater runoff in order to protect water quality in the county.	Participate in the East Metro Water Resource Education Program to increase public awareness and understanding of stormwater issues and the impacts of stormwater runoff on water quality.
	Provide training opportunities for county staff in erosion control, best management practices, good housekeeping, and pollution prevention at construction sites.
	Coordinate with other Municipal Separate Storm Sewer (MS4s) to improve implementation efficiency and effectiveness.
Protect land, structures, and natural communities from flooding that exceeds natural water level fluctuations.	Regulate flood- hazard areas subject to periodic inundation causing hazard to life and property, disruption of commerce and governmental services, unsanitary conditions, and interruption of transportation and communication.
	Prevent new building and limit expanding existing structures located in floodplains.
	Amend Floodplain Management Regulations as required by the Federal Emergency Management Agency (FEMA) and MN Rules 6120.5500.
	Participate in the Flood Insurance Program.
	Collaborate with local watershed organizations, local governments, the Minnesota Department of Natural Resources, and the Federal Emergency Management Agency to update and adopt the flood insurance rate maps. These maps are used by insurance and mortgage companies to determine the need for flood insurance on properties within the county.
Support integrated resource management and projects that provide multiple or co-benefits.	Seek opportunities to enhance water quality protection in related projects such as those that promote and improve pollinator habitat, preserve open space, and encourage alternative agriculture practices including cover crops and emerging markets.

Support efforts to slow the spread of Aquatic Invasive Species (AIS).	Continue Local AIS Prevention Aid program (as funds remain available from the State).
	Evaluate results of Local AIS Prevention Aid grant activities annually and encourage grantees to modify their approach, where needed, to most effectively slow the spread of AIS.
	Monitor the latest state and national AIS research, and encourage prospective grantees to implement best management practices to effectively slow the spread of AIS.
Water Resources Goal 2: Protect groundwater and surface water resources through coordination and collaboration with state and local water resource organizations.	
Water Resources Policy	Water Resources Strategy
Facilitate the sharing of groundwater and surface water information and resources through interdisciplinary and intergovernmental work.	Initiate shared projects and conduct joint studies and research initiatives related to water management as funding opportunities arise.
	Provide leadership for the Water Consortium to improve the efficiency and effectiveness of water management within the county.
	Develop collaborative strategies and actions to implement the Washington County Groundwater Plan and annual work plan.
	Support inter-governmental coordination and cooperation in implementing existing and developing new groundwater, surface water, and wetland rules, policies, and programs.
	Implement sound watershed management practices in cooperation and conjunction with state and local government entities engaged in water management programs.
Encourage local governments to consider groundwater and surface water protection when adopting land use plans and zoning ordinances and making land use decisions.	Encourage communities to regulate the siting and permitting of new land development to protect groundwater quality and quantity from degradation and depletion.
	Share technical information with communities so that they may develop effective groundwater policies and plans.
	Encourage use of sound scientific data and understanding in planning, zoning, and land use decisions.
	Encourage communities to develop groundwater protection policies related to the siting and permitting of new commercial and industrial development.

<p>Encourage local governments to consider groundwater and surface water protection when adopting land use plans and zoning ordinances and making land use decisions. (Continued)</p>	<p>Encourage communities to establish and enforce standards that prevent ground and surface water contamination.</p>
	<p>Establish and enforce more stringent standards to protect areas of significant groundwater recharge.</p>
<p>Collaborate with state agencies and local communities to promote and support the efficient use of groundwater resources to ensure that drinking water supplies are adequate for projected growth in the county.</p>	<p>Promote local planning and land use patterns that protect groundwater quality and quantity.</p>
	<p>Promote research and water supply planning to provide for sustainable water supplies and, to the extent possible, minimize the loss of flow to surface water features and groundwater dependent natural resources.</p>
	<p>Encourage local units of government to develop and implement water conservation and efficiency plans.</p>
	<p>Support local partners to implement water conservation and efficiency practices and programs.</p>
	<p>Continue to track on local and regional groundwater-surface water interaction issues.</p>
<p>Collaborate with partners including the Minnesota Department of Natural Resources, Minnesota Aquatic Invasive Species Research Center, Washington Conservation District, watershed districts and management organizations, lake associations, and others on AIS activities.</p>	<p>Encourage organizations with similar or overlapping AIS management goals to work together to leverage resources.</p>
	<p>Convene organizations working on AIS education and management efforts annually to highlight the latest research and most effective practices.</p>
<p>Collaborate with partners to build climate resilience through integrated surface and groundwater management. See Resilience chapter for more information.</p>	<p>Promote green infrastructure practices that support resiliency and adaptability to climate events.</p>
	<p>Coordinate with other resilience efforts as described in the resilience chapter.</p>

Collaborate with state and local agencies to involve and educate the public in water resource management.	Participate in the East Metro Water Resource Education Program to increase public awareness and understanding of water issues.
	Support regional education efforts, where feasible, including the Metro Children’s Water Festival, Watershed Partners, and others.
Facilitate the sharing of groundwater and surface water information and resources through interdisciplinary and intergovernmental work.	Support regional education efforts, where feasible, including the Metro Children’s Water Festival, Watershed Partners, and others.
	Initiate shared projects and conduct joint studies and research initiatives related to water management as funding opportunities arise.



Cottage Grove Ravine Regional Park

Chapter 7 – Parks, Trails and Open Space



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Executive Summary

Washington County, encompassing 423 square miles of land and water surface, is the fourth smallest county in Minnesota. The physical environment is very diverse; its surface and underground features vary throughout the county. The county is framed by unique and exceptional water features - the St. Croix River forms the entire eastern border and the Mississippi River forms the southern and southwestern border. Including the rivers, important natural features are: the bluffs and ravines in the St. Croix valley; the county's abundant streams, wetlands, lakes, forests, and groundwater; and the prime farmland soils of the agricultural areas of the county.

The parks, trails, and open space protect and provide access to the aforementioned natural amenities in the region. Washington County's role is an important one as the county grows. Natural areas provide environmental benefits by preserving natural resources, reducing air pollution, and managing stormwater runoff. Moreover, parks and open space strengthen residents' physical, psychological, and social wellbeing by providing opportunities for recreation, stress reduction, and social interaction. Because the parks system clearly contributes to the health and quality of life of the region, it is important that Washington County plans and manages this land and water responsibly.



The following chapter plan summarizes existing conditions related to the parks, trails, and open space of Washington County and discusses future strategies and improvements for these public resources. The goals, policies, and strategies for the parks, trails, and open space plan have been identified in the following chapter as well as in Chapter 3. It is also of note that many additional strategies can be found in chapter 11 of this plan, which lays out implementation tools for future development.

Public Outreach Process

The Washington County Park, Trails, and Open Space chapter will guide the development of the county-controlled sites and facilities. To help inform this plan, Washington County implemented a public engagement process. The purpose for engaging the public in comprehensive planning is to understand what the community values today and how they would like to see the parks, trails, and open space system evolve in the future. Washington County would like to thank all stakeholders who were involved in the public engagement process. Chapter 1 highlights the public engagement efforts held as part of the comprehensive plan development.

Washington County Residential Survey (2016)

In 2016, Washington County conducted a survey asking residents to assess the county's performance. Residents awarded the Parks system the Top-Rated County Service, Top County Characteristic, and the Services and Facilities Most Used by Older Adults (see Figures 1 – 3).

Figure 1: Top Rated County Services

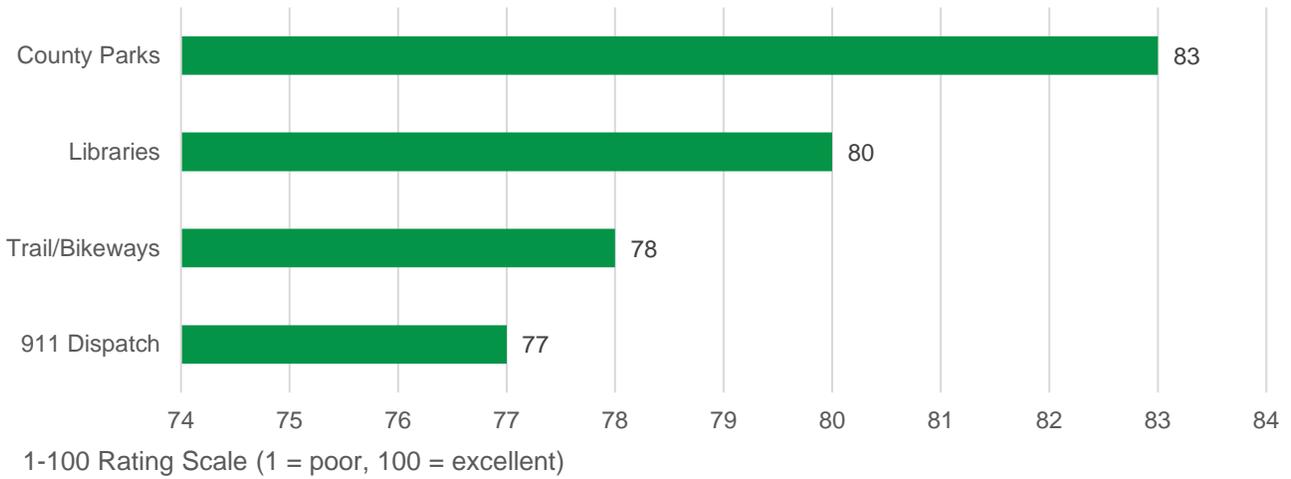


Figure 2: Top Rated County Characteristic

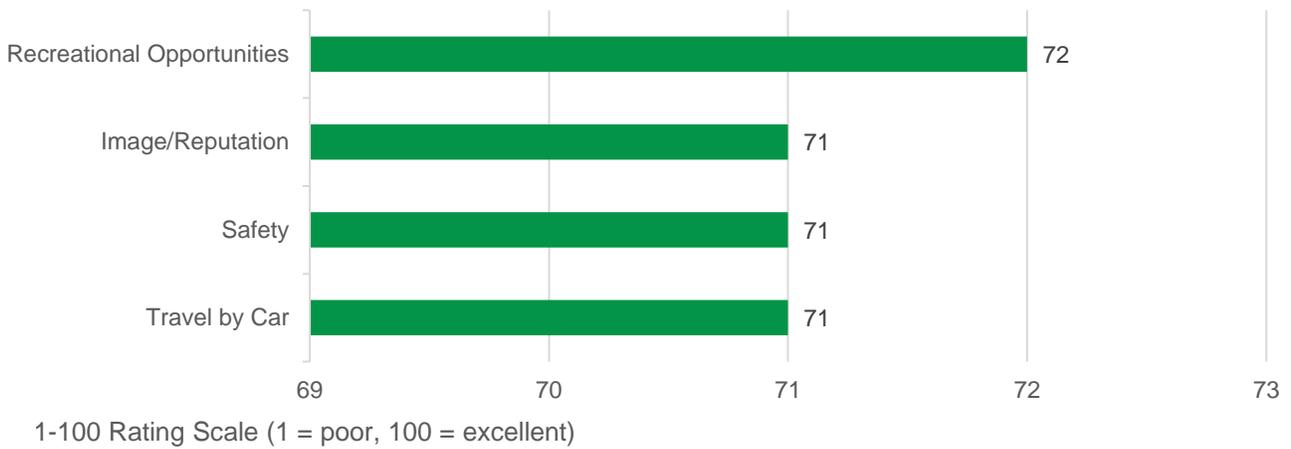
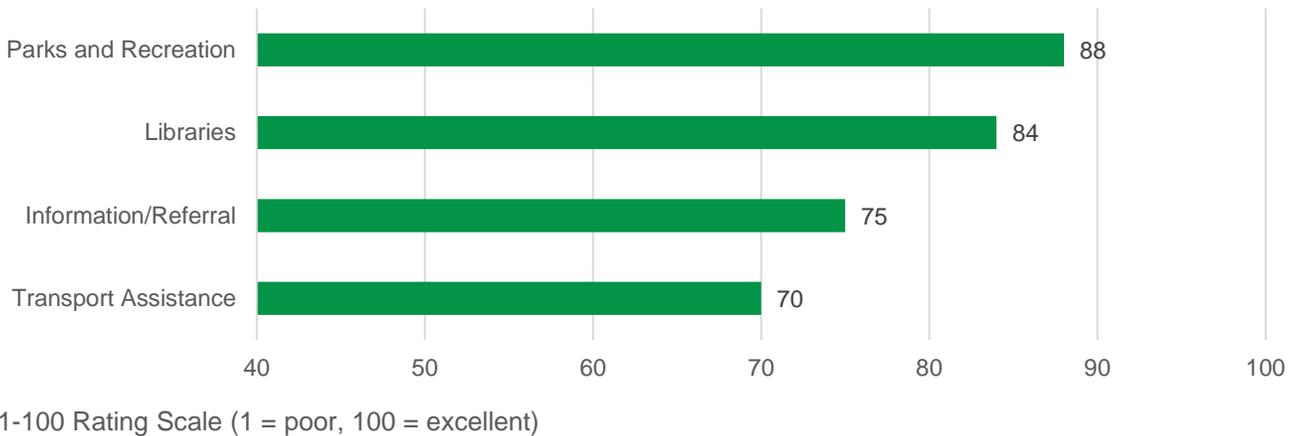


Figure 3: Services and Facilities Most Used by Older Adults



Water Consortium

Engagement also provided an opportunity to gather input from the Water Consortium, a group of stakeholders who meet to discuss issues around water resources in Washington County. At a world-café style exercise, Washington County staff gathered responses from the event’s attendees to the following questions:

- What role do parks and open space play in protecting the county water resources?
- How can parks and open space connect people to water resources?
- What would you like to see in the County parks and open space system to improve water resources?
- What does resiliency and sustainability mean to the county from a water resources perspective?

Input received informed the content of this chapter and the Water Resources chapter.

Parks and Open Space Commission

The Parks and Open Space Commission (PSOC) of Washington is a citizen advisory committee consisting of representative stakeholders from all county districts and one representative county commissioner. This commission has the role of providing feedback and guidance on the Washington County parks, trails, and open space undertakings throughout the year.

In 2017, the commission took the responsibility of being involved in guiding the parks, trails, and open space chapter of the comprehensive plan. Through a several month process, this commission participated in five workshops.

Table 1: Parks and Open Space Commission Meetings

POSC Meeting Date	Subject	Activity
May 18	Goals	Brainstorming Exercise
June 29	Policies	Policy Discussion
July 13	Implementation Strategies	Implementation Strategies Discussion
August 15	Draft Comment Period	Draft available for POSC comments
September 21	Draft Review	Review of drafted Goals, Policies, Strategies

The chapter content, especially the final goals, policies, and implementation strategies, directly reflect this group’s input.

Inventory of Current Facilities

Table 2: Inventory of Current Facilities

	Big Marine Park Reserve	Square Lake	Pine Point Regional Park	Lake Elmo Park Reserve	Cottage Grove Ravine Regional Park	Grey Cloud Island Regional Park	Point Douglas Park	St. Croix Bluffs Regional Park	Hardwood Creek Regional Trail	Point Douglas Regional Trail
Park Classification	PR	SRF	R	PR	R	R	C	R	RT	RT
Facilities/Activities										
Boat Launch	X	X		X				X		
Fishing Pier	X	X		X	X		X	X		
Swimming	X	X		X			X	X		
Camping				X				X		
Picnicking	X	X		X	X		X	X		
Field Games				X				X		
Play Equipment	X			X	X			X		
Natural Areas	X		X	X	X	X		X		
Restroom Facilities	X	X	X	X	X		X	X		
Trails										
Hiking	X		X	X	X			X	X	X
Biking (paved)	X		X	X	X			X	X	X
Biking (turf)			X	X						
Cross-country Skiing	X		X	X	X			X		
Equestrian			X	X					X	
In-line Skating	X		X	X	X			X	X	X

Park Classification: R = Regional Parks; PR = Park Reserve; SRF = Special Recreation Feature; C = County Park; RT = Regional Trail

Park and Trail Visitation

Washington County and the Metropolitan Council collect data and produce reports on who visits regional parks and trails, and how they are being used. These reports allow Washington County to track visitation and usage data overtime, and assess performance. Determining the types of users and their needs is an important step when evaluating future park and trail needs. Ultimately, this information helps Washington County make informed decisions for planning, building, and maintaining the parks and trails system.

In this section, the following reports that evaluate Washington County park and trail visitation will be described:

- Annual Use Estimate of the Regional Parks System
- Regional Parks System Visitor Study
- Washington County Park Visitor Study
- Regional Park Use Among Select Communities of Color

Annual Use Estimate of the Regional Parks System (2016)

The Metropolitan Council annually produces the [Annual Use Estimate of the Regional Parks System](#). This report collects visitation data within each unit and extrapolates it to produce an annual estimate for every regional park and trail in the seven-county area. Key findings from the 2016 report included:

- Washington County parks received approximately 1.35 million visits in 2016, which accounts for 2.9 percent of visits in all regional parks and trails. The table below breaks down Washington County park and trail visitation by unit.
- An estimated 56.1 percent of park visitors were from Washington County, while the other 43.9 percent came from outside Washington County to visit.

Table 3: Total Park Visits in 2016

Park Unit	Total Visits (2016)
Big Marine Park Reserve	240,700
Cottage Grove Ravine Regional Park	70,800
Hardwood Creek Regional Trail	208,300
Lake Elmo Park Reserve	519,900
Pine Point Regional Park	95,500
Square Lake Special Recreation Feature	95,900
St. Croix Bluffs Regional Park	116,900
Totals	1,348,000

Regional Parks System Visitor Study (2016)

The Metropolitan Council also commissioned the [Regional Parks System Visitor Study \(2016\)](#) to provide benchmark data of park and trail visitor experiences at regional parks and trails. Key findings from the report included:

- When compared with other implementation agencies, Washington County park and trail users were more likely to:
 - Rate the quality of facilities, services, and recreation opportunities as very good (73 percent)
 - Visit a park closer to home (average of 9.5 miles to travel to park)
 - Arrive in an automobile (81 percent)
 - Look for information prior to visiting (18 percent)
 - Bring kids under age 10 (30 percent)
 - Report a larger average group size (average group size of 2.84)
 - Visit longer periods of time (average time spent of 3.01 hours)
 - Say that lack of free time is the primary barrier to visiting more often (83 percent)
- Disparities in Washington County park and trail visitation included:
 - Age of Washington County park and trail users (see Figure 4)
 - Household income of Washington County park and trail users (see Figure 5)
 - Educational attainment of Washington County park and trail users (see Figure 6)
 - Physical or mental ability of Washington County park and trail users (see Figure 7)
 - Race and ethnicity of Washington County park and trail users (see Figure 8)

Figure 4: 2016 Age Cohorts of Park and Trail Users

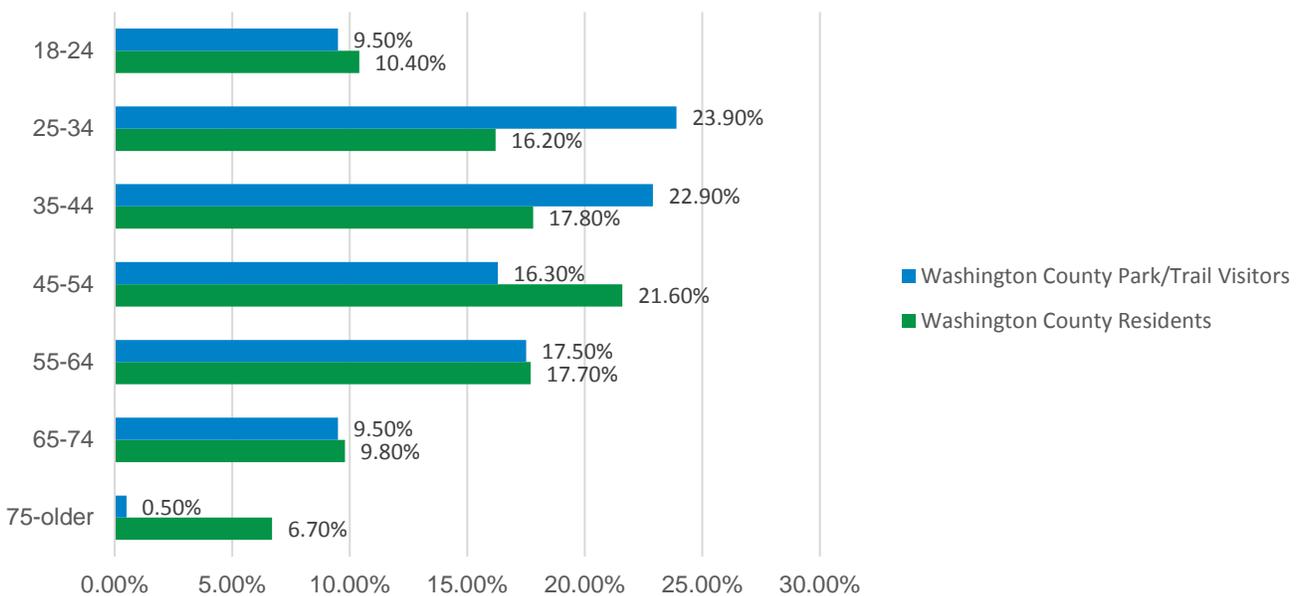


Figure 5: 2016 Household Income of Park and Trail Users

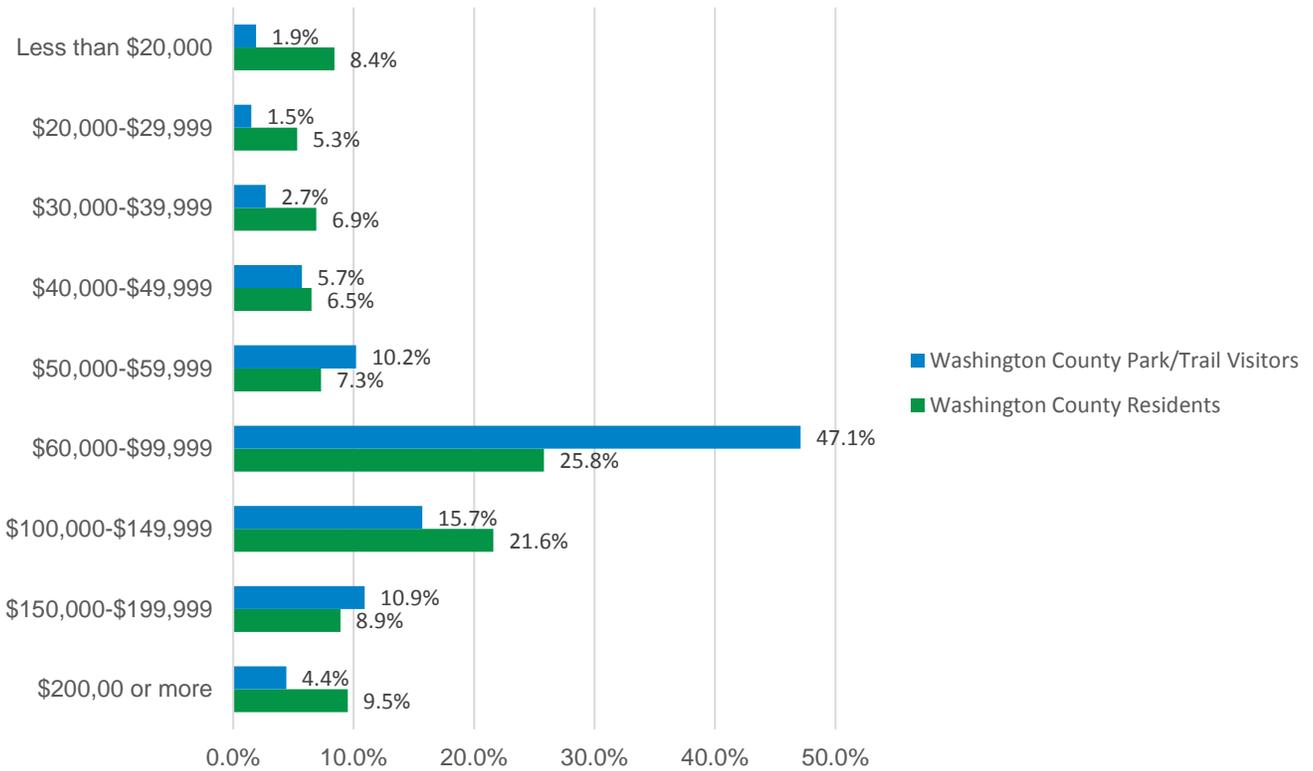


Figure 6: 2016 Educational Attainment of Park and Trail Users

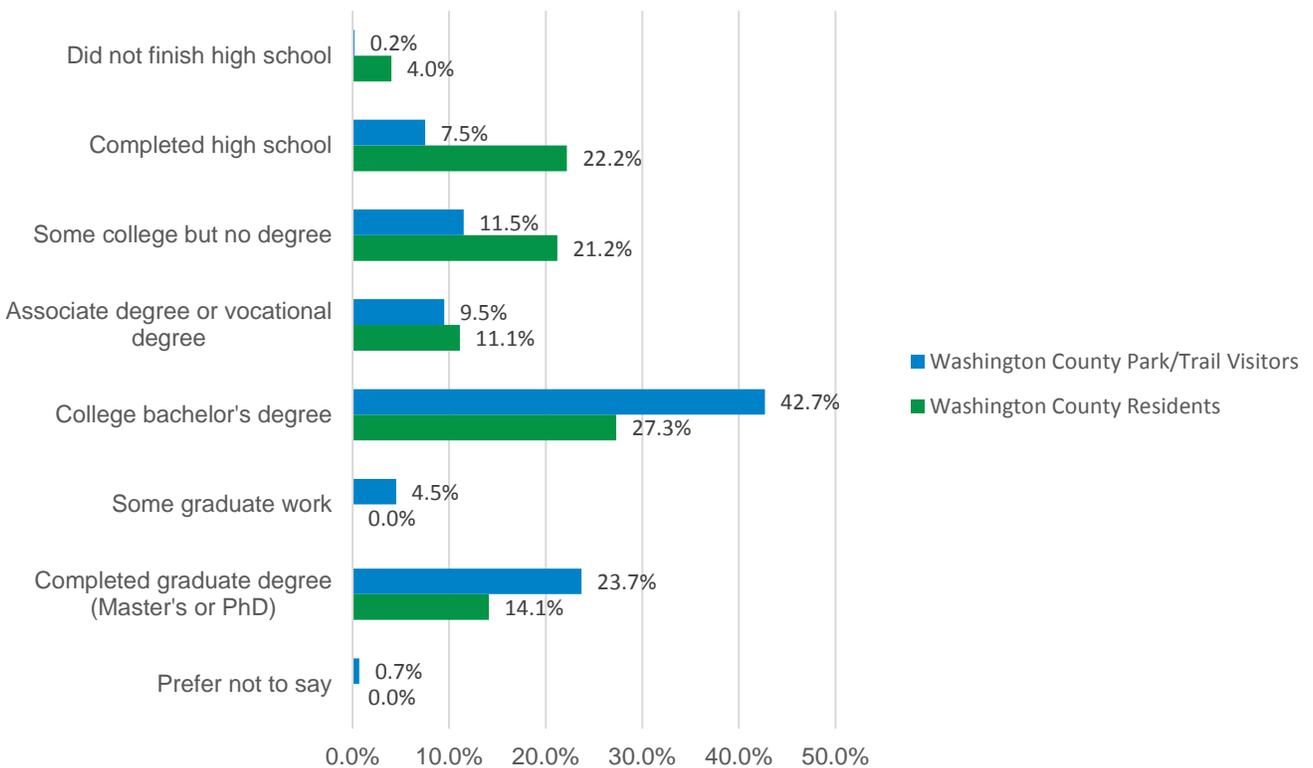


Figure 7: 2016 Physical and Mental Ability of Park and Trail Users¹:

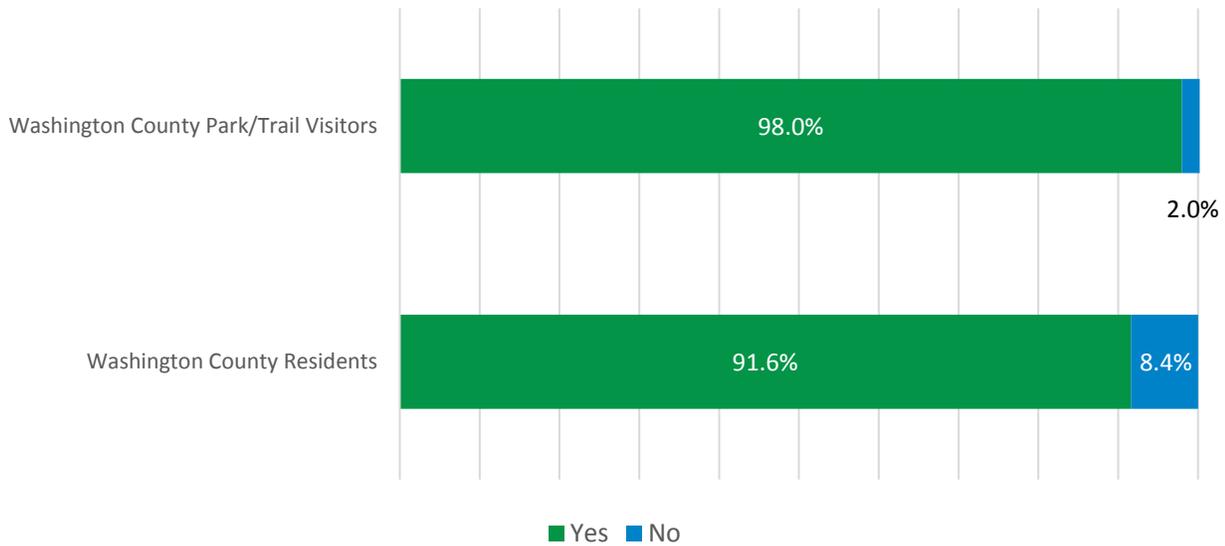
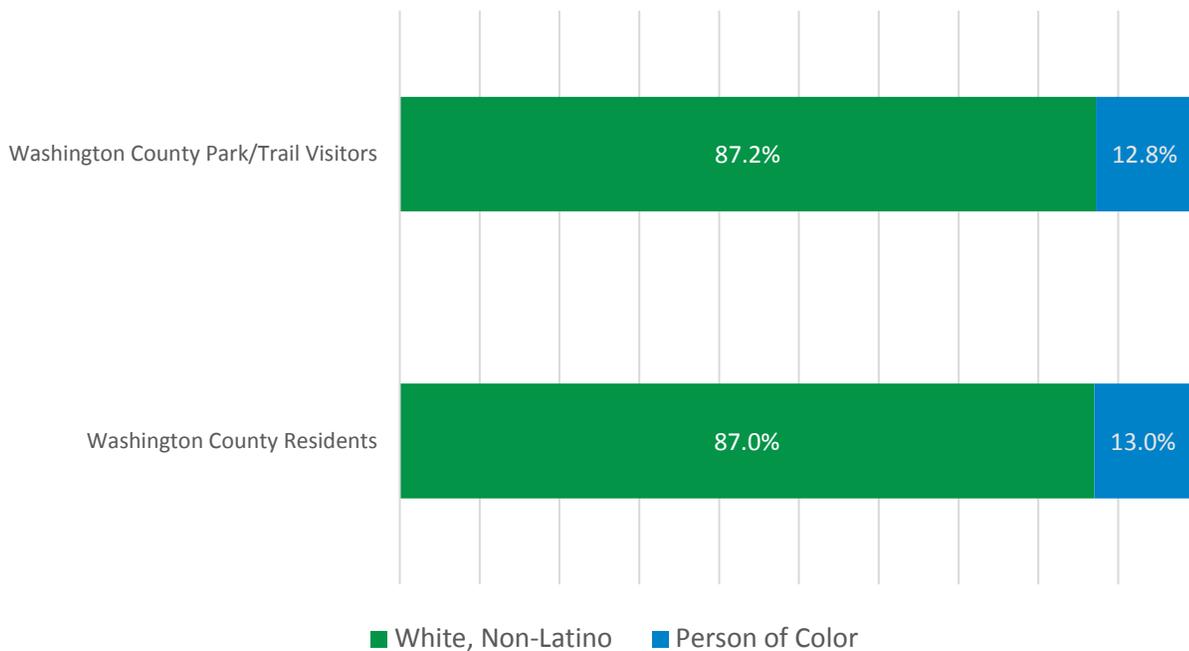


Figure 8: 2016 Race and Ethnicity of Park and Trail Users



¹ Responses reflect answers to the following question: “Does anyone in your group have a physical or mental condition that makes it difficult to access or participate in [Park/Trail] activities or services?”

Washington County Park Visitor Study (2016)

Washington County Parks conducts an independent Visitor Use Survey annually. These responses serve as another tool to measure visitation and park use. Furthermore, it gives Washington County flexibility in asking questions unique to the County (as opposed to the region as a whole). Key findings from the report included:

- Survey respondents primarily engaged in the following activities:
 - Nature walks/trails
 - Swimming
 - Boating/Fishing
 - Camping
 - Biking (paved trails)
- Programs visitors provided responses on activities they would like to see offered (or offered more frequently) in Washington County Parks:
 - Canoeing/kayaking lessons
 - Outdoor recreation for women
 - Moonlight hike/ski
 - Tree & plant identification
 - Cross country ski lessons/rental

Regional Park Use Among Select Communities of Color (2014)

In 2014, the Metropolitan Council staff produced the [Regional Park Use Among Select Communities of Color](#) report to better understand and address disproportionate or inequitable park use and identify barriers to regional park visitation among communities of color. Metropolitan Council staff partnered with several local community-based organizations and public agencies to collect demographic data and organize focus groups throughout the metropolitan region. Key findings from the report included:

- The most prominent perceived barriers to regional park system visitation among focus group participants were:
 - Lack of awareness
 - Time available
 - Fear/safety concerns
 - Lack of transportation options
 - Language barrier
- The most prominent suggestions from focus group participants to enhance regional park system visits were:
 - Increase awareness
 - Address safety
 - Enhance capacity of gathering spaces
 - Create ambassador program
 - Increase and diversify programming

Parks

Washington County’s parks system plays a key role in providing opportunities for visitors to recreate outdoors and interact with nature. But by itself, it cannot and was never intended to serve all the area’s recreational needs. The parks operated by Washington County are one component of the greater park and recreation system for the area that includes neighborhood, city, state, and federal parks and open space areas, as well as private sector facilities.



The Metropolitan Council's 2040 Regional Parks Policy Plan contains a classification system for determining what facilities warrant regional status. Regional facilities emphasize high-quality natural resources, contain regionally important features, and provide for activities that tend to require large areas of land or water. Washington County, as an implementation agency, is responsible for owning and operating regional parks, park reserves, regional trails, and special recreation features. The Metropolitan Council supports these efforts by assisting with planning, funding, research, marketing, and advocacy.

State, local, and private recreational facilities provide additional recreational opportunities for park users within Washington County. These additional facilities are able to respond to the wants and needs of different groups of constituents. All these other facilities and services complement Washington County-operated parks to create a comprehensive system that contributes to the community’s high-quality of life.

This section will identify, describe, and map, all of the regional park components in Washington County, in addition to county, federal, and state recreation areas and open space lands that are located within Washington County:

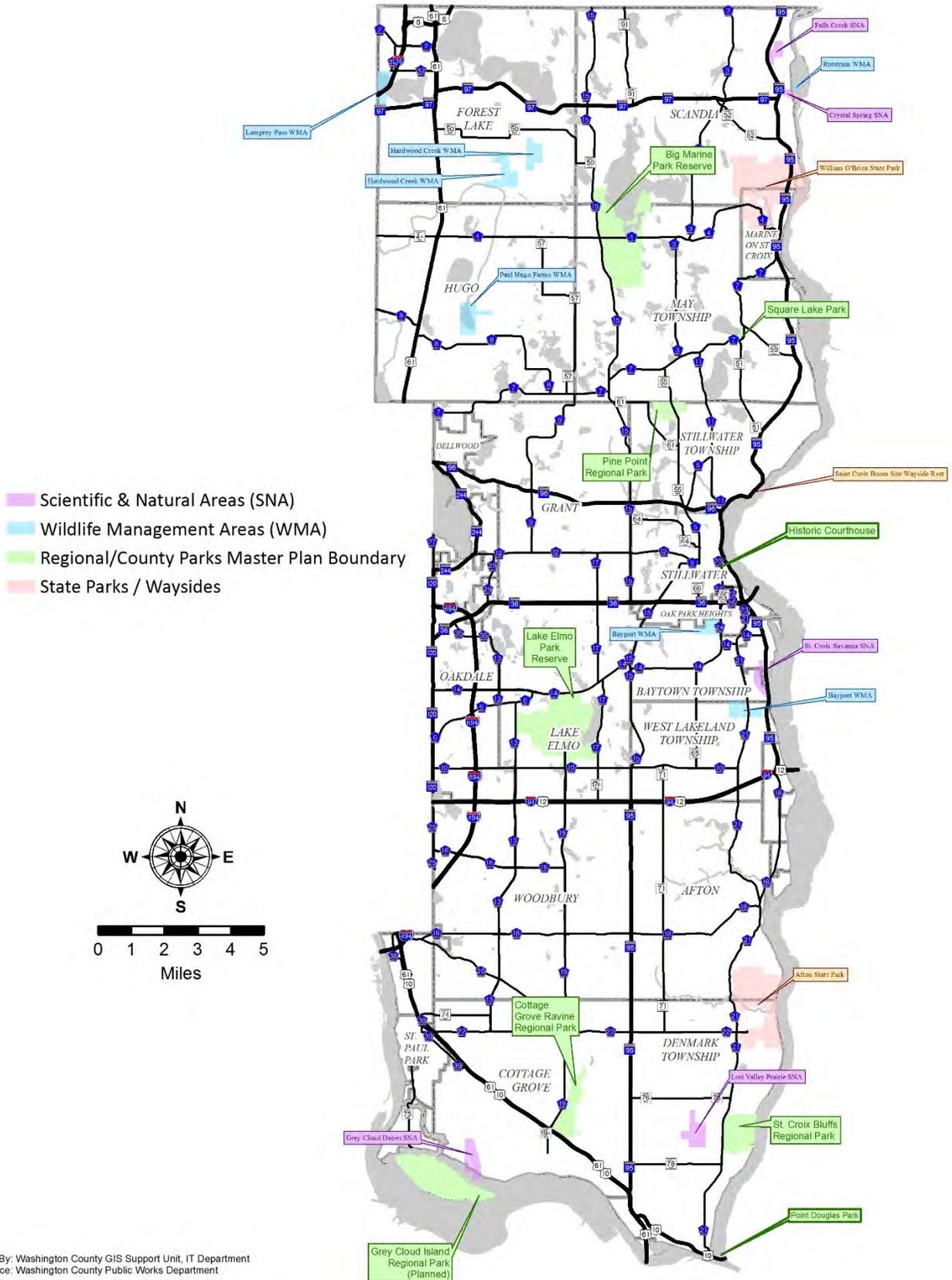
- Regional Parks
- Regional Park Reserves
- Regional Special Recreation Features
- County Parks and Facilities
- Scientific and Natural Areas
- Wildlife Management Areas
- State and National Parks

Table 4: Washington County Regional Parks

Regional Park Unit	Acres Publicly Accessible	Acres Proposed in Master Boundary	County-owned Acres	Acres to be Acquired
Pine Point Regional Park	286.8	N/A*	286.8	N/A*
Cottage Grove Ravine Regional Park	522.1	599.9	522.1	77.8
Saint Croix Bluffs Regional Park	583.7	704.6	583.7	120.9
Grey Cloud Island Regional Park (Planned)	0.0	1366.8	113.8	1253.0
Lake Elmo Park Reserve	2178.9	2,196.6	2178.9	17.7
Big Marine Park Reserve	204.7	1,883.8	683.4	1200.4
Square Lake Park	24.9	N/A*	24.9	N/A*
Point Douglas Park	8.6	12.4	8.6	3.8
Historic Courthouse	2.1	N/A*	2.1	N/A*
Total:	3,811.90	6,764.16	4,404.41	2,673.56

*Note: N/A = No master plan has been approved by the Metropolitan Council

Figure 9: Washington County Regional Parks System



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Washington County Public Works Department

Regional Parks

Regional parks are centered around land and water that is regionally important and would draw users from across the Minneapolis-Saint Paul metropolitan region. These parks contain a diversity of nature-based resources, either naturally occurring or human-built, and are typically 200-500 acres in size. Regional parks accommodate a variety of outdoor recreation activities.

This section will provide profiles of each of the following regional parks within Washington County:

- Pine Point Regional Park
- Cottage Grove Ravine Regional Park
- St. Croix Bluffs Regional Park
- Grey Cloud Island Regional Park



Pine Point Regional Park

Existing Conditions:

Park Classification:	Regional Park
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Regional Significance:

The park serves as a trailhead to the Gateway State Trail, a major recreation destination for the region. It also features views of Louise Lake and Loon Lake. Landscape types include rolling topography, mixed hardwoods, pine plantations, prairie, and wetlands.

Existing Development:

Existing development is centered on providing access to the Gateway State Trail and opportunities for various trail users. Existing facilities include:

- Trailhead
- Picnic areas
- Paved and soft surface trails

Planning Status:	A master plan was adopted by the Washington County Board in 1989 but never adopted by the Metropolitan Council. A new master plan, approved by the Metropolitan Council, is needed to make park acquisition and development eligible for regional funding.
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Development Concept:

Proposed Development:	<p>A master plan will guide Pine Point Regional Park’s future acquisition and development. Implementation will occur over a number of years as funding and other resources become available. Phasing of park development will take into consideration the timing of related projects. The 1989 master plan calls for development to include:</p> <ul style="list-style-type: none"> • Expanded paved and soft surface trail network • Camping (primitive) • Viewing blinds • Vegetation restoration
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Cottage Grove Ravine Regional Park

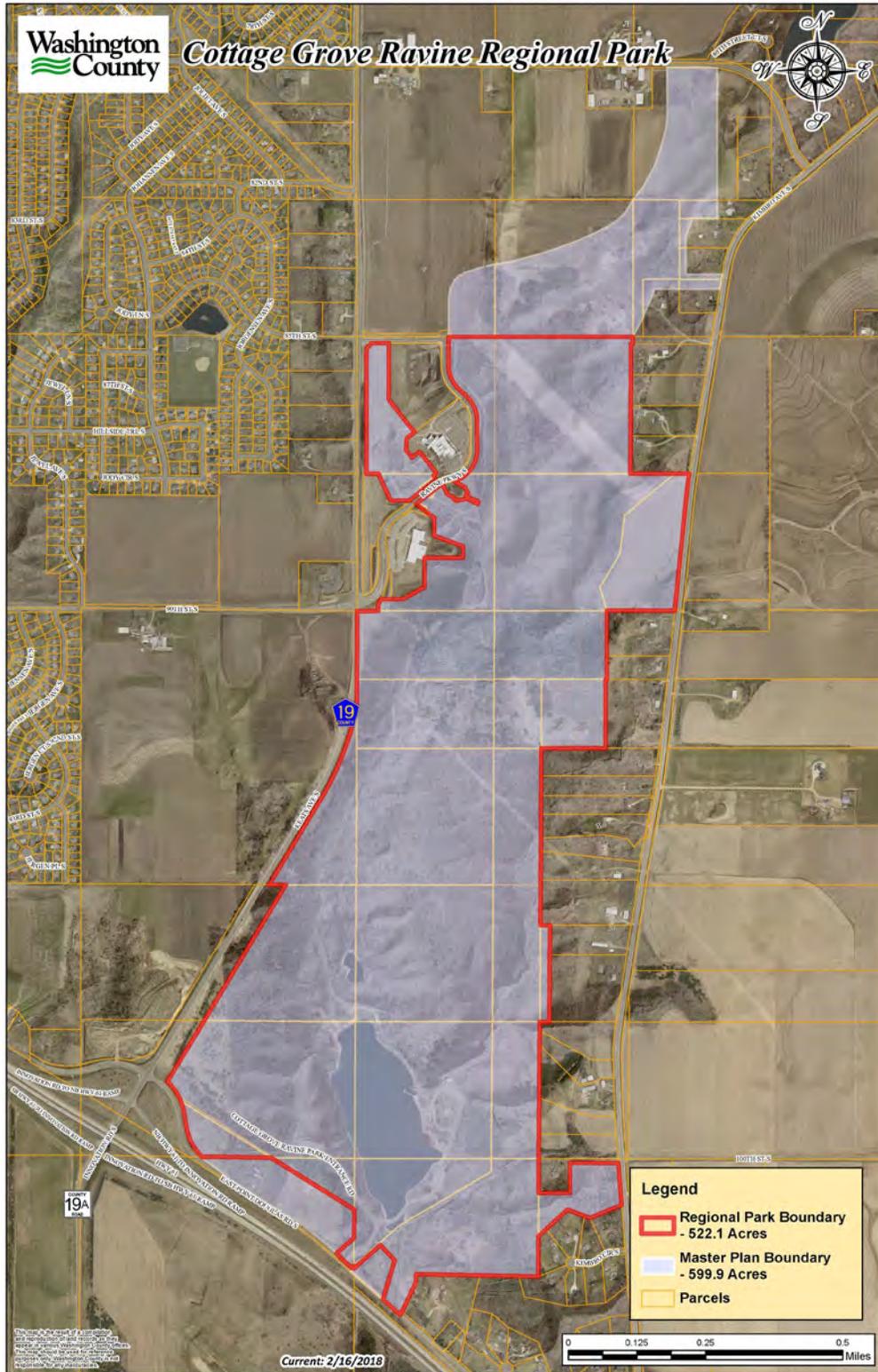
Existing Conditions:

Park Classification:	Regional Park	
Regional Significance:	The park features Ravine Lake, steep topography, and wooded ravines. Landscape types include oak woodland, pine plantation, old field, and dry prairie.	
Existing Development:	Existing development is centered on providing access to the scenic ravine landscape and recreation opportunities for various park users. Existing facilities include: <ul style="list-style-type: none"> • Playground structure • Swimming beach • Fishing pier • Boat (non-motorized) launch on Ravine Lake • Picnic areas • Visitor contact station • Paved and soft surface trails 	
Planning Status:	A master plan was adopted in 2017.	

Development Concept:

Proposed Development:	<p>The master plan will guide Cottage Grove Ravine Regional Park’s future acquisition and development. Implementation will occur over a number of years as funding and other resources become available. Phasing of park development will take into consideration the timing of related projects. The master plan calls for development to include:</p> <ul style="list-style-type: none"> • Expanded paved and soft surface trail network (including lighted trail loops) • Trailhead facility • Playground structures • Expanded picnic areas • Observation tower • Vegetation restoration
------------------------------	--

Cottage Grove Ravine Regional Park



St. Croix Bluffs Regional Park

Existing Conditions:

Park Classification:	Regional Park
Regional Significance:	The park fronts 3,800 feet of shoreline along the St. Croix River, a nationally-recognized wild and scenic river route. The landscape types consist of mesic hardwood forest, oak woodland, pine plantations, prairie restoration, cropland, traversing steep bluffs and deep ravines.
Existing Development:	Existing development is centered on providing access to the St. Croix River and a variety of other recreational activities, including camping. Existing facilities include: <ul style="list-style-type: none"> • Playground structure • Swimming beach • Fishing pier • Boat (non-motorized and motorized) launch on St Croix River • Camping areas (modern, group) • Softball/baseball field • Sport courts (tennis, volleyball, basketball, horseshoe) • Picnic areas • Visitor contact station • Maintenance facility • Paved and soft surface trails.



Planning Status:	A master plan was adopted in 2003.
-------------------------	------------------------------------

Development Concept:

Proposed Development:	The master plan will guide St. Croix Bluffs Regional Park’s future acquisition and development. Implementation will occur over a number of years as funding and other resources become available. Phasing of park development will take into consideration the timing of related projects. The master plan calls for development to include: <ul style="list-style-type: none"> • Expanded paved and soft surface trail network • Trailhead facility • Overlooks • Beach improvements • Expanded camping facilities and areas • Expanded picnic areas • Vegetation restoration
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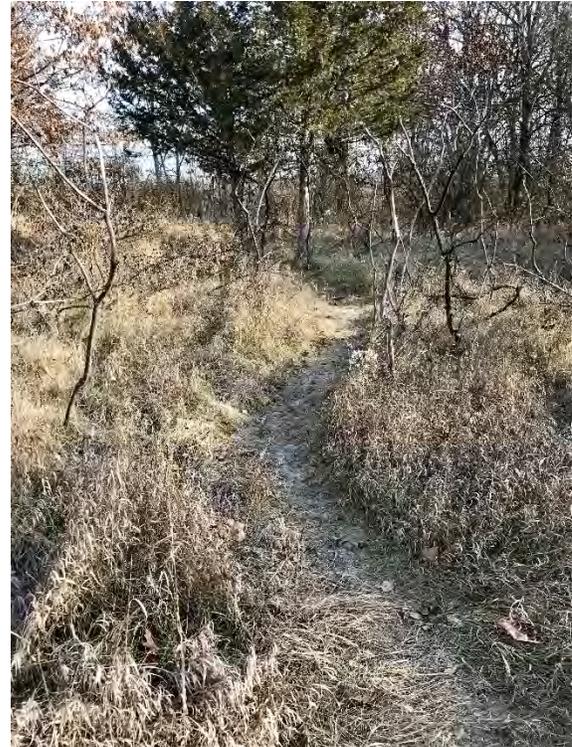
St. Croix Bluffs Regional Park



Grey Cloud Island Regional Park

Existing Conditions:

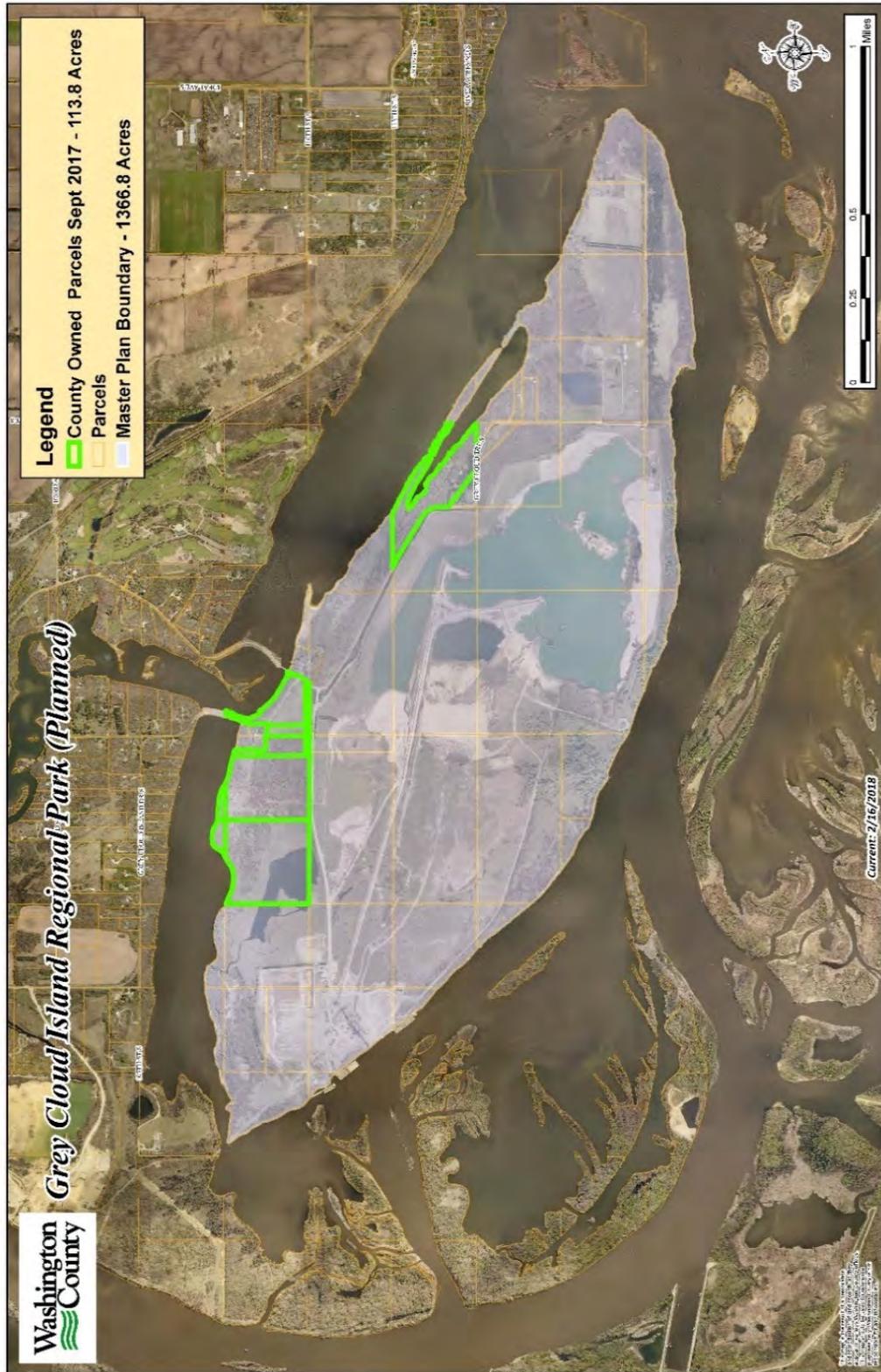
Park Classification:	Planned Regional Park
Regional Significance:	
<p>Grey Cloud Island features natural and archaeological resources that represent an important link within the Mississippi River corridor network. This park will also support wildlife habitat (i.e., Mississippi River Valley wildfowl flyway) and sensitive water basins (i.e., Mooer's Lake, Baldwin Lake, and Mississippi River shoreline). The landscape types include mixed hardwood forest and 100-year designated floodplains. The land resides in the Mississippi River Corridor Critical Area, as defined by the Minnesota Department of Natural Resources.</p>	
Existing Development:	
<p>Grey Cloud Island Regional Park has not yet been developed as Washington County is pursuing acquisition of properties within the master plan boundary on a willing-seller basis. The regional park is not yet open to the public. Existing uses on the island include gravel mining, residential, and agriculture.</p>	
Planning Status:	A master plan was adopted in 1994.



Development Concept:

Proposed Development:	<p>The master plan is guiding Grey Cloud Island Regional Park’s future acquisition. Park development within Grey Cloud Island is unlikely to occur prior to completion of mining activities that currently exist. Mining activities will impact the park’s ultimate development and the configuration of its functional areas. It is likely that Washington County will assess and update the master plan adopted in 1994 before commencing significant park development. Development on Grey Cloud Island will adhere to the Mississippi River Corridor Critical Area rules. More information on these rules can be found in Chapter 4, Land Use.</p> <p>Implementation will occur over a number of years as funding and other resources become available. Phasing of park development will take into consideration the timing of related projects.</p>
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Grey Cloud Island Regional Park



Regional Park Reserves

Park reserves, like regional parks, provide for a diversity of outdoor recreation activities and draw visitors from across the region. One major feature that distinguishes the park reserve from a regional park is its size. The minimum size for a park reserve is 1,000 acres. An additional characteristic of park reserves is that they are required to manage at least 80 percent of the park reserve as natural lands that protect the ecological functions of the native landscape.

This section will provide profiles of each of the following regional park reserves within Washington County:

- Lake Elmo Park Reserve
- Big Marine Park Reserve



Lake Elmo Park Reserve

Existing Conditions:

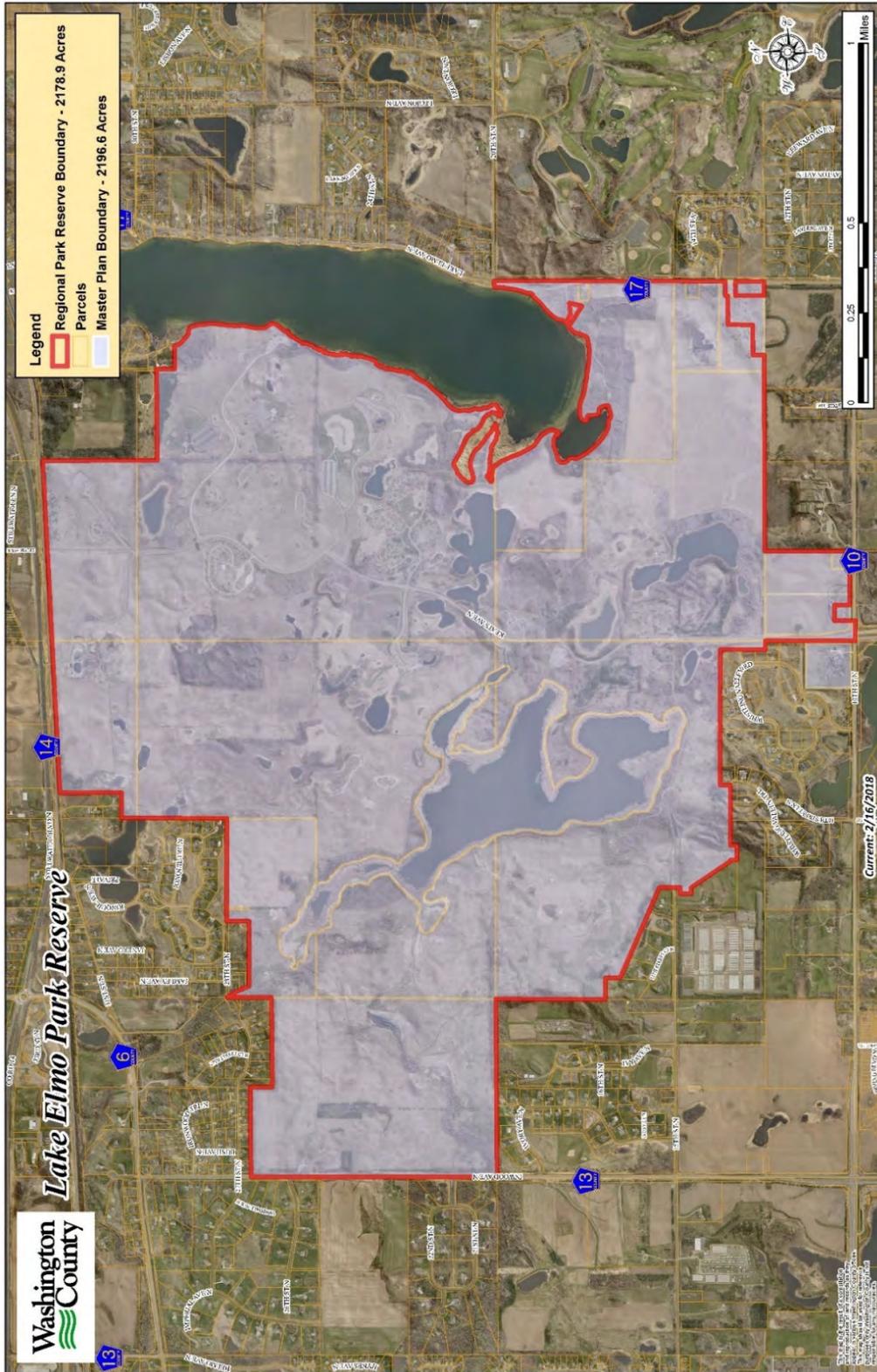
Park Classification:	Park Reserve
Regional Significance:	
The park reserve features Eagle Point Lake, Lake Elmo, and variety of topography, from gently rolling hills, to steep slopes. The landscape types consist of old field, restored prairie, mixed hardwoods, wetlands and cropland.	
Existing Development:	
Existing development is centered on providing access to over 2,000 acres of protected nature and to provide a variety of recreational uses. Existing facilities Include:	
<ul style="list-style-type: none"> • Swim pond • Boat (non-motorized & motorized) launch on Lake Elmo; boat (non-motorized) launch on Eagle Point Lake • Fishing pier • Camping areas (group, modern, rustic, and primitive) • Archery range • Playground structure, • Picnic and grill areas • Trailheads • Nordic Center • Amphitheater • Visitor contact station. • Paved and soft-surface trails, including lighted trail loops 	
Planning Status:	A master plan was adopted in 2006.



Development Concept:

Proposed Development:	<p>The master plan will guide Lake Elmo Park Reserve’s future acquisition and development. Implementation will occur over a number of years as funding and other resources become available. Phasing of park development will take into consideration the timing of related projects. The master plan calls for development to include:</p> <ul style="list-style-type: none"> • Expanded paved and soft surface trail network • Expanded picnic areas • Expanded camping facilities and areas • Updated playground structures • Updated trail and recreation facilities • Updated maintenance facility • Vegetation restoration
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Lake Elmo Park Reserve



Big Marine Park Reserve

Existing Conditions:

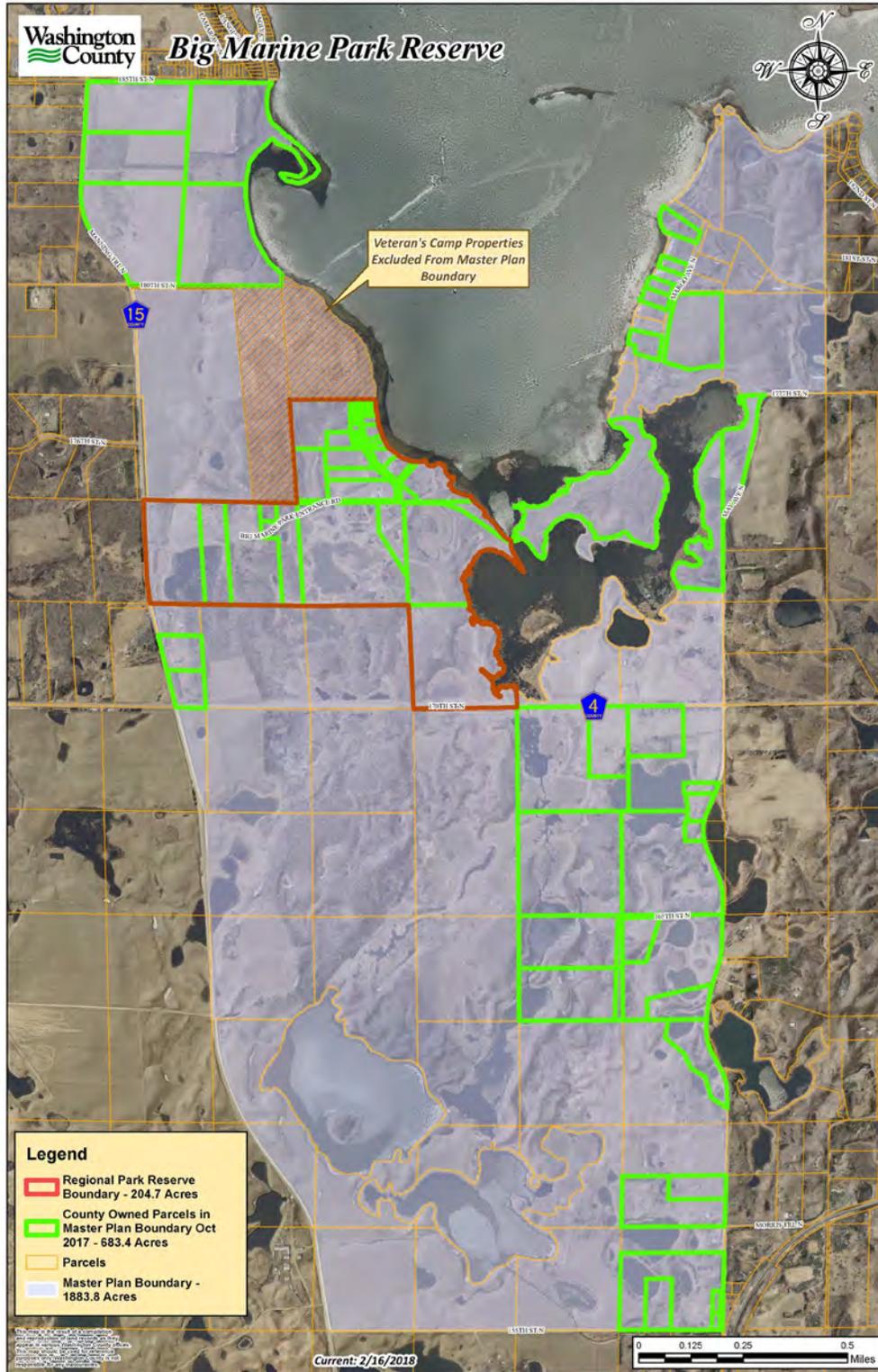
Park Classification:	Park Reserve
Regional Significance:	
The park reserve features Big Marine Lake, an important water feature in Washington County. The landscape is composed of rolling topography, high-quality wetlands, mature oak forests, and St. Croix Valley Moraine.	
Existing Development:	
Existing development is centered on providing access to Big Marine Lake and opportunities for visitors to experience the unique St. Croix Valley Moraine landscape. Existing facilities include:	
<ul style="list-style-type: none"> • Playground structure • Swimming beach • Fishing pier • Boat (non-motorized and motorized) launch on Big Marine Lake • Picnic areas • Visitor contact station • Paved and soft surface trails. 	
Planning Status:	A master plan was adopted in 2010.



Development Concept:

Proposed Development:	<p>The master plan will guide Big Marine Park Reserve’s future acquisition and development. Implementation will occur over a number of years as funding and other resources become available. Phasing of park development will take into consideration the timing of related projects. The master plan calls for development to include:</p> <ul style="list-style-type: none"> • Expanded paved and soft surface trail network, including boardwalks • Trailhead facility • Camping areas (primitive, group, modern) • Archery • Expanded picnic areas • Special use facility for youth group activities • Maintenance facility • Vegetation restoration
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Big Marine Park Reserve



Regional Special Recreation Features

Special recreation features are defined as areas that preserve, maintain, and provide specialized recreational activities not generally found in the regional parks, park reserves or trail corridors. Unique managing and programming efforts are often necessary to operate these features.

This section will provide a profile of the following special recreation feature within Washington County:

- Square Lake

Square Lake Special Recreation Feature	
Existing Conditions:	
Park Classification:	Special Recreation Feature
Regional Significance:	
The park features Square Lake, a regional amenity renowned for its water quality. The lake has some of the clearest waters in Minnesota.	
Existing Development:	
Existing development is centered on providing recreational opportunities for scuba divers, swimmers, paddle boarders, anglers, and more. Existing facilities include:	
<ul style="list-style-type: none"> • Swimming beach • Fishing pier • Boat (non-motorized and motorized) launch on Square Lake • Picnic and grill area 	
Planning Status:	A master plan is needed for Square Lake Park.
Development Concept:	
Proposed Development:	Washington County will develop a master plan to guide future park acquisition and development.



Square Lake Special Recreation Feature



County Parks and Facilities

County parks and facilities are typically smaller than regional parks, but still draw visitors from across the county. These parks protect and provide access to natural and historical features valued by the county. They also provide a variety of opportunities for outdoor recreation and education.

This section will provide a profile of the following county parks within Washington County:

- Point Douglas County Park
- Washington County Historic Courthouse



Point Douglas County Park

Existing Conditions:

Park Classification:	County Park
Regional Significance:	
The park serves as a trailhead for Point Douglas Regional Trail and the planned St. Croix Valley Regional Trail. It features views of and access to the Mississippi River.	
Existing Development:	
Existing development is centered on providing access to the Mississippi River and the Point Douglas and St. Croix Valley Regional Trails. Existing facilities include: <ul style="list-style-type: none"> • Trailhead facility • Swimming beach • Picnic area • Fishing overlook 	
Planning Status:	A master plan was adopted in 2012, together with Point Douglas Regional Trail master plan. The park land resides in the Regional Park System as a regional trailhead facility.



Development Concept:

Proposed Development:	<p>The master plan will guide Point Douglas’s future acquisition and development. The future park boundary will depend on negotiations with MnDOT regarding land to be turned over to the County at a future date (the proposed future park boundary as seen on the map represents a possible outcome). Implementation will occur over a number of years as funding and other resources become available. Phasing of park development will take into consideration the timing of related projects. The master plan calls for development to include:</p> <ul style="list-style-type: none"> • Trailhead facility improvements • Trail improvements • Picnic area improvements • Parking and access improvements • Septic system • Expanded picnic areas • Landscaping improvements
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Point Douglas County Park



Washington County Historic Courthouse

Existing Conditions:

Park Classification:	County Facility
Site Significance:	
<p>The Washington County Historic Courthouse features a 150-year-old facility and grounds, which serve as hallmarks of Washington County government and landmarks for the birthplace of the State of Minnesota. The site is supported through public and private funds, user fees, and volunteer services. It is a showcase of adaptive reuse of an historic building and serves as a venue for programming.</p>	
Existing Development:	
<p>Existing development is centered on maintaining and improving the building structure and grounds, and providing opportunities for visitors to experience and learn about Washington County history. Existing facilities include:</p> <ul style="list-style-type: none"> • Exhibit rooms • Courthouse space (used for large meetings and events) • Observation dome • Memorials/statutes/plaques 	
Planning Status:	There is no master plan adopted for this site.



Development Concept:

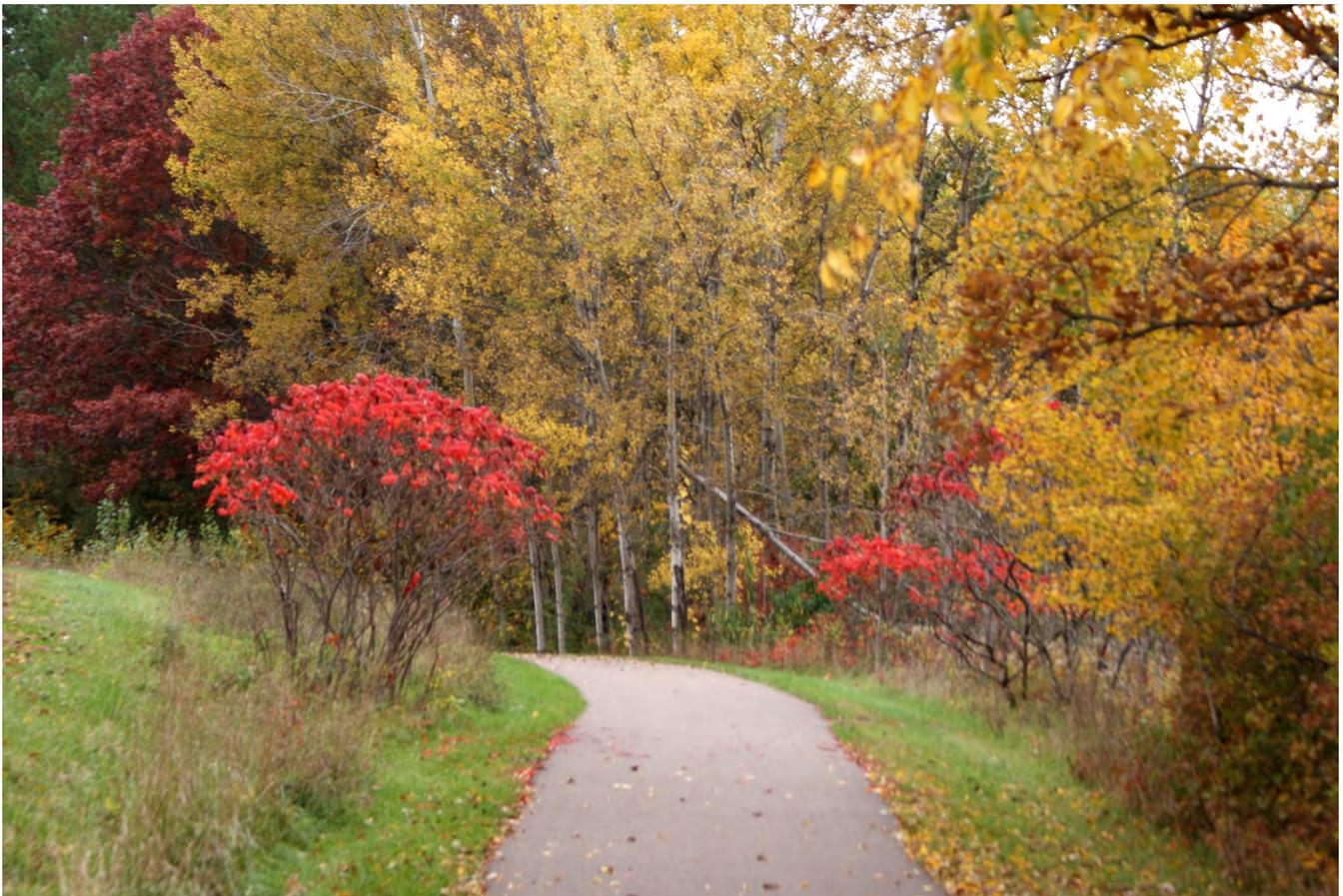
Proposed Development:	<p>The vision for Washington County Historic Courthouse is to provide a place where all visitors can connect to the county’s past. The site will continue to be available to the public to enjoy its scenery, architectural value, and sense of history. It will also continue to be a unique venue for programming and community events.</p> <p>Washington County will develop plans for the continued maintenance of the facility and grounds. The county will also pursue new programming and funding opportunities to further improve the site and visitor experience. Implementation will occur over a number of years as funding and other resources become available. Phasing of park development will take into consideration the timing of related projects.</p>
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Scientific and Natural Areas

Scientific and Natural Areas (SNAs) are state lands preserving Minnesota's ecological and geological diversity. They protect natural features of exceptional scientific or educational value including native plant communities, populations of rare species, and geological features of statewide significance. All five of the Scientific and Natural Areas are found in the St. Paul-Baldwin Plains and Moraines subsection of the state's Ecological Classification System. Locations of SNAs are shown on Figure 9.

This section will provide profiles of the following scientific and natural areas within Washington County:

- Falls Creek
- Crystal Spring
- St. Croix Savanna
- Lost Valley
- Grey Cloud Dunes



Scientific and Natural Areas

Falls Creek

Location:	Scandia
Size:	136 acres
Description:	Falls Creek is one of the most diverse natural areas in Washington County. Steep ravines line the intermittent stream beds. The site is unique for its stand of virgin hardwood and white pine forest, which is rare along the St. Croix River. The site exhibits an impressive show of woodland wildflowers.

Crystal Spring

Location:	Scandia
Size:	38 acres
Description:	Steep cliffs line a seasonal cold water stream and old forests stand tall on the rugged terrain at Crystal Spring. Overall the site supports high-quality red oak-basswood forest with steep slopes containing sugar maple and white pine. Butternut trees, listed as endangered in Minnesota, have also been recorded here.

St. Croix Savanna

Location:	Baytown Township, Bayport
Size:	148 acres
Description:	The St. Croix Savanna occurs along the top and side of a south-facing bluff, with scenic views of the St. Croix River. The dry savanna contains a diversity of grasses including side-oats and hairy grama, needle and thread, and prairie dropseed. Rare kitten-tails grow in near bur oaks.

Lost Valley Prairie

Location:	Denmark Township
Size:	320 acres
Description:	Lost Valley is a bedrock bluff prairie, and features a series of limestone ridges and dry swales. Ridge crests and upper slopes have a variety of grasses including big and little bluestem and Indian grass. Of special interest are Hill's thistle, a Minnesota special concern species, and state-threatened rock sandwort.

Grey Cloud Dunes

Location:	Cottage Grove
Size:	237 acres
Description:	Grey Cloud Dunes contain two sandy terraces along the Mississippi River. The terraces mark the height of the Mississippi at different time periods after the melting and retreat of continental glaciers. Rare sea-beach needlegrass and the North American (blue) racer, an uncommon Minnesota snake, may be found here.

Wildlife Management Areas

Wildlife management areas (WMAs) are part of Minnesota's outdoor recreation system and are established to protect those lands and waters that have a high potential for wildlife production, public hunting, trapping, fishing, and other compatible recreational uses. Locations of WMAs are shown on Figure 9.

This section will provide profiles of the following wildlife management areas within Washington County:

- Lamprey Pass
- Rustrum
- Hardwood Creek
- Paul Hugo Farms
- Bayport



Wildlife Management Areas

Lamprey Pass	
Location:	Forest Lake
Size:	1,267 acres
Description:	Lamprey Pass is the largest WMA outside of Carlos Avery in the North Metro area. The WMA is primarily managed for waterfowl and consists of 76 percent wetland – including two open water basins that total more than 600 acres – 16 percent woodland and 8 percent grassland/food plot.
Rustrum	
Location:	Scandia
Size:	24 acres
Description:	Accessible only by water, this area offers unique boat access hunting opportunities. Floodplain forest wildlife viewing is also available. The WMA consists of 83 percent open water and emergent vegetation marsh, and 17 percent floodplain forest.
Hardwood Creek	
Location:	Forest Lake
Size:	583 acres
Description:	Hardwood Creek WMA is part of the largest complex of native habitat remaining in Washington County. A 60-acre tamarack bog and high quality maple-basswood forest are highlights. Management efforts emphasize maintenance of small planted prairies that make up 10 percent of the area. The remainder is primarily wooded wetlands and islands.
Paul Hugo Farms	
Location:	Hugo
Size:	357 acres
Description:	Rice Lake on Paul Hugo Farms WMA is one of the largest bodies of water in the metro area to offer canoe or other non-motorized boating opportunities where motorized boat traffic is not allowed. Breeding trumpeter swans can be observed on Rice Lake.
Bayport	
Location:	Bayport
Size:	452 acres
Description:	The major emphasis is to manage for a variety of woodland and grassland wildlife. The area consists of 72 percent grassland/agricultural land, 27 percent woodland and a small amount of wetland. This is a good area to observe purple cone flowers and black-eyed Susans in the planted prairie.

State Parks, State Wayside Areas, and National Parks



The purpose of state parks is to protect and perpetuate areas of the state that illustrate and exemplify Minnesota's unique natural resources, and to provide for the use, enjoyment, and understanding of such resources without impairment for the enjoyment and recreation of future generations. State parks are operated by the Minnesota Department of Natural Resources.

The Minnesota state park and trail system includes waysides areas. These are generally parcels of land too small to be full-fledged state parks, but with more cultural or natural resources than those found at highway waysides and rest areas.

Locations of these are shown on Figure 9.

This section will provide profiles of the following state parks and wayside areas within Washington County:

- William O'Brien State Park
- Afton State Park
- St. Croix Boom Site State Wayside

This section will also include profiles for the National Parks located in Washington County. These recreational destinations are operated by the National Park Service:

- St. Croix National Scenic Riverway
- Mississippi National River and Recreation Area

State Parks, State Wayside Areas, and National Parks

William O’Brien State Park

Location:	Scandia, Marine on St. Croix
Size:	1,860 acres
Description:	A variety of vegetation types, the St. Croix River floodplain, oak-hickory forests, scattered white pine areas, marshes, oak savanna, upland prairie and rolling meadows provide habitat for diverse wildlife populations at William O’Brien. The park also sits adjacent the St. Croix River.

Afton State Park

Location:	Afton, Denmark Township
Size:	1,620 acres
Description:	The park is set amongst rolling hills and bluffs, and contains woodlands, savanna, and prairie. The forests combine upland hardwoods with some pine plantations. Oak savannas and prairies are being expanded and restored through an aggressive resource management program. Park wildflowers include woodland ephemerals in the spring; butterfly weed and puccoons on the summer prairie; and sunflowers and blazing star in the fall. The park also borders the St. Croix River.

St. Croix Boom Site State Wayside

Location:	Stillwater
Size:	26 acres
Description:	The wayside overlooks a wide area on the St. Croix River where an estimated 15.5 billion feet of logs from the pine forests of the St. Croix valley were gathered and sorted before being floated downstream to sawmills between 1856 and 1914. The site was developed as a roadside recreational area in the 1930s and designated a National Historic Landmark in 1966. Washington County has partnered with the DNR to make improvements to the site. The county will assess the potential role of the St. Croix Boom Site in the park system and a proposed trail connection to the Brown’s Creek State Trail.

St. Croix National Scenic Riverway

Location:	Northwest Wisconsin and eastern Minnesota
Size:	230 miles
Description:	Relatively free-flowing and unpolluted, the Namekagon and St. Croix rivers flow through some of the most scenic and least developed country in the Upper Midwest. Together they form the 230-mile-long park that offers outdoor enthusiasts a chance to enjoy a variety of recreation opportunities within easy reach of Minneapolis-St. Paul. The last 25 miles of the St. Croix River are not part of the national park, but are part of the national wild and scenic rivers system.

Mississippi National River and Recreation Area	
Location:	Minneapolis-Saint Paul metropolitan area
Size:	72 miles
Description:	<p>The Mississippi River's character changes more throughout the 72 mile stretch of the Mississippi National River and Recreation Area than anywhere else along its 2,350-mile course.</p> <p>The river enters the northern corridor as a free-flowing prairie river and moves downstream to plunge over St. Anthony Falls and into the river's narrowest gorge. Eight and one-half miles later, the river exits the gorge to become the country's dominant floodplain river and part of the largest inland navigation system on earth. Through the eight and one-half mile gorge, the Mississippi drops more than 110 feet, the river's steepest descent anywhere. The river's rapidly changing character explains why the national river and recreation area has such a unique concentration of nationally significant resources.</p>

Trails

Trails owned and operated by Washington County are one component of a comprehensive bicycle and pedestrian network that provides recreation and transportation opportunities for trail users. The regional trail system in the metropolitan area is like the highway system, with regional and local components. The regional component consists of trails in the regional trail system, run by park implementation agencies such as Washington County, and state administered trails. These trails are complemented by shorter, local trails that may eventually feed into units of the regional trail system.

The Metropolitan Council's 2040 Regional Parks Policy Plan contains a classification system for determining what trails warrant regional status. These trails must serve a regional audience and connect two or more units of the regional parks system, without duplicating an existing route. Washington County, as an implementation agency, is responsible for owning and operating regional trails. The Metropolitan Council supports these efforts by assisting with planning, funding, research, marketing, and advocacy.

It is important to note that Washington County has made progress on providing opportunities for trail users outside of the regional trail system. Many county highways not currently identified as part of the regional trail system have separated trails or wide shoulders for biking. Washington County has plans to expand this network as well (see Figure 10).

This section primarily focuses on role and function of regional trails within Washington County. A trail assessment memo was developed for a more comprehensive description of county-wide trails (see Appendix I).

The regional and local trail network is also supported and enhanced by the Regional Bicycle Transportation Network (RBTN), which is identified as part of the Metropolitan Council's 2040 Transportation Policy Plan (TPP). The RBTN helps to define the region's on-street bikeways and off-street trail connections, and how the system works together to serve regional transportation trips by bicycle. More information on the RBTN's role in Washington County is provided in the Transportation Chapter.

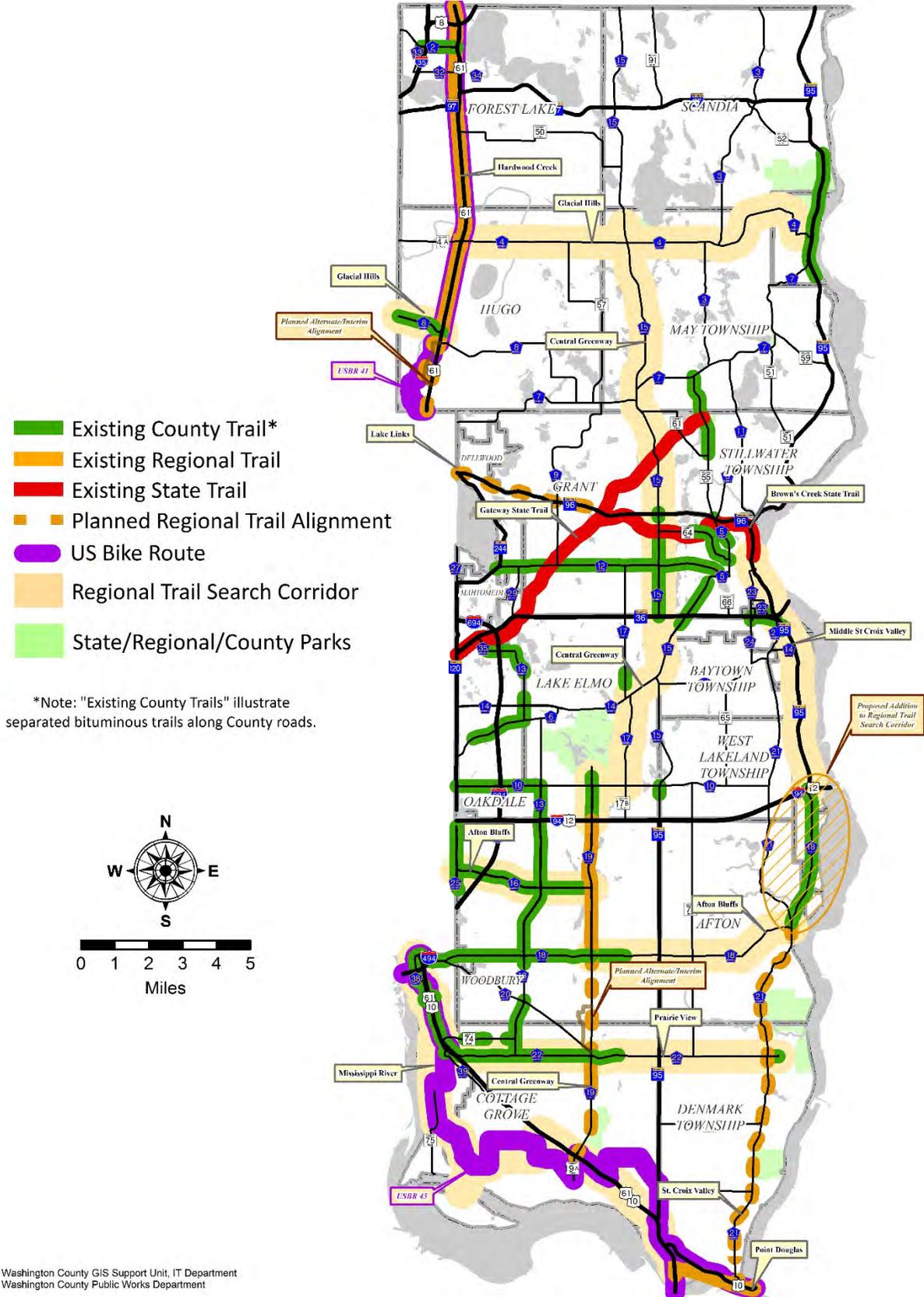
This section will identify, describe, map, and plan for all of the regional and state trail components:

- Regional Destination Trails
- Regional Linking Trails
- Regional Search Corridor
- State Trails

Table 5: Regional Trails

Regional Trail	Miles Proposed	Miles Existing	Miles to be Completed
Hardwood Creek	12	10	2
Point Douglas	2.5	2.5	0
St. Croix Valley	20.5	0	20.5
Central Greenway	TBD	5	TBD
Lake Links	4.6	0	4.6
Glacier Hills	TBD	TBD	TBD
Middle St. Croix Valley	TBD	TBD	TBD
Afton Bluffs	TBD	TBD	TBD
Mississippi River	TBD	TBD	TBD
Prairie View	TBD	TBD	TBD

Figure 10: Washington County Regional Trail System



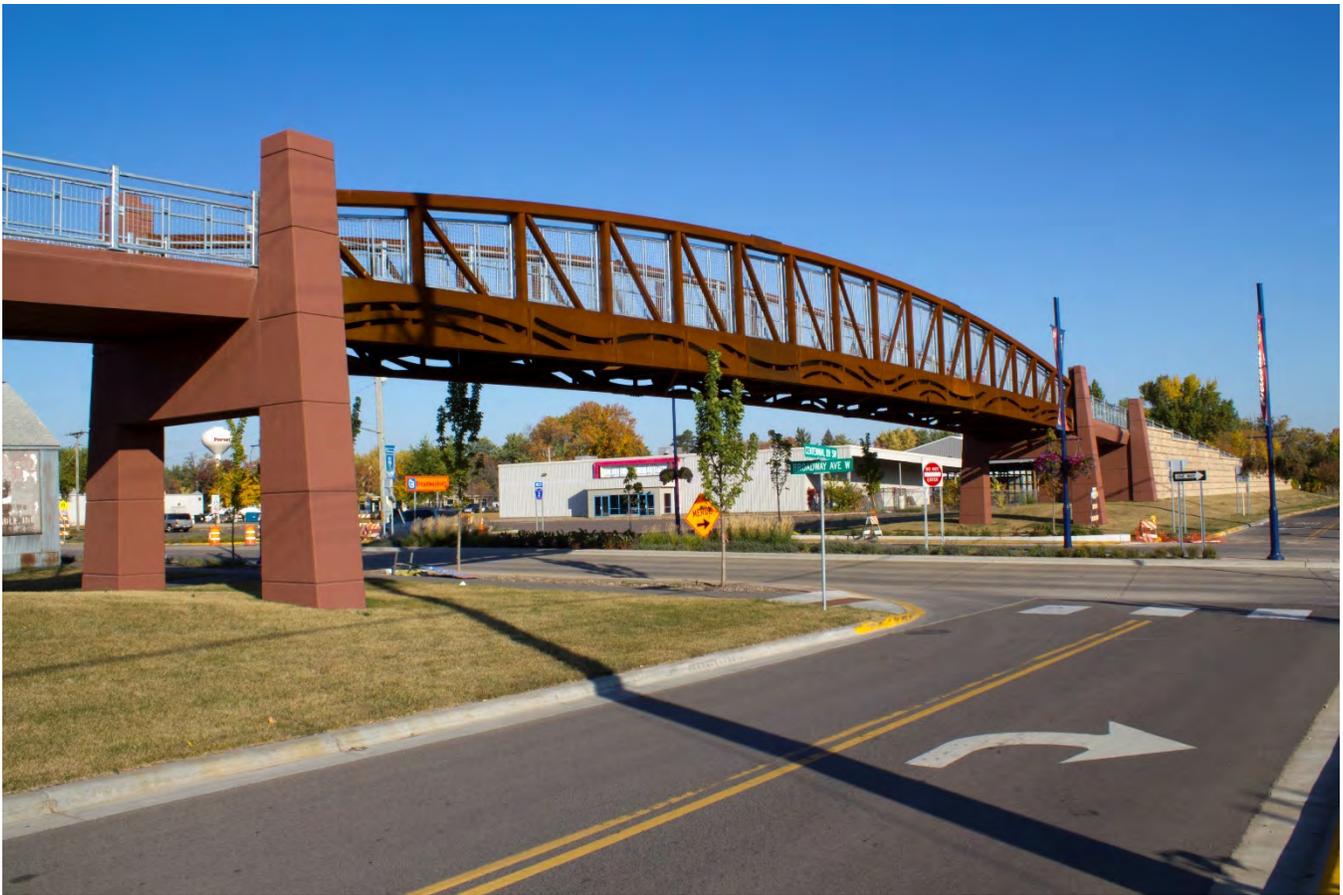
Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Washington County Public Works Department

Destination Trails

Destination or greenway trails typically follow along routes with high-quality natural resources that make the trail itself a destination. The presence of high-quality natural resources is considered when planning a destination regional trail or greenway because the setting contributes to the quality of trail recreational experience. The corridor should have no adverse impact on the natural resource base, while safely accommodating trail users.

This section will provide profiles of each of the following regional destination trails within Washington County:

- Hardwood Creek Regional Trail
- Point Douglas Regional Trail
- St. Croix Valley Regional Trail



Hardwood Creek Regional Trail	
Existing Conditions:	
Trail Classification:	Regional Trail Destination
Regional Significance:	
The Hardwood Creek Regional Trail is a multiple-use trail in northwestern Washington County. The trail connects to the Sunrise Prairie Regional Trail in Chisago County and will eventually link with the Bruce Vento Regional Trail in Ramsey County. The trail takes visitors through residential areas, natural areas, and the commercial areas of Hugo and Forest Lake.	
Existing Development:	
The Hardwood Creek Regional Trail is on a former Burlington Northern Railroad grade which is level and wheelchair accessible. The existing trail consists of two parallel trails that run adjacent to State Highway 61, from the Washington/Chisago County Line in Forest Lake, to 140th Street in Hugo, about 10 miles. The paved portion is for hard surface trail users, while the turf portion is separated for horseback riders in the summer and snowmobilers in the winter.	
Planning Status:	A master plan was adopted in 2013.
Development Concept:	
Proposed Development:	<p>The master plan will guide future acquisition and trail development. The Hardwood Creek Regional Trail will be approximately 12 miles long.</p> <p>The master plan’s optimal route begins with a connection north to the Sunrise Prairie Regional Trail (in the City of Wyoming). On the south end, the trail will connect to Bald Eagle-Otter Lakes Regional Park (in White Bear Township), and ultimately to the larger Ramsey County regional trail system. From the north to south, the trail follows the Burlington Northern Railroad corridor, adjacent to Highway 61, from the Chisago County border in the north, to 140th Street in Hugo. Between 140th Street and Falcon Court, an interim trail route is identified in the master plan to provide near-term means to get around a part of the corridor where rail use will remain active for an undefined period of time.</p> <p>Implementation will occur over a number of years as funding and other resources become available. Phasing of trail development will take into consideration the timing of related projects.</p>

Point Douglas Regional Trail	
Existing Conditions:	
Trail Classification:	Regional Trail Destination
Regional Significance:	
The Point Douglas Regional Trail is a multiple-use trail in southeastern Washington County. The trail runs west along the backwaters and main channel of the Mississippi River, providing vistas of the river. The trail is a key link in the regional network, connecting to the Mississippi River Trail Bikeway, the planned St Croix Valley Regional Trail, and trails in Dakota County and St Croix County (WI). The trail will also provide vital connections to local trails, parks, schools, and businesses.	
Existing Development:	
The existing Hardwood Creek Regional Trail begins at the Point Douglas County Park trailhead and heads west, crosses under US Highway 10 and initially follows the south side of the highway until it ties into an old rail bed right-of-way previously acquired by Washington County. Approaching US Highway 61, the trail turns south, extending over an active rail line, and connecting to an existing trail along the east side of the highway. The trail then crosses over the Mississippi and heads into Hastings.	
Planning Status:	A master plan was adopted in 2012.
Development Concept:	
Proposed Development:	The Point Douglas Regional Trail was developed in accordance to the master plan and is approximately 2.5 miles long. The master plan will continue to guide future acquisition and improvements, as needed.



St. Croix Valley Regional Trail	
Existing Conditions:	
Trail Classification:	Regional Trail Destination
Regional Significance:	
<p>The St Croix Valley Regional Trail is a planned multiple-use trail in southeastern Washington County. Once fully developed, it will link Downtown Afton, Afton State Park, St Croix Bluffs Regional Park, Point Douglas County Park and Regional Trail, and Carpenter Nature Center into Washing County’s trail system. The trail will also provide vital connections to local trails, parks, schools, and businesses.</p>	
Existing Development:	
The St. Croix Valley Regional Trail is not developed.	
Planning Status:	A master plan was adopted in 2001
Development Concept:	
Proposed Development:	<p>The master plan will guide future acquisition and trail development. The St Croix Valley Regional Trail will be approximately 20.5 miles long.</p> <p>From north to south, the master plan’s optimal route starts in the city of Afton at Steamboat Park where an existing trail terminates. The planned trail follows the east side of County Road 21/ St. Croix Trail moving south, where it enters Afton State Park. The optimal trail diverts into two branches on the south end of Afton State Park. One branch follows Quadrant Avenue South, and the other follows the park entrance drive and continues south on County Road 21/St. Croix Trail. The trail branches converge at 87th Street and County Road 21/St. Croix Trail. It then follows County Road 21/ St. Croix Trail south until it enters St. Croix Bluffs Regional Park. Heading south from the regional park, the planned trail will continue along the east side of County Road 21/St. Croix Trail until 117th Street South, where it traverses through Carpenter Nature Center. The proposed route continues heading south following an old rail grade until it connects with Point Douglas County Park and Regional Trail.</p> <p>Implementation will occur over a number of years as funding and other resources become available. Phasing of trail development will take into consideration the timing of related projects.</p>

Regional Linking Trails



Linking trails are predominately intended to provide connections between various Regional Parks System units, most notably regional parks or park reserves. These trails should also attempt to connect to population, economic and social centers along its route, when feasible. The corridor must sufficiently accommodate trail users and should have no adverse impact on the area’s natural resource base.

This section will provide profiles of each of the following regional linking trails within Washington County:

- Central Greenway Regional Trail
- Lake Links Regional Trail

Central Greenway Regional Trail	
Existing Conditions:	
Trail Classification:	South Segment (Cottage Grove Ravine Regional Park to I-94) – Regional Linking Trail Lake Elmo Segment (I-94 to Hwy 36) – Regional Trail Search Corridor North Segment (Hwy 36 to Big Marine Park Reserve) – Regional Trail Search Corridor
Regional Significance:	
The Central Greenway Regional Trail is a multiple-use trail that will run north-south through the center of Washington County. Once fully developed, it will connect trail users to regional destinations, including Cottage Grove Ravine Regional Park, Lake Elmo Park Reserve, Big Marine Park Reserve, future Washington County regional trails, and the Gateway and Brown’s Creek state trails. The trail will also provide vital connections to local trails, parks, schools, and businesses.	
Existing Development:	
The Central Greenway Regional Trail is not fully planned or developed. The proposed South Segment alignment runs 9.65 miles primarily along County Road 19/Keats Avenue. The 4-mile section between I-94 and County Road 18/Bailey Road within the South Segment is developed. The Lake Elmo and North segments of the Central Greenway Regional Trail could identify existing trails as part of Central Greenway during the master planning process.	
Planning Status:	The Central Greenway – South Segment Master Plan was adopted in 2017. A master plan is needed for the Lake Elmo Segment and North Segment.
Development Concept:	
Proposed Development:	<p>The master plan will guide future acquisition and trail development. The Central Greenway Regional Trail will be approximately 30 miles long.</p> <p>The South Segment of the trail is planned and the proposed alignment runs 9.65 miles primarily along County Road 19/Keats Avenue, from Cottage Grove Ravine Regional Park to I-94. Two different alignments were identified for the section of trail between Military Road and Dale Road within the South Segment. Washington County will determine which alignment is best suited for trail development at a future date.</p> <p>The Lake Elmo Segment and North Segment alignments will be determined through a future master planning process.</p> <p>Implementation will occur over a number of years as funding and other resources become available. Phasing of trail development will take into consideration the timing of related projects.</p>

Lake Links Regional Trail	
Existing Conditions:	
Trail Classification:	Regional Linking Trail
Regional Significance:	
The Lake Links Regional Trail is a planned multiple-use trail that extends from Ramsey County into north Washington County. Once fully developed, it will connect trail users with regional destinations in Washington County; including the Central Greenway Regional Trail, and the Gateway and Brown’s Creek state trails. The planned trail includes segments within Ramsey County, connecting to the greater regional trail network. The trail will also provide vital connections to local trails, parks, schools, and businesses.	
Existing Development:	
The Lake Links Regional Trail is planned but not fully developed. The optimal regional trail route segments are not under the jurisdiction of Washington County.	
Planning Status:	A master plan was adopted in 2001
Development Concept:	
Proposed Development:	<p>The master plan will guide future acquisition and trail development. The Lake Links Regional Trail will be approximately 34.1 miles long, across both Ramsey and Washington Counties.</p> <p>The trail’s master plan designates Highway 96 as the regional trail optimal route, beginning at the intersection of Highway 244 and linking the Gateway State Trail and Brown’s Creek State Trail. The Lake Links master plan also designates local-level trails that feed into the area’s regional and state trails. The local trail optimal route within Washington County includes a loop around White Bear Lake, connecting Birchwood Village, Willernie, Mahtomedi, and Dellwood.</p> <p>The existing and planned regional and local segments of trail identified in the master plan are not under the jurisdiction of Washington County.</p>

Search Corridors

Some regional trails have been envisioned as parts of the regional trail system for several years and have been included in past comprehensive plans. Since alignments for these trails have not yet been approved by the Metropolitan Council as part of a master plan, and are therefore not yet part of the regional trail system funding for acquisition and development, they are considered regional trail search corridors. Once an alignment is approved through a master plan process, they will be designated as regional trails.

This section will provide profiles of each of the following regional trail search corridors within Washington County:

- Glacier Hills Regional Trail
- Middle St. Croix Valley Regional Trail
- Afton Bluffs Regional Trail
- Mississippi River Regional Trail
- Prairie View Regional Trail

Glacier Hills Regional Trail	
Existing Conditions:	
Trail Classification:	Regional Trail Search Corridor
Regional Significance:	
The Glacier Hills Regional Trail will be a multiple-use trail that will run through northern Washington County. Once fully developed, it will connect trail users to regional destinations; including, Hardwood Creek and Central Greenway Regional Trails, Big Marine Park Reserve and William O’Brien State Park. The trail will also provide vital connections to local destinations; including, trails, parks, schools, and businesses.	
Existing Development:	
The Glacier Hills Regional Trail is not planned or fully developed. A master planning process could identify existing trails as part of regional trail alignment.	
Planning Status:	A master plan is needed for the Glacier Hills Regional Trail.
Development Concept:	
Proposed Development:	The Glacier Hills Regional Trail alignment will be determined through a future master planning process. A master plan will also guide future acquisition and trail development.

Middle St. Croix Valley Regional Trail	
Existing Conditions:	
Trail Classification:	Regional Trail Search Corridor
Regional Significance:	
<p>The Middle St Croix Valley Regional Trail will be a multiple-use trail that will run through eastern Washington County. Once fully developed, it will connect trail users to regional destinations, including the Brown’s Creek State Trail. The trail will also provide vital connections to local destinations; including, trails, parks, schools, and businesses. The Middle St. Croix Valley Regional Trail Search Corridor links to the St. Croix Crossing and the corresponding Loop Trail – important non-motorized transportation features within the county.</p> <p>During the next update to the Regional Parks Policy Plan, Washington County will seek to extend this Regional Trail Search Corridor south along County Road 18 to County Road 21, connecting to the planned St. Croix Valley Regional Trail.</p>	
Existing Development:	
The Middle St Croix Valley Regional Trail is not planned or fully developed. A master planning process could identify existing trails as part of regional trail alignment.	
Planning Status:	A master plan is needed for the Middle St Croix Valley Regional Trail
Development Concept:	
Proposed Development:	The Middle St. Croix Valley Regional Trail alignment will be determined through a future master planning process. A master plan will also guide future acquisition and trail development.

Afton Bluffs Regional Trail	
Existing Conditions:	
Trail Classification:	Regional Trail Search Corridor
Regional Significance:	
<p>The Afton Bluffs Regional Trail will be a multiple-use trail that will run through Woodbury and Afton. Once fully developed, it will connect trail users to regional destinations; including, Central Greenway and St Croix Valley Regional Trails, Afton State Park, and Battle Creek Regional Park (Ramsey County). The trail will also provide vital connections to local destinations; including, trails, parks, schools, and businesses.</p>	
Existing Development:	
The Afton Bluffs Regional Trail is not planned or fully developed. A master planning process could identify existing trails as part of regional trail alignment.	
Planning Status:	A master plan is needed for the Afton Bluffs Regional Trail.
Development Concept:	
Proposed Development:	The Afton Bluffs Regional Trail alignment will be determined through a future master planning process. A master plan will also guide future acquisition and trail development.

Mississippi River Regional Trail	
Existing Conditions:	
Trail Classification:	Regional Trail Search Corridor
Regional Significance:	
The Mississippi River Regional Trail will be a multiple-use trail that will run through southern Washington County. Once fully developed, it will connect trail users to regional destinations; including, Central Greenway, Mississippi River, and Point Douglas Regional Trails, Grey Cloud Island Regional Park, and Cottage Grove Ravine Regional Park. The trail will also provide vital connections to local destinations; including, trails, parks, schools, and businesses.	
Existing Development:	
The Mississippi River Regional Trail is not planned or fully developed. A master planning process could identify existing trails as part of regional trail alignment.	
Planning Status:	A master plan is needed for the Mississippi River Regional Trail.
Development Concept:	
Proposed Development:	The Mississippi River Regional Trail alignment will be determined through a future master planning process. A master plan will also guide future acquisition and trail development.

Prairie View Regional Trail	
Existing Conditions:	
Trail Classification:	Regional Trail Search Corridor
Regional Significance:	
The Prairie View Regional Trail will be a multiple-use trail that will run through southern Washington County. Once fully developed, it will connect trail users to regional destinations; including, Central Greenway, Mississippi River, and St. Croix Valley Regional Trails. The trail will also provide vital connections to local destinations; including, trails, parks, schools, and businesses.	
Existing Development:	
The Prairie View Regional Trail is not planned or fully developed. A master planning process could identify existing trails as part of regional trail alignment.	
Planning Status:	A master plan is needed for the Prairie View Regional Trail.
Development Concept:	
Proposed Development:	The Prairie View Regional Trail alignment will be determined through a future master planning process. A master plan will also guide future acquisition and trail development.

State Trails

A state trail is described as a route that connects state or national park destinations, and provides access to significant scenic, historic, scientific, or recreational areas. State trails tend to be on abandoned railroad grades and accommodate both non-motorized and motorized uses. State trails are operated by the Minnesota Department of Natural Resources.

The following subsections will provide profiles of the state trails within Washington County:

- Gateway State Trail
- Brown’s Creek State Trail

State Trails	
Gateway State Trail	
Distance:	18 miles
Description:	Located on a former Soo Line Railroad grade, the Gateway State Trail is generally level and accessible to users of all abilities. The paved trail connects St. Paul to Pine Point Regional Park, and passes through a diverse cross-section of urban areas, parks, lakes, wetlands and fields in both Ramsey and Washington Counties. Trail users find rural landscapes and access to downtown Saint Paul and the State Capitol complex.
Brown’s Creek State Trail	
Distance:	6 miles
Description:	Situated on the former Minnesota Zephyr railroad grade, the Brown’s Creek State Trail is generally level and accessible to users of all abilities. The paved trail connects the Gateway State Trail in Grant to downtown Stillwater and a growing network of trails to the south and east of Stillwater. Two miles of the state trail is adjacent to Brown's Creek, a designated trout stream with a dense forest canopy and steep-sided slopes. Other segments of the trail lie parallel to the St. Croix River.

Open Space



Washington County is committed to protecting its natural resources to assure a high quality of life. This requires us to meet current needs without placing environmental, economic, and social burdens on future generations to meet their own needs. Multifaceted and collaborative approaches are underway at the county to secure this envisioned future, though more work and investment is needed to stabilize and reverse the declining health of our natural resources.

The following summarizes the existing conditions of the natural resource assets in the county.

Existing Conditions

Soils

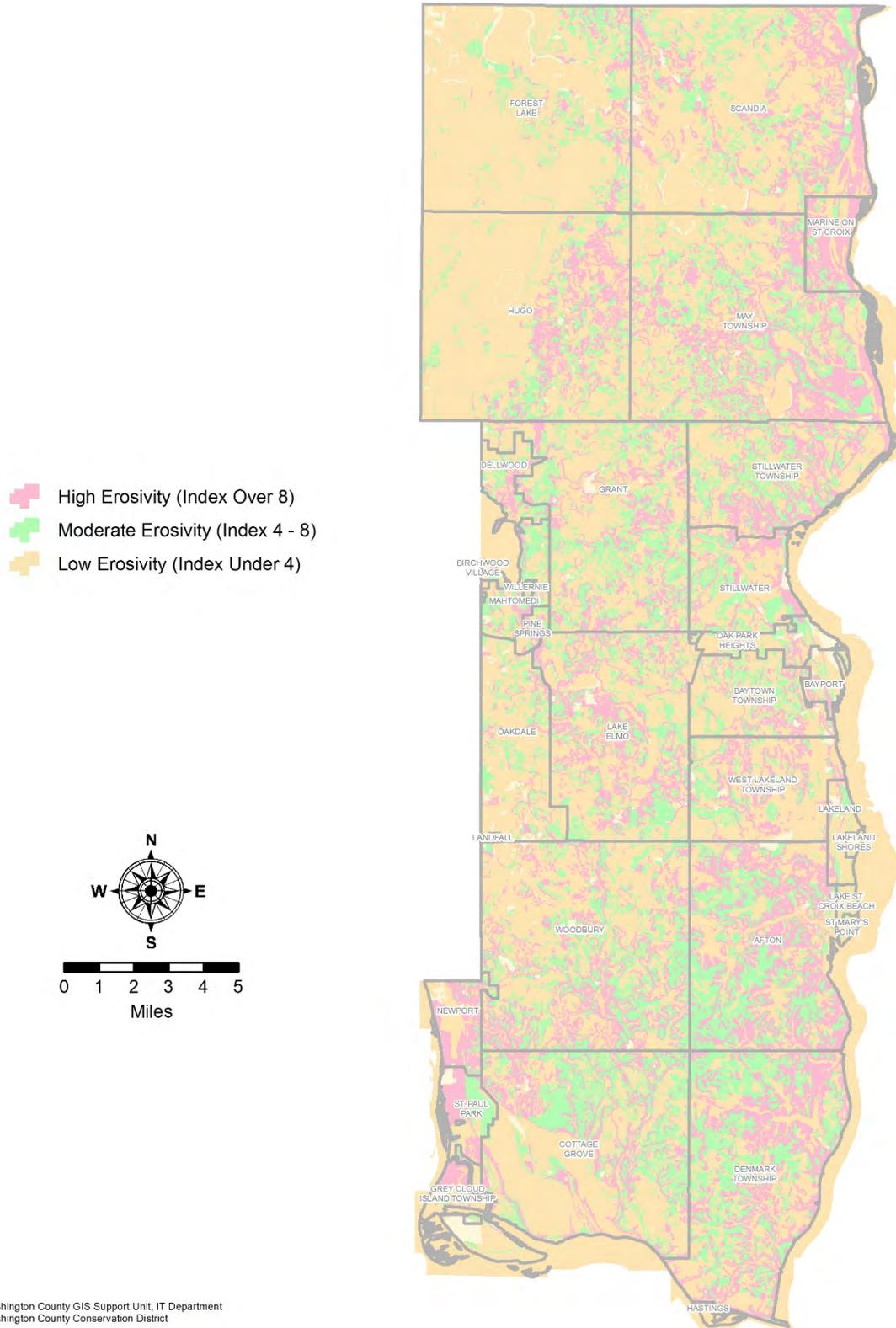
As erosion, vegetation, and other factors changed glacial deposits, a wide variety of distinct soil types evolved in Washington County. The Natural Resource Conservation Service's Soil Survey for Washington County describes 14 major and over 100 minor soil types in the county. The soils are classified according to the origination of their parent materials, coarseness, slope, and drainage. The Soil Survey includes the suitability of the soil as a source material for particular uses. Notable conditions in Washington County include:

- Bedrock within three feet of the surface can be encountered along the St. Croix River and in other scattered areas of the county.
- Wet soils with slow percolation rates are prevalent throughout the northern half of the county. These soils are periodically flooded or have a high water table.
- Steep slopes are common along the St. Croix River.

Areas with bedrock near the surface, steep slopes, wet or periodically flooded areas, or soils with slow percolation rates signal inappropriate areas for development. Though Washington County has made progress through the use of zoning, shore land and other protection tools, development efforts continue to drain and build in sensitive areas best left in a natural state.

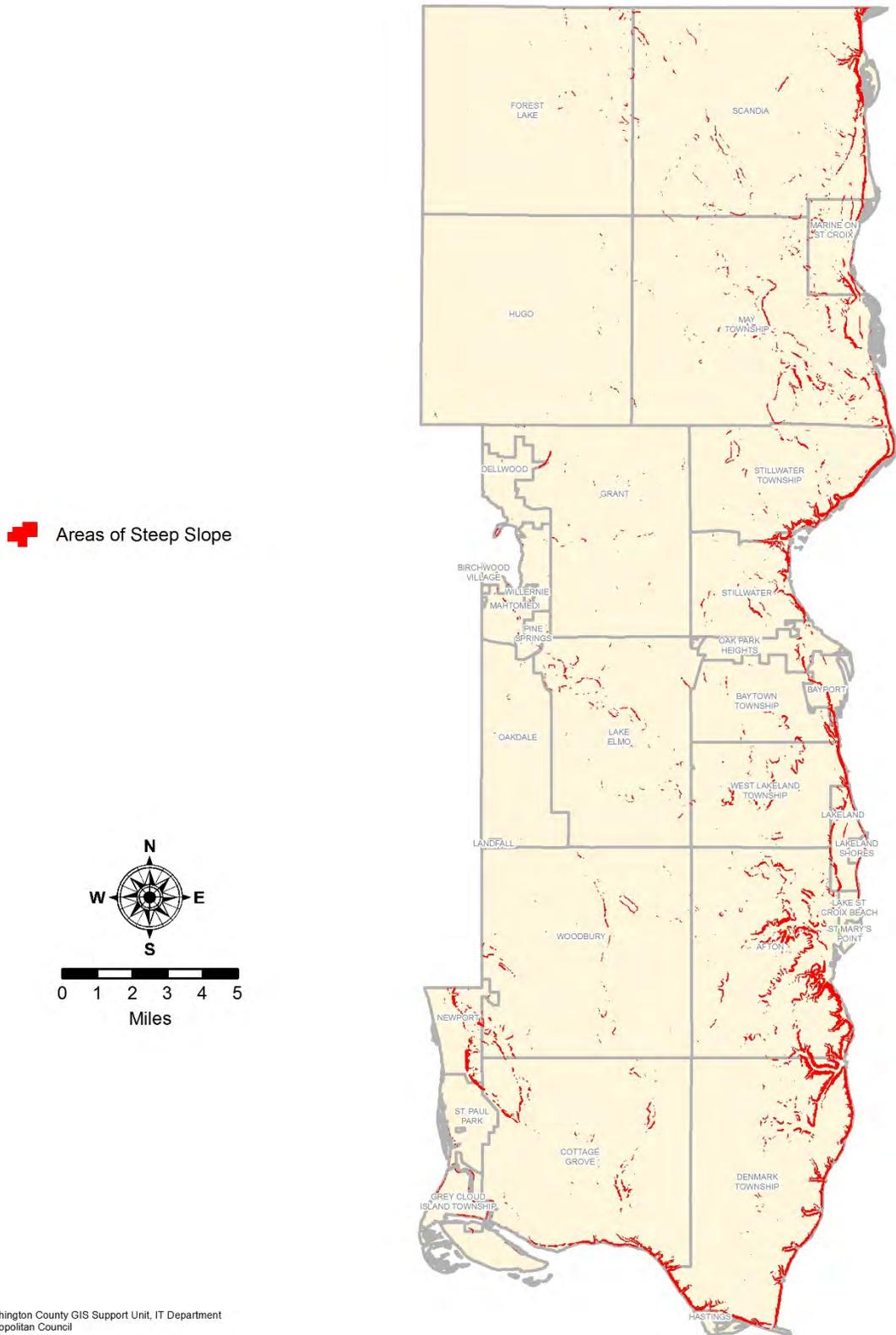


Figure 11: Erosion-Prone Slopes



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Washington County Conservation District

Figure 12: Steep Slopes



Prepared By: Washington County GIS Support Unit, IT Department
Data Source: Metropolitan Council

Though considered part of the metro area, Washington County still retains rural areas and significant active agriculture. Farmland acres in Washington County decreased by 68 percent between 1950 and 2012 from 249,600 acres on 1,642 farms to 80,901 acres on 602 farms (US Census on Agriculture).

The prime soils for farmland are predominantly located in the southern part of the county in Denmark Township and the cities of Cottage Grove and Afton (see Figure 13). Soils classified as prime farmland have a good combination of moisture-holding capacity, permeability, natural fertility, non-sloping land, and chemical composition for producing food, feed, forage, fiber, and oilseed crops (row crops). These lands must have a suitable growing season, an adequate moisture supply, an acceptable level of alkalinity or acidity, and few rocks.

Aggregate and Mineral Resources

Outwash sand and gravel deposits are the predominant natural aggregate resource in Washington County. Deposits are located along the St. Croix River and within the cities of Woodbury and Cottage Grove. Dolomite is abundant throughout Washington County. Quarries that provide this material comprise the bulk of the carbonate used locally for building and road construction.

The majority of the sand and gravel material, as well as limestone resources, are located along the bluffs and plains near the St. Croix and Mississippi rivers (see Figure 14)

Washington County is a major provider of these resources for the Twin Cities Metropolitan Area. Currently, the aggregate supply from the Grey Cloud mine in southern Washington County is estimated to have a potential 30-year aggregate supply and a mine in Dakota County a 50-year supply to support the seven county metro area. Additional information about mining resources can be found in the Land Use section.

Land Cover and Plant Communities

In the last ten years, the county has indeed experienced changes in the landscape. Before settlement, as much as 80 percent of the county was forested. The most recent Minnesota Land Cover Classification System (MLCCS) inventory completed between 2005 and 2016 found 13.84 percent of the county currently forested or woodland. The northern half of the county retains remnants of the original forests with the largest stands along the St. Croix River. The county's woodlands mostly consist of oak woods and maple/basswood forest. Stands of birch, aspen, pine, and tamarack are scattered around the county. See Figure 15 for a map of the current large blocks of forest interior in the county.

Figure 13: Prime Farmland Soils

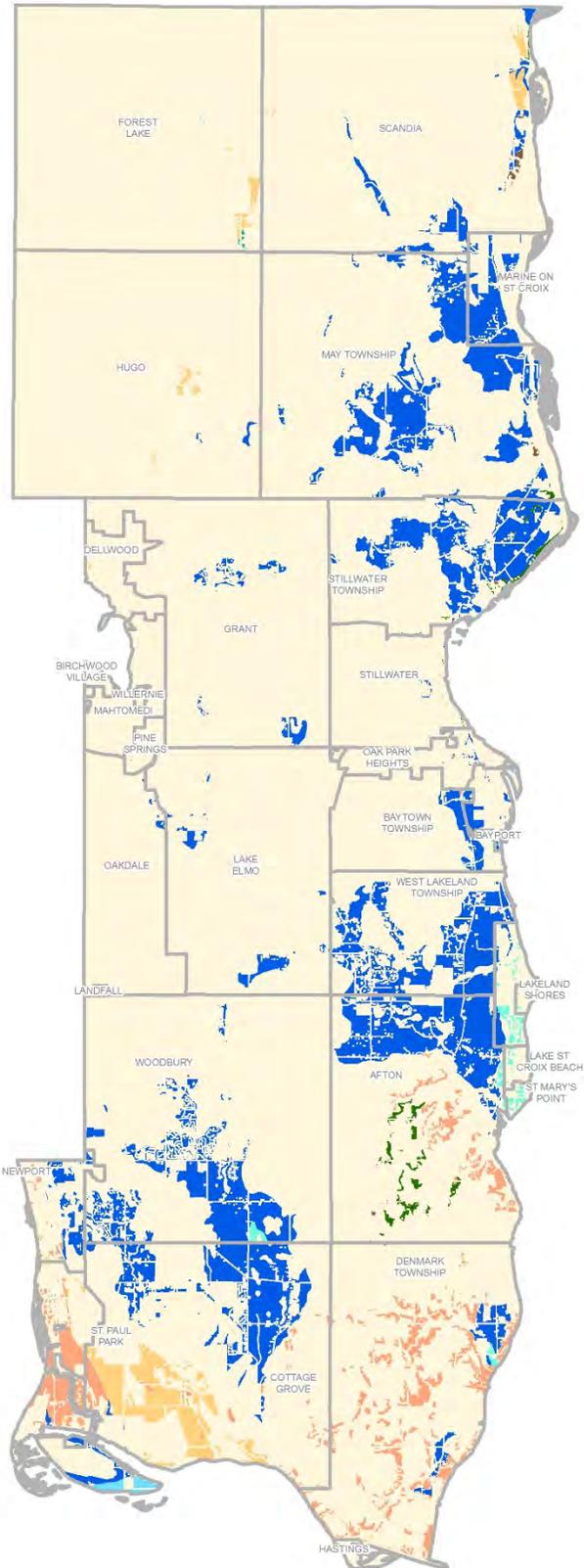
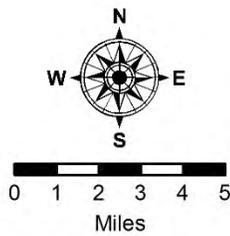


Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Metropolitan Council

Figure 14: Prime Aggregate Resources

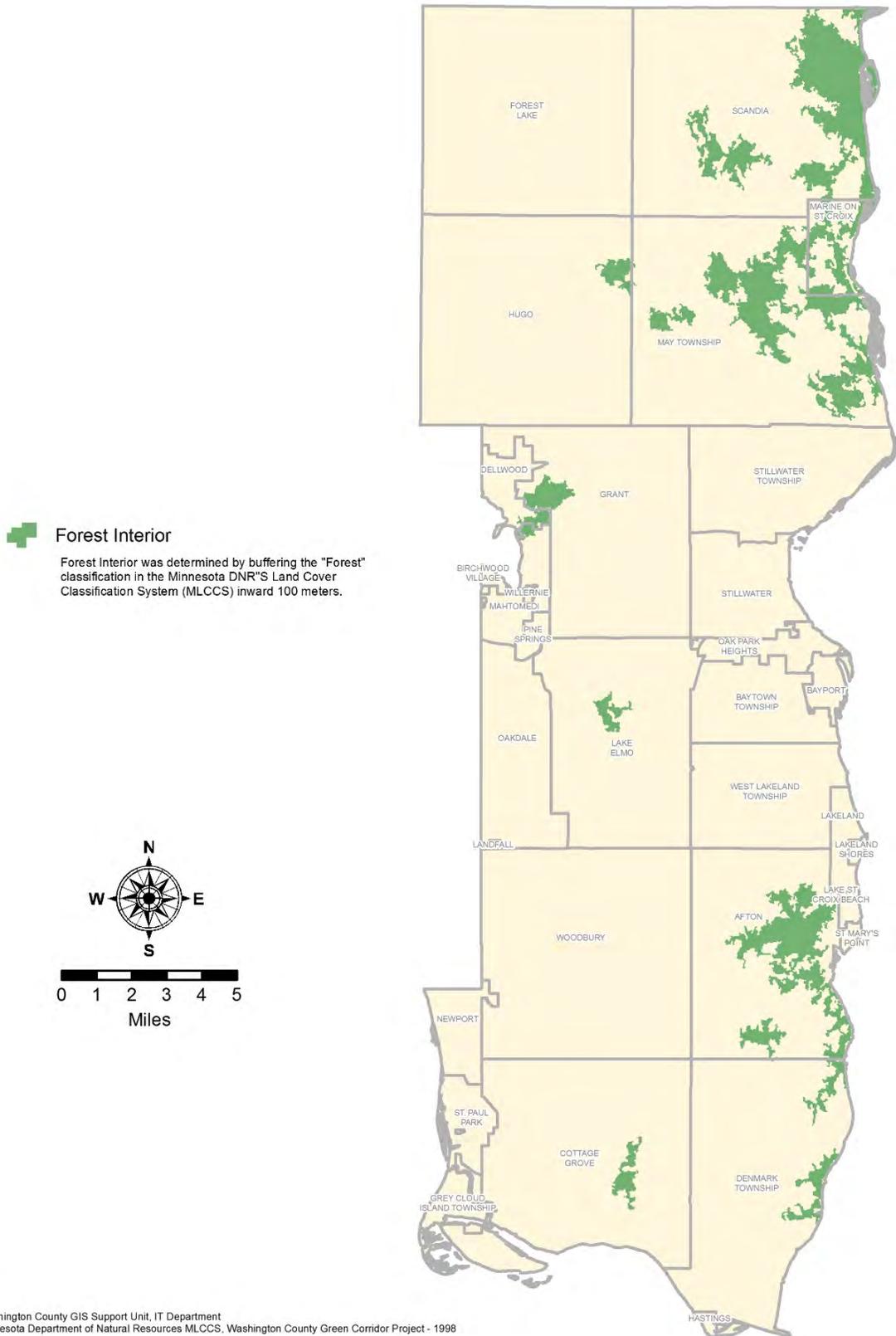
Aggregate Deposit Classification

-  Class A - Prairie du Chien Dolostone > 30 ft thick
-  Class B - Prairie du Chien Dolostone >10 <30 ft thick
-  Class C - Prairie du Chien Dolostone < 10 ft thick
-  Class 2 - Des Moines Lobe Sand and Gravel > 20 ft thick, poor to moderate quality
-  Class 3 - Des Moines Lobe Sand and Gravel > 20 ft thick, moderate to good quality
-  Class 4 - Superior Lobe Sand and Gravel > 20 ft thick, good to excellent quality
-  Class 5 - Des Moines Lobe Sand and Gravel 10-40 ft thick, poor to moderate quality
-  Class 6 - Des Moines Lobe Sand and Gravel 10-40 ft thick, moderate to good quality
-  Class 7 - Superior Lobe Sand and Gravel 10-40 ft thick, good to excellent quality
-  Class 10 - Des Moines Lobe Sand and Gravel > 40 ft thick, moderate to good quality
-  Class 11 - Superior Lobe Sand and Gravel > 40 ft thick, good to excellent quality



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Metropolitan Council - 1997

Figure 15: Forest Interior

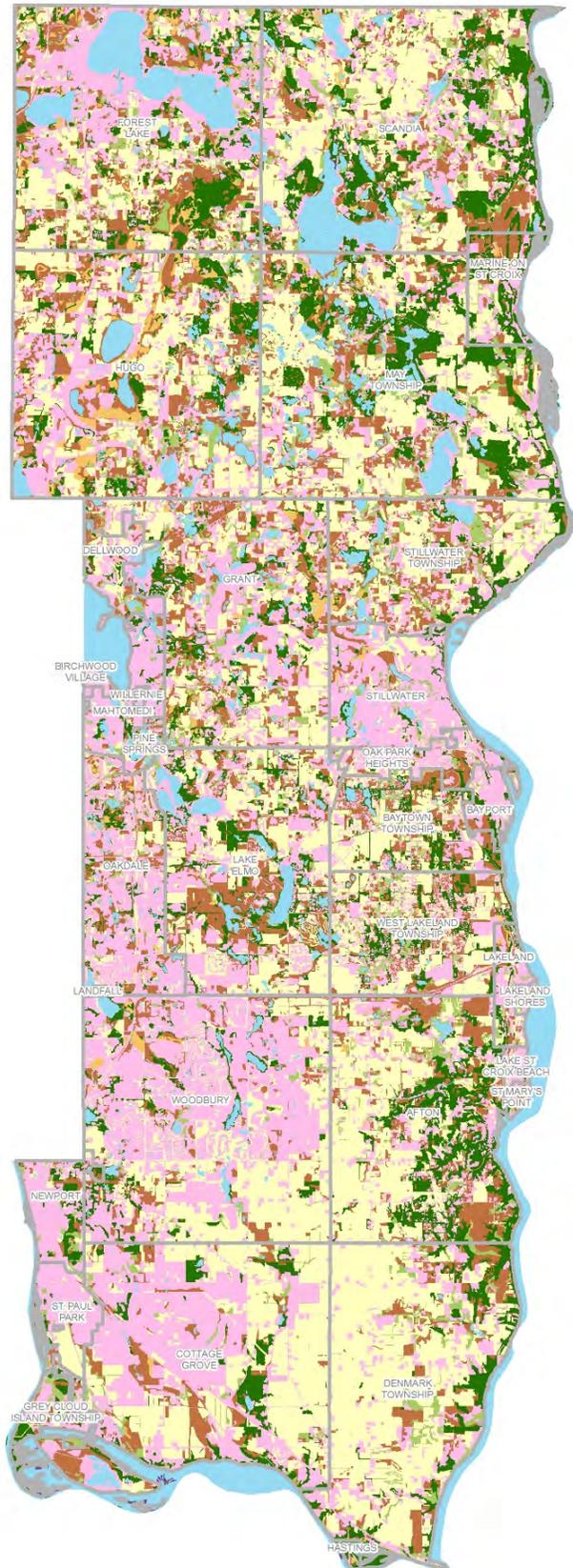
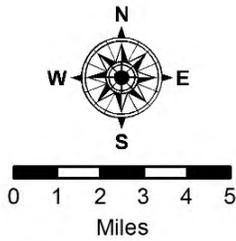


Prepared By: Washington County GIS Support Unit, IT Department
Data Source: Minnesota Department of Natural Resources MLCCS, Washington County Green Corridor Project - 1998

Figure 16: MLCCS Land Cover Types

Minnesota Land Cover Classification System

- Undefined
-  Impervious surfaces
-  Cultural vegetation
-  Forests
-  Woodlands
-  Shrublands
-  Herbaceous
-  Non-vascular veg.
-  Sparse vegetation
-  Water



Prepared By: Washington County GIS Support Unit, IT Department
Data Source: Washington Conservation District 12/12/2017

The MLCCS identified the following land cover types in Washington County. Figure 16 shows the location of each type.

Table 6: MLCCS Land Cover Types in Washington County

Cover Type	2005		2016		Net Change	
	Acres	Percent	Acres	Percent	Acres	Percent
Light Density Development (4-25% Impervious)	34,606	12.78%	35,873	13.25%	1,267	0.47%
Medium Density Development (26-75% Impervious)	24,674	9.11%	27,105	10.01%	2,431	0.90%
High Density Development (76-100% Impervious)	11,505	4.25%	12,294	4.54%	789	0.29%
Cropland	56,244	20.77%	50,170	18.53%	-6,074	-2.24%
Forest & Woodlands	37,463	13.84%	38,334	14.16%	871	0.31%
Wetlands	28,550	10.54%	28,259	10.44%	-291	-0.11%
Grasslands	25,331	9.36%	25,109	9.27%	-222	-0.08%
Exposed and Transitional Lands & Mines	3,975	1.47%	4,066	1.50%	91	0.03%
Planted and Maintained Grasses	20,972	7.75%	21,886	8.08%	914	0.34%
Planted Trees & Nurseries	6,852	2.53%	6,974	2.58%	122	0.05%
Open Water	20,790	7.68%	20,886	7.71%	96	0.04%
Total	270,962*	--	270,956*	--	--	--

*Acreages were calculated within ArcMap and may not be identical to other data sets due to differing coordinate systems and source data. The six-acre discrepancy is due to rounding during analysis. Data source: Washington Conservation District.

There appears to be a trend of development of cropland with a combined 24 percent being developed to some degree, which is especially prevalent in the Lake Elmo, Stillwater, Woodbury, and Cottage Grove communities. An additional 18 percent is either in the process of being developed (transitional) or has been mined for sand and gravel. Nearly 20 percent has also been reclassified as grasslands. This should be viewed with some caution, however, as those new grasslands may be occasionally hayed rather than remaining in an undisturbed state. The same may be said of the 27 percent reclassified as planted or maintained grasses. Another finding to consider is the 291-acre change in wetlands. This is an artifact of changes in classifications to more accurately represent water bodies.

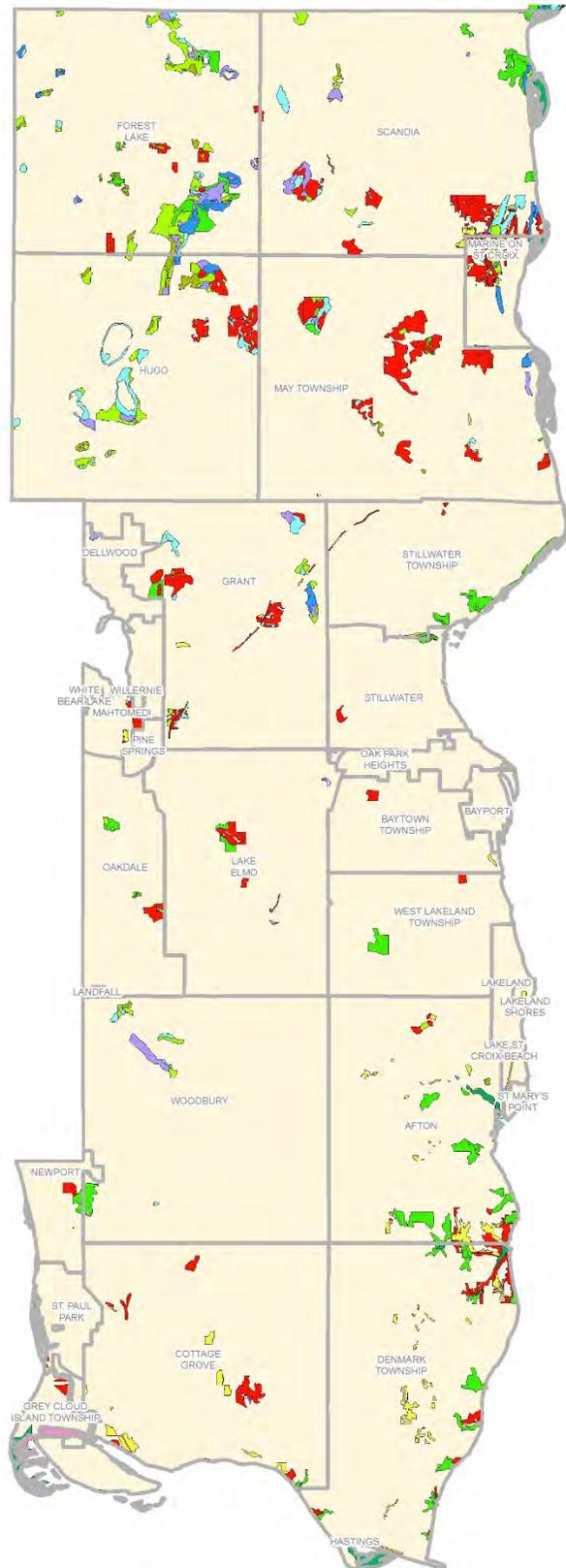
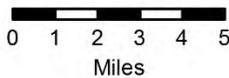
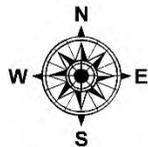
As a result of human activities such as logging, farming, and development, most of the county's native vegetation has been developed or converted to row crops. Figure 17 shows the county's land area containing native vegetative cover.

Other important native vegetation exists in small remnants of native prairie and in a variety of wetland areas such as fens, marshes, swamps, and bogs. Restoration efforts are increasing and many prairie and forest communities are being restored on public and private lands.

Figure 17: County Biological Survey

DNR Native Plant Communities

-  Acid Peatland System
-  Cliff/Talus System
-  Fire-Dependent Forest/Woodland System
-  Floodplain Forest System
-  Forested Rich Peatland System
-  Lakeshore System
-  Marsh System
-  Mesic Hardwood Forest System
-  Open Rich Peatland System
-  River Shore System
-  Rock Outcrop System
-  Upland Prairie System
-  Wet Forest System
-  Wet Meadow/Carr System
-  Wetland Prairie System
-  Complex community



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Minnesota Department of Natural Resources

Water



Washington County recognizes that healthy ground and surface water are essential for life and healthy communities and is committed to protecting this valuable resource. Information on the county’s water resources can be found in the Water section (LINK to Water Resources Section).

Animals and Insects

Current data also suggest an overall dramatic pattern of decline in animal and insect diversity and abundance in many parts of the world. The decline of honeybee populations has received widespread public attention in recent years, in large measure because of their vital role in pollinating food crops. Insects play a central role in a variety of processes, including pollination, plant eating and nutrient cycling and providing a food source for higher trophic levels such as birds, bats, other mammals and amphibians. Ongoing loss of animal and insect diversity and abundance provokes cascading effects on food webs and jeopardizes ecosystem services. Recognizing the significance of this, Washington County will assess strategies to minimize impact to animal and insect habitat.

Washington County Land Acquisitions and Conservation Easements

Future generations deserve healthy environmental commons – soil, water, air, climate, insects, and animals. Land acquisitions and conservation easements are two approaches used by the County to assure the commons are protected and cared for generation after generation in perpetuity.

History of Washington County Land Protection Efforts

Time Line

- 1970s & 1980s

The Minnesota Department of Natural Resources and the National Park Service acquired scenic easements along the St. Croix River. Scenic easements are agreements between a landowner and a government agency to protect and preserve views of scenic river districts or byways. These easements typically are held in perpetuity and are a thin corridor along the shore or bluff tops. Nearly all the scenic easements in Washington County are located along the St. Croix River in the communities of Afton, Scandia, and May, and Stillwater, and Denmark townships.

A conservation easement is a legal agreement between the landowner and a conservation organization, whereby the landowner agrees to limit or prohibit development and other activities on the land for the purposes of protecting the natural characteristics of the land. The land typically remains in private ownership and future landowners are bound by the terms of the conservation easement in perpetuity. Washington County or a nonprofit conservation organization typically holds and enforces the conservation easement. Each conservation easement is unique, specifically tailored to the natural characteristics of the land and to the particular situation of the landowner. Easements are filed with county land records.

- 1990s

Washington County Land Trust (later reincorporated to become the Minnesota Land Trust) began acquiring conservation easements throughout the county. Conservation easements are used to protect natural, scenic, or open-space values of properties. These easements typically are held in perpetuity and prohibit or greatly restrict development of the property.

- 2000

Washington County began actively protecting its most precious remaining resources through its Purchase of Development Rights Program after receiving a small grant from the State of Minnesota that resulted in protection of 203 acres of corridors of green space in the County.

- 2006

Washington County residents voted in favor of a Preservation of Water Quality, Woodlands and Other Natural Areas bond referendum. It authorized the County to spend \$20 million to acquire land and interests in land to improve water quality of rivers, lakes and streams; protect drinking water sources; purchase parkland; preserve wetlands and woodlands; and help protect land along water bodies from development. This occurred two years before passage of the Clean Water, Land and “Legacy Amendment” to the state constitution in 2008 that set aside state funds for clean water, improved parks and outdoor habitats and a stronger cultural sector.

A scenic easement is the right to control the use of land (including the air space above such land) within the authorized boundaries of a component of the wild and scenic river system, for the purpose of protecting the natural qualities of a designated wild, scenic, or recreational river area, but such control shall not affect, without the owner’s consent, any regular use exercised prior to the acquisition of the easement. Each easement is unique, specifically tailored to the natural characteristics of the land and to the particular situation of the landowner. Easements are filed with county land records.

In 1972, Minnesota enacted the Lower St. Croix Wild and Scenic River Act to protect the river and its values. The St. Croix River is in the federal Wild and Scenic Rivers system.

Land and Water Legacy Program History

The 2006 referendum outcome became branded as the Washington County Land and Water Legacy Program (LWLP). To further define priority areas for investment, an extensive natural resource assessment, analysis and mapping process of undeveloped natural areas using the Minnesota Land Cover Classification System and other datasets was undertaken. The data helped identify the top ten high priority natural areas in the county in addition to the high prioritization of land along the St. Croix River (see Figure 18). As a result of this process, the Washington County Board of Commissioners also established the following more defined general priorities beyond those established by the 2006 referendum:

- County parkland, including recreational trails
- Lands adjacent to waterways, recreational trails, parks, and other public facilities
- Lands adjacent to already protected lands
- Lands serving multiple public purposes and allowing public access
- Projects that leverage additional dollars from other sources.

It was determined that ideal Land and Water Legacy Program projects are also accessible or visible to the public, create ecological connections and corridors of natural space, are adjacent to a major lake, stream or river, and contain high quality natural features. It was further determined that projects brought forth by local governments could be elevated to high priority status if identified in a land protection plan. The county's POSC participates in reviewing and making recommendations on projects under consideration for LWLP funding. The County Board formally approves all projects.

Since the referendum's passage, the county has worked only with voluntary landowners and organizations to purchase or accept donations or interests in high priority land directly or in partnership with cities, townships, public agencies and nonprofit conservation groups. To date, almost \$9 million of Land and Water Legacy bond funds, leveraging more than \$14 million in non-county funds, have been spent to protect 484 acres of the county's most precious natural resources. Parcels purchased for inclusion in the county's park system are typically paid for with a 25 percent contribution from the Land and Water Legacy Program and 75 percent contribution from the Metropolitan Council.

Land and Water Legacy Program funds have been used to protect 484 acres, including 297 acquired acres (153 acres of these for inclusion in the county parks system) and three conservation easements on 187 privately held acres. Seven conservation easements over 203 acres were also acquired through the Purchase of Development Rights Program, the predecessor of the Land and Water Legacy Program.

Washington County Protected Lands

The County continues its efforts to implement residents' mandate to work with partners and landowners to place additional land into protection through willing-seller acquisitions and easements.

- Department of Natural Resources – 3,425 acres
 - 126 acres in conservation and scenic easements
- National Park Service – 2,402 acres
 - 687 acres in fee ownership
 - 1,715 acres in scenic easements
- Washington County Parks and Regional Reserves – 4,404 acres
- Nature centers – 741 acres
 - Carpenter Nature Center 425 acres
 - 80 acres in conservation and scenic easements
 - Warner Nature Center 316 acres
- Conservation and scenic easements – 7,761 acres
 - As of 2018, a total of 577 conservation and scenic easements are recorded in Washington County.
 - Figure 19 shows the location of these easements.

Figure 18: High-Priority Natural Areas

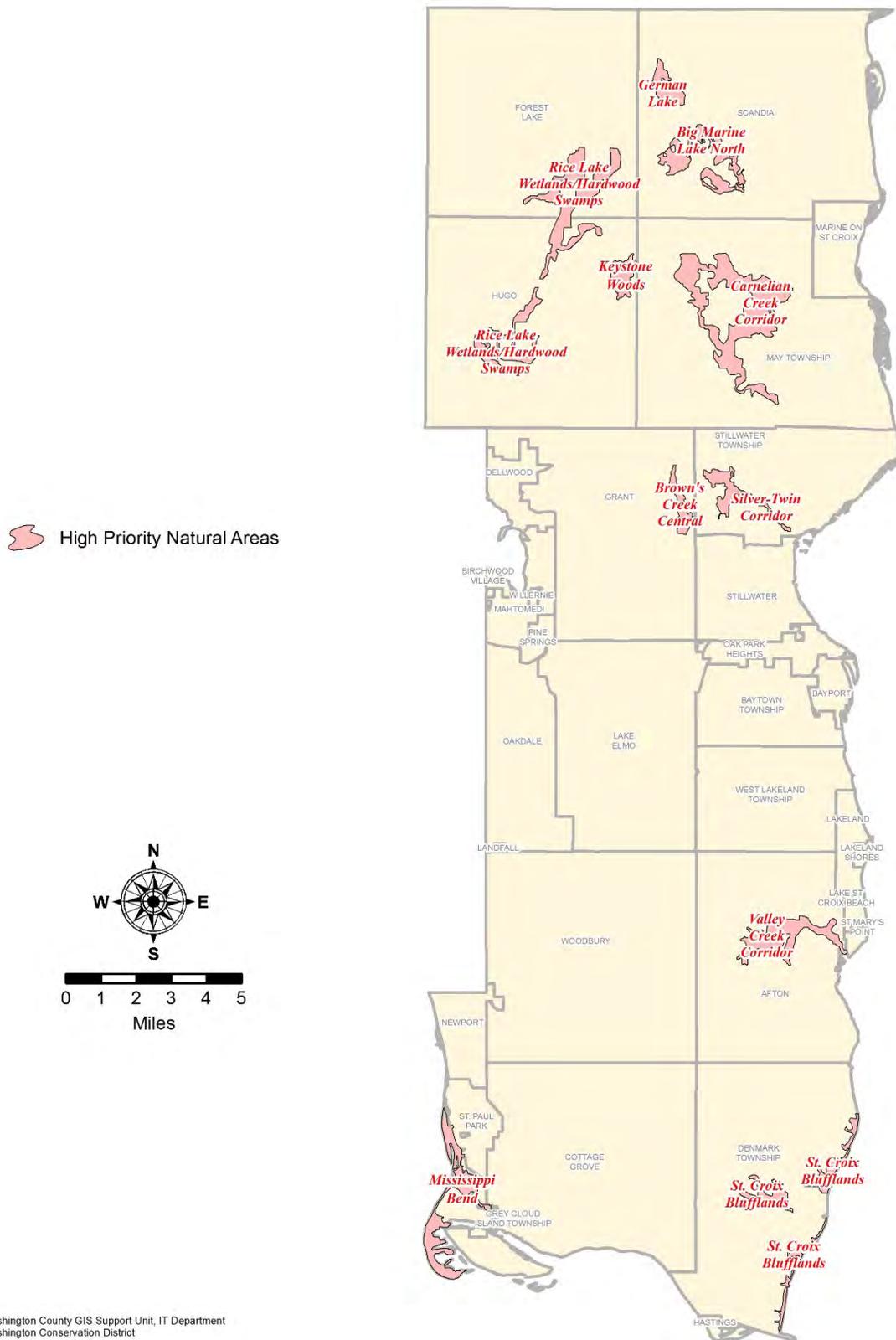
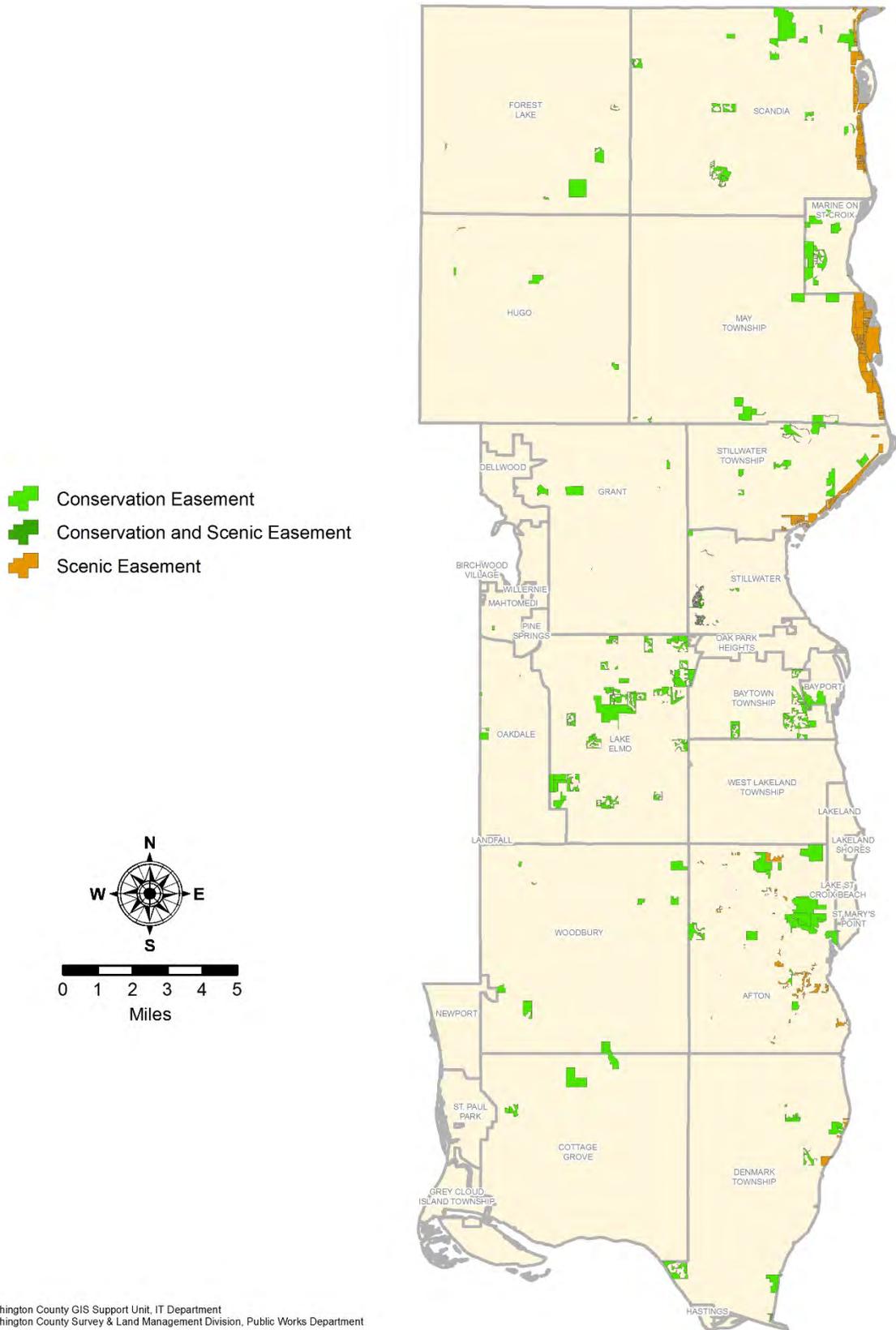


Figure 19: Conservation Scenic Easements



Prepared By: Washington County GIS Support Unit, IT Department
 Data Source: Washington County Survey & Land Management Division, Public Works Department

Goals, Policies, and Strategies

To guide future decision making and county actions, goals, policies and strategies have been developed specific to the parks, trails, and open space element. The following pages outline three goals with corresponding policies and strategies that set the course for the county’s future. Chapter 3, Goals, Polices, and Strategies, also provides the information contained within this section, along with the goals for the other plan elements. Chapter 11, Implementation, provides tools that can be utilized while working to achieve these goals.

Parks, Trails, and Open Space Goal 1: Plan, build, and maintain growing network of parks and trails that serve our communities and the greater region.	
Parks, Trails, and Open Space Policy	Parks, Trails, and Open Space Strategy
Prioritize investment in infrastructure and facilities to ensure safe, high quality experiences for park users.	Continue to assess condition of infrastructure and facilities.
	Provide timely and quality maintenance of existing infrastructure, facilities, and equipment.
	Assess, rank and fund new park and trail infrastructure and facilities.
Plan and build the park system to serve the needs of a growing and changing county and region.	Plan and adopt new park master plans; including, Square Lake Special Recreation Feature and Pine Point Regional Park.
	Assess the role of sites not currently a part of the regional or county park system for future inclusion in the park system.
Plan and build the trail system to link our regional parks and connect communities to local and regional amenities.	Plan and adopt trail master plans; including, Central Greenway Regional Trail (central segment) and St. Croix Valley Regional Trail (middle segment).
	Adopt a bicycle and pedestrian plan to address county recreation and transportation needs.
	Consider trail investment a priority in developing the capital improvement plan.
	Assess county policy on trail maintenance.
Incorporate principles of public health and sustainability into park and trail planning, operations, and maintenance.	Plan parks and trails to support healthy lifestyle choices.
	Incorporate active living by design in projects to support county health and wellness initiatives.
	Incorporate green infrastructure, pollinator-friendly habitat, sustainable landscaping and public art in projects, where feasible.
	Increase energy efficiency in facilities, operations, and maintenance.
	Whenever feasible, evaluate and implement operational best practices to reduce adverse impact of salt, pesticide, and fertilizer use to natural resources.

Parks, Trails, and Open Space Goal 2: Protect, enhance, and provide access to precious public resources – our land, water, and open space – through conservation and stewardship.	
Parks, Trails, and Open Space Policy	Parks, Trails, and Open Space Strategy
<p>Prioritize investment in the protection and management of high quality open space.</p>	Provide for ongoing investment to protect open space through land acquisition programs, such as Land and Water Legacy Program.
	Use Land and Water Legacy Program Conservation Priorities document to guide investment for the conservation of open space.
	Pursue land and right-of-way acquisition within and adjacent to regional parks and trails master plan boundaries.
	Continue partnering to expand open space acquisition and stewardship capacity.
	Develop and implement a plan to manage proper maintenance of conservation easements.
	Assess county policy on public access to protected open space.
	Evaluate strategies to protect agricultural resources and rural character within the open space system.
	Consider development of county conservation areas and greenways.
<p>Preserve, conserve, and restore natural resources by implementing sustainable practices that promote biodiversity and healthy ecosystems.</p>	Develop a comprehensive, strategic park natural resource management approach.
	Develop and implement sustainable forest management plans that address wildlife habitat, forest health, and future forest adaptation.
	Develop and implement sustainable agricultural practices on existing cropland fields.
	Develop and implement land management practices that include effective and innovative methods, such as conservation-based grazing.
	Enhance natural areas through active restoration.
	Use integrated pest management practices in invasive species management efforts.
	Mitigate impacts to high-value trees, wetlands, and other natural resources in all projects.
	Collaborate with governmental units and non-governmental organizations on land and water stewardship efforts.
Coordinate partnerships to involve the community in the maintenance of parks and open space.	

Parks, Trails, and Open Space Goal 3: Provide opportunities for all people to connect to the outdoors by cultivating a welcoming environment, providing robust programming, and building partnerships.

Parks, Trails, and Open Space Policy	Parks, Trails, and Open Space Strategy
<p>Engage the community in planning, stewardship, and programming through strategic partnerships and communication.</p>	<p>Conduct public engagement that minimizes barriers to participation and seeks input from a broad audience of community members.</p>
	<p>Develop educational opportunities and interpretive tools to spread awareness of County natural resource stewardship and sustainability efforts.</p>
	<p>Adopt a marketing and park visitor services plans to promote county parks, trails, and programs.</p>
	<p>Pursue mutually-beneficial partnerships that increase exposure to park and trail system.</p>
<p>Deliver a broad range of programs that provide opportunities for the public to experience the parks, trails, and open spaces.</p>	<p>Continue to use public-private partnerships in developing park programming.</p>
	<p>Expanding recreational opportunities and programs to grow park use in all seasons.</p>
	<p>Develop programs that provide the opportunity for visitors to connect with the county’s history.</p>
<p>Strengthen equitable usage of parks and trails, across age, income, race, ethnicity, national origin, educational attainment, and ability.</p>	<p>Target demographic groups underrepresented as park users in planning and programming efforts.</p>
	<p>Collaborate with the Metropolitan Council and other organizations on identifying implementable steps to strengthening equity within the parks and trails system.</p>
	<p>Use equity tools, such as Metropolitan Council’s equity lens, to evaluate projects.</p>
<p>Provide efficient and high-quality visitor services through innovation, technology, and trained staff.</p>	<p>Pursue technology upgrades, such as electronic pay stations, that will improve staff efficiency and service.</p>
	<p>Engage with the public on programs, events, and services through social media and other online tools.</p>
	<p>Measure and use visitor experience data to make informed decisions on park services.</p>
	<p>Continue efforts to provide staff with the training and resources to aptly serve an increasingly diverse audience of park and trail users.</p>



Arbors 4 Apartments in Oakdale

Chapter 8 - Housing



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Executive Summary



A critical component to a healthy and vibrant community is a diverse and balanced housing supply in good physical condition that includes a variety of price levels, housing types, and sizes. A mix of housing tenures, types, and rent and sales prices provides residents with a range of choices so that they can continue living in their community as their housing needs change through their lifetimes. The affordability of housing is especially important for all residents because it provides a stable foundation on which to build one's life. A diverse housing supply can also better adapt to future environmental, social, and economic changes than one that is largely based on just one of these types. A full range of housing options also enables communities to address the housing needs of employers and a diverse workforce.

The existing housing market in Washington County consists of 96,709 units. The number of households, a direct reflection of the number of housing units, is forecasted to increase to 116,210 households by 2030 and 130,090 households by 2040. The private market will likely build housing stock to accommodate a majority of this anticipated growth. The production of affordable, special needs, and senior housing, however, will require assistance from Washington County and the Washington County Community Development Agency (CDA), as well as other public funding partners. A spectrum of programs and initiatives are provided by the Washington County Community Services Department and the CDA. Community Services provides programming to assist persons with disabilities and to stabilize households in crisis and at risk of homelessness. The CDA provides programming to assist and promote the development of affordable owner-occupied and rental housing options including its ownership of affordable rental units. In addition, the CDA assists cities and townships with a variety of community development efforts, including public facility financing and redevelopment initiatives.

Washington County encourages housing choices that provide residents the opportunity to remain a part of the community while moving through their stages of life. A variety of housing ensures single-family homes and multifamily homes, and senior living developments are available in all price ranges throughout Washington County. Residents at the low end of the income spectrum are not easily serviced by the conventional housing market. Washington County and CDA programs are aimed at helping housing providers to develop new and preserve existing housing, thus creating diverse housing choices in all communities. Funding from these programs can create opportunities for providers to develop diverse housing choices in all communities.

Existing Housing Needs

The existing housing market in Washington County consists of 96,709 households, according to Metropolitan Council 2015 estimates. Washington County has a diverse housing stock with a good mix of owner-occupied and rental units. Housing units are more concentrated in the western half of the county due to growth and development patterns. An unmet need exists for greater affordability in home prices and rents to ease the housing needs of people who work in the county. This is a result of home and apartment prices increasing faster than incomes.

The CDA commissioned Maxfield Research & Consulting, LLC to prepare a *2017 Comprehensive Housing Needs Assessment for Washington County*. This assessment forms the basis for much of the additional data presented in this Housing Chapter. The Needs Assessment analyzed housing needs by defined “market areas” (see Figure 1).

Housing Tenure

With a rate of 80.5 percent, Washington County’s 2015 homeownership rate is more than 10 percent higher than Minnesota (70.1 percent) and over 16 percent higher than the United States (63.7 percent). Of all households, 77,821 owned and occupied their home and 18,888 households rented (see Table 1). The homeownership rate decreased slightly from 83 percent in 2010. The county’s portion of rental housing increased from 17 percent in 2010 to 19 percent in 2014, after being relatively constant since 1990 (see Table 2).

Figure 1: Washington County Market Areas

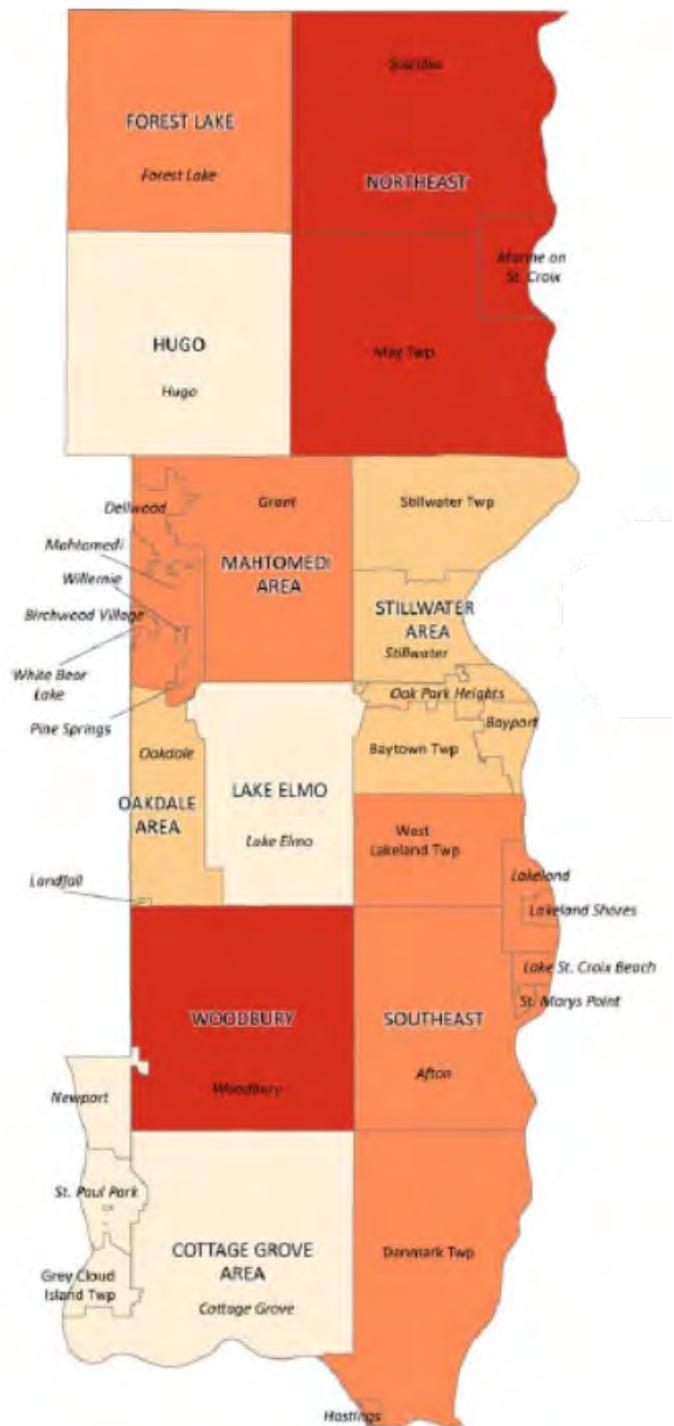


Table 1: Washington County Household Tenure – 2015

Owner-Occupied Units	Rental Units
77,821	18,888

Source: U.S. Census Bureau, 2011-2015 American Community Survey five-year estimates; counts adjusted to better match the Council's 2015 housing stock estimates

Most residences are located in the western half of the county. Households are concentrated (55.9 percent) in the Cottage Grove Area, Oakdale Area, and Woodbury markets. In the eastern half of the county, the majority of housing units are located in the Stillwater Area. The homeownership rates are highest in the Northeast Area, Southeast Area and Lake Elmo markets (92 percent) while the Stillwater Area market area has the lowest homeownership rate (72 percent) (see Table 2).

Table 2: Washington County Household Tenure Trends by Market Area – 2010 and 2014

Market Areas	Owner-Occupied Units			Rental Units		
	2010	2014	Percent Change	2010	2014	Percent Change
Cottage Grove Area	13,032	13,242	2%	2,125	2,192	3%
Forest Lake	5,362	5,238	-2%	1,652	1,761	7%
Hugo	4,539	4,505	-1%	451	546	21%
Lake Elmo	2,648	2,639	0%	131	218	66%
Mahtomedi Area	4,891	4,967	2%	683	812	19%
Northeast Area	2,670	2,644	-1%	214	242	13%
Oakdale Area	8,704	8,443	-3%	2,509	2,710	8%
Southeast Area	4,135	4,034	-2%	249	345	39%
Stillwater Area	8,447	8,394	-1%	2,823	3,298	17%
Woodbury	18,290	18,425	1%	4,304	5,234	22%
Washington County	72,718	72,531	0%	15,141	17,358	15%
Percent of Housing Stock	83%	81%	-2%	17%	19%	12%

Source: U.S. Census; Maxfield Research & Consulting, LLC

Householder age is one factor that impacts housing tenure. Age groups utilize housing differently as their housing needs change through their lifetime. The youngest age group, ages 15 to 24 years, are typically not in a financial position to purchase a home. The proportion of those renting is much higher than those who own by a 3 to 1 margin (see Table 3). As residents move toward middle age, many are able to afford to own and the homeownership rate climbs to 89 percent in the 45 to 54 age group. The rate declines to 81 percent after age 65 when residents begin to utilize senior rental and assisted living housing options.

Table 3: Washington County Housing Tenure Units by Age Group and Type – 2014

Age Group	Rental		Owner-Occupied	
	Units	Percent	Unit	Percent
15-24	1,345	74%	473	26%
25-34	4,635	36%	8,349	64%
35-44	3,490	20%	14,064	80%
45-54	2,518	11%	19,664	89%
55-64	2,067	11%	16,713	89%
65+	3,303	19%	14,227	81%
Total	17,358	19%	73,540	81%

Source: U.S. Census, Maxfield Research & Consulting, LLC

Homeownership attainment is not distributed evenly. Minnesota has one of the greatest disparities in homeownership rates between white and non-white households in the nation. In Washington County, this disparity, known as the homeownership gap, is 18.2 percent (see Table 4). The homeownership gap has many causes including historic discriminatory housing policies, income disparities, and differences in the ability to attain wealth. While the county's homeownership gap is lower than the Metro Region and homeownership rates for households of color have continued to rise since the 1990s, more work is needed to ensure all households have equitable access to homeownership.

Table 4: Metro Counties Homeownership Rates by Race – 2010-2014

County	Share of White, non-Latino households who own their home	Share of Households of Color who own their home	Homeownership Gap (difference)
Anoka	83.7%	56.2%	27.5%
Carver	82.0%	68.8%	13.2%
Dakota	79.5%	48.6%	30.9%
Hennepin	71.6%	32.8%	38.8%
Ramsey	68.7%	30.2%	38.5%
Scott	85.9%	67.2%	18.7%
Washington	82.5%	64.3%	18.2%
Metro Region	75.6%	37.8%	37.8%

Source: Metropolitan Council/Mosaic Community Planning analysis of U.S. Census Bureau, American Community Survey Five-Year Estimates, 2010-2014

Housing Type

Washington County's housing stock is primarily comprised of single family homes (see Table 5). Multifamily units, both owner-occupied and rental, account for 16 percent of the county's housing stock. There are eight manufactured home parks located in Washington County, with one park in each of the following cities: Forest Lake, Landfall, Lake Elmo, Cottage Grove, Oakdale, St. Paul Park, Hugo, and Stillwater.

Table 5: Washington County Housing Types – 2015

Single Family Units	Multifamily Units	Manufactured Homes	Other Housing Units
79,545	15,781	1,335	48

Source: Metropolitan Council, 2015 housing stock estimates

Compared to other suburban counties, Washington County has a similar proportion of multifamily homes to single family homes; except in Dakota County where multifamily units make up a greater proportion of the housing stock than single family units (see Table 6).

Table 6: Single Family & Multifamily Housing Type – 2015

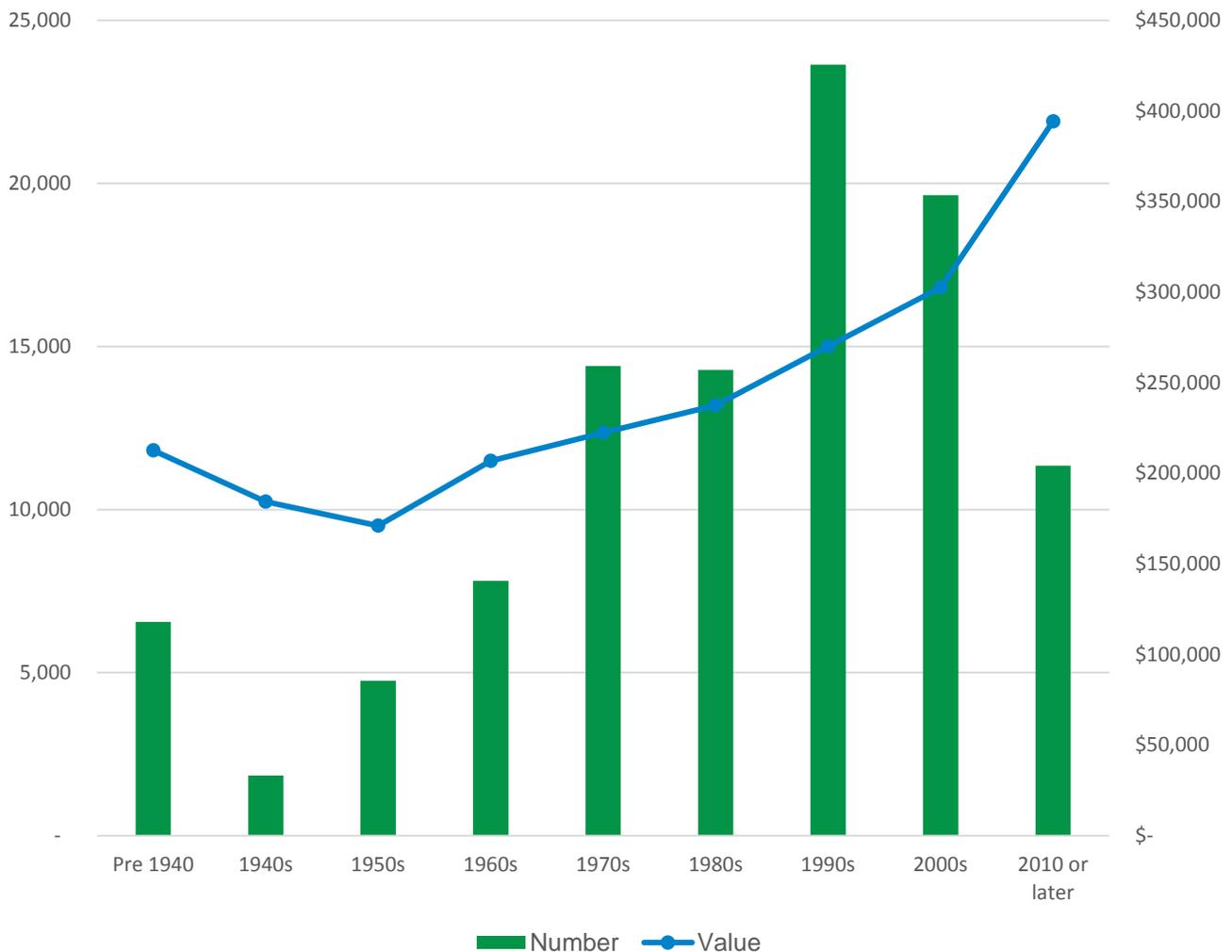
County	Single Family		Multifamily		Total
	Number	Percent	Number	Percent	
Anoka	107,045	82%	19,56	15%	131,046
Carver	30,634	83%	5,481	15%	37,005
Dakota	122,676	74%	38,851	24%	164,956
Hennepin	324,659	61%	203,911	39%	529,474
Ramsey	130,576	59%	87,487	40%	220,954
Scott	43,118	86%	6,267	13%	50,129
Washington	79,545	82%	15,781	16%	96,709
Twin Cities Region	838,253	68%	377,346	31%	1,230,273

Source: Metropolitan Council, 2015 housing stock estimates

Much of Washington County's housing stock is less than 30 years old. The county's median year built is 1986 with the greatest proportion of housing (23 percent) built in the 1990s (see Figure 2). By comparison, the proportion of homes built in the 1990s in the Minneapolis/St. Paul metro area is only 14 percent. Suburbs such as Oakdale, Woodbury, and Cottage Grove developed newer housing stock as these communities captured a large amount of the Twin Cities metropolitan area's recent growth. Over half of all the homes built in Washington County are in these three cities, with 58 percent built after 1990. Hugo has the newest housing stock of all the markets with 70 percent of its housing units built after 2000. Generally, the older housing stock is more affordable. According to the U.S. Census, the median value for homes built in the county in the 1980s was \$237,500, while the median value for new homes built since 2010 is nearly 40 percent higher at \$394,300.

The economic life of housing when not maintained or renovated is typically 45 to 60 years. Approximately one-quarter of the county’s housing stock (20,979 units) was built prior to 1970 and those units that have not been maintained or renovated will be reaching the end of their economic life. As homes age, investments to retain quality, update amenities, and maintain market viability are needed.

Figure 2: Housing Stock Age & Value by Decade – 2015



Source: U.S. Census, American Community Survey; Maxfield Research & Consulting, LLC

Housing Affordability

Housing affordability is measured by dividing a household’s housing costs by its gross income. If housing costs are 30 percent or less than a household’s income, the housing is considered affordable. Housing costs include mortgage or rent payments, utilities, homeowners or renters insurance, and association or other fees. Metropolitan Council estimates that 51,433 units in Washington County are affordable to the low and moderate income individuals (see Table 7); however, these homes are not necessarily occupied by or available to households with those incomes. Fewer homes are affordable to Washington County households with the

lowest, and usually fixed, incomes. Of the 96,709 total housing units in the county, only a fraction (2.7 percent) are affordable to households with incomes less than 30 percent of the Area Median Income (AMI).

Table 7: Housing Affordability by Income Category – 2015

Units affordable to households with income at or below 30% AMI	Units affordable to households with income 31%-50% AMI	Units affordable to households with income 51%-80% AMI
2,642	13,245	35,546

Source: Metropolitan Council staff estimates for 2015 based on 2015 and 2016 MetroGIS Regional Parcel Datasets (ownership units), 2009-2013 Comprehensive Housing Affordability Strategy data from HUD (rental units and household income), and the Council’s 2015 Manufactured Housing Parks Survey (manufactured homes)

Over 17,300 low and moderate-income households are spending more than 30 percent of their income toward housing expenses (see Table 8). Households spending more than 30 percent of income for housing costs are considered to be "housing cost burdened." Households with incomes below 50 percent of the AMI experience the greatest cost burden; 85 percent are paying a disproportionate amount toward their housing.

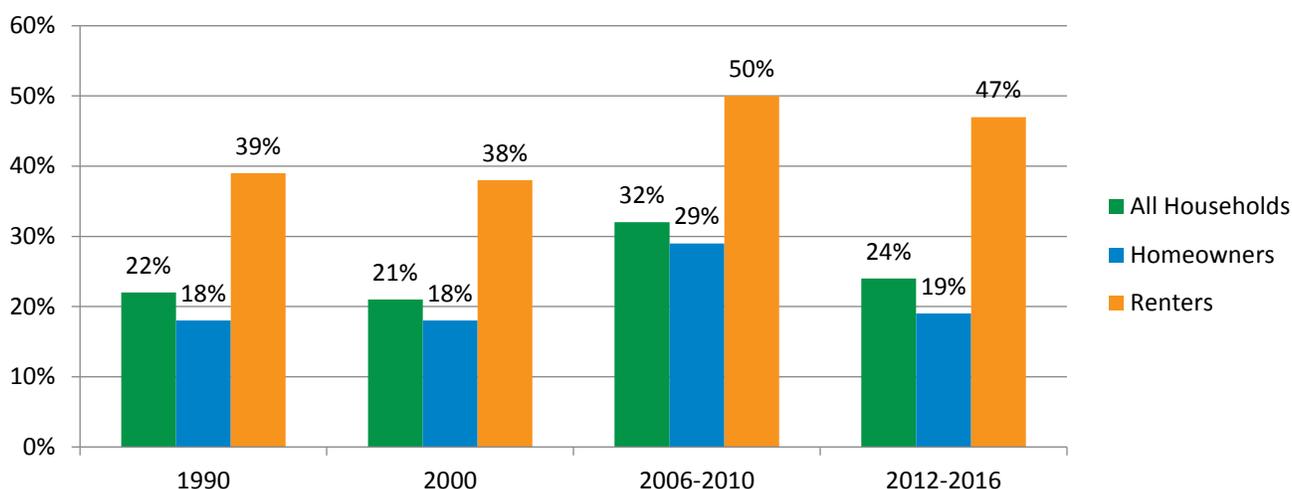
Table 8: Housing Cost Burdened Households – 2015

Income at or below 30% of AMI	Income 31% - 50% AMI	Income 51 – 80% AMI
5,161	7,776	4,392

Source: U.S. Department of Housing and Urban Development, 2009-2013 Comprehensive Housing Affordability Strategy (CHAS) data, with counts adjusted to better match Metropolitan Council 2015 household estimates

The proportion of households experiencing a housing cost burden peaked between 2006 and 2010, at the height of the Great Recession, when 32 percent of all Washington County households paid more than 30 percent of their income toward housing costs (see Figure 3). Cost burdens are more prevalent for renters than homeowners. Nearly half of all renters and one in five homeowners are cost burdened, regardless of income level.

Figure 3: Housing Cost Burden by Tenure – 1990, 2000, 2006-2010, 2012-2016



Source: U.S. Census, 2006-2010 American Community Survey, 2012-2016 American Community Survey

Owner-Occupied Market

Home values in Washington County are among the highest in the metropolitan area. In 2015, the median owner-occupied home value in Washington County was \$251,160, which is 14 percent higher than the metropolitan area (\$220,675). Almost half of the owner-occupied units are valued between \$150,000 and \$249,999 (see Table 9). The most affordable owner-occupied markets of the Cottage Grove Area and Oakdale Area have median home values much lower than the county median value; respectively, 84 percent and 90 percent of the units are valued below \$250,000 (see Figure 4). The Oakdale Area includes a larger proportion of manufactured housing, usually valued lower than other housing types, which is reflected in the number and percent of homes valued less than \$150,000. The most expensive owner-occupied markets of Lake Elmo, Southeast Area, Mahtomedi Area, and Northeast Area have median values exceed \$335,000 with 8 percent or more of the units valued over \$400,000.

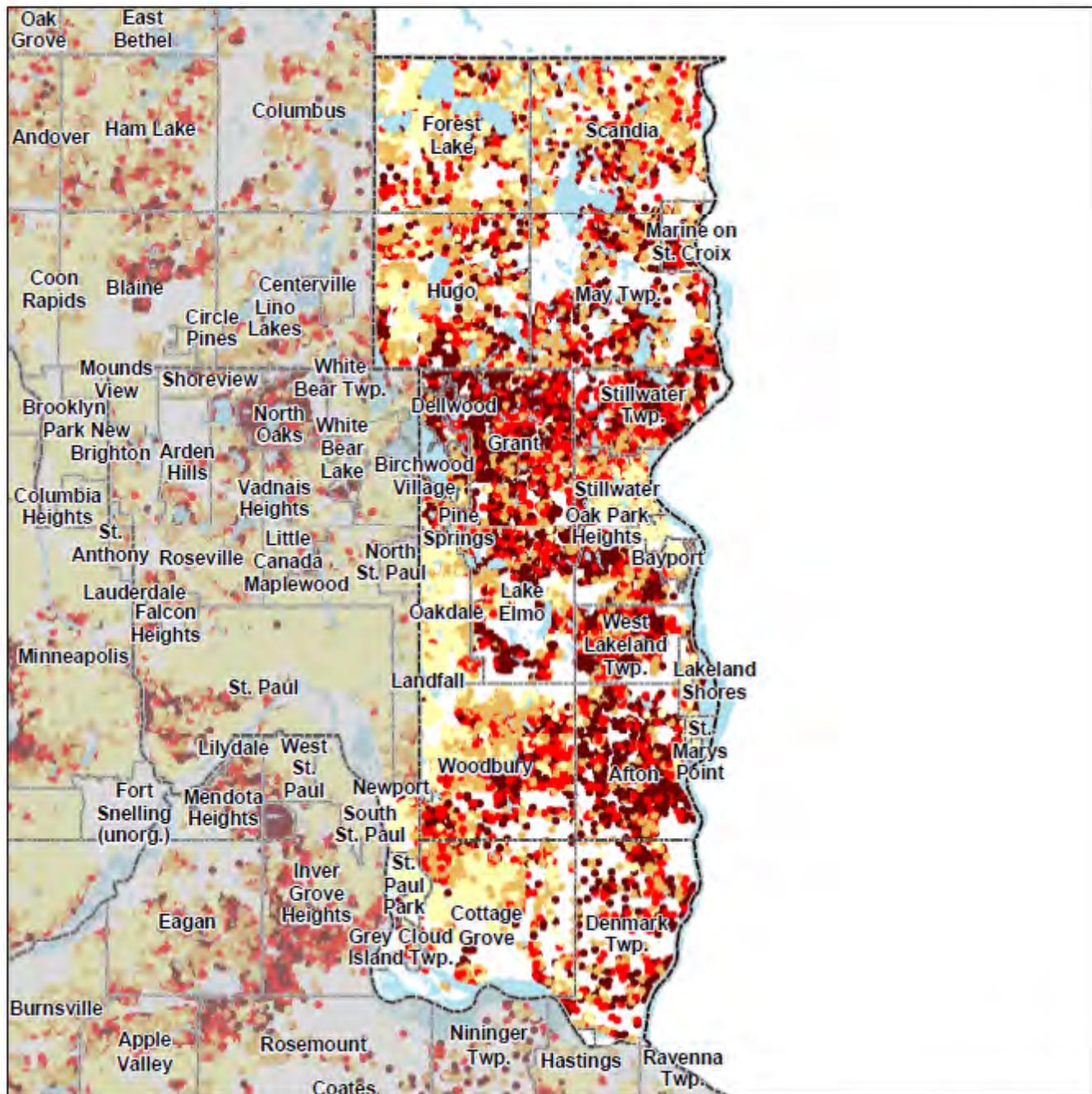
Table 9: Median Value of Owner-Occupied Units – 2015

Market Areas	Less than \$149,999		\$150,000 - \$249,999		\$250,000 - \$399,999		More than \$400,000		Total Units	Median Value
	Units	%	Units	%	Units	%	Units	%		
Cottage Grove Area	2,562	20%	8,232	64%	2,025	16%	30	0%	12,849	\$164,115
Forest Lake	1,068	20%	2,720	52%	1,400	27%	37	1%	5,225	\$230,100
Hugo	917	20%	2,331	52%	1,187	26%	49	1%	4,484	\$228,700
Lake Elmo	399	15%	599	22%	1,456	54%	236	9%	2,690	\$369,000
Mahtomedi Area	416	8%	1,667	34%	2,432	49%	414	8%	4,929	\$345,025
Northeast Area	147	5%	970	36%	1,339	50%	226	8%	2,682	\$335,320
Oakdale Area	2,804	32%	4,973	58%	830	10%	27	0%	8,634	\$183,395
Southeast Area	325	8%	1,306	31%	2,223	53%	324	8%	4,178	\$346,685
Stillwater Area	1,053	12%	4,253	50%	3,000	35%	175	2%	8,481	\$265,310
Woodbury	2,793	15%	8,563	46%	7,157	38%	199	1%	18,712	\$272,000
Washington County	12,484	17%	35,614	49%	23,049	32%	1,717	2%	72,864	\$251,160

Source: U.S. Census; Maxfield Research & Consulting, LLC

The diversity and geographic distribution of owner-occupied housing values in 2015 is mapped in Figure 4.

Figure 4: Washington County Owner-Occupied Housing by Estimated Market Value – 2015



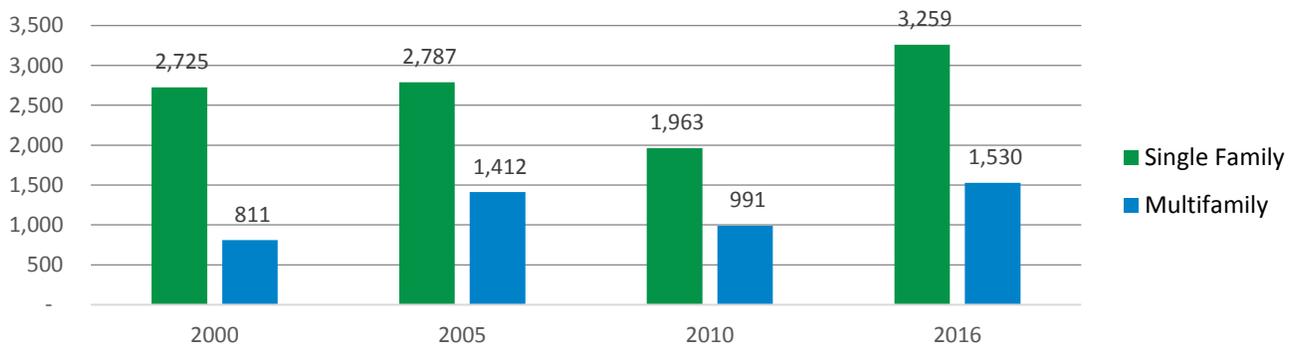
County Boundaries	Owner-Occupied Housing Estimated Market Value, 2015	1 inch = 5.331 miles	
City and Township Boundaries	\$238,500 or Less		
Lakes and Major Rivers	\$238,501 to \$350,000		
	\$300,001 to \$450,000		
	Over \$450,000		

Source: MetroGIS Regional Parcel Dataset, 2015 estimated market values for taxes payable in 2016.
 Note: Estimated Market Value includes only homesteaded units with a building on the parcel.

Owner-Occupied Resales Volume

The owner-occupied housing market includes single family homes and multifamily homes (two or more connected units). Multifamily housing is playing a larger role in the county’s owner-occupied housing stock than in previous decades. Generally, the number of multifamily resales has been about half that of single family resales since 2005. This proportion grew from about one third in 2000 to one half in 2005 where it has remained despite a drop in the number of resales in 2010 during the recession (see Figure 5).

Figure 5: Number of Owner-Occupied Home Resales – 2000, 2005, 2010, 2016

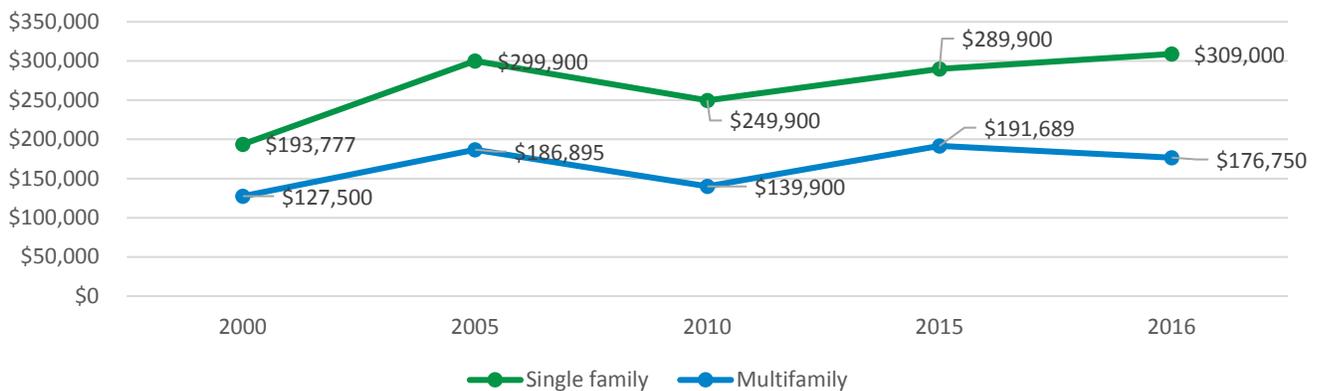


Source: Maxfield Research & Consulting, LLC

Owner-Occupied Resale Prices

The median resale price for both types of owner-occupied housing has increased substantially since 2000 in all market areas. Multifamily home resale prices have hovered at 60 percent of the price of single family homes since 2000 and the pricing trends closely mirror each other over this time period (see Figure 6). Both single family and multifamily median resale prices increased about 50 percent from 2000 to 2005, but single-family home prices declined by 17 percent and multifamily prices by 25 percent in 2010 during the recession. Since then, single family prices have recovered to exceed the 2005 level while the multifamily prices have recovered slower and are equal to the 2005 level. Washington County resale prices fared slightly better than those in the metro region during the recession. The drop in the single-family resale price from 2005 to 2010 of 17 percent is less than the metro wide decline of 23 percent.

Figure 6: Home Median Resale Price – 2000, 2005, 2010, 2015, 2016



Source: Maxfield Research & Consulting, LLC

All market areas experienced substantial increases in single family home median resale prices since 2000 ranging from 39 percent in Lake Elmo to 68 percent in Hugo (see Table 10). Since 2000, the other market areas with large median single-family price increases include Stillwater (67 percent) and Cottage Grove (63 percent). Other market areas with the smaller single-family price increases since 2000 include the Mahtomedi (44 percent) and Oakdale (42 percent) market areas.

Similarly, all market areas experienced substantial increases in multifamily median resale prices since 2000 ranging from 16 percent in Hugo to 62 percent in Stillwater and 300 percent in Southeast, which is skewed because the year 2000 had just one sale (Table 10). Since 2000, other market areas with high median prices increases include Woodbury (52%) and Cottage Grove (39%). Other market areas with lower price increases include Mahtomedi (23%) and Forest Lake (24%) market areas.

Table 10: Owner-Occupied Home Median Resale Price by Market Area – 2000, 2016

Market Areas	Single Family Units			Multifamily Units		
	2000	2016	Percent Change	2000	2016	Percent Change
Cottage Grove Area	\$149,500	\$243,600	63%	\$111,500	\$154,500	39%
Forest Lake	\$169,900	\$256,250	51%	\$136,840	\$170,000	24%
Hugo	\$201,191	\$338,620	68%	\$143,485	\$167,000	16%
Lake Elmo	\$311,000	\$431,545	39%	\$275,000	\$364,545	33%
Mahtomedi Area	\$257,500	\$370,000	44%	\$186,985	\$229,750	23%
Northeast	\$285,171	\$428,685	50%	--	\$194,250	--
Oakdale Area	\$169,900	\$242,100	42%	\$114,900	\$150,000	31%
Southeast	\$270,000	\$394,120	46%	\$60,000	\$240,000	300%
Stillwater Area	\$189,950	\$317,000	67%	\$133,000	\$215,000	62%
Woodbury	\$235,000	\$359,900	53%	\$127,375	\$193,825	52%
Washington County	\$193,777	\$309,000	59%	\$127,500	\$176,750	39%

Source: Regional Multiple Listing Service; Maxfield Research & Consulting, LLC

Affordability of Owner-Occupied Units

The resale price for owner-occupied single-family housing in Washington County is relatively high and not affordable for many households while the resale price for multifamily homes is more affordable. The Metropolitan Council estimates that an affordable home purchase price for a household with an income at 80 percent of the AMI in 2016 was \$238,500. The county median resale price for a single-family home of \$309,000 puts this type of housing out of reach for many households. The county median price for a multifamily home of \$176,750; however, is in the affordable ownership range for modest incomes. Of the 653 single family homes listed on the market in the county in January of 2017, only 89 (14percent) approached the \$238,500 affordability

level with a purchase price of \$250,000 or below. Of the 150 owner-occupied multifamily units on the market, 73 homes (49 percent) had a purchase price at or below \$250,000. Most of the single-family listings with affordable resale prices are found in the Forest Lake, Oakdale and Cottage Grove market areas, while most of the affordable owner-occupied multifamily listings are concentrated in the Woodbury and Oakdale submarkets.

Compared to other metro counties, Washington County has the highest median resale price after Carver and Scott counties (see Table 11). All counties saw consistent and substantial price increases during this period ranging from 22 to 45 percent with the Washington County increase of 30 percent in the middle of that range.

Table 11: Median Resale Price for Owner-Occupied Housing by Metro County – 2012-2015

County	2012	2013	2014	2015	Percent Change 2012-2015
Anoka	\$152,000	\$174,900	\$187,825	\$200,000	45%
Carver	\$230,150	\$250,000	\$258,050	\$273,490	22%
Dakota	\$170,500	\$200,000	\$215,000	\$226,900	41%
Hennepin	\$182,500	\$209,900	\$221,000	\$235,000	35%
Ramsey	\$142,000	\$163,000	\$176,500	\$187,810	41%
Scott	\$197,000	\$226,500	\$239,900	\$245,000	30%
Washington	\$200,000	\$220,000	\$236,000	\$242,300	30%
Metro Region	\$167,900	\$192,000	\$205,600	\$220,000	38%

Source: Regional Multiple Listing Service; Maxfield Research & Consulting, LLC

One in every five county homeowners (15,198 households) pay more than an affordable proportion (30 percent) of their income on housing expenses and are considered cost burdened. Over half (57 percent) of homeowners with incomes of \$50,000 or less are cost burdened. A household income of \$61,447 is required to afford an entry level single family home priced at \$250,000. This is affordable to 66 percent of all Washington County households. An entry level multifamily townhome priced at \$150,000 is more affordable and requires an income of \$38,868. The move-up multifamily home priced at \$260,000 is just above the entry level single family home price with similar affordability levels. It requires an annual income of \$64,438.

For those employed in Washington County, the average weekly wage of \$846, or \$43,992 annually, can be enough to afford the entry level multifamily home, assuming good credit risk and minimal outstanding debts, but is well under the income needed to afford a single-family entry level home. Homeownership in Washington County is out of reach for employees in retail trade and accommodation and food services sectors, which make up over a quarter of the employment opportunities, as these sectors pay a fraction of the annual income needed to afford homeownership.

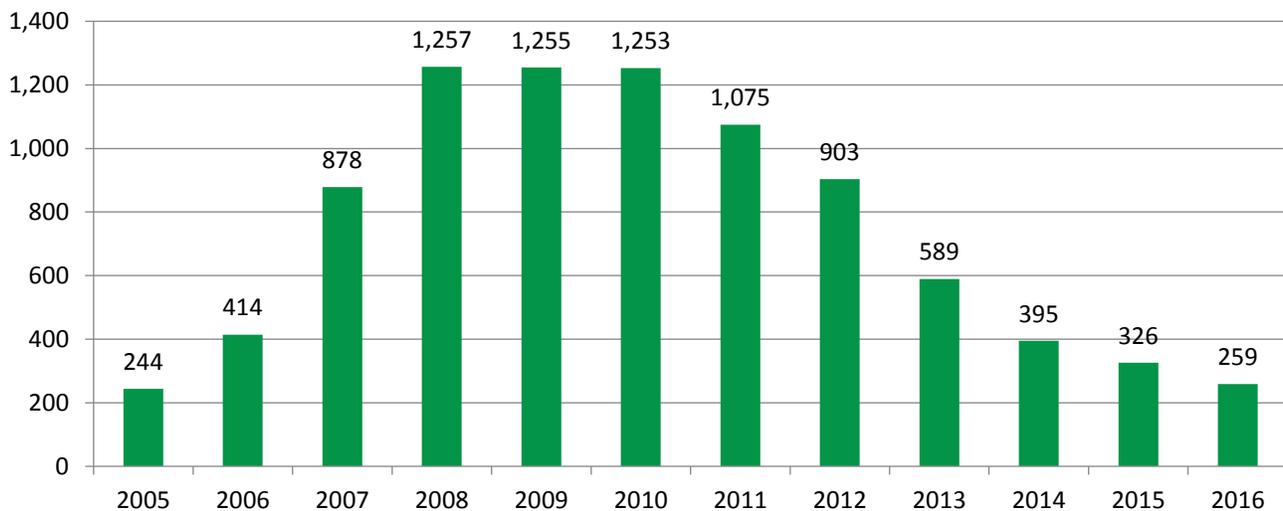
Affordable owner-occupied units have been produced, with financial assistance from Washington County and the CDA, by two local non-profit organizations. Twin Cities Habitat for Humanity has constructed or rehabilitated 150 units in the county, their largest portfolio in the metropolitan area after Minneapolis and St.

Paul. Their homes are targeted to first time homeowners with incomes between 30 and 80 of the AMI. Two Rivers Community Land Trust has constructed or rehabilitated 50 units in the county, accounting for 90 percent of their portfolio. Their homes are targeted to homeowners with incomes at or below 80 of the AMI. Long term affordability is provided through equity sharing and income requirements at resale governed by a 99-year ground lease.

Residential Foreclosures

The number of home mortgage foreclosures in Washington County peaked in 2008 with 1,257 foreclosures (see Figure 7). This represents over a 400 percent increase from 2005 which had just 244 foreclosures. The number of foreclosures remained near the 2008 level through 2010 and then steadily declined each year down to near pre-recession levels in 2016 when there were only 259 foreclosures.

Figure 7: Washington County Total Foreclosures – 2005-2016



Source: Washington County CDA, Washington County Sheriff's Department

Rental Market

In 2015, Washington County had 18,888 rental units comprised of general occupancy rental housing and age-restricted or senior rental housing. The county's general occupancy rental market remains tight, despite recent growth, with vacancy rates well below the market equilibrium rate of five percent (Table 12). The vacancy rate for market rate rental units in January 2017 was 2.3 percent, declining from 3.2 percent in 2013 and 4.2 percent in 2007. Vacancies in affordable and subsidized general occupancy rental housing are virtually non-existent. The exceptionally low vacancy rates for Affordable Units (0.6 percent) and Subsidized Units (0.0 percent) indicates overwhelming demand for rent restricted rentals and that demand is not being met in the current market. Affordable Units are defined as apartments restricted to households with incomes at or below 80 percent of AMI. Subsidized Units are defined as apartments restricted to households with incomes at or below 50 percent AMI whose rent is based on their income.

A survey was completed by Maxfield Research & Consulting, LLC to identify vacancy rates and rental rates for housing units in Washington County (see Tables 12 and 13). This data does not include single family rentals,

smaller rental properties (less than 12 units), and rental properties which did not respond to the survey. The owners of 7,954 general occupancy rental units responded to the January 2017 survey. Respondents owned 5,817 market rate units, 1,524 affordable units, and 655 subsidized units. The survey was sent to properties with 12 or more units.

Table 12: Surveyed General Occupancy Vacancy Rates by Market Area – January 2017

Market Areas	Market Rate Vacancy Rate	Affordable Units Vacancy Rate	Subsidized Units Vacancy Rate	Total Vacancy Rate
Cottage Grove Area	1.9%	2.1%	1.8%	1.8%
Forest Lake	1.2%	0.4%	1.0%	1.0%
Mahtomedi Area	0.0%	0.0%	0.0%	0.0%
Oakdale Area	1.3%	0.3%	0.0%	0.7%
Stillwater Area	0.6%	0.3%	0.0%	0.7%
Woodbury	3.1%	1.9%	0.0%	3.1%
Washington County	2.3%	0.6%	0.00%	2.1%

Source: Maxfield Research & Consulting, LLC; Washington County CDA

Market Rate Rental Units

As the availability of market rate, general occupancy rental housing has decreased it is not surprising that rents have increased. The average monthly rent at market rate developments in the county in 2017 were \$1,064 for one-bedroom units, \$1,339 for two-bedroom units, and \$1,582 for three-bedroom units (see Table 13). In the past decade, one-bedroom rents have increased 31 percent, two-bedroom rents have increased 34 percent, and three-bedroom rents have increased 23 percent. The rate of growth for rent has outpaced the 11 percent growth of income during this same period.

Table 13: Surveyed General Occupancy Market Rate Rents by Market Area – 2007 and 2017

Market Areas	July 2007				January 2017			
	Total Units	1 BR	2 BR	3 BR	Total Units	1 BR	2 BR	3 BR
Cottage Grove Area	525	\$709	\$810	\$1,101	632	\$817	\$933	\$1,234
Forest Lake	440	\$665	\$784	\$926	836	\$815	\$954	\$1,115
Mahtomedi Area	--	--	--	--	12	--	--	\$1,000
Oakdale Area	769	\$707	\$912	\$1,147	868	\$848	\$1,066	\$1,316
Stillwater Area	257	\$667	\$763	--	323	\$816	\$974	\$1,363
Woodbury	2,625	\$973	\$1,083	\$1,401	3,146	\$1,886	\$1,564	\$1,895
Washington County	4,616	\$811	\$1,002	\$1,284	5,817	\$1,064	\$1,339	\$1,582

Sources: Maxfield Research & Consulting, LLC; Washington County CDA

Affordable/Subsidized Rental Units

Affordable Units are defined as apartments restricted to households with incomes at or below 80% of AMI. Subsidized Units are defined as apartments restricted to households with incomes at or below 50% AMI whose rent is based on their income. In order to maintain and operate quality rental housing with rent restrictions, public subsidies are often needed to either offset the owner's cost to develop or the tenant's cost to rent. Approximately 3 percent of the county's housing stock, or 3,124 units, are publicly subsidized (see Table 14). A small portion of the units are restricted to occupancy by seniors and persons with disabilities. With a portfolio of 1,100 units, the CDA owns and operates a third of the county's total Affordable and Subsidized rental units.

Table 14: Publicly Subsidized Units – 2015

All publicly subsidized units	Publicly subsidized senior units	Publicly subsidized units for people with disabilities	Publicly subsidized units: all other
3,124	859	24	2,241

Source: HousingLink Streams data (covering projects whose financing closed by December 2014)

Affordability of Rental Units



Washington County has high rents across much of the county that are unaffordable for many renter households. The county median rent is \$1,011, which is 14 percent higher than the metro area median rent of \$886 (see Table 15). The 2017 *Comprehensive Housing Needs Assessment for Washington County* drew information from the U.S. Census to identify the median contract rent that includes all rental types and for each market area to help determine affordability. Hugo has the highest median contract rent of \$1,120. High rents, averaging over \$1,000 per month, are also found in the Northeast Area, Southeast Area, Stillwater Area, and Woodbury markets. Only the Lake Elmo and Mahtomedi Area markets have median rents below the metro median.

Table 15: Median Contract Rent by Market Area – 2015

Market Areas	Total Units	Median Rent
Cottage Grove Area	2,586	\$900
Forest Lake	1,875	\$871
Hugo	693	\$1,120
Lake Elmo	204	\$728
Mahtomedi Area	823	\$867
Northeast Area	236	\$1,098
Oakdale Area	2,811	\$915
Southeast Area	284	\$1,025
Stillwater Area	3,227	\$1,041
Woodbury	5,347	\$1,011
Washington County	18,608	\$1,011
Metro Region	346,742	\$886

Source: U.S. Census, Maxfield Research & Consulting, LLC

Forty-four percent of all renters (7,957 households) are considered cost burdened, meaning that they pay more than an affordable proportion (30 percent) of their income on rent and utilities (see Table 16). The cost burden rate for renters with incomes less than \$35,000 is even greater, at 76 percent or 5,584 households. These rates are consistent across all metro counties. Washington County has the highest median rent of all metro area counties. An annual household income of \$40,480 is needed to afford the county median rent of \$1,011. This means that most renters (56 percent), whose median income is generally lower than the county as a whole, cannot afford a market rate apartment.

The average weekly wage paid by Washington County employers of \$846, or \$43,992 annually, is just enough to afford a market rate apartment. Wages paid in the retail trade and accommodations (\$25,168 annually) and food services (\$16,328 annually) industries provide only a fraction of the annual income needed to afford the median rent; however, they make up over a quarter of the employment in Washington County.

Table 16: Median Contract Rent & Renter Household Cost Burden – 2015

County	Median Contract Rent	Cost Burdened Renter Households			
		All Renters		Renters with Income <\$35,000	
		Number	Percent	Number	Percent
Anoka	\$884	12,234	49%	9,440	83%
Carver	\$877	2,860	42%	2,108	75%
Dakota	\$887	17,497	44%	13,748	82%
Hennepin	\$874	84,579	46%	67,661	78%
Ramsey	\$789	41,584	49%	35,004	77%
Scott	\$923	3,424	43%	2,565	77%
Washington County	\$1,011	7,957	44%	5,584	76%
Metro Region	\$886	170,135	47%	136,110	78%

Sources: U.S. Census; Maxfield Research & Consulting, LLC

Senior Housing

As a subset of the housing market, age-restricted housing is a unique market to be considered separate from the general occupancy rental and owner-occupied housing markets. The senior housing market includes the following housing types restricted to people age 55, sometimes age 62, or older: owner-occupied, affordable and subsidized rental, and market rate rental. The market rate rental type includes independent living, congregate care, assisted living, and memory care. The majority of the existing 4,056 senior housing units were built in the 1990s and early 2000s, according to the *2017 Comprehensive Housing Needs Assessment for Washington County*. Senior housing development in Washington County have vacancy rates of 5.6 percent as of February 2017, which indicates a healthy market compared to a market equilibrium rate of five percent vacancy. Affordable and subsidized senior housing units are in exceptionally high demand as indicated by the 0.6 percent vacancy rate. Based on the senior housing respondents to the Maxfield Research & Consulting, LLC survey, 63

percent of the senior housing is market rate rental units, 33.6 percent is affordable or subsidized rental units, and 3 percent are ownership units (see Table 17).

Table 17: Senior Housing Units by Type and Community – 2017

Cities	Market Rate Rental*	Affordable/ Subsidized Rental	Owner-Occupied	Total
Cottage Grove	214	150	0	364
Forest Lake	248	168	0	416
Hugo	124	28	0	152
Lake Elmo	0	0	0	0
Mahtomedi	336	222	0	547
Northeast	0	40	0	40
Oakdale	327	292	55	674
Southeast	0	0	0	0
Stillwater	818	304	0	1,122
Woodbury	675	90	76	841
Washington County	2,562	1,363	131	4,056

*Market Rate Rental includes market rate independent living, congregate, assisted living and memory care units

Source: Maxfield Research & Consulting, LLC

Special Needs Housing

The landscape of special needs housing changed in response to the U.S. Supreme Court decision in *Olmstead v. L. C.*, ruling that people with disabilities have equal rights to live in the community. Since this landmark decision in 1999, federal and state governments have been working to support individuals with disabilities in community-based living. States are required to place persons with mental disabilities in community settings rather than in institutions when a state’s treatment professionals have determined that community placement is appropriate, the transfer from institutional care to a less restrictive setting is not opposed by the affected individual, and the placement can be reasonably accommodated, taking into account the resources available to the state and the needs of others with mental disabilities. Minnesota developed an Olmstead Plan with the vision that “people with disabilities are living, learning, working, and enjoying life in the most integrated setting” and this vision guides the state’s implementation actions.

In 2015, there were 20,379 people with a disability living in Washington County (8.3 percent) according to the U.S. Census. Historically, the Minnesota Department of Human Services (DHS) has partnered with counties to provide foster care, transitional housing, assisted living, and supportive services apartment settings. DHS has made significant policy changes that support personal choice and community living. Washington County has participated in these changes and been on the leading edge of creating a better housing continuum for people with disabilities.

The top two types of special needs housing in Washington County are foster care and assisted living. Foster care, both corporate and family, accounts for over 35percent of the special needs housing in Washington County. Foster care is typically provided in a single-family home in the community and offers services for up to four people with disabilities or seniors. Assisted living facilities are typically larger buildings made up of individual apartments for people age 55 and older. The numbers of beds listed in Table 18 are facilities that contract with Washington County to provide beds that are affordable for people who receive home and community-based waiver services.

Table 18: Special Needs Housing – 2017

Housing Type	Number of Buildings	Number of Beds
Foster care – corporate (shift share)	97	375
Foster care – family	49	145
Assisted living (contracted only)	31	243
Short-term treatment facilities (mental health/chemical dependency)	4	82
Supportive apartment settings (private lease with additional services)	37	114
Transitional housing (up to two years)	10	47
Other provider – controlled group settings (5+ people living together)	5	51
Washington County	233	1,057

Source: Washington County Community Services

Even though the majority of special needs housing is provider-controlled, there is a shift toward more integrated housing that is controlled by the person receiving services. This type of housing, called supportive apartment settings, began in Washington County in 2009 and continues to expand each year. A supportive apartment setting is a model comprised of two components: independent housing and service coordination. In 2017, almost 11percent of the special needs housing was made up of supportive apartment settings.

Homelessness

To address the needs of homeless persons and most efficiently utilize the resources available in the community, Washington County uses a coordinated entry system to assess and prioritize an individual’s housing needs. The system has been designed to meet the specific needs of the county in coordination with the Suburban Metro Area Continuum of Care and the State to assure consistency across counties state wide. Washington County has three points of access for people experiencing homelessness: St. Andrew’s Community Resource Center for families, County’s Community Services Department for singles, and StreetWorks Outreach for youth.

The coordinated entry system utilizes an initial assessment to determine if the person or family can be diverted from homelessness with connections to resources. If it is determined housing is needed for those who meet the U.S. Department of Housing and Urban Development (HUD) definition of homeless a full assessment is conducted. This assessment will determine the type and level of support needed: temporary shelter, rapid

rehousing, transitional housing or permanent supportive housing. HUD’s definition of homeless includes those who lack or will imminently lose a fixed, regular, and adequate nighttime residence, and children and families fleeing domestic violence. The number of assessments has increased over the past three years as the administrative capacity increased after the program’s first year in 2015 (see Table 19).

If the assessment determines temporary shelter support is needed, families are referred to Hope for the Journey Home. Hope for the Journey Home, a multi-congregational effort of 31 area churches, operates an eight-bedroom family shelter in the former rectory of Guardian Angels Catholic parish in the City of Oakdale. A second temporary shelter located in the City of Hugo is expected to open in 2018 and will serve 5 to 7 families. Harriet Tubman Center East Safe Journeys Shelter and Transitional Housing located in Maplewood provides a limited number of shelter beds for youth and young adult victims of violence and exploitation, including sex trafficking. Youth receive customized individual and group support as well as resources to help with safety, basic needs, school, parenting, legal, financial, spiritual, social, emotional, recreational, leadership, career and other self-identified goals. The county uses hotel vouchers to provide emergency shelter to singles that have been assessed and it is determined have no other shelter options.

Table 19: Coordinated Entry Assessments for Homeless Persons in Washington County – 2015, 2016, 2017

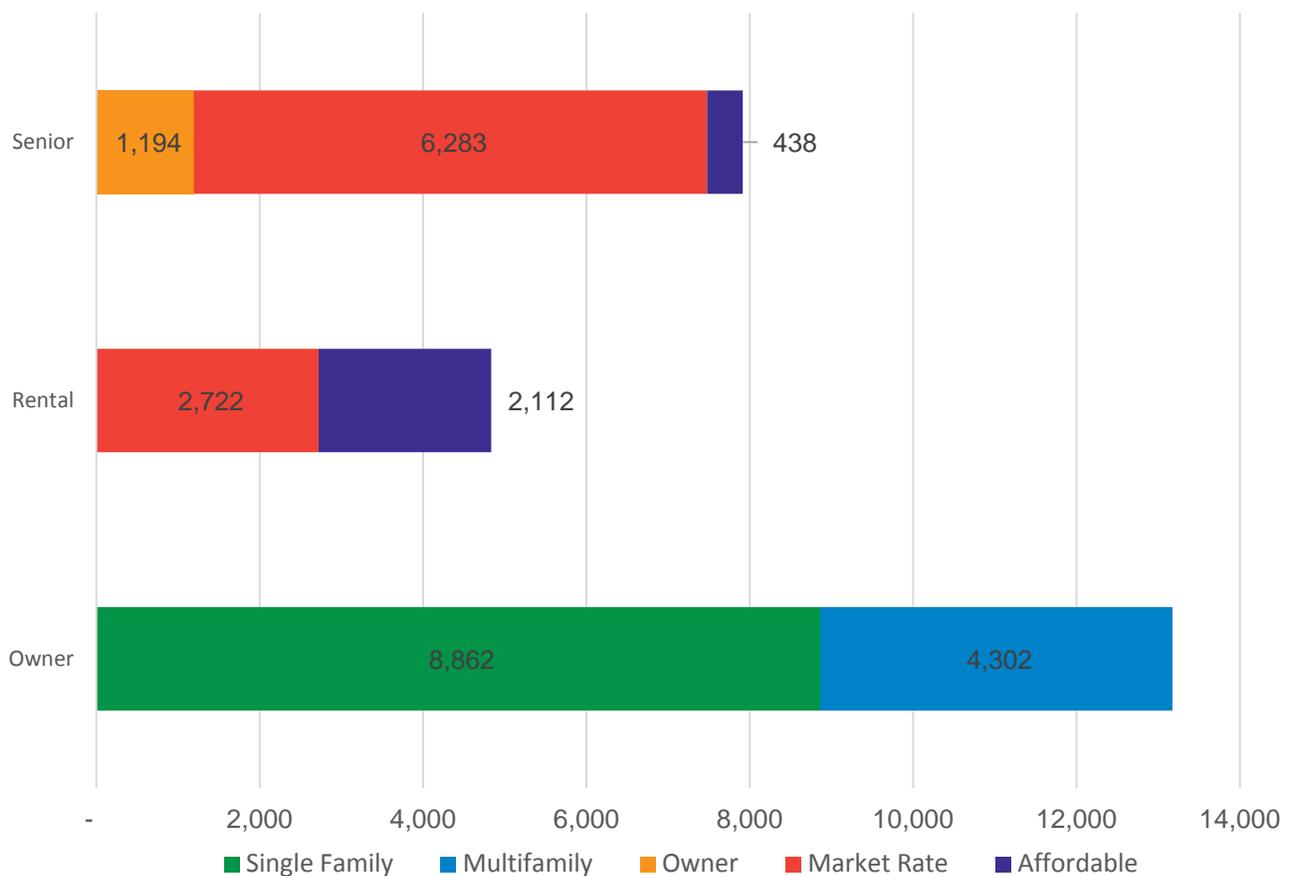
	2015	2016	2017 (Jan-July)
Number of Assessments	161	237	191

Source: Washington County Community Services

Projected Housing Need

Demand for housing, whether it is rental or owner-occupied, can come from multiple sources including household and employment growth, demographic changes, changes in housing preferences, and replacement need. According to the *2017 Comprehensive Housing Needs Assessment for Washington County*, the county will continue to experience strong demand for all types of housing. The study estimates that between 2016 and 2030 the number of new households targeted for general occupancy under the age of 65 will grow by 13,550 households. In addition to new households, there will be demand from existing household turnover and those desiring new owner-occupied or rental housing. The total 2016-2030 general occupancy demand is estimated to be 13,164 owner-occupied units and 4,834 rental units (see Figure 8). Demand for senior housing is calculated differently from general occupancy demand. Senior housing demand is driven by a capture rate of point-in-time population as opposed to household growth. The 2030 total demand is estimated to be 7,917 units.

Figure 8: Demand for Additional Housing Units – 2016-2030



Source: Maxfield Research & Consulting, LLC

The Metropolitan Council identifies an Allocation of Affordable Housing Need for each community in the metropolitan region. The Allocation of Affordable Housing Need represents the individual community's share of the affordable housing units needed to accommodate the region's projected population growth over the next 20 years. The Allocation of Need figures are to help guide community planning in regards to housing. In particular,

it serves to ensure that sufficient land is guided at density levels high enough to accommodate this need. Washington County no longer has land use planning authority for the unincorporated areas of the county. The Allocation of Need only applies to individual communities connected to the regional water and sewer system. Twelve cities in Washington County have specified Allocations of Need, including the county's largest communities of Woodbury, Oakdale, Stillwater and Forest Lake.

The total Allocation of Need in Washington County is 4,315 housing units. This total is broken down into the following levels of affordability by AMI:

- 2,114 of at or below 30 percent AMI
- 1,467 from 31 to 50 percent AMI
- 734 from 51 percent to 80 percent AMI

Owner-Occupied Housing Demand 2016 to 2030

Demand for general occupancy owner-occupied housing in Washington County is mainly driven from new household growth. Washington County is expected to absorb an increasing share of new single-family housing development, due to more available land than in the core of the Twin Cities metro area. Much of the new household growth will be in owner-occupied homes continuing the high homeownership rate trends of the county ranging from 72 to 92 percent. Demand also comes from turnover of existing homeowners who desire a new home and accounts for about 15 percent of the total owner-occupied housing demand.

The total projected demand for owner-occupied housing from 2016 to 2030 is 13,164 units, which is half of the overall housing demand. The demand for single family units makes up about two thirds of the total demand for owner-occupied housing (see Figure 8). The demand for single family homes is spread evenly among five market areas in the western half of the county that each have a demand between 1,100 and 1,900 units: Cottage Grove Area, Forest Lake, Hugo, Lake Elmo, and Woodbury.

County wide, half of the single-family demand is for move-up priced homes (\$350,000 to \$500,000), while over a third of it is for executive priced homes (over \$500,000), and just under an eighth is for modest price homes (under \$350,000) (see Table 20). Hugo and Forest Lake have relatively high proportions of demand for modest price homes, while much of the demand in Lake Elmo, Northeast and Southeast market areas is for Executive priced homes.

Table 20: Demand for Owner-Occupied Housing Units by Market Area – 2016-2030

Market Areas	Single-Family Units				Multi-Family Units			Total Units
	Modest	Move-up	Executive	Sub-total	Modest	Move-up	Sub-total	
Cottage Grove Area	87	1,220	436	1,743	434	651	1,085	2,828
Forest Lake	331	498	276	1,105	219	328	547	1,652
Hugo	480	959	480	1,919	224	416	640	2,559
Lake Elmo	0	410	461	1,171	65	197	262	1,433
Mahtomedi Area	0	9	37	46	5	22	27	73
Northeast Area	0	113	339	452	0	41	41	493
Oakdale Area	6	26	8	40	98	98	196	236
Southeast Area	0	45	133	178	0	26	26	204
Stillwater Area	24	286	166	476	85	199	284	760
Woodbury	87	952	693	1,732	418	776	1,194	2,926
Washington County	1,015	4,518	3,329	8,862	1,548	2,754	4,302	13,164

Source: U.S. Census; Maxfield Research & Consulting, LLC

About one third of the total owner-occupied demand will be for multifamily units. In the Oakdale market, the demand for multifamily units greatly exceeds the demand for single family, and it is the only market area where that is the case. The market areas with the next highest proportion of demand for owner-occupied multifamily units include Woodbury (41 percent), Cottage Grove Area (38 percent), Stillwater Area (37 percent), and Mahtomedi Area (37 percent). Demand for multifamily units is concentrated in the Cottage Grove Area and Woodbury which each have demand for over 1,000 units and make up over half of the county's total demand for multifamily units. The majority of the owner-occupied multifamily demand (65 percent) county wide is for modest units priced under \$250,000, while move-up units priced over \$250,000 have just over a third of the projected demand (36 percent).

The private sector has been primarily responsible for the production of new owner-occupied housing units and will continue to be the main producer in the next ten and twenty years. In order to meet the demand for affordable homeownership and reduce the homeownership gap, public and non-profit agencies will need to assist in this production. Assistance can be provided through programs like the Twin Cities Habitat for Humanity's homeownership, Veterans Initiative, and lending programs; Two Rivers Community Land Trust's single-family rehabilitation program; and the CDA's homeownership assistance and development assistance programs.

In order for homes to maintain value as they age, homeowners need to make substantial investments to retain quality, update amenities, and maintain market viability. Between 2020 and 2040, homes built between 1980 and 1995 will be reaching the end of their economic life. Capital will be needed to renovate and rehabilitate a greater number of homes than has been needed in past decades.

General Occupancy Rental Housing Demand 2016 to 2030

Like the demand for additional owner-occupied housing, much of the demand for additional rental units is driven by the county's projected new household growth. The projected number of new households is adjusted by the percentage of households who are likely to rent, which ranges by market area from 9 to 27 percent. Additional demand is calculated from turnover of existing renters that would prefer to live in a new rental development, which ranges from 42 to 77 percent by market area. While turnover accounted for only about 15 percent of total demand for additional owner-occupied housing, it makes up 52 percent of the total demand for additional rental units.

The projected demand for general occupancy rental units between 2016 and 2030 is 4,834 units (see Figure 8 and Table 21). The majority of the rental demand is in the county's employment centers which each have demand for over 500 units including the Cottage Grove, Oakdale, Forest Lake, Stillwater, and especially Woodbury market areas. Woodbury has by far the highest demand for market rate units with over three times as many as any other market area and accounts for nearly half of the total market rate demand. The demand for affordable and subsidized units is fairly widespread among the major market areas and makes up about half of the total rental demand in each area, except for Woodbury where it consists of only a quarter of its total demand.

Table 21: Demand for New General Occupancy Rental Housing Units by Market Area – 2016-2030

Market Areas	Market Rate	Affordable*	Subsidized**	Total
Cottage Grove Area	311	161	153	625
Forest Lake	363	236	250	849
Hugo	150	81	85	316
Lake Elmo	104	21	25	150
Mahtomedi Area	11	7	9	27
Northeast Area	41	11	11	63
Oakdale Area	214	72	149	535
Southeast Area	26	6	6	38
Stillwater Area	263	142	164	569
Woodbury	1,239	255	168	1,662
Washington County	2,722	1,092	1,020	4,834

* Income restricted property to households earning 80% of Area Median Income (AMI) or less

** Income restricted to households earning 50% AMI or less

Source: Maxfield Research & Consulting, LLC

Affordable Rental Housing Demand

The projected additional demand for affordable and subsidized general occupancy rental units is 2,112 and 438 units for senior occupancy, for a total of 2,550 units of additional units by 2030. This makes only up about 10 percent of the 26,077 of total demand for additional housing of all housing types. Unlike other types of housing, however, the demand for affordable and subsidized units are typically not met by the market on its own. The

below-market rents of affordable and subsidized properties that help to make them affordable to households with low incomes generate a lower return on investment compared to market rate developments. This means that the financing of new affordable and subsidized developments typically need government gap financing, or a subsidy is necessary to make them feasible. This also makes the financing of new affordable and subsidized housing very complex and time consuming which hinders the development of them.

Since 1970, an average of 72 income-restricted affordable housing units have been built each year, totaling 3,324 units in Washington County. To meet the projected demand for 2030, an annual affordable housing production of 180 units is needed over the next 14 years, which is two and half times the historic production. Washington County will need to continue its work with private non-profit and for profit developers to maximize the financial resources available to increase annual production of affordable rental units. Tax exempt bonds and Low Income Housing Tax Credits have been the primary resources to preserve, construct and rehabilitate affordable rental units. The CDA will need to continue and increase its leveraging of Community Development Block Grant, HOME Investment Partnerships, GROW funds and other local resources in order to add 180 affordable units per year through 2030. Housing with rents affordable to households earning 30 percent of the AMI are the most difficult to produce. The cost to build an apartment unit does not vary but the ability to pay debt service on development funding is hampered when rents are restricted.

Senior Housing Demand 2020 and 2030

Senior demand is calculated differently from general occupancy demand. Demand for senior housing is driven by the capture rate of point-in-time population as opposed to population growth. The capture rate blends national senior housing trends and local housing market characteristics. Existing senior housing units are deducted from the demand calculations for each product type:

- Market rate rental and owner-occupied senior housing as well as affordable and subsidized rental senior units are often called independent living because they are age restricted to those ages 55 or 62 or older but offer no additional services.
- Congregate properties offer support services such as meals and housekeeping and targets seniors over age 65.
- Assisted living properties offer extensive support services for frail seniors age 70 and over including meals and housekeeping as well as 24-hour staff and emergency response availability.
- Memory care developments are specifically designed to meet the needs of persons who have Alzheimer’s disease or other dementias.

The services associated with congregate, assisted living, and memory care properties mean that they have rents which reflect support services costs in addition to the lodging expense.

By 2030, Washington County will need 7,917 units of rental senior housing to meet demand (see Table 22). Over one third of the senior demand is for assisted living housing type. Much of the demand (48 percent) is concentrated in the Cottage Grove, Stillwater and Woodbury markets. The total demand for rental units without any services (independent living market rate and affordable/subsidized rentals) is 1,877 units; the demand for affordable and subsidized units makes up about a quarter of this total.

Table 22: Demand for Senior Rental Housing Units by Market Area – 2020 and 2030

Market Areas	Affordable	Subsidized	Market Rate					Total
			Owner-Occupied	Rental	Congregate	Assisted Living	Memory Care	
Cottage Grove Area	0	0	213	190	130	550	152	1,235
Forest Lake	0	0	159	194	133	264	46	796
Hugo	20	17	54	162	63	111	35	462
Lake Elmo	36	34	69	103	31	163	67	503
Mahtomedi Area	0	0	98	51	0	254	0	403
Northeast Area	31	0	48	112	88	175	40	494
Oakdale Area	5	0	69	0	58	397	86	615
Southeast Area	44	39	72	107	89	222	106	679
Stillwater Area	0	130	236	45	0	569	160	1,143
Woodbury	82	0	173	475	61	591	205	1,587
Washington County	218	220	1,164	1,439	653	3,296	897	7,917

Source: U.S. Census; Maxfield Research & Consulting, LLC

Special Needs & Homeless Demand

The housing needs of the special needs population vary from handicap accessible housing to 24-hour available support services to assist with independent living. The Minnesota Demographic Center notes that people with disabilities are two times more likely to live in poverty than those without a disability. As a result, access to affordable housing is especially important for this population. The percent of Washington County's population with a disability in 2015 was 8.1 percent or 20,379 people, up from 7.4 percent or 18,029 people in 2012 according to the U.S. Census. For a basic forecast of the need for Special Needs housing, the 2015 percentage can be applied to the 2020 population projection, which yields 21,784 persons, a demand for 1,405 additional Special Needs housing units. This amount increases to 3,898 by 2030. While much of this need can be accommodated with new general occupancy and senior units, others will require handicap accessible features or a variety of support services and assistance to accompany the housing.



The demand for services and facilities for persons experiencing homelessness can be expected to remain steady or modestly increase in the coming years based on the data from the Coordinated Entry Assessment system. This means that there will be a continued need for services and programs for this population. The Heading Home Washington County Plan details specific goals, actions and progress towards ending long-term homelessness. Metropolitan counties will spearhead a regional effort to meet the mobility of this population and use resources most efficiently.

Summary of Projected Housing Needs

Washington County does not have land use and planning authority. While it cannot guide the potential locations of housing and variations in density and type, Washington County and the CDA will support city efforts to address the total allocation of affordable housing need of 4,315 units.

Housing Plan

Based on the data and analysis above, the following housing needs have been identified as priorities for Washington County through 2040.

- Home improvement assistance for low-income homeowners at or below 80 percent AMI
- Support underserved populations to be successful homebuyers and homeowners
- New construction of general occupancy rental homes at all affordability levels
- Support and assistance for vulnerable and homeless populations
- New construction of senior housing affordable to incomes at or below 30 percent AMI
- Preservation of publicly subsidized housing

A critical component to a healthy and vibrant community is a diverse and balanced housing supply in good physical condition that includes a variety of price levels, housing types, and sizes. A mix of housing tenures, types, and rent/sales prices provides residents with a range of choices so that they can continue living in their community as their housing needs change through their lifetime. The affordability of housing is especially important for all residents because it provides a stable foundation on which to build one's life.

The goals of this Housing Plan focus on the following three areas: 1) promoting a diverse housing supply to provide residents with a range of housing options; 2) helping to ensure that affordable housing options are available to residents and those who work in the county; 3) and safeguarding the physical quality of housing so residents have a healthy living environment.

Resilience and Sustainability

A diverse housing supply that includes a variety of single family homes, townhomes, and apartments can better adapt to future environmental, social, and economic changes than one that is based solely on one of these housing types. It provides local governments with a broad tax base that can withstand these changes to minimize dramatic impacts on government budgets and services. The higher densities associated with townhomes and apartments support transit service which reduces auto dependency and greenhouse gas emissions. Specific area plans can call for this type of housing to be located near transit stops. This can include measures that encourage affordable housing at these locations which also supports social equity goals. Land can be designated in local comprehensive plans to accommodate higher density housing while helping to address the regions share of affordable housing.



The impacts associated with large scale economic, social or environmental changes on local resident populations are mitigated by a housing supply with a variety of options and affordability levels because it allows them to adapt to the new circumstances which in turn allows the community as a whole to be resilient.

Economic Competitiveness

A mix of housing at various price points specifically helps to address the needs of local workers and employers. Typically, workers want to live close to where they work while employers want housing options that attract and retain the best qualified talent at all wage levels with a variety of home preferences. A full range of housing options enables communities to match the housing needs of a diverse workforce.

One of the key findings from the *2017 Comprehensive Housing Needs Assessment for Washington County* is that for many who work in Washington County, the wages they earn are not always enough to afford to live close to work. Many jobs in the county are low skill and do not pay enough to afford much of the existing housing in the county. This also points to the lack of modestly priced housing in the county that is affordable at that wage level. To be a vibrant and growing community, a good mix of jobs at a variety of wage rates is needed as well as enough housing that is affordable to all income levels so that those who work in the county can also call it home. This will help ensure that businesses that want to grow and expand will have a reliable labor force to fuel it. Available affordable housing is critical to that effort to attract and retain a talented workforce.

Goals, Policies, and Strategies

To guide future decision making and county actions, goals, policies and strategies have been developed specific to the housing element. The following pages outline three goals with corresponding policies and strategies that set the course for the county’s future. Chapter 3, Goals, Polices, and Strategies, also provides the information contained within this section, along with the goals for the other plan elements. Chapter 11, Implementation, provides tools that can be utilized while working to achieve these goals.

Housing Goal 1: Promote a diverse housing supply to provide residents with a range of housing options.	
Housing Policy	Housing Strategy
Support and assistance to homeless households and those at risk for homelessness.	Assist and counsel homeless or households at risk of homelessness using the housing phone line.
	Coordinate with other metro counties through the Regional Metropolitan Committee regarding homelessness prevention and assistance.
	Actively participate in the Suburban Metropolitan Area Continuum of Care (SMAC) regionalized wait list and utilize a regionalized wait list for homeless beds and referrals.
	Continue to manage the Family Homelessness Prevention and Assistance Program (FHPAP) in order to provide needed resources within our community.
	Continue to utilize the maximum 15 percent of the annual CDBG grant for crisis assistance and homelessness counseling.
	Participate with other SMAC counties in the Landlord Risk Migration Fund Pilot to see if offering additional incentives to landlords will help in securing more housing opportunities to household that are facing homelessness.
	Explore more cost-effective options to shelter households experiencing homelessness than using a hotel voucher system.
Support and assistance to vulnerable populations.	Continue to maximize use of Housing Support (previously Group Residential Housing) funds for housing programs for people with a disability.
	Continue to maximize use of Elderly Waivers to assist seniors with housing and assisted living expenses.

<p>Support and assistance to vulnerable populations. (Continued)</p>	<p>Continue to maximize use of Home and Community Based Services (HCBS) programs to assist the people on these programs to use services to maintain their current housing or to assist them with other housing costs such as assisted living or foster care.</p>
	<p>Continue to utilize person-centered planning best practices in ensuring that people with a disability are living and working in the most integrated setting possible.</p>
<p>Support underserved populations to be successful homebuyers and homeowners.</p>	<p>Continue to provide Home Stretch educational workshops for prospective homebuyers.</p>
	<p>Continue to provide one on one professional homebuyer counseling by appointment to prepare households for the mortgage and realty process, including budget counseling.</p>
	<p>Continue to participate in the Minnesota Cities Participation Program to fund Minnesota Housing’s Start-Up first time homebuyer program through the sale of tax exempt bonds.</p>
	<p>Develop a program to fund down payment assistance to households.</p>
	<p>Continue to provide post-purchase counseling to homeowners looking at options to refinance their mortgage.</p>
	<p>Continue to provide one-on-one professional counseling by appointment for homeowners struggling with their mortgage payments looking to avoid foreclosure.</p>
<p>New construction of senior housing affordable to incomes at or below 30% AMI.</p>	<p>Refer eligible homebuyers to affordable homeownership programs through Two Rivers Community Land Trust and Twin Cities Habitat for Humanity, as well as city-funded down payment assistance programs (Woodbury residents).</p>
	<p>Consider an application for 4% Low Income Housing Tax Credit sub-allocation to encourage senior housing affordable to 60% AMI, prioritizing units serving the lowest income tenants of 30% and 50% Area Median Income (AMI).</p>
	<p>Consider issuing housing bonds to support rental developments serving seniors at 50% and 60% AMI, prioritizing developments at 30% AMI.</p>
	<p>Consider an application for CDBG funds for land acquisition and environmental clean-up related to affordable senior housing.</p>
	<p>Consider an application for HOME Investment Partnership funds to construct affordable senior housing.</p>
<p>Consider creating Tax Increment Financing (TIF) housing districts with the support of the applicable municipality to increase and diversify property tax base, eliminate blight, support employment, and promote housing diversity through affordable senior housing.</p>	

<p>New construction of senior housing affordable to incomes at or below 30% AMI. (Continued)</p>	<p>Strongly consider sponsoring an application to the Metropolitan Council’s Livable Communities Account (LCA) program for affordable senior housing development.</p>
	<p>Consider an application to the GROW Fund financing program to construct housing affordable to 60% AMI, prioritizing units with greater affordability.</p>
	<p>Continue to expand ownership and management affordable housing for seniors ensuring long-term affordability.</p>
	<p>Strongly support allocating Group Residential Housing (GRH) assistance to maintain lower rental rates for seniors.</p>
	<p>Consider project-basing units in affordable senior housing, such as the Shelter Plus Care program as spots are available.</p>
<p>Affirmatively further fair housing actions and activities in Washington County.</p>	<p>Continue to affirmatively further fair housing through active compliance with its fair housing policy.</p>
	<p>Incorporate equal opportunity housing criteria and requirements for all recipients of its housing finance and housing assistance programs.</p>
	<p>Continue to educate homebuyers and homeowners about potential and known real estate scams. Furthermore, continue to counsel victims of foreclosure, lending, closing and real estate fraud and make referrals to pro-bono legal assistance to recover lost costs.</p>
	<p>Continue to be an active participant and contributor to regional fair housing activities.</p>
<p>Housing Goal 2: Ensure that affordable housing options are available to residents and those who work in the county.</p>	
<p>Housing Policy</p>	<p>Housing Strategy</p>
<p>Encourage resident participation and best practices in housing policy development.</p>	<p>Continue to encourage robust public engagement by involving residents in the development of housing, community development and economic development plans and allocation of CDBG and HOME funds.</p>
	<p>Continue to participate or designate an appropriate representative to actively engage in the Minnesota Chapter of National Association of Housing and Redevelopment Officials (NAHRO).</p>
	<p>Continue to be an active member of the Housing Collaborative institute, attending and presenting at monthly regional industry meetings organized by Local Initiatives Support Corporation.</p>

<p>Preservation of publicly subsidized housing.</p>	<p>Prioritize applications for 4% or 9% Low Income Housing Tax Credit sub-allocation which preserve subsidized units through extensions of housing assistance payment contracts and affordability periods.</p>
	<p>Consider issuing housing bonds to preserve units affordable at 50% and 60% AMI, prioritizing developments at 30% AMI.</p>
	<p>Consider an application for HOME investment partnership program funds to preserve affordable housing through acquisition or rehabilitation costs.</p>
	<p>Support use of funds from Minnesota Housing’s Preservation Affordable Rental Investment Fund (PARIF) program to preserve existing affordable rental units.</p>
<p>New construction of general occupancy rental homes at all affordability levels.</p>	<p>Maximize the usage of the 9% Low Income Housing Tax Credit sub-allocation to encourage workforce housing affordable to 60% AMI; prioritizing units serving the lowest income tenants of 30% and 50% AMI.</p>
	<p>Consider issuing housing bonds to support rental developments serving tenants at 50% and 60% AMI.</p>
	<p>Consider an application for CDBG funds for land acquisition and environmental clean-up related to affordable housing at 80% AMI.</p>
	<p>Consider an application for HOME Investment Partnerships program funds to construct housing affordable to 80% AMI.</p>
	<p>Consider creating TIF housing districts with the support of the applicable municipality to increase and diversify property tax base, eliminate blight, support employment, and promote housing diversity through affordable housing.</p>
	<p>Strongly consider sponsoring an application to the Livable Communities Account (LCA) program for affordable housing development.</p>
	<p>Strongly consider supporting an application to Minnesota Housing and its funding partners for affordable rental housing, particularly those paired with CDA resources.</p>
	<p>Consider an application for its gap financing program (i.e. GROW) to construct housing affordable to 60% AMI, prioritizing units with greater affordability.</p>
	<p>Continue and expand its ownership and management of affordable housing ensuring long-term affordability.</p>

Housing Goal 3: Safeguard the physical quality of housing to promote healthy living environments.	
Housing Policy	Housing Policy
Assist lower income homeowners with home repairs.	Allocate a portion (at least 30%) of available Community Development Block Grant (CDBG) funds each program year to continue the Home Improvement Loan Program to assist low and moderate-income homeowners maintain and improve their home.
	Refer eligible homeowners to Minnesota Housing’s Fix-Up Fund lenders to assist homeowners with necessary repairs.
Promote the proper maintenance, repair, or replacement of residential subsurface sewage treatment systems.	Provide loans and, when income eligible, grants to mitigate the impact of failing septic systems on the county’s lakes, streams and rivers.



Frozen floodplain in Afton

Chapter 9 – Resilience and Sustainability



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Executive Summary

The world today is changing more rapidly than ever before: severe weather events are becoming more frequent, our communities are becoming more diverse, and our systems and political climates are evolving. These changes, and those that will continue to occur, will require communities to be well-prepared and adaptable, to be successful for generations to come. For Washington County to continue to be a great place to live, work, and play, it is crucial to develop and maintain sustainable and resilient systems.

Resiliency means having the capacity to respond, adapt, and thrive under changing conditions and realities. It seeks to address how communities can reduce the vulnerability of individuals and local systems to the impacts of changing weather, climate, and environmental, societal and economic challenges. This involves not only preparing for the impacts of natural or man-made disasters and reducing greenhouse gas emissions, but also adopting policies to reduce energy consumption and automobile dependency, protect valuable infrastructure assets, and preserve open space and natural resources, among others. In short, resiliency is focused towards increasing a community's ability to survive a sudden disruption and to anticipate, adapt, and flourish in the face of change.

Balancing resilient and sustainable communities must also be viewed through a social equity lens. In that respect, communities should ensure all people can live healthy lives by expanding their choices for things like homes, jobs, healthy food options, and recreational opportunities. The Resilience and Sustainability chapter has recognized some of these challenges by identifying potential demographics (e.g., race, class, age, and education attainment) that are more at risk, and most likely to be negatively impacted during times of change. These disparities are further recognized by embracing the region's goals for a more prosperous, equitable, livable and sustainable future. A community is only as strong as its most at-risk or vulnerable residents. A resilient community is one that recognizes this and actively works to enhance social equity and opportunity for all residents.

The following statement provides further clarification on what resiliency, sustainability and social equity means to the County.

Washington County will strive to maintain its identity, high quality of life, and access to a healthy lifestyle for current and future residents, by embracing resiliency and sustainability in future decision making. Efforts will be made to ensure resiliency through the county's ability to react, adapt and thrive in the face of environmental, social, and economic changes. Healthy and vibrant communities are those that are prepared and have the capacity to evolve. Washington County will support the development of a community that is equipped to respond to change with diverse solutions and redundant systems by enhancing social capital and equity through the sharing of risks and opportunities. The ability to mitigate the effects of these changes and disruptions over a long period of time will protect Washington County's regional vitality for future generations by preserving the capacity to maintain a sustainable future.



The Washington County 2040 Comprehensive Plan integrates resilience and sustainability throughout the plan and in the goals, policies and strategies of the eight chapters. While resilience and sustainability are new concepts to comprehensive planning, these concepts are widely included in current County operations. Elements that support a resilient and sustainable future throughout the Comprehensive Plan are identified with the symbol to the left, with text highlighted in a light green.

The Resilience and Sustainability chapter is dedicated to specifically recognizing four key areas that are linked in some form to a resilient, sustainable and equitable future and are not included in other plan elements:

- Hazard Mitigation/Community Vulnerability
- Healthy Communities
- Energy
- Solid Waste Management

These four key areas are also new to the comprehensive plan; however, they have been a core part of the Washington County's planning activities. Past planning initiatives have included programs and strategies that address themes such as emergency preparedness and community health. The following are examples of these initiatives:

- The adoption and implementation of an *All Hazard Mitigation Plan* and an *Emergency Operations Plan*, based on best practices set by the Federal Emergency Management Agency (FEMA).
- Carrying out a *Community Health Assessment*, *Community Health Improvement Plan*, and promoting healthy activities through partnerships like *Living Healthy in Washington County*.
- The development of the *Washington County Energy Plan*, which promotes policies related to energy reduction in county buildings, modes of transportation, waste removal and water resource management.
- The development of the *Washington County Waste Management Master Plan*, which guides county waste management activities and identifies specific opportunities and challenges important to the county. The plan includes strategies to address from most preferred, such as waste reduction, recycling, organics management, and waste-to-energy, to least preferred such as land disposal.

Hazard Mitigation and Community Vulnerability

Washington County and local community Comprehensive Plans address the projected population and demographic changes in many ways. A critical facet in all aspects of planning for any size population should include consideration of risks and vulnerabilities inherent to Washington County communities and their level of emergency response capabilities.

Preparing communities to be resilient to disasters takes place at both the household and workplace as well as at the local and county level. History has shown that Washington County is vulnerable to the effects of natural disasters such as extreme temperatures, extreme precipitation events, high winds, floods, tornadoes, winter storms and fires. Washington County is also vulnerable to a variety of human-caused hazards such as major transportation accidents, civil disorder, terrorism, and hazardous material events which may present risks to the community through potential exposures in the air, surface water, groundwater or soil.

Climate and Precipitation Trends and Health Effects

While the population of the county is expected to grow and change, climate trends suggest that in the next 50 years Minnesota will experience increased precipitation, hotter summers, warmer and wetter winters, and more severe weather events. Growing seasons are becoming longer, earlier ice-outs and thaws are occurring earlier in the spring, and “mega” rain events are becoming more frequent.

The average annual temperature for the Twin Cities region, including Washington County, is rising. Figure 1 indicates a gradual increase in the annual average temperature for the Twin Cities region from 1873 to 2016. The temperature has been rising 0.5 °F per decade, since 1960, with nine of the ten warmest years on record occurring within the last three decades.

The average annual precipitation for Washington County (near Stillwater) is 33.94 inches. This represents a 30-year average (1987-2016) based on data from the Minnesota Department of Natural Resources. The (Washington Conservation District) WCD recalculates this average every year. Figure 2 shows the long-term precipitation since 1891. Average precipitation amounts are increasing as well. On a statewide basis, Minnesota’s precipitation patterns are changing. From 1895-1959, annual precipitation decreased about 0.2” per decade, while from 1960-2016, annual precipitation increased 0.5” per decade. From a regional perspective, the upper Midwest has seen a 37 percent increase in heavy precipitation events from 1928 – 2012. Seven of the fifteen Minnesota “mega rain events” have occurred since 2002. In addition to two major rivers in the county, the St Croix and Mississippi, which already see flood events at varying times, the county also has many land-locked water basins that can cause more localized flooding, particularly during mega rain events.

Figure 1: Annual Average Temperature: Twin Cities Region: 1906-2016

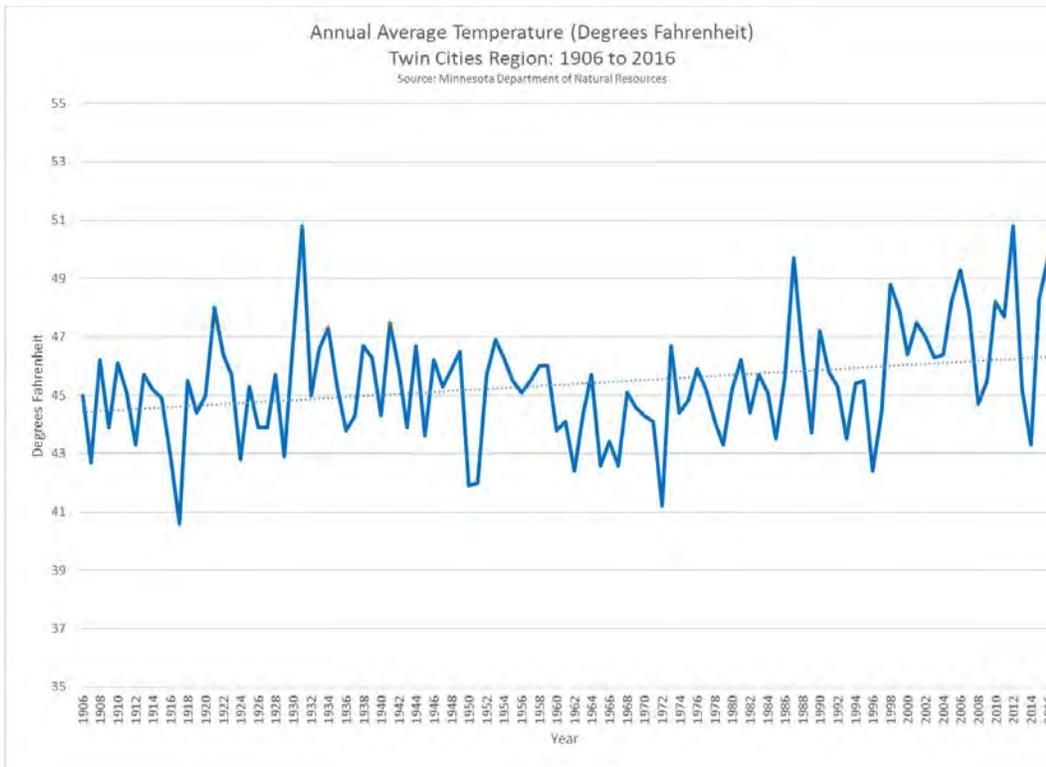
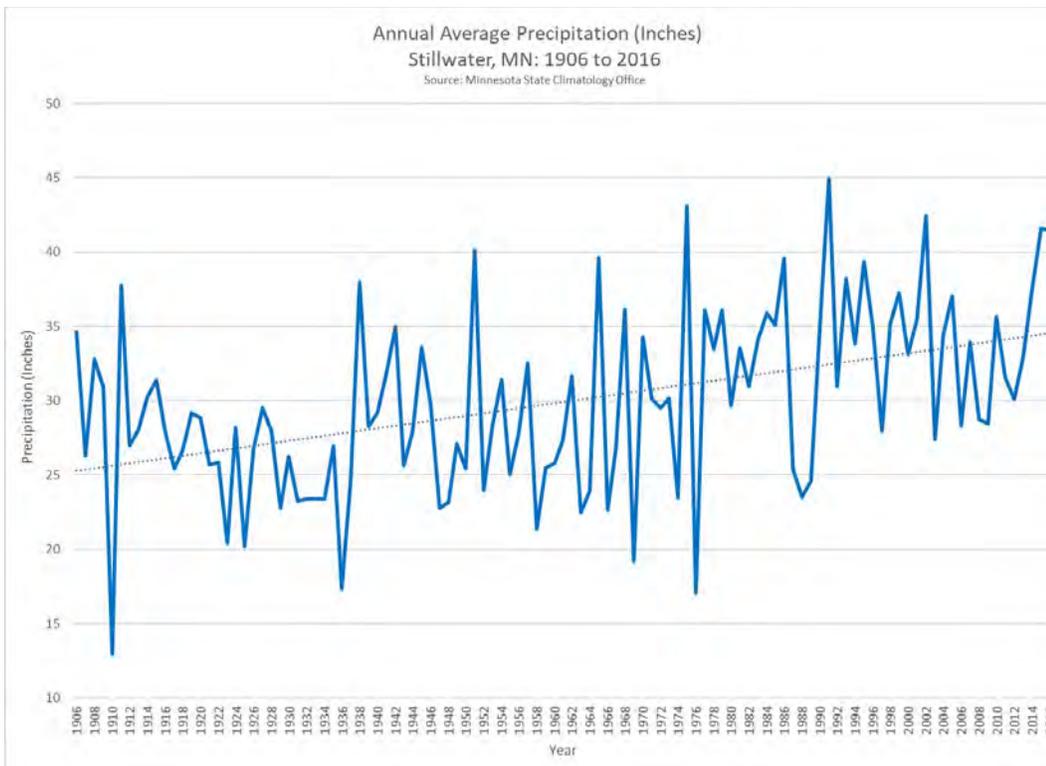
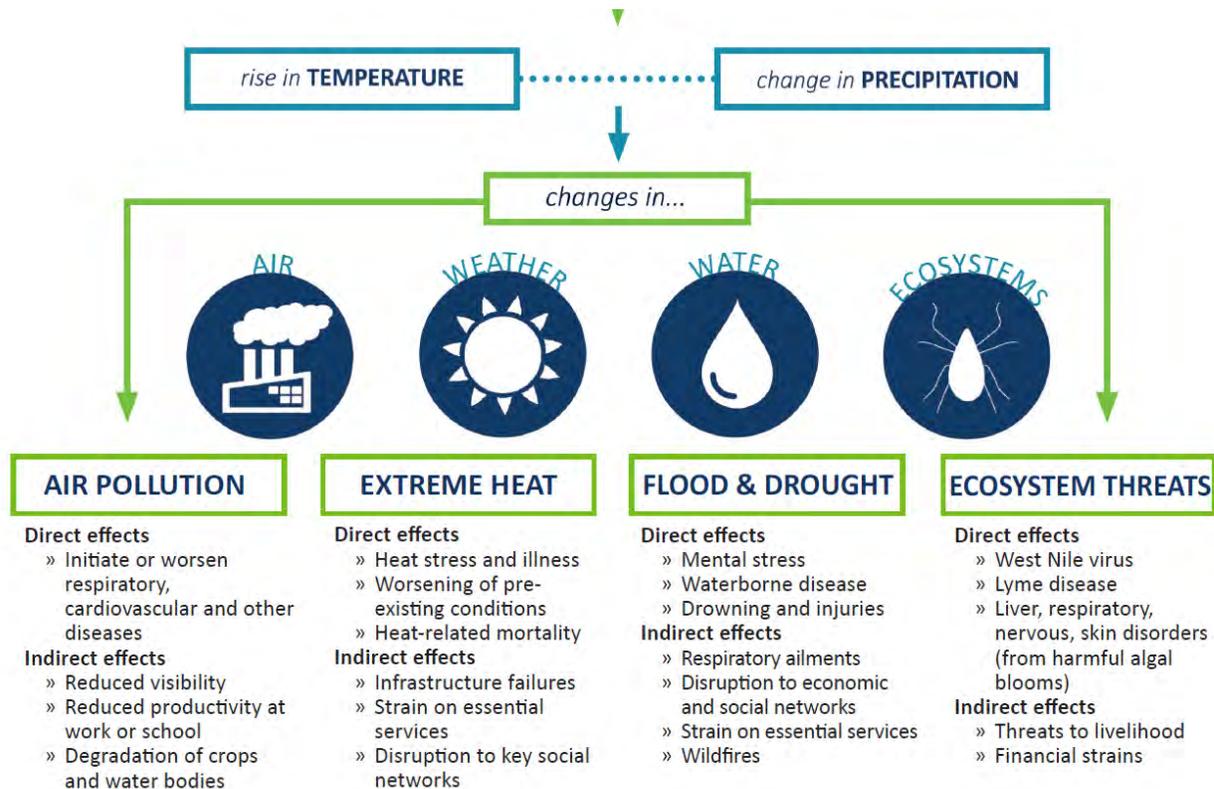


Figure 2: Annual Average Precipitation: Stillwater, MN: 1906-2016



Changes in our climate can lead to direct and indirect consequences for the health of our communities. Rise in temperature and changes in precipitation can lead to changes in air pollution, extreme heat days, flood and droughts, and ecosystem threats. Extreme heat, for example, includes direct effects of heat stress and illness, worsening pre-existing conditions, and heat-related mortality. Indirect effects from extreme heat include infrastructure failures, strain on essential services, and disruption to key social networks. Below, Figure 3 provides an overview of some of the direct and indirect effects expected from these climate disruptions.

Figure 3: Climate and Health Effects



Graphic courtesy of Minnesota Department of Health. See <http://www.health.state.mn.us/climatechange/> for more information.

A statewide climate vulnerability assessment conducted by The Minnesota Department of Health (MDH) in 2014 found that Washington County has five to six identified climate hazards, which included events like Lyme disease incidence, extreme heat events, and flash floods. More recently, in 2017, the county participated, along with several local partners, in a resilience workshop hosted by South Washington Watershed District. County staff and stakeholders identified extreme wind, increased rainfall, warmer winter and ice storms as the top climate hazards in the county. In addition, county staff were able to develop recommendations for addressing these hazards. Efforts from this workshop helped identify resilience goals and strategies identified in this comprehensive plan.

Vulnerable Populations

When threats from climate-related events and natural and man-made disasters are considered, evidence has shown that certain populations are more vulnerable than others. These include those who are economically disadvantaged, those with chronic health conditions or disabilities, children, and other groups who require

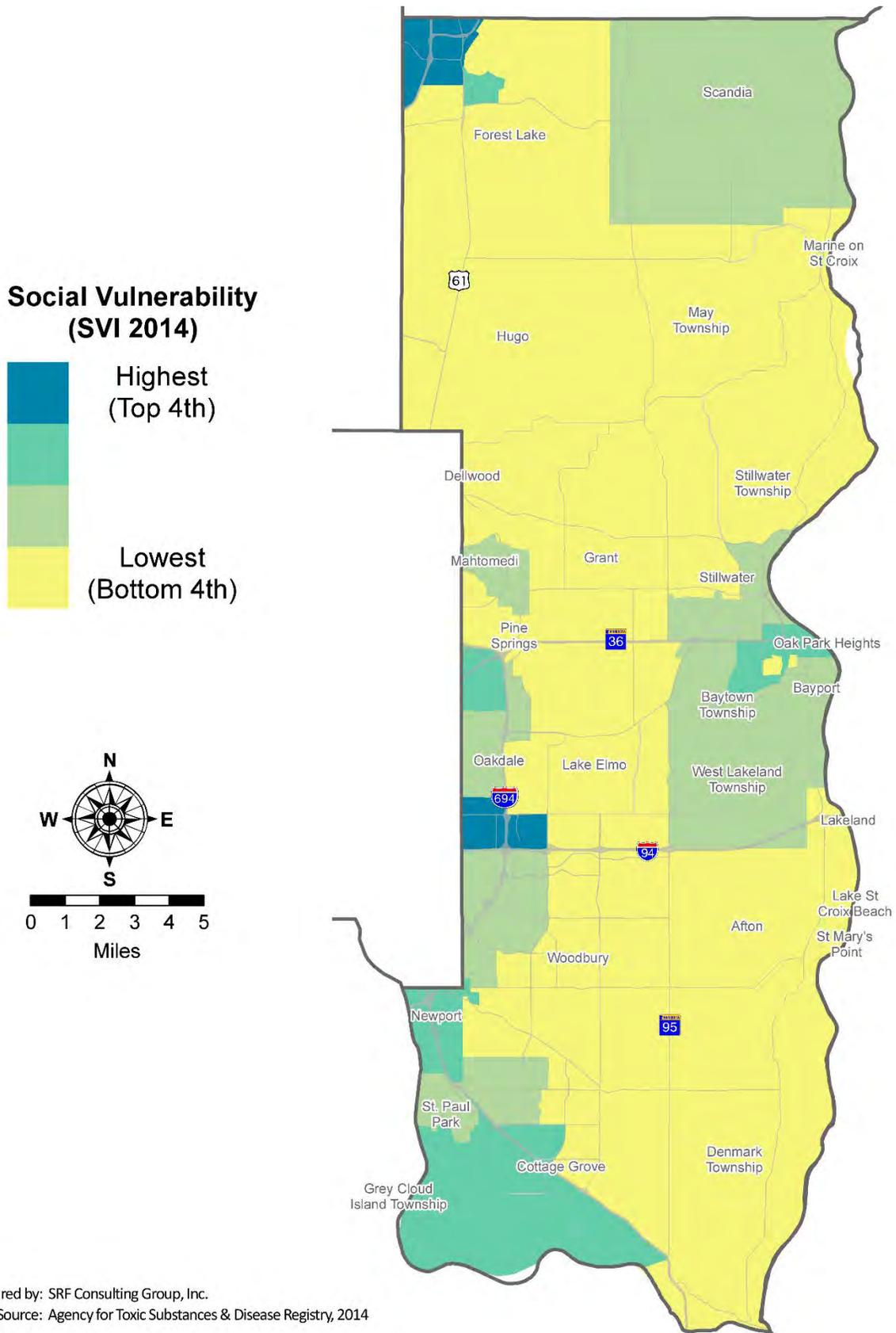
additional assistance beyond that of the more resource-rich population. In emergency preparedness planning, the county and respective communities are tasked with identifying any functional needs of a population, and identifying various vulnerable populations. The elderly, for example, will be more directly affected by certain events, like extreme heat days. Vulnerable populations require additional considerations in all five phases of all hazard emergency events - planning, preparedness, response, recovery, and mitigation.

A report on social vulnerability, compiled by the Center for Disease Control and the Department of Health and Human Services, describes the areas and residents of Washington County most at risk based on the following metrics: socioeconomic status (poverty, unemployment rate, per capita income, high-school diploma attainment), race/ethnicity/language (minority, English Language Ability), household composition (aged 65 and over, aged 17 and younger, single-parent household, aged 5 and over with a disability) , and housing/transportation (multi-unit home, mobile home, density, no vehicle). When these metrics are placed together, Washington County fares well and as a result is one of the least socially vulnerable communities in the seven-county Metro area (see Figure 4). That being said, the county will continue to see demographic shifts including an aging population, and will need to plan for these changes and the needs of these populations.

Infrastructure

One of the most important aspects of maintaining a resilient system is maintaining a strong physical, social and economic infrastructure. The chapters on Housing and Economic Competitiveness discuss resilience and sustainability through the lens of those respective systems. A primary example of contributing to a resilient system includes workforce development for Washington County's growing economy. Ensuring that an available and skilled workforce is critical for the sustainability of the county's economic centers. Our physical infrastructure, both natural and manmade, is at risk from flood events, precipitation changes and other climate trends. The Transportation chapter provides an overview of the county transportation system, and includes a wide range of policies and strategies aimed at strengthening the county's existing road system, while also diversifying opportunities for alternate modes of travel including transit, biking and walking. Building this type of diversity into the transportation system helps add redundancy, a key characteristic of a resilient and sustainable community. Washington County must also consider climate resilience in our water and natural resources management. For example, integrating green infrastructure principles into county plans and projects will help the county and communities address issues related to storm water management, and urban heat island effects.

Figure 4: Social Vulnerability Composite Map of Washington County



Prepared by: SRF Consulting Group, Inc.
 Data Source: Agency for Toxic Substances & Disease Registry, 2014

Current Planning Efforts

The communities within Washington County are diverse in size, population, resources, threats, vulnerabilities, and preparedness. The way in which each city and township, as well as the county as a whole, chooses to become more resilient and sustainable may be as diverse as the communities themselves.

Local communities, both in the private and public sector, increase their resilience to disasters through planning, training and exercising. Various Washington County departments organize and run exercises annually to become more efficient at providing necessary support during an emergency event. Communities have leveraged available grants and implemented effective mitigation projects such as installation of an outdoor lightning detection system at a large outdoor gathering space, purchase and installation of backup generators for critical facilities, purchase and installation of outdoor weather sirens, and the building of safe rooms for use in high wind events for slab on grade residential structures, to mention a few. The purchase of repetitive loss structures in communities such as Newport and St. Paul Park as well as the retrofitting of residential homes in other Washington County communities has been an effective way to reduce the impact of past extreme rain and/or snow melt events. The implementation of mitigation projects increases the resilience of a community by reducing or eliminating negative financial, emotional, and social implications caused by a disaster.

Washington County Sheriff's Office maintains an Emergency Operations Plan (EOP) to address planning for, responding to, and recovering from disasters within the county. In addition, a countywide All Hazard Mitigation Plan is kept up to date and compliant with regards to FEMA regulations. This plan identifies past and current mitigation efforts and future mitigation projects for thirty-one cities and townships within the county. In addition, Washington County maintains an annual Threat and Hazard Identification and Risk Assessment (THIRA) both at the county and metropolitan area level. Because the county is subject to a variety of disasters, both man-made and natural in nature, these imperative plans are maintained to provide an effective response to all five phases of disasters – prevention, protection, response, recovery, and mitigation. By planning, training, and exercising plans at all levels, those involved improve their resilience to a variety of emergencies.

Washington County as an organization has and maintains a Continuity of Operations Plan (COOP). This plan identifies the essential functions that must be continued should an emergency occur that creates a challenge to normal daily operations. The process of planning and exercising the Washington County COOP increases the county's resilience to disasters and will likely reduce service interruptions by identifying and addressing potential gaps in continuity. These actions reduce the perceived and actual impacts to the county's constituents and stakeholders.

Healthy Communities

Introduction

The natural and built environment provides the opportunity to support or limit healthy behaviors and active lifestyles. Our health begins with decisions on where to place things such as county facilities and services, transit routes, parks, trails, and highway investments. County operations, public entities and community organizations and businesses should be encouraged to consider community health as early as possible in the decision-making process to ensure all residents can lead healthy lives. The health in all policies approach recognizes that

community leaders, planners and engineers are in a unique position to improve the county's health by shaping the environments where people live, work and play.

The Minnesota Department of Health (MDH) and the Metropolitan Council have recognized the impacts the built environment can have in achieving healthy communities and have identified numerous practices that can be implemented to promote a healthier environment for our residents. Comprehensive planning can draw upon these connections and put policies in place to support healthy communities. However, the county's role in shaping the built environment from a healthy community's perspective may be limited in certain areas, such as land use control. Therefore, the Washington County Comprehensive Plan has started the healthy community discussion by recognizing existing programs and initiatives, as well as highlighting health inequities, chronic disease prevention (e.g., active living and tobacco use) and access to healthy foods.

Existing Conditions

Existing Plans and Efforts

Washington County is part of a larger statewide effort to make long lasting and economic health impacts. This program is known as *Living Healthy in Washington County (LHWC)*. LHWC helps create health-friendly policies, while providing resources that make it easier for residents to incorporate healthy actions into their daily routines. This partnership is supported by the Minnesota State Health Improvement Partnership (SHIP), a statewide funding program. From better nutrition in schools, child care facilities, emergency food programs and homes to more physical activity and reduced tobacco exposure, LHWC strives to make positive difference across the community for all ages and abilities.

Washington County also tracks and monitors the health of the county from a public health lens. In this way, the county's overall health is defined based on various health metrics such as rates of chronic disease, drug and alcohol use, and access to nutritious food options, to name a few. These findings are primarily detailed in the following documents: **Community Health Assessment (CHA)**: The CHA is updated every five years. The CHA discusses a wide array of information about the conditions and factors affecting health, as well as indicators of population health status. It represents a snapshot in time of the health of people and environments in Washington County, and identifies the top health priorities for community action.

- **Community Health Improvement Plan (CHIP)**: The CHIP is a long-term, systematic effort to address public health priorities identified in the county. The CHIP is used by the Department of Public Health and the Environment (PHE) and community partners to set priorities, coordinate resources, develop policies, and sets actions to protect and promote health.
- **Metro SHAPE 2014 Adult Survey**: Metro SHAPE is ongoing metro-wide public health surveillance and assessment project to periodically survey and report on the health of children and adults. Figures 5 and 6 show the demographics of 2014 Metro SHAPE survey respondents.
- **Targeted SHAPE Sample**: In 2014, the county conducted an oversample of low income and vulnerable populations in the county, which, as indicated in Figures 5 and 6, are not typically well represented in the overall Metro SHAPE survey. Results from this targeted sample provided a unique window into health behaviors and disparities of low income and underserved communities within the county.

Figure 5: Demographics of 2014 Metro SHAPE Adult Survey Respondents

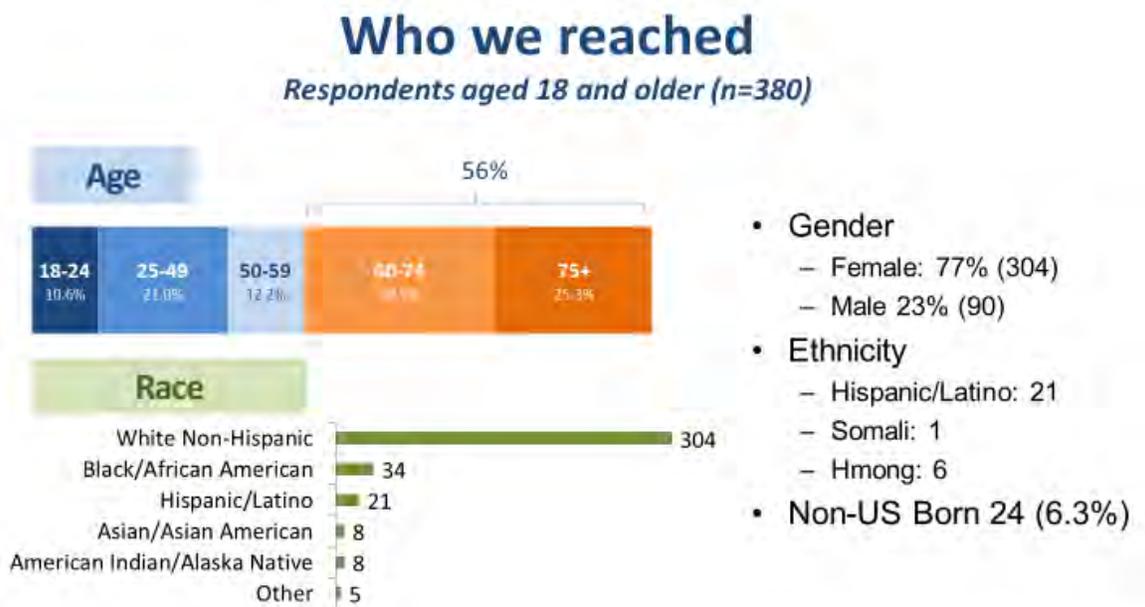
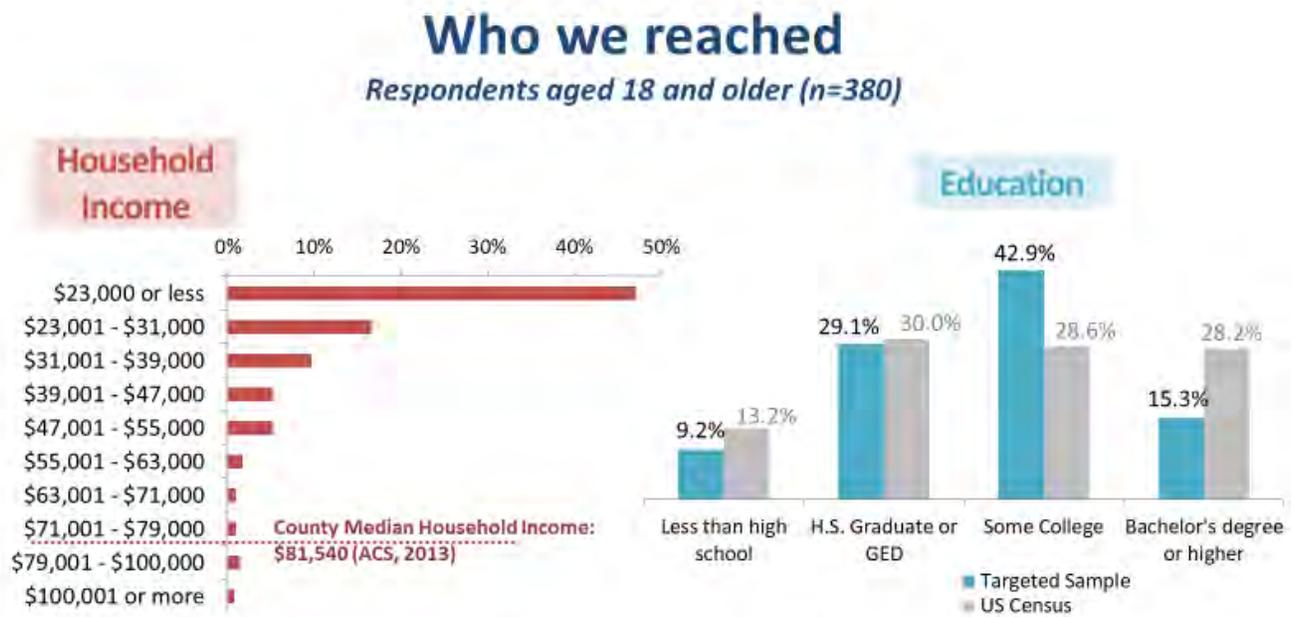


Figure 6: Income and Educational Attainment of 2014 Metro SHAPE Adult Survey Respondents



In recent years, Washington County has also embraced healthy community themes in transportation plans. An example includes the Health Impact Assessment (HIA) completed for the METRO Gold Line (previously known as the Gateway Corridor). The HIA serves as a resource for those seeking to protect and promote health through evidence-based land use decisions along the Metro Gold Line.

Health Data and Health Disparities

Although Washington County consistently ranks as one of the healthiest counties in the state, some residents in the county are still affected by poor health. Age, race/ethnicity, income, and mental health status all impact opportunities for individuals to maintain or improve their health. Thus, Washington County will be challenged to find ways to prevent these differences from creating higher health risks and poorer health outcomes for residents. These findings are documented in the County's CHA and CHIP, Metro SHAPE 2014 Adult survey, and the targeted Metro SHAPE survey, in addition to other public health resources. Below are a sample of these data points regarding existing conditions:

- Washington County is 3rd best amongst Minnesota counties in overall health factors in 2017 (health behaviors, clinical care, social and economic factors, and physical environment).¹
- Fourth amongst Minnesota counties in overall health outcomes in 2017 (length of life and quality of life).²
- Low percentage of residents who are uninsured (6.9 percent within Washington County versus 10.3 percent statewide in 2010).³
- Good access to healthcare (one primary care physician for every 897 residents in Washington County, compared to every 1,116 residents in Minnesota).⁴
- High median household income (\$77,000 within Washington County versus \$57,000 statewide in 2011).⁵
- Poverty disparity between white and minority residents is high (over 20 percent of all minorities in Washington County live at 200 percent below the federal poverty line, compared with 6.5 percent of white residents).⁶
- Obesity rate for Washington County was 23.5 percent, which compares favorably with the statewide average of 29.2 percent. However, the rate for low income residents jumps to 41.4 percent.
- High rates of lung cancer as proportion of total cancer deaths (nearly 30 percent in 2010).⁷
- Low percentage of children who get the proper number of minutes per day of physical activity (53 percent of 6th graders and 49 percent of 12th graders).⁸
- High rates of acute drinking among adults (22.5 percent in Washington County compared with 17.2 percent in Minnesota in 2010).⁹
- Rates of alcohol use by students (6th - 12th grades) has decreased, but remains relatively high (43 percent of 12th graders reported using alcohol one or more times in the past month in 2010, compared with 51 percent of 11th graders in 2007).¹⁰

¹ County Health Rankings. University of Wisconsin Population Health Institute and the Robert Wood Johnson Foundation. 2017.

² County Health Rankings. University of Wisconsin Population Health Institute and the Robert Wood Johnson Foundation. 2017.

³ U.S. Census Bureau Small Area Health Insurance Estimates. 2010.

⁴ Health Resources and Services Administration (HRSA). 2010.

⁵ U.S. Census Bureau Small Area Income and Poverty Estimates. 2011.

⁶ Minnesota Compass. 2013.

⁷ Minnesota Department of Health. 2011.

⁸ Minnesota Student Survey. 2010.

⁹ Minnesota Department of Health. County Health Tables. 2010.

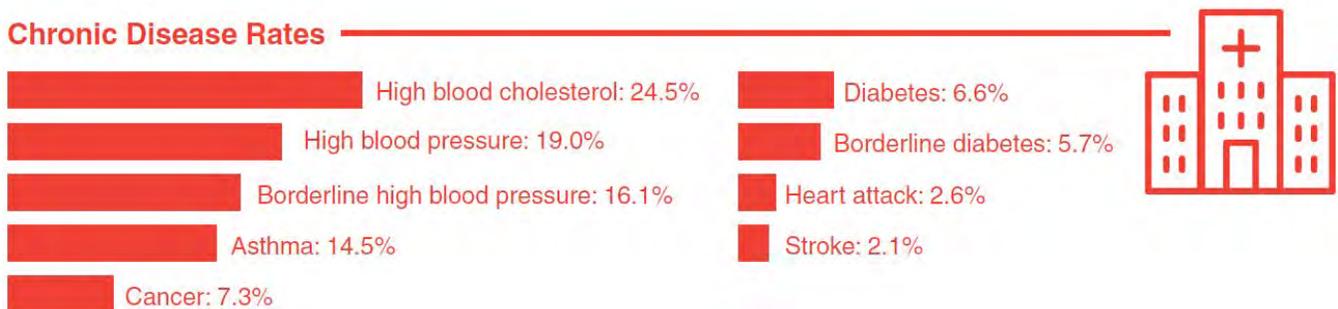
¹⁰ Minnesota Student Survey. 2010.

- Average rates of adult smoking (17.5 percent in Washington County compared with 17.1 percent in Minnesota in 2013 and 21.6 percent for SHAPE Targeted Sample in 2014).¹¹
- High rates of food access. However, approximately 7.6 percent of residents (17,000 individuals) lack the resources to adequately access food on a daily basis. This number increases to 52.9 percent of residents within the SHAPE Targeted Sample.¹²

Chronic Diseases

Through data collected in the Community Health Assessment (CHA), the most common types of chronic disease identified are heart disease, cancer, stroke, diabetes and arthritis. These and other chronic diseases can cause illness, disability and death. Seven out of ten deaths among Americans each year are from chronic diseases. Following these national trends, the leading causes of death in Washington County are cancer, heart disease, Alzheimer’s disease and stroke. The increased risk of chronic disease is caused primarily by behaviors such as inactivity, poor diet, smoking and tobacco use, and excessive alcohol use. Opportunities to support modifying these behaviors through healthy choices at the community level can work to prevent disease and promote health equity.

Chronic Disease Rates



Active Living

Residents who can easily and comfortably move on foot in their neighborhoods tend to get more physical activity and feel safer. To be active, one must have safe and convenient access between neighborhoods, jobs, services, and recreational activities. Being able to reach these types of destinations is essential for healthy communities. For example, adequate pedestrian, bicycle, and transit infrastructure is necessary to create safe connections for all users, including people who do not own a vehicle. Ample parks and open spaces also provide residents with opportunities to integrate physical activity into their daily habits.

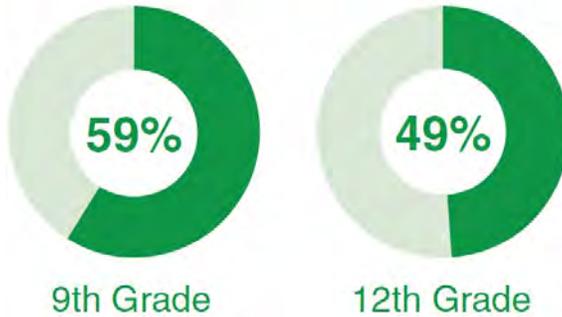
Geographically, Washington County is a large county comprised of many community designations (e.g., urban, suburban, and rural). Each of these designations capture the county’s varying landscapes and densities. Some areas are better served by the county parks and trail networks, providing unique conditions for active living across the county. For example, St. Paul Park and Stillwater are more urban in nature, and provide supporting infrastructure (e.g., city sidewalks) to incorporate active living into daily habits. These habits could include biking and walking to work; whereas Scandia, Hugo, and Denmark Township are more rural in nature, and therefore present different challenges in incorporating active living opportunities into daily habits. These parts of the county offer better access to county parks and regional trails that support recreational activities.

¹¹ Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System. 2013.

¹² Washington County Community Health Assessment. 2013.

Healthy Living

Percent of age group that met the recommended levels of moderate activity per week in 2010:

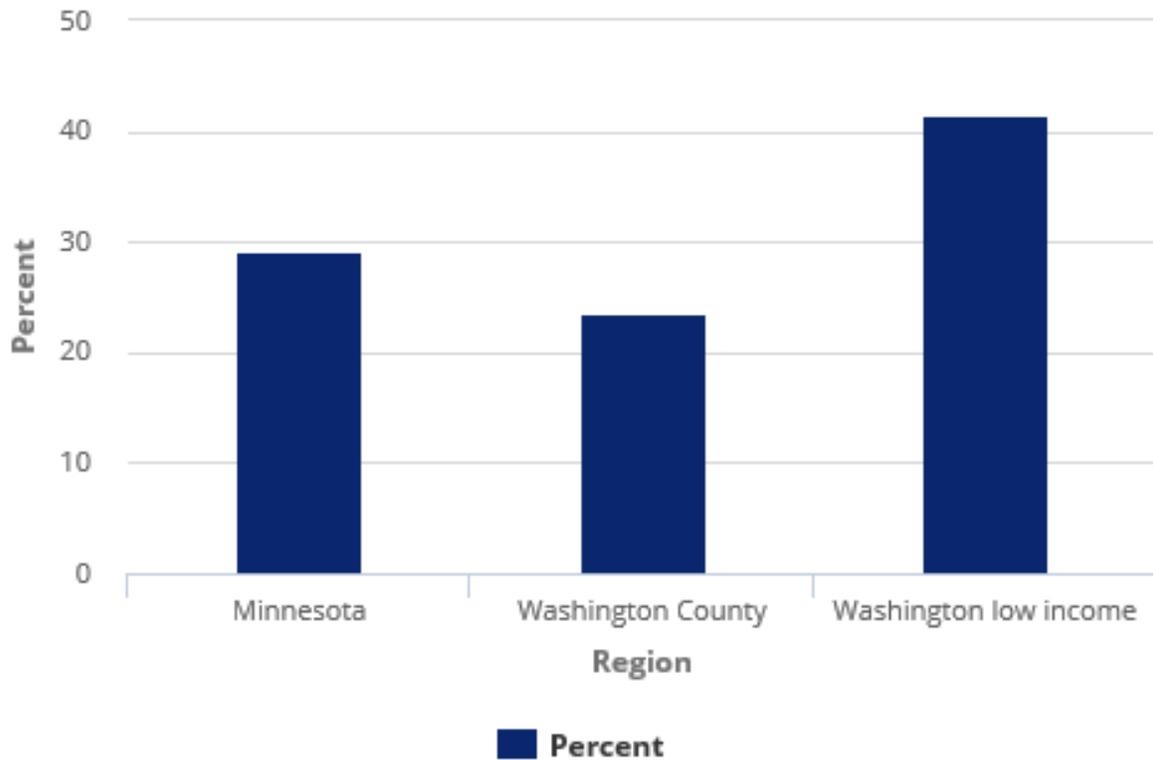


Washington County's park and trail system is highlighted below:

- Washington County provides more than 4,100 acres of park space, 47 miles of walking and hiking trails, and over 70 miles of bike routes
- Washington County provides four designated bicycle loops between communities and key destinations. These bicycle loops include:
 - **Loop #1:** Scandia, William O-Brien State Park, Square Lake Park, Big Marine Park Reserve
 - **Loop #2:** Square Lake Park, Stillwater Township, Pine Point Park
 - **Loop #3:** Pine Point Park, Gateway State Trails, Historic Courthouse in Brown's Creek Trail
 - **Loop #4:** Lake Elmo Regional Park Reserve

The county parks and regional trails will help foster active lifestyles, specifically helping address some of the county's healthy disparities. Some of these disparities can be found in the 2014 Metro SHAPE survey. The survey found that among minority populations and those living in poverty, obesity rates are much higher than the county average (23.5 percent) (see Figure 7).

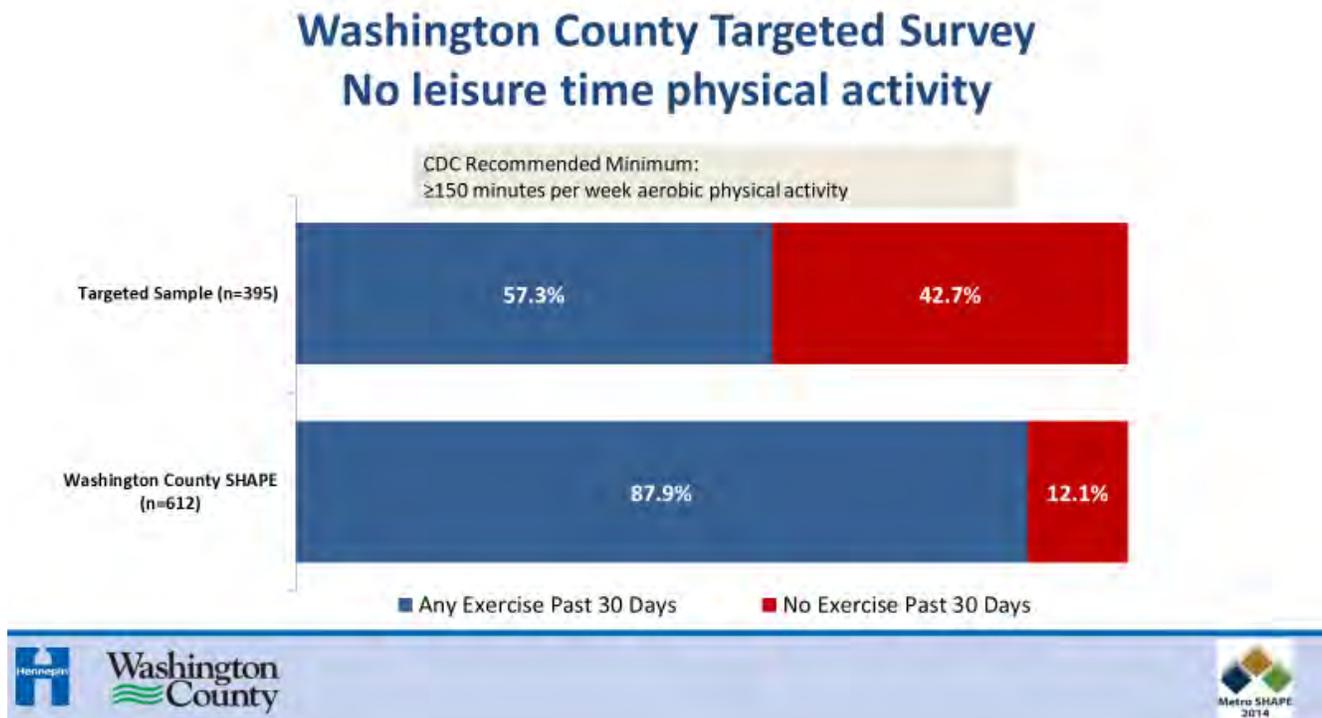
Figure 7: Percent of adults who are obese



Survey findings also included:

- Obesity rates are particularly high in the African-American community (46.4 percent of adults).
- African-American residents were three times more likely to have not participated in a physical activity during the course of the previous month.
- Over 40 percent of residents that made up the SHAPE Targeted Sample were recorded as having not participated in any physical activity within the previous 30 days (see Figure 8).
- In households where the income is less than \$23,000 annually, obesity rates were 35.5 percent for adults, much higher than the county average.

Figure 8: Exercise Habits of Survey Respondents - 2014 Metro SHAPE Adult Survey Targeted Sample



Tobacco Use

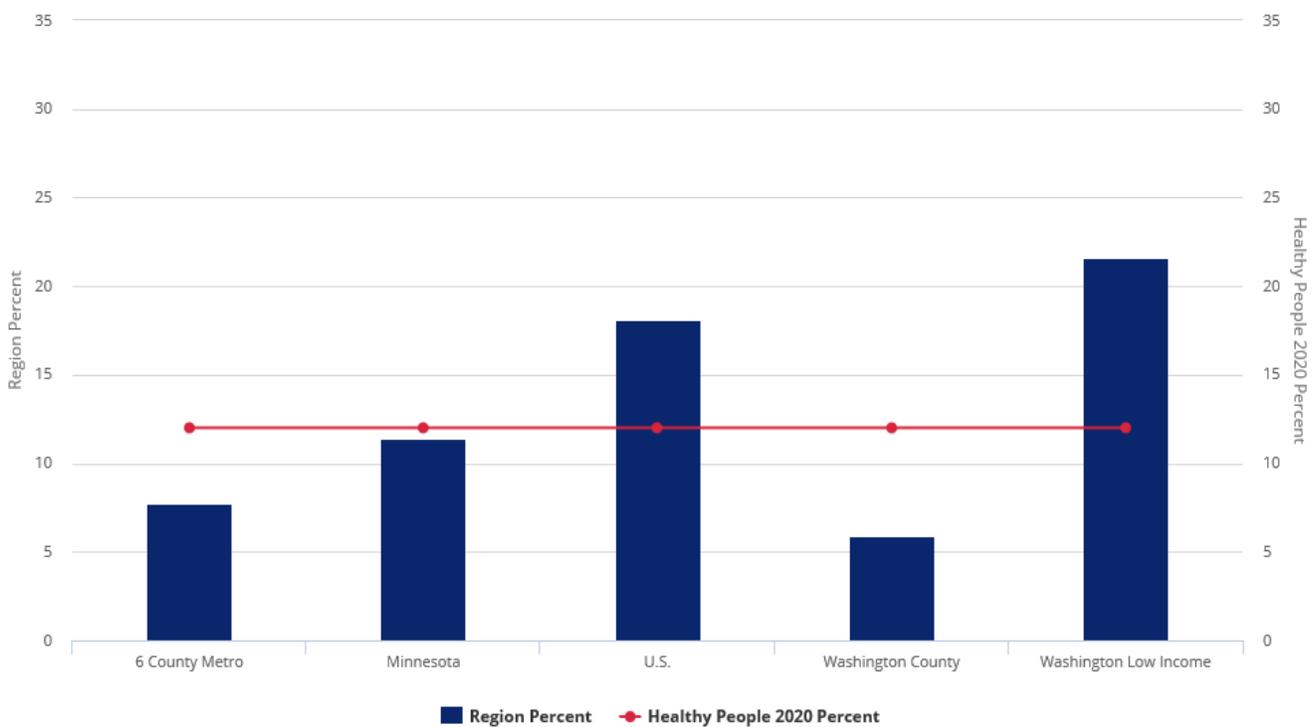
One of the leading causes of preventable deaths throughout the nation is linked to tobacco use. Tobacco use in Minnesota has been responsible for over 6,300 deaths and \$3.2 billion in excess medical costs per year. The State of Minnesota and Washington County have partnered to help address these issues through the State Health Improvement Partnership (SHIP). SHIP works to reduce secondhand smoke exposure and access to commercial tobacco products throughout the state. Through these efforts, SHIP is helping provide Minnesotans with smoke-free homes and reducing the likelihood that young people will eventually start using tobacco. SHIP efforts in Washington County (known as *Living Healthy in Washington County*) have focused on supporting smoke free multi-unit housing programs to tackle the burden of tobacco use and exposure in the county.

As part of the *Living Healthy in Washington County* programs, Washington County now has the third-lowest percentage of adult smokers in Minnesota, and rates of tobacco use have been at their lowest in decades. Throughout the program’s successes in reducing tobacco use there are still health disparities linked between targeted demographics and tobacco use. Overcoming these disparities can be achieved through continued SHIP and *Living Healthy in Washington County* initiatives. Targeted efforts should focus on communities in which rates of tobacco use are much higher than the county average.

Recognizing and understanding the racial and class disparities that exist among communities will allow Washington County to more effectively address tobacco use in future policy decisions. Some disparity factors include residents living in poverty, residents who have not attended college, residents with frequent mental distress, and African-Americans. These disparities are found in the 2014 Metro Survey, CHA, and the 2013 Minnesota Student Survey. Below are a sample of these data points:

- Over 50 percent of individuals within the SHAPE Targeted Sample responded as current or former smokers. This number is significantly higher than the 31.5 percent of the general population who responded as current or former smokers.
- The county average for smoking is low (6 percent) compared to the statewide (16.3 percent) and national (18.1 percent) averages. The average for the low income targeted sample was 21.6 percent (see Figure 9).
- The smoking rate for African-Americans was 14.4 percent in 2014.
- The smoking rate for households with annual incomes of \$23,000 or less was 18.8 percent.
- Nearly 40 percent of residents who have not attended some form of college currently smoke.
- Over 15 percent of residents who have frequent mental stress currently smoke.
- In 2013, 14.4 percent of 11th graders reported smoking in the past 30 days, compared with 35 percent in 1998.

Figure 9: Percent of adults who are current smokers



Healthy Food Access

The ability to easily access basic needs and services influence a person’s social, economic, physical, and mental well-being. How connections (e.g., roads, sidewalks, paths, transit) to basic goods and services are designed determines how easily people can benefit from the availability of these resources. Access to healthy foods can

reduce the rates of preventable diseases, improve the county’s overall health, aid in community and economic development initiatives, and promote equity for all residents. To achieve these benefits, safe and convenient

transportation (e.g., walking or biking) options must be linked to more people and interwoven between healthy food environments.

The Minnesota Food Access Planning Guide by the Minnesota Food Charter, defines food access and healthy foods as follows:

- **Food Access:** The ability of a person or group of people to obtain healthy food, depending on factors such as physical access, seasonal availability, affordability, knowledge, or cultural attitudes.
- **Healthy Food:** A diverse selection of nutritious foods that nourish the body and promote health.

A quality transportation system is important for residents of all backgrounds and incomes to have access to healthy foods. Washington County's many miles of highways provide access to grocery stores, farmers markets, and other healthy food locations to those who drive as their primary mode of transportation. However, it is also important to consider the needs of residents who do not own or travel by car as their primary mode. Often, those who travel by bus, bicycle, or by foot have lower access to healthy food options.

There are health disparities in Washington County when comparing demographics to lifestyles from a healthy food perspective. For example, the 2014 Metro SHAPE survey found disparities among Washington County residents, particularly African-American residents and those living in poverty (200 percent below the federal poverty line). These residents were twice as likely to consume sugar-sweetened beverages and nearly 1.5 times less likely to consume two or more servings of fruit per day. The Targeted SHAPE survey also found that 52.9 percent of this targeted population had experienced, or were experiencing, food insecurity.

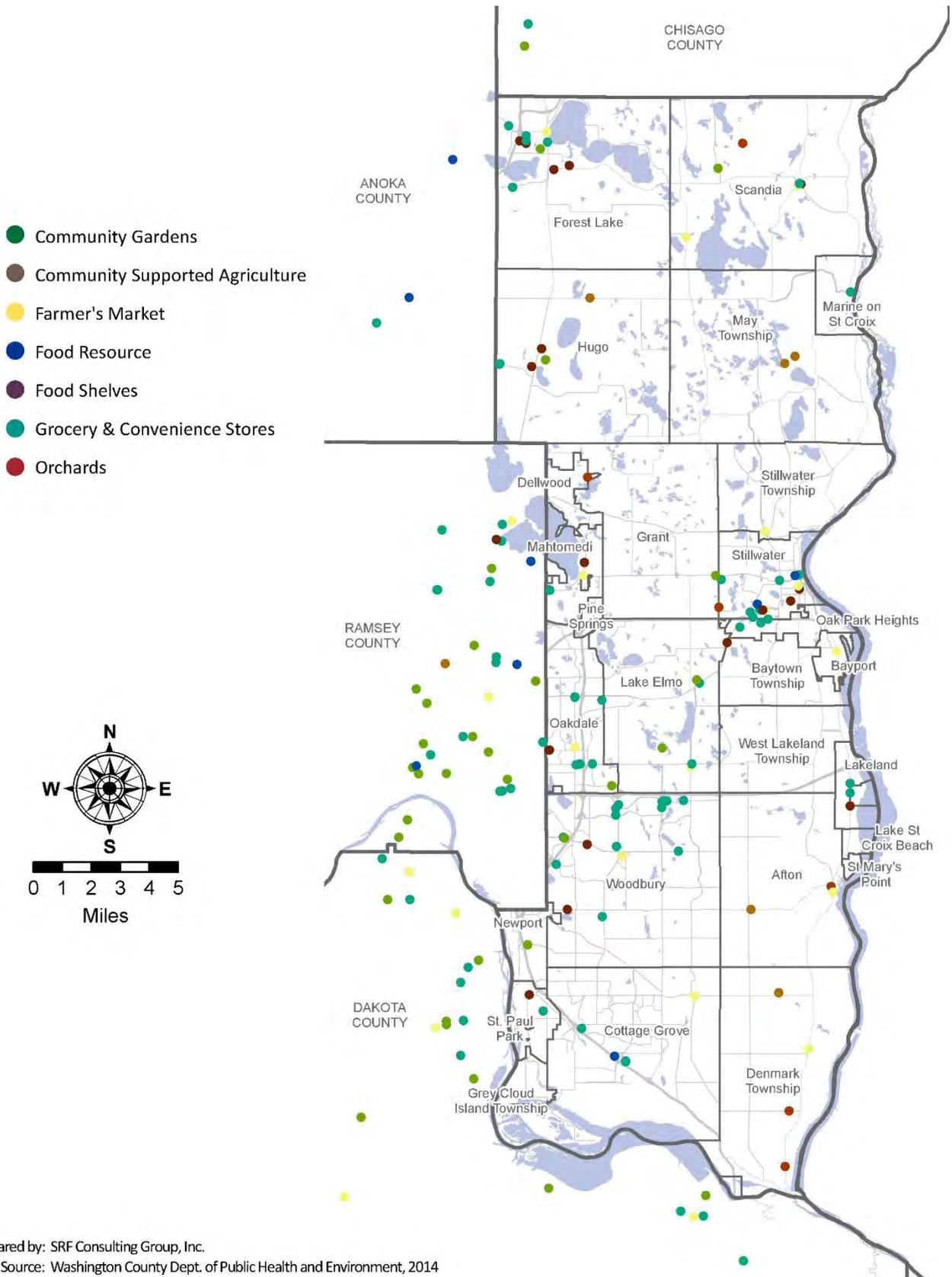
Food Security

About **7.6%**, approximately **17,000** people, lack the resources to consistently get adequate food.



To address these needs, Washington County has invested in improving the transit system by placing stops and stations near healthy food options and continuing to build off-street trails to make local streets safer and more accessible for bicyclists and pedestrians. These improvements allow those without vehicles to safely and efficiently access healthy food options within Washington County. Food access locations in Washington County and surrounding areas is shown in Figure 10.

Figure 10: Food access locations in Washington County and surrounding areas.



Prepared by: SRF Consulting Group, Inc.
 Data Source: Washington County Dept. of Public Health and Environment, 2014

Energy Efficiency and Conservation

Washington County is committed to promoting and expanding the use of renewable energy resources and energy efficient practices by reducing energy consumption and increasing the use of clean energy resources. This energy use profile illustrates the county’s energy consumption and greenhouse gas emissions from buildings and transportation and reviews the status of efficiency, solar, wind and biomass resources.

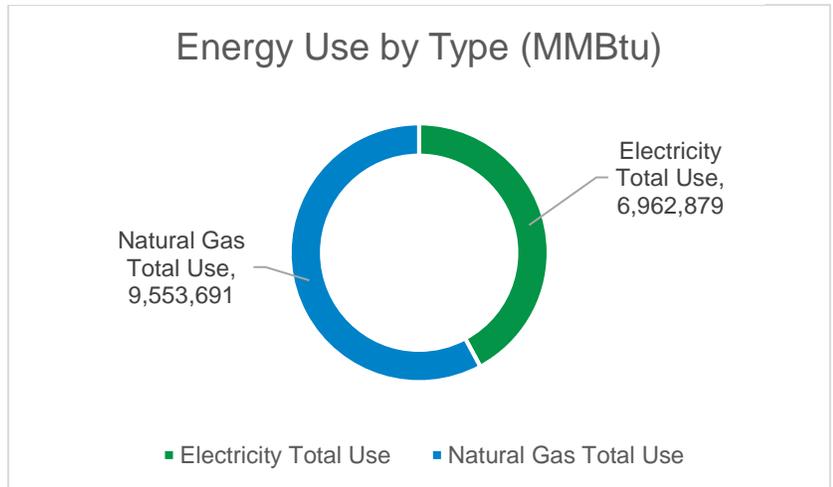
Energy Use Profile

Nearly all of Washington County is served by Xcel Energy for electricity and natural gas. A small percentage (3 percent) is delivered by Connexus Energy, an electric co-op. Xcel Energy provides energy consumption data by sector for communities within its territories and is the primary source of data for this profile.

Buildings and industrial processes in Washington County primarily use electricity and natural gas as energy sources. While other fuels (heating fuel for residential use) are also used, they are not captured in this assessment. Figure 11 shows that consumers use more natural gas than electricity, with 58 percent of energy consumed being natural gas. Natural gas is primarily used for water and space heating, cooking, and some industrial processes. Electricity is used for appliances, water and space heating, lighting and other electronic devices. Streetlights are included in electricity consumption and are less than one percent of electricity consumption.

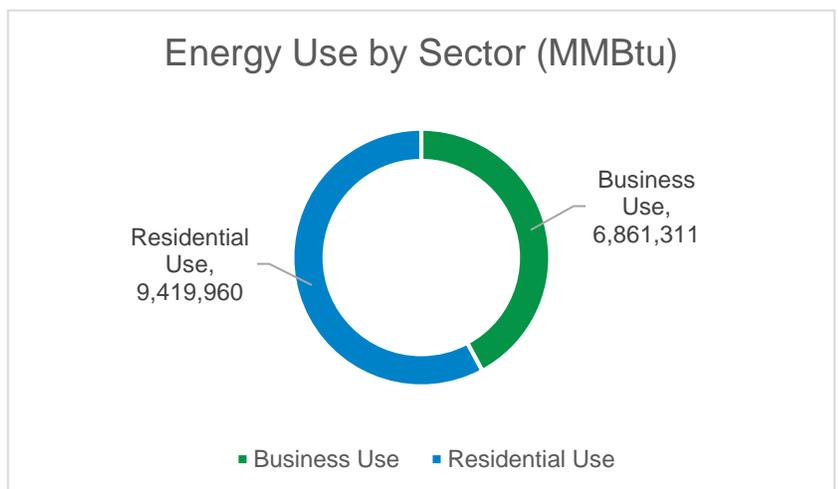
Figure 12 illustrates that residential consumers use a greater share of energy than commercial and industrial consumers. However, it is important to note there are more than 92,000 residential customers in Washington County as compared to 9,600 commercial and industrial customers. The Xcel Energy Community Energy Report indicates utility electricity consumption costs Washington County residents and businesses \$217.1 million each year; an average of \$1,200 per household and \$11,000 per business. According to the Energy Information

Figure 11: Energy Use by Type (MMBtu)



Data Source: Xcel Energy 2016 Community Energy Report and Minnesota Department of Commerce Electric Utility Annual Report

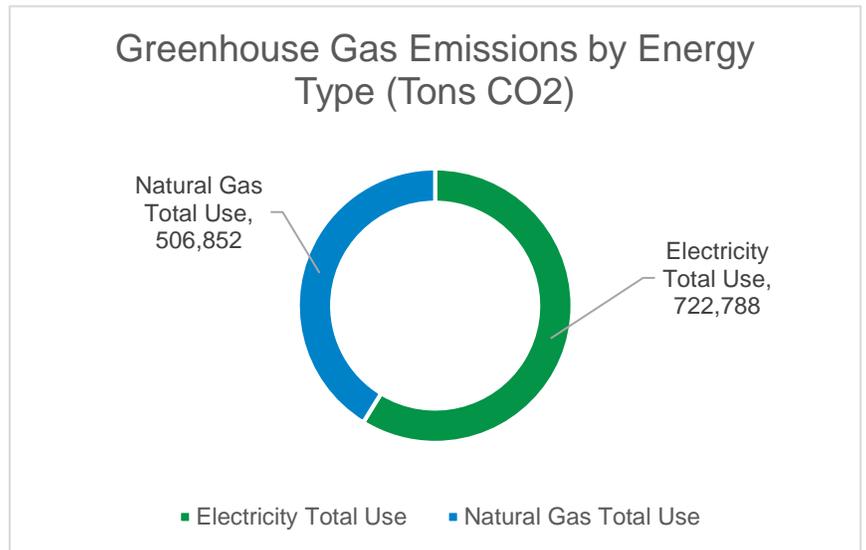
Figure 12: Energy Use by Sector (MMBtu)



Data Source: Xcel Energy 2016 Community Energy Report

Administration, Minnesota households spent \$1,108 on electricity and Minnesota businesses spent \$7,585, on average, in 2015. Greenhouse gases (GHG) are emitted from burning conventional fuels like coal and natural gas to produce electricity. Electricity generation is growing increasingly cleaner as utilities add renewable energy sources each year. However, electricity is currently more carbon intensive than natural gas. So, while more natural gas is used in the county (in terms of MMBtu), electricity has higher total emissions in tons of CO₂ (see Figure 13). Greenhouse gas emissions from electricity and gas use by buildings can be reduced by expanding clean energy and improving energy efficiency.

Figure 13: Greenhouse Gas Emissions by Energy Type (Tons CO₂)



Data Source: Xcel Energy 2016 Community Energy Report

The residential and business sectors each make up about half of the GHGs emitted from building energy use.

Transportation Energy Use Profile

Transportation energy is almost exclusively attributable to car and truck travel, and is estimated by vehicle miles traveled (VMT) within the county boundaries (regardless of through traffic or with an origin or destination in the county).

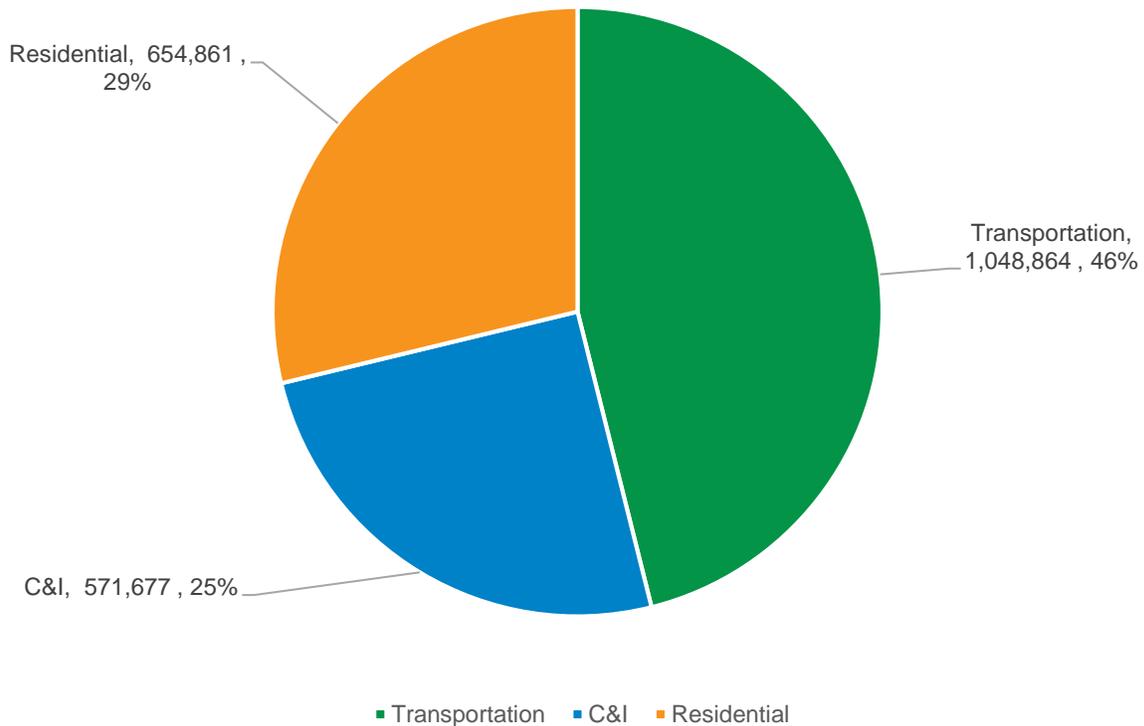
VMT includes commercial and freight vehicles, personal cars, and mass transit vehicles. VMT does not capture energy attributable to rail and airplanes, but those are generally a very small portion of transportation energy use. Minnesota Department of Transportation (MnDOT) data show 2,349,079,167 vehicle miles are traveled annually in Washington County. This is a 63 percent increase from 1992 to 2014, making it one of the highest county VMT growth rates. The greenhouse gas emissions associated with this travel are approximately 1,048,864 tonnes of CO₂e, or almost half of the county’s total GHG emissions. Transportation fuels also represent a significant portion of total energy expenditures in the county and provide an opportunity for cost-savings through efficiency and fuel-switching to less expensive or cost-volatile fuels.

Greenhouse Gas Emission Summary

The energy use data gathered for building energy consumption and transportation illustrate a clear picture of the major sources for GHG emissions across the county (see Figure 14). Residential (29 percent) and Commercial Industrial (25 percent) building energy consumption together result in 54 percent of total emissions. Transportation emissions make up the other 46 percent of total emissions.

GHG emissions from air travel, waste and wastewater treatment processes are not included in this graph and will require further data analyses or a community-wide GHG inventory.

Figure 14: Greenhouse Gas Emissions by Sector (Tons of CO2)



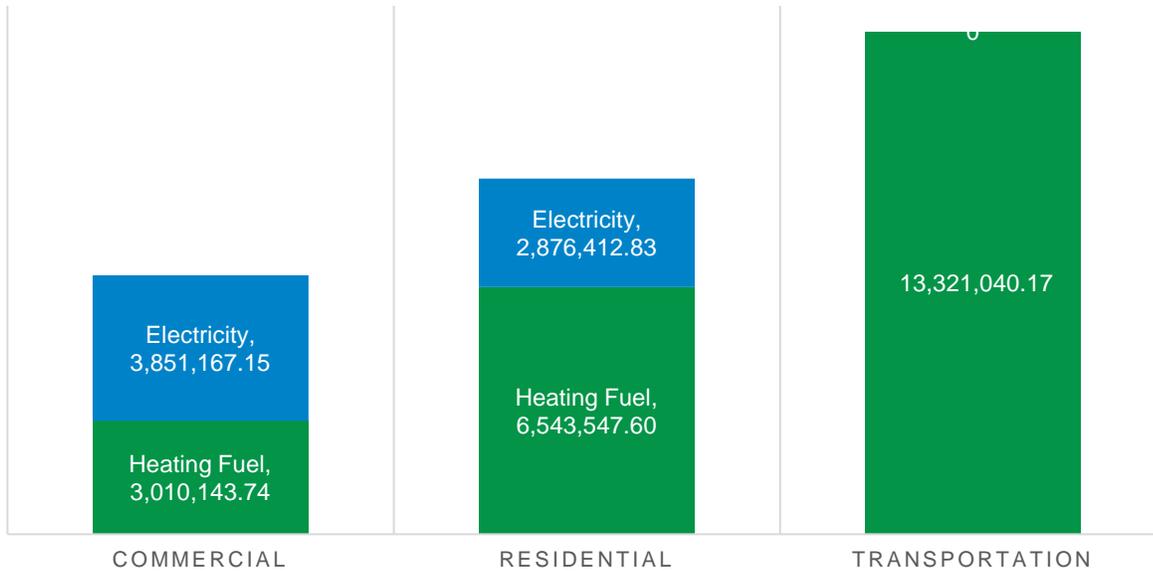
Data Source: Xcel Energy 2016 Community Energy Report, Minnesota Department of Transportation Roadway Data

Efficiency Resource

The county’s efficiency resource is measured by looking at current energy use. The greater the energy consumption, the greater resource available for Washington County to be more efficient. As noted in the energy use profile, the utility energy use and therefore the efficiency resource is greater among households as compared to businesses. However, because energy use per customer is higher in the business sector, there is opportunity to have a bigger impact in energy reduction by working with large commercial users. Focusing on commercial and industrial building energy use is a potentially high-impact strategy for capturing the county’s efficiency resource; a single successful efficiency investment in a commercial building could reap the efficiency benefits of dozens of residential investments.

Figure 15: Energy Efficiency Potential by Sector in Washington County

ENERGY EFFICIENCY POTENTIAL (MMBTU)



Xcel Energy offers incentives to residential and business customers to help increase energy efficiency action. Participation rates for these programs can be found in Xcel’s Community Energy Reports. For Washington County, 2016 participation rates by businesses and residents were:

Table 1: Participants in Xcel Energy’s Rebate Program

Sector	Rebates Given	Electricity Savings (kWh)	Natural Gas Savings (Therms)
Business	411	16,115,437	477,643
Residential	8,412	3,996,174	716,980

Utility companies can manage the electric load through demand response programs. These programs incentivize consumers to allow the utility to ramp down appliances (e.g., Saver’s Switch® for central air conditioning) or other larger electric equipment to relieve pressure from the grid during times of high use. In Washington County, more than 1,098 businesses participate in such programs, creating 44,731 kW of available capacity; 41,986 residential customers participate, creating a load management resource of 23,222 kW.

Conservation Improvement Program

Under the Next Generation Energy Act of 2007, Minnesota requires “electric and natural gas utilities to achieve annual energy savings equal to 1.5 percent of annual retail energy sales of electricity and natural gas directly through energy conservation improvement programs and rate design, and indirectly through energy codes and appliance standards...”

Transportation efficiency is another significant resource, comprising almost half of the county’s GHG emissions and a significant portion of energy expenditures.

GHG emissions related to transportation can be reduced in three ways by:

1. switching to a low-carbon or carbon-free fuel
2. improving efficiency (miles per gallon) or right-sizing vehicles according to their use
3. mode shifting, or increasing use of non-motorized or transit options

The county is already active in working with its cities, townships and the Metropolitan Council in encouraging transit use and expanding the reach of multi-modal transportation infrastructure. Electric vehicle markets are poised for rapid expansion over the next decade. Improved efficiency in vehicles is likely to occur through increased use of hybrid and electric vehicles. Hybrid vehicles still burn gasoline, but have long-ranges and now come in a variety of vehicle types used by residents and businesses. Electric vehicle models are becoming increasingly available in the marketplace, mileage ranges continue to improve and charging stations continue to grow in number.

Solar Resource

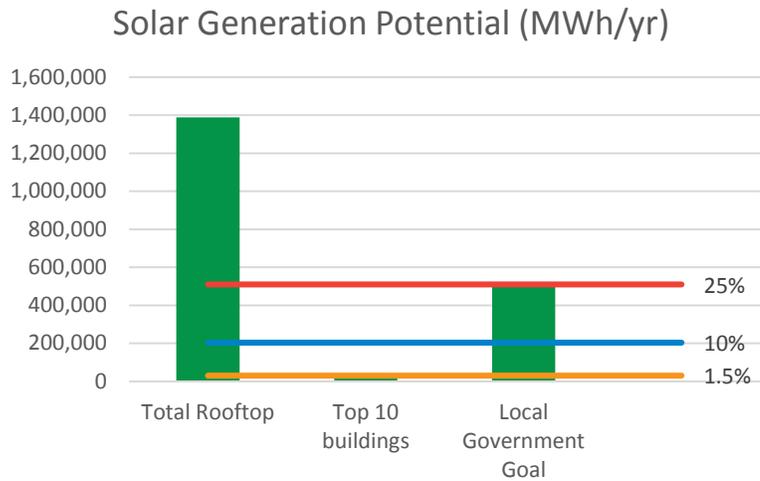
In accordance with the Metropolitan Land Planning Act, all communities are required to include an element for protection and development access to solar energy in their comprehensive plans. The Metropolitan Council has developed a solar resource calculator and map to help communities determine how much solar energy is available for development, identify good sites for solar development, and signal where there may be land use conflicts. Washington County’s available solar resource is as follows:

Table 2: Washington County Rooftop Solar Resource

Community	Gross Potential	Rooftop Capacity	Rooftop Generation Potential	Solar Potential of Top 10 Rooftops
Washington County	624,704,100 MWh/yr	1,069 MW	1,389,643 MWh/yr	29,049 MWh/yr

The total capacity of the rooftop solar resource in Washington County is 1,069 MW, equal to approximately 68 percent of the electricity consumed in the county. This means that if the county wanted to maximize its entire rooftop solar resource, it could set a goal of up to 68 percent on-site solar generation. The solar resource does not include potential energy efficiency measures that need to be implemented, resulting in an increase of the share of electricity that could come from rooftop solar.

Figure 16: Example of Solar Potential and Community Goal



Solar installations are not limited to rooftop applications. This analysis does not include ground-mounted systems, but commercial parking lots may make good solar resources, or public right of ways; while areas planned for future development or park space may not. These criteria can be used to recalculate potential solar generation and redefine future solar goals for local development.

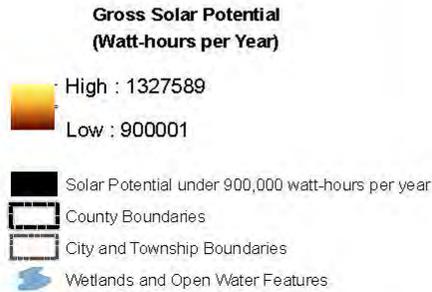
Solar Data Resources

Metropolitan Council: The Metropolitan Council requires cities to include: 1) A calculation of your community’s solar resource along with solar suitability map; 2) Policies relating to the development of access to direct sunlight for solar energy, per the Metropolitan Land Planning Act; and 3) Strategies to implement those policies. The Council has developed maps for every community within its jurisdiction to help complete this requirement.

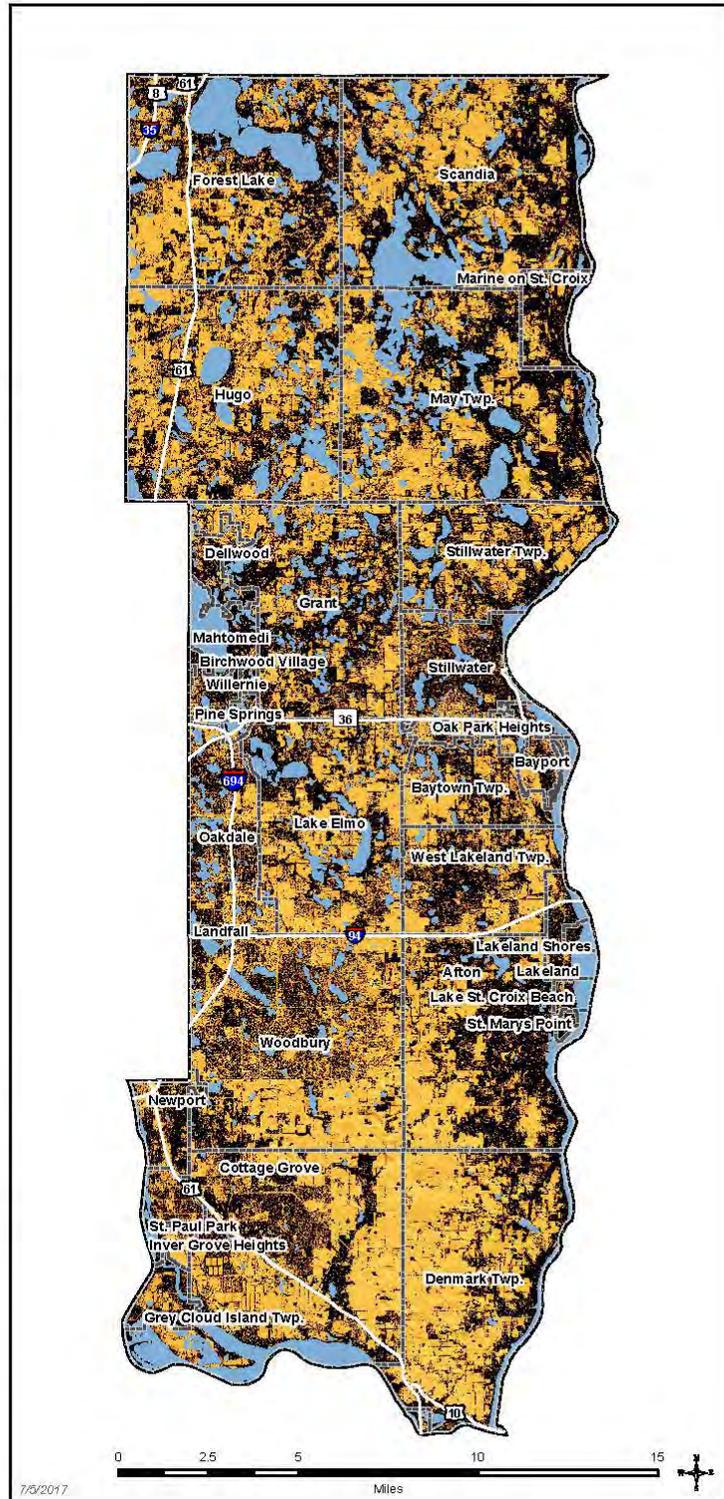
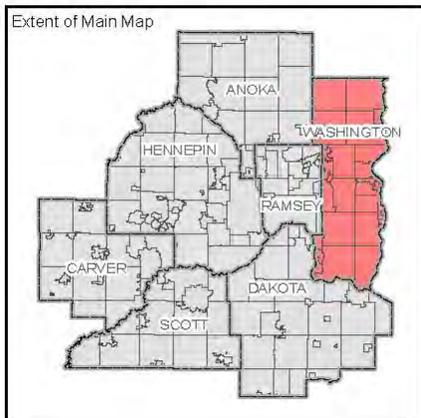
Minnesota Solar Suitability App: For communities outside the Metropolitan Council’s jurisdiction, solar data can be accessed through the state of Minnesota’s Solar Suitability App that provides a 1-meter resolution of a community’s solar resource for nearly every section of the state. This data can be clipped to a community’s building footprint to refine the solar potential (www.mn.gov/solarapp).

Figure 17: Solar Resource Map, Metropolitan Council Community Page

Gross Solar Potential Washington County



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



Wind Resource

Wind Resource

A good wind energy site needs to meet a number of characteristics, the most important of which is a good wind resource. Other characteristics include soils that can support the weight of the turbine; a site large enough to accommodate safety setbacks from neighboring properties, structures, or other uses; and surrounding land uses for which the visual impact and potential nuisances will not create a conflict. The Distributed Wind Energy Association offers this guidance on wind turbine placement:

The industry guidance on minimum wind turbine height states the lowest extension of a wind turbine rotor must be 60 feet above the ground, assuming no surrounding obstacles. Where obstacles are present, the wind turbine rotor should be at least 30 feet above the tallest obstacle within a 500-foot radius. If trees are not fully grown, then the tower height must be adjusted for the growth over the next two or so decades, the life of the wind turbine.

Washington County with its urban, suburban, and rural characteristics has varying suitability for towers above a certain height. More appropriate tower heights for this community type would be at 30 meter heights. The Minnesota Department of Commerce developed wind speed maps at a 500-meter resolution to give a general sense of the wind resource at various tower heights, these are not adequate for a specific site assessment.

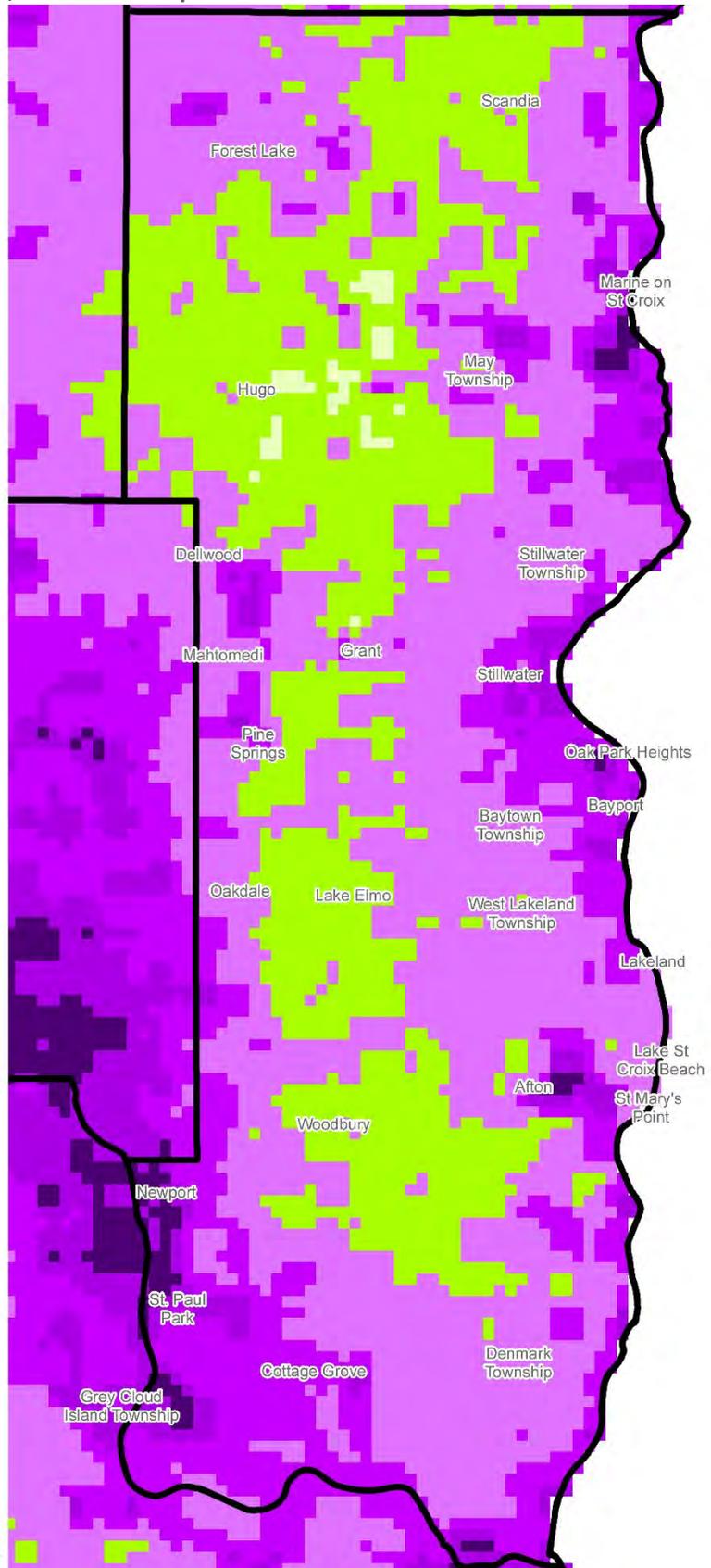
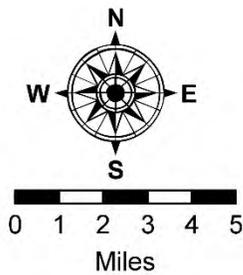
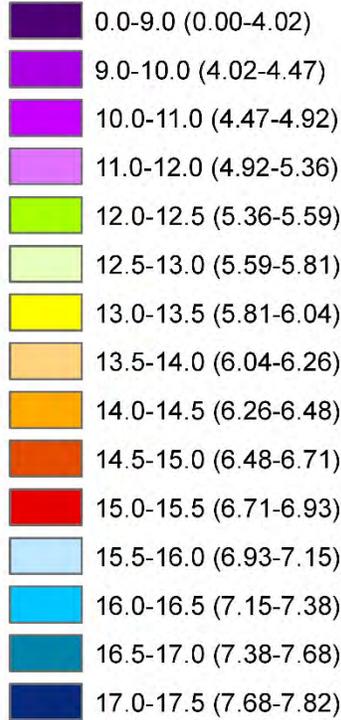
A good rule of thumb is that 12 mph is typically the minimum average annual wind speed for a good wind resource. At 30 meters, Washington County has an average wind speed of less than 10 miles per hour. The wind resource available at 30 meters is below the optimal speed needed for a productive wind energy system, suggesting that taller towers would be necessary from a production standpoint.

While the county does not have many opportunities for wind energy development, residents and businesses can participate in Xcel Energy's Windsource® or Renewable*Connect programs. These programs provide the clean energy benefit of having local wind (and solar) energy, although the economic benefits of clean energy development are realized elsewhere. According to Xcel Energy, eleven businesses are subscribed to a total of 52,887 kWh of wind energy, and 3,209 residences are subscribed to a total of 8,269,416 kWh of wind energy.

Figure 18: Minnesota Wind Resource Map, Minnesota Department of Commerce

Wind Speed

MPH (m/s)



Prepared by: SRF Consulting Group, Inc.
Data Source: Minnesota Department of Commerce, WindLogics

Biomass Resource

Fuel derived from biomass can be used to generate renewable electricity, waste heat, and gas. Minnesota has several biomass facilities generating electricity and heat. Biomass resources include municipal solid waste, landfill gas, wood waste, agricultural byproducts, food processing residue and other organic waste.

There are few assessments and little information available about potential biomass resources at a community level and the type of resource varies widely across communities. However, the county does currently use biomass resources for energy production, and additional opportunities may be available.

Through the Ramsey/Washington Recycling & Energy Board (R&E Board), Washington County owns and operates with Ramsey County the Recycling & Energy Center (R&E Center) in Newport, a refuse derived fuel (RDF) facility. The R&E Center uses shredding, magnetic separation and density separation to convert waste received into RDF. Ferrous metals and aluminum are also separated and recovered for recycling. After being processed, the RDF is transported to two facilities owned by Xcel Energy (in Red Wing and Mankato, MN) that use the RDF to generate electricity. These two plants provide enough electricity for 22,000 homes annually through waste-to-energy. In addition, the Washington County Waste Management Master Plan has policies and strategies pertaining to waste-to-energy, but also aims to increase the amount of organic waste (food waste, compostable paper, yard waste) to be managed through composting.

Through the R&E Board, the two counties are also exploring new technologies to increase energy produced, create fuels, make compost, or provide recyclable materials for manufacturing such as mixed waste processing, anaerobic digestion, and gasification.

Biomass as Renewable Energy

Anaerobic digestion is a process that uses captured biogas (methane and carbon dioxide) from the decomposition of organic material to generate heat and/or electricity. Biogas generated from this process can also be cleaned to remove carbon dioxide and other impurities to produce a renewable product equivalent to conventional natural gas, referred to as renewable natural gas. Renewable natural gas (or biogas) can serve as a replacement for any natural gas application and can also be compressed to provide a source of transportation fuel in place of conventional natural gas.

Biogas can be used to generate electricity in a process called combined heat and power. Combined heat and power (CHP) systems simultaneously generate electricity and thermal energy within a single system. By using the thermal energy, CHP systems efficiency is much greater than conventional power generating systems. While this system is well established in Minnesota, there is still great potential to harness this resource.

Benefits of CHP application include:

- Produces power at a cost below retail electricity
- Enhances local power reliability
- Expands ability of biogas to produce useful energy beyond thermal loads
- Reduces greenhouse gas emissions and other air pollutants

Energy Storage Resource

Energy storage has the potential to transform the energy landscape. By storing energy, electricity can be redistributed from times of the day during which a surplus of energy can be generated to times of high energy demand. In the absence of storage, excess energy production is lost, while high demand necessitates the use of expensive gas-fired peaking plants that only are active for a few hours each year. Wide implementation of energy storage may smooth out the energy demand curve, reduce the need for peaking plants, bring about significant resiliency benefits, reduce carbon emissions, and result in an overall reduction in costs.

Energy storage has been experiencing a dramatic increase in deployment, and this trend is likely to continue for the foreseeable future. Various forms of energy storage are already in use. Batteries are the most widely known form of energy storage - and well known for their use in electrical vehicles - but energy storage is much more than the latest advancement in lithium battery technology. Chemical, thermal mechanical and electrical battery families populate today's market.

The University of Minnesota's Energy Transition Lab published a 2017 report suggesting that energy storage will become a cost-effective resource in the near future in Minnesota, especially when coupled with solar PV. Their work found that if environmental benefits are included, solar + storage will be a cost effective alternative to natural gas-fired peaking plants as early as 2018, and standalone storage will be a cost-effective alternative as soon as 2023. While still emerging as a use in Washington County and the country, energy storage could be a resource that is broadly employed over the next decade. Current testing of technology in demonstrates it is possible to run entire homes and charge electric vehicles through sole reliance on home batteries.

Back-up Power and Resilience

One of the potential advantages of using local energy resources for local energy needs is that local generation can provide backup or substitute power for when extreme weather or other emergencies shuts down the electric grid. The ability to generate power on-site is particularly important for critical facilities such as law enforcement, emergency shelters, health care facilities, and water pumping. Washington County currently has eleven generators at nine facilities that provide back-up electric power in the event of a power outage. All the generators are fueled with diesel and/or natural gas. Diesel generators are often sufficient to supply electricity for short-term outages; however, they have limitations that could be offset with a solar photovoltaic (PV) and storage system that increases the resilience of the facility and saves the county money.

Weather-related power outages have increased significantly in the U.S. since 2000. Sustained power outages can impact daily life, health, and safety of residents, as well as strain local economies. Diesel generators depend on an adequate supply of diesel to withstand long-term power outages, and may only work for a few days, particularly if there is limited or no access to additional fuel. Natural gas back-up power generators tend to have a more reliable supply, but can be expensive to run for an extended period.

Distributed PV can significantly increase the resilience of the local electricity system, but it must be designed with back-up power in mind. Most PV systems are technically incapable of providing back-up power during an outage. For safety reasons, these systems are installed with inverters that are designed to automatically disconnect from the grid during a power outage. Systems can, however, be designed for standalone operation along with battery storage to provide continuous power during an outage. The PV system should include an inverter that can automatically switch between charging batteries, supplying electricity to the on-site load, and/or feeding electricity to the grid. It must also be able to isolate the system from the grid during a power outage.

Existing Policy

State of Minnesota Energy and Climate Goals

- Many communities adopt the Minnesota energy or greenhouse gas (GHG) reduction goals. Minnesota has set a mandatory 80 percent GHG emission reduction target by 2050, from a 2005 emission baseline.
- The interim 2025 GHG target is a 30 percent reduction, including a 25 - 30 percent required renewable energy fuel mix for electric utilities.
- For renewable energy, Minnesota set an aspirational solar energy target equal to 10 percent of electric retails sales.

Waste Management

A sustainable community seeks a better quality of life for current and future residents by maintaining nature's ability to function over time. It depends on a co-existence of industry, transportation, economic development, residential development and the natural environment all of which can present challenges to one another. Washington County's waste management system is an integral component of the infrastructure of a sustainable community. Proper management of solid waste and recycling conserves resources and assures a high level of community sanitation. Therefore, solid waste must be managed by technologies and methods that support sustainable communities and environments, while also seeking to mitigate and effectively manage factors such as noise, congestion, odors, and environmental degradation which threaten the conditions that are desirable for citizens to live work and play. Municipal solid waste (MSW) generation in the Twin Cities Areas continues to grow with residential and business waste generated in the county increasing with population and business growth. MSW includes garbage, recyclables, yard waste, household hazardous waste, and bulky waste such as furniture.

In 1980, the Waste Management Act (MN Stat 115A) was passed to improve integrated solid waste management system to protect public health and the environment. The law established the waste management hierarchy for waste and order of preference for the management of waste.

Metropolitan counties are required (MN Stat 473.803) to prepare a master plan to implement the Minnesota Pollution Control Agency's (MPCA) Solid Waste Management Policy Plan every six years. The county's waste management master plan guides waste management activities while continuously striving to achieve quantifiable objectives to reduce land disposal of waste.

Development and implementation of the county's waste management master plan also includes continued partnership with Ramsey County through the Ramsey/Washington Recycling & Energy Board (R&E Board). This partnership brings together the two counties with common goals to collaborate, save financial and staff resources, and focus efforts to achieve the state's waste objectives. The counties have been working together since the early 1980's on solid waste management. This partnership was strengthened through its 2015 purchase of the Recycling & Energy Center (R&E Center), a refuse derived fuel (RDF) facility in Newport, MN.

Ramsey and Washington counties will continue to partner in exploring the potential of emerging technologies to extract additional recyclables from the trash until they can be separated at the source by the generator (helping the counties move closer to the state's 75 percent recycling goal).

Waste generated in the county is managed in a number of ways. The county reported nearly 213,000 tons of MSW managed in 2016. Almost 43 percent of that waste was recycled (this includes traditional curbside recycling and organics recycling), 40 percent was processed or waste-to energy and 12 percent was landfilled. However, recycling rates over the years have not increased significantly and the county must meet a new state 75 percent recycling goal. In addition, land disposal rates have increased since 2007.

The county has a number of programs and services to support recycling, composting, and waste-to- energy activities and also for proper management of solid and hazardous wastes. Some of these include:

- Technical support and funding is available to cities, townships, and schools for residential recycling programs and waste activities at schools.
- Solid and hazardous waste compliance programs and education and technical assistance on proper waste management.
- Operation of the Washington County Environmental Center for residents to dispose of household hazardous waste, electronics, and recyclables in an environmentally responsible way.
- Environmental complaint and response program for solid or hazardous waste issues and public health nuisances.

Washington County collects a county environmental charge that supports county efforts, such as the few listed above, to promote recycling, reduce waste, and protect soil and water against waste contamination.

Goals, Policies, and Strategies

To guide future decision making and county actions, goals, policies and strategies have been developed specific to the resilience and sustainability element. The following pages outline four goals with corresponding policies and strategies that set the course for the county’s future. Chapter 3, Goals, Polices, and Strategies, also provides the information contained within this section, along with the goals for the other plan elements. Chapter 11, Implementation, provides tools that can be utilized while working to achieve these goals.

Resilience and Sustainability Goal 1: Maintain and improve community preparedness and emergency response capacity to ensure public health and safety.	
Community Vulnerability Policy	Community Vulnerability Strategy
Continue and enhance county and city level all-hazard mitigation and response planning.	Ensure the Washington County All Hazard Mitigation Plan is kept active and ensure local communities are considered eligible for the associated funding sources.
	Encourage all communities within Washington County to maintain an updated all hazards Emergency Operations Plan.
	Partner with local communities and private partners to encourage individual preparedness through educational opportunities.
	Continue to utilize stakeholder involvement in the update and implementation of the Washington County All Hazards Mitigation Plan.
	Promote and implement the goals, objectives, and strategies written within the Washington County All Hazard Mitigation Plan when feasible.
	Incorporate mitigation strategies into other local planning documents, processes, or mechanisms such as Continuity of Operations Plans (COOP), Growth Management Plans, Ordinances, Resolutions, Regulations, and Capital Improvement Plans (CIP).
Recognize and plan for the support of populations with high needs and vulnerabilities to all hazards including extreme weather and climate-related events.	Conduct a county wide climate vulnerability assessment that considers risk factors such as extreme heat events, poor air quality, changes in precipitation, changing ecologies, changing demographics, and psychological impacts.
	Incorporate, when possible, the needs of vulnerable populations such as elderly, low income, medically fragile, disabled, non-English speakers and children within applicable all hazards plans, training, and exercises at the city and county level of government.
	Encourage the inclusion of private partners in the identification and inclusion of vulnerable populations in preparedness planning.

<p>Promote a disaster resistant community infrastructure of housing, utilities, transportation systems, and health care resources able to withstand natural, man-made and economic changes.</p>	<p>Promote mitigation efforts taken within Washington County for communities to reduce vulnerabilities.</p>
	<p>Encourage the collaboration between government agencies and private partners to incorporate mitigation activities for larger scale systems.</p>
	<p>Protect, maintain and improve constructed and natural systems that provide critical infrastructure.</p>
	<p>Consider current and future climate predictions in design of county infrastructure.</p>
<p>Resilience and Sustainability Goal 2: Promote personal and community health for all residents.</p>	
<p>Healthy Communities Policy</p>	<p>Healthy Communities Strategy</p>
<p>Pursue opportunities to address inequities and barriers to health.</p>	<p>Complete Community Health Assessment & Community Health Improvement Plan every five years to address health equity.</p>
	<p>Assess social determinants of health in county services and practices.</p>
	<p>Adopt health in all policies guides.</p>
<p>Support individual and community health behaviors that reduce the risks of chronic disease.</p>	<p>Promote policies and strategies of the county parks, trails and open space to encourage healthy and active lifestyle choices for all ages and abilities (see Parks, Trails and Open Space section).</p>
	<p>Support public and private partnerships that promote and encourage healthy lifestyle choices within the county.</p>
	<p>Adopt steps for access to multi-modal transportation for all residents to encourage physical activity (See Transportation section).</p>
	<p>Support, maintain and enhance county policies related to the reduction in tobacco use and exposure to second-hand smoke.</p>
<p>Encourage practices and activities to achieve healthy food access for all residents.</p>	<p>Support public and private partnerships that promote and encourage healthy food access.</p>
	<p>Adopt steps for access to multi-modal transportation for all residents to support access to healthy foods (See Transportation section).</p>
	<p>Promote small scale food production of healthy foods and county-wide availability.</p>

Resilience and Sustainability Goal 3: Identify, promote, and expand the use of energy efficient practices and renewable energy resources.	
Energy Efficiency & Conservation Policy	Energy Efficiency & Conservation Strategy
<p>Collaborate with public entities, community organizations, businesses within the county, and with other counties to achieve mutual energy goals.</p>	Support cities, townships and schools working on conserving energy, using renewable energy, or taking steps to reduce greenhouse emissions.
	Partner with key stakeholders in the development and implementation of a countywide energy plan.
	Support the use of technologies that increase the use of local energy resources.
	Continue to promote Property Assessed Clean Energy (PACE) loans to finance energy efficiency upgrades and renewable energy installations in commercial buildings.
	Promote equitable access to energy resources for all.
	Continue to work with regional partners to connect and expand options for initiatives such as multi-modal transportation (see Transportation Chapter).
<p>Lead by example in county operations to conserve energy, use renewable energy sources in an effective manner, and take steps to reduce greenhouse gas emissions.</p>	Champion, adopt and implement a countywide energy plan.
	Incorporate energy conservation into existing and new building plans by using material and equipment to conserve energy and reduce greenhouse gas emissions.
	Leverage reduction of non-renewable consumption with renewable energy sources.
Resilience and Sustainability Goal 4: Protect public health and the environment by reducing the amount and toxic character of waste and ensuring proper management of wastes.	
Waste Management Policy	Waste Management Strategy
<p>Minimize land filling through an integrated waste management system in accordance with the state hierarchy of waste reduction, reuse, recycling, composting and waste-to-energy.</p>	Communicate and educate about sound environmental practices related to waste management activities and county programs, services, and resources to waste generators.
	Manage wastes generated by the county in accordance with the Minnesota Pollution Control Agency’s (MPCA) Metropolitan Solid Waste Management Policy Plan, the Washington County Waste Management Master Plan (both are updated every six years), state law and county ordinances, and work with other public entities so that their waste is managed in the same manner.

<p>Minimize land filling through an integrated waste management system in accordance with the state hierarchy of waste reduction, reuse, recycling, composting and waste-to-energy. (Continued)</p>	<p>Continue partnership with Ramsey County through the Recycling and Energy (R&E) Board to collaborate in joint programming and projects, and explore new technologies at the R&E Center to produce energy and fuels, make compost or harvest materials for creation of consumer products.</p>
	<p>Explore ways to increase awareness and develop tools to address health equity and environmental justice in county waste and recycling programs and services.</p>
	<p>Communicate and educate about sound environmental practices related to waste management activities and county programs, services, and resources to waste generators.</p>
<p>Lead by example in county operations to develop and implement innovative waste management solutions.</p>	<p>Manage wastes generated by the county in accordance with the Minnesota Pollution Control Agency’s (MPCA) Metropolitan Solid Waste Management Policy Plan, the Washington County Waste Management Master Plan (both are updated every six years), state law and county ordinances, and work with other public entities so that their waste is managed in the same manner.</p>
	<p>Ensure all municipal solid waste generated by county activities is processed and require all public entities to process municipal solid waste generated as a result of their activities.</p>
<p>Identify ways to collaborate with public entities, community organizations and businesses to develop and implement innovative waste management solutions.</p>	<p>Provide technical assistance, grant funding, and networking opportunities to share resources to cities, townships, and schools to make progress in implementing best practices to reinvigorate recycling, increase organics diversion, and refresh waste reduction and reuse opportunities.</p>
	<p>Continue partnership with Ramsey County, through the R&E Board, to assist businesses in organic waste diversion and recycling opportunities.</p>
	<p>Provide technical assistance and outreach to solid and hazardous waste generators to improve compliance to state regulation requirements.</p>



Downtown Marine St. Croix

Chapter 10 - Economic Competitiveness



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Executive Summary

Economic competitiveness may be a new element to the 2040 Comprehensive Plan; however, economic development initiatives are a core part of Washington County’s planning activities. The Washington County Community Development Agency (CDA) plays the economic development role for the county, monitoring changing trends, promoting economic development and ensuring the availability of programs and services for cities, townships and the county. The CDA was approved for creation by the Washington County Board of Commissioners in June of 2016. A full time Economic Development Director was hired by the CDA to serve as the designated point of contact and to coordinate the economic development efforts within the county.

Since its creation, the CDA has developed initiatives and programs to support the future of the county. These economic development initiatives are recognized in Washington County’s Economic Development Plan prepared by the CDA in 2017. This plan was created in collaboration with local agencies (e.g., cities and townships) and businesses and reflects their vision of the county from an economic development perspective.

This chapter provides a snapshot of the 2017 – 2019 Washington County Economic Development Plan (Appendix P), with supplemental existing conditions and trends information. The 2017-2019 plan should be referenced for more information regarding economic development initiatives throughout the county. This plan is updated every three years, and the most recent plan should always be referred to.

Existing Conditions



Washington County strives to provide a variety of resources to create a welcoming environment for businesses and communities to enhance economic development, expand the tax base, and promote job creation. To achieve this goal, the CDA helps communities attract businesses and talent by cultivating partnerships, promoting Washington County across the region, supporting business-friendly infrastructure development, and technical and financial assistance.

A review of historic and forecasted economic data presented by various data sources offer a clear picture of Washington County’s economic conditions. A summary review of economic data for Washington County finds that the county’s economy is healthy.

- *Washington County is a competitive, job creating economy.* The county has experienced steady and robust growth in the number of jobs and weathered the recession well. Washington County had 24 percent employment growth from 2000-2017 adding 16,446 new jobs. The number of jobs in 2017 has rebounded to pre-recession levels to 85,263 total jobs.
- *Washington County competes very well within the region and the Twin Cities economy.* A total of 236 new establishments have been added since 2010.
- *Washington County is especially competitive and has significantly more jobs in comparison to neighboring counties in Wisconsin.* Washington County’s employment growth rate exceeded or was on par with neighboring counties.

Washington County Employment

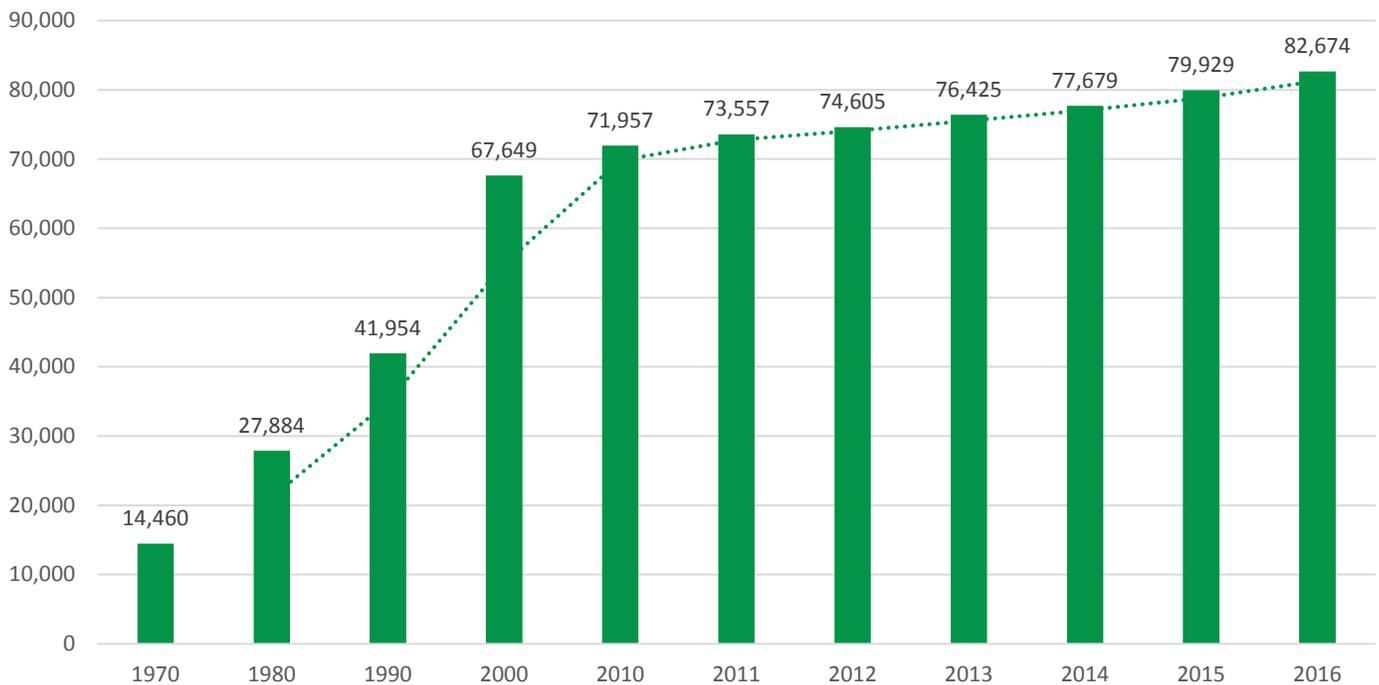
With a highly-educated and growing labor pool, affordable and safe communities, and scenic landscapes and recreation opportunities, Washington County is home to many businesses and continuing to attract new ones. In fact, the Metropolitan Council projects Washington County’s workforce to grow by 32 percent or 33,513 by 2040. This growth will outpace Anoka, Dakota, Hennepin and Ramsey County (see Table 1). Industries that have grown between 2013 and 2015 include those in the Health Care Services, Manufacturing, and Professional and Technical Service.

Table 1: Metro Area Jobs Growth by County

County	2010	2040	Growth Percentage
Carver	31,836	53,840	41%
Scott	41,534	68,640	39%
Washington	71,897	105,410	32%
Dakota	170,192	236,300	28%
Anoka	106,387	145,420	27%
Hennepin	805,089	1,038,140	22%
Ramsey	316,937	393,070	19%

Washington County has continued to experience an increase in employment over the last 40 years (see Figure 1). The county experienced a moderate growth rate through the recession of 6.4 percent from 2000 to 2010. Employment totals have grown at twice the rate since 2010, experiencing a 14.9 percent increase from 2010 to 2016.

Figure 1: Employment in Washington County



Source: Quarterly Census of Employment and Wages, MNDEED

Employment Industries

Overall, Washington County is home to over 5,500 businesses (see Table 2). Many of these businesses (86 percent) are comprised of less than 20 employees. Furthermore, Washington County is home to 17,847 self-employed businesses or “non-employers” in 2014 (defined as businesses without employees that are subject to federal income tax).

Table 2: Washington County Industry Employment Statistics, 2017

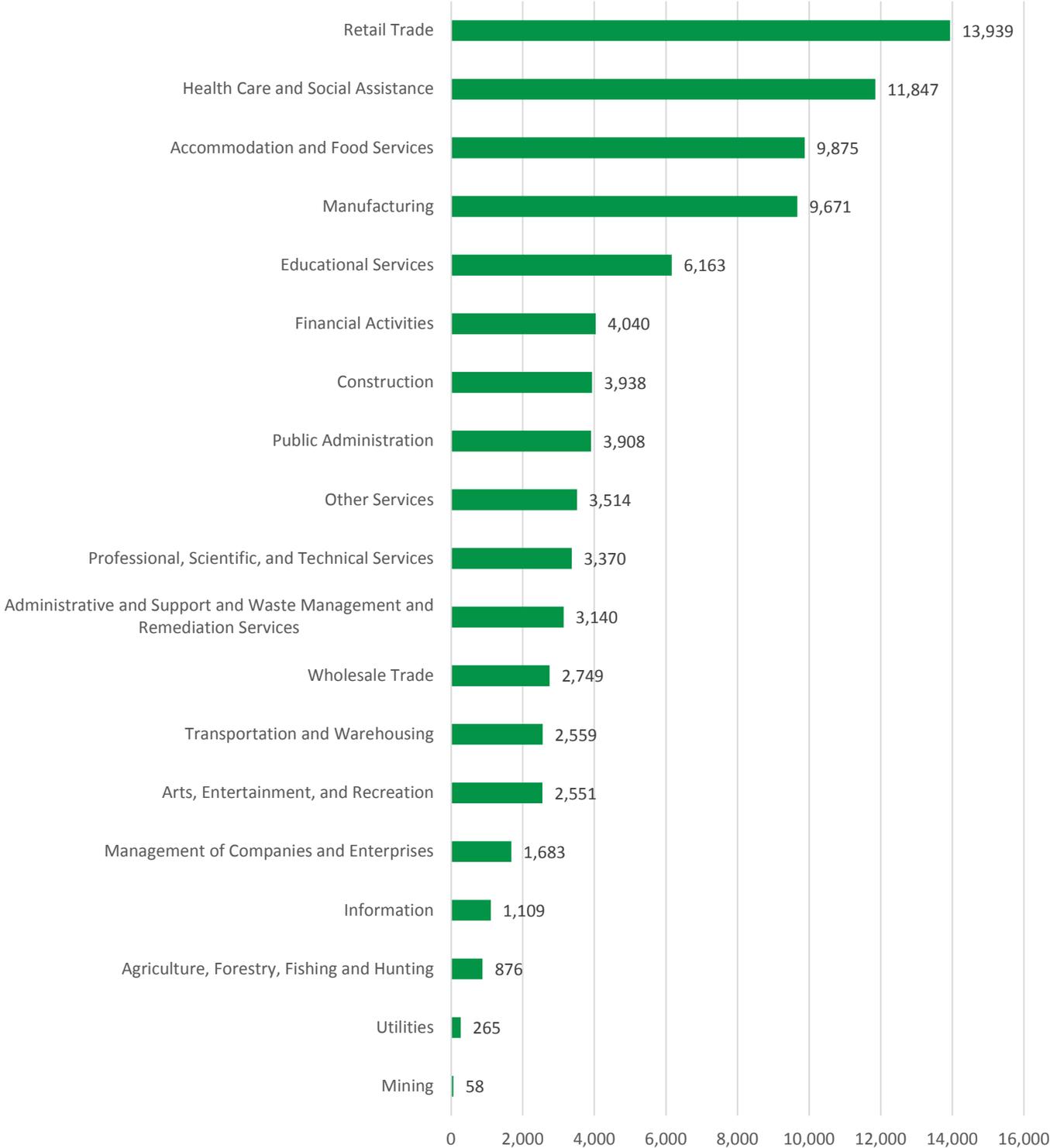
NAICS Industry Title	Number of Establishments	Number of Jobs	Percent of Jobs
Total, All Industries	5,525	85,263	100.0%
Retail Trade	679	13,939	16.3%
Health Care and Social Assistance	602	11,847	13.9%
Accommodation and Food Services	413	9,875	11.6%
Manufacturing	218	9,671	11.3%
Educational Services	147	6,163	7.2%
Construction	531	3,938	4.6%
Public Administration	56	3,908	4.6%
Other Services	638	3,514	4.1%
Professional, Scientific, and Technical Services	672	3,370	4.0%
Finance and Insurance	364	3,183	3.7%
Administrative and Support and Waste Management and Remediation Services	270	3,140	3.7%
Wholesale Trade	210	2,749	3.2%
Transportation and Warehousing	135	2,559	3.0%
Arts, Entertainment, and Recreation	135	2,551	3.0%
Management of Companies and Enterprises	47	1,683	2.0%
Information	73	1,109	1.3%
Agriculture, Forestry, Fishing and Hunting	45	876	1.0%
Real Estate and Rental and Leasing	276	857	1.0%
Utilities	7	265	0.3%
Mining	7	58	0.1%

Source: MN DEED, Quarterly Census of Employment and Wages (QCEW), Quarter 3 2017

Throughout Washington County the highest concentration of jobs in 2017 was supported in the Retail Trade and Health Care and Social Assistance industries, comprising over 30 percent of the county’s jobs (see Figure 2). These industries experienced moderate growth rates between 2010 and 2017 of 17.1 percent and 32.7 percent

respectively. The wholesale trade industry experienced the largest growth over the seven-year period, growing 80.6 percent.

Figure 2: Washington County Employment by Industry, 2017



Wages in Washington County

Washington County industries provide average annual wages between \$16,000 and \$110,000, as reported in 2017 (see Table 3). The industries with the top average annual wages include utilities (\$110,552), mining (\$84,864), and wholesale trade (\$75,902).

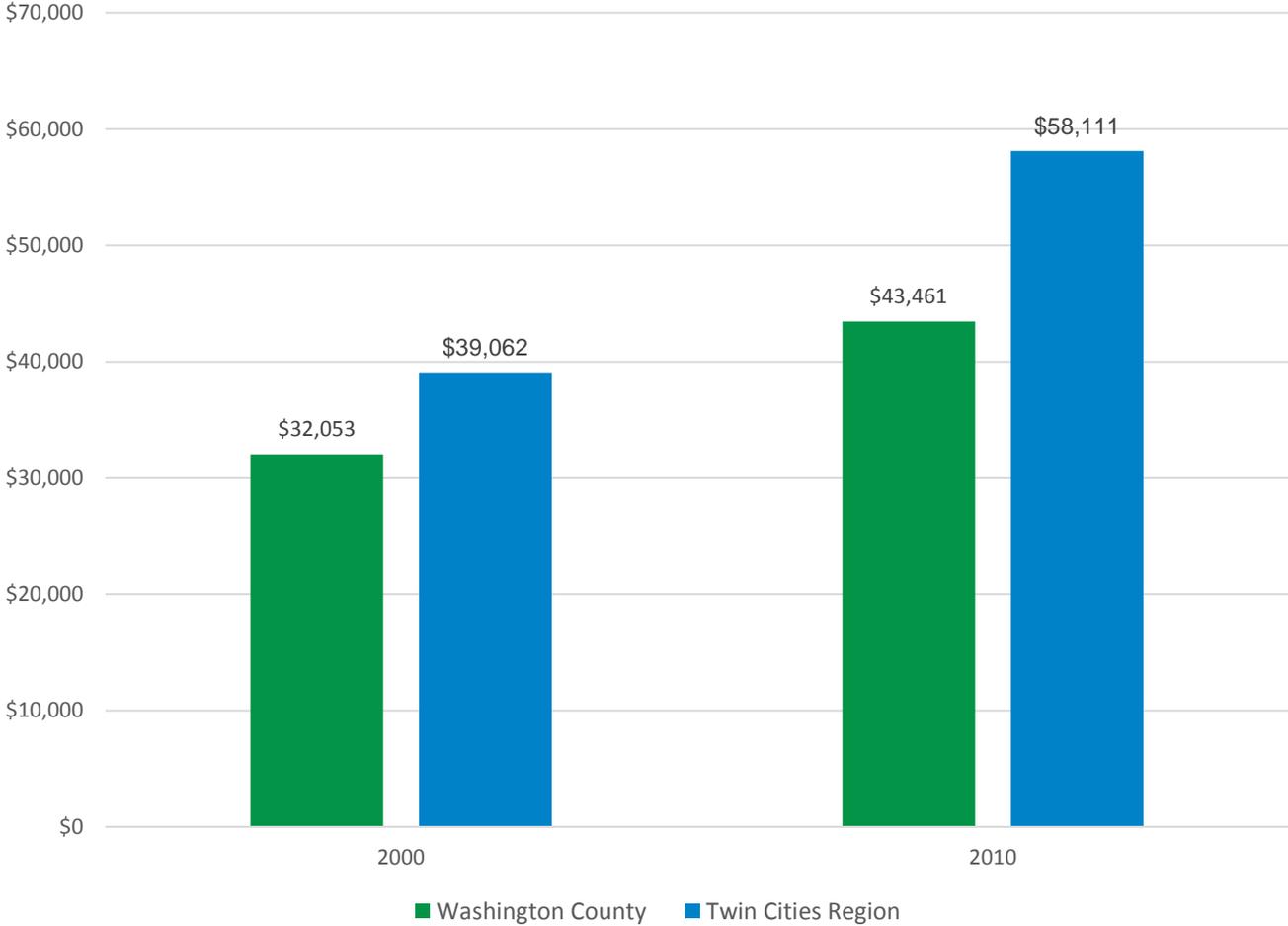
Table 3: Washington County Average Annual Wage by Industry, 2017

NAICS Industry Title	Average Annual Wage
Utilities	\$110,552
Mining	\$84,864
Wholesale Trade	\$75,920
Management of Companies and Enterprises	\$74,152
Professional, Scientific, and Technical Services	\$65,728
Construction	\$65,104
Financial Activities	\$64,532
Manufacturing	\$61,360
Public Administration	\$53,300
Health Care and Social Assistance	\$51,168
Information	\$50,752
Administrative and Support and Waste Management and Remediation Services	\$47,528
Transportation and Warehousing	\$42,120
Educational Services	\$42,016
Agriculture, Forestry, Fishing and Hunting	\$33,540
Other Services	\$25,636
Retail Trade	\$25,272
Accommodation and Food Services	\$17,836
Arts, Entertainment, and Recreation	\$16,640

Source: MN DEED, Quarterly Census of Employment and Wages (QCEW), Quarter 3 2017

Washington County’s annual average wages are lower than the Twin Cities region (see Figure 3). The wage gap between the two areas has increased over the last 20 years. As previously noted, wages in Washington County are lower than incomes earned outside of the county. It is important to develop affordable work force housing to support employees that wish to work and live in Washington County.

Figure 3: Average Annual Wages

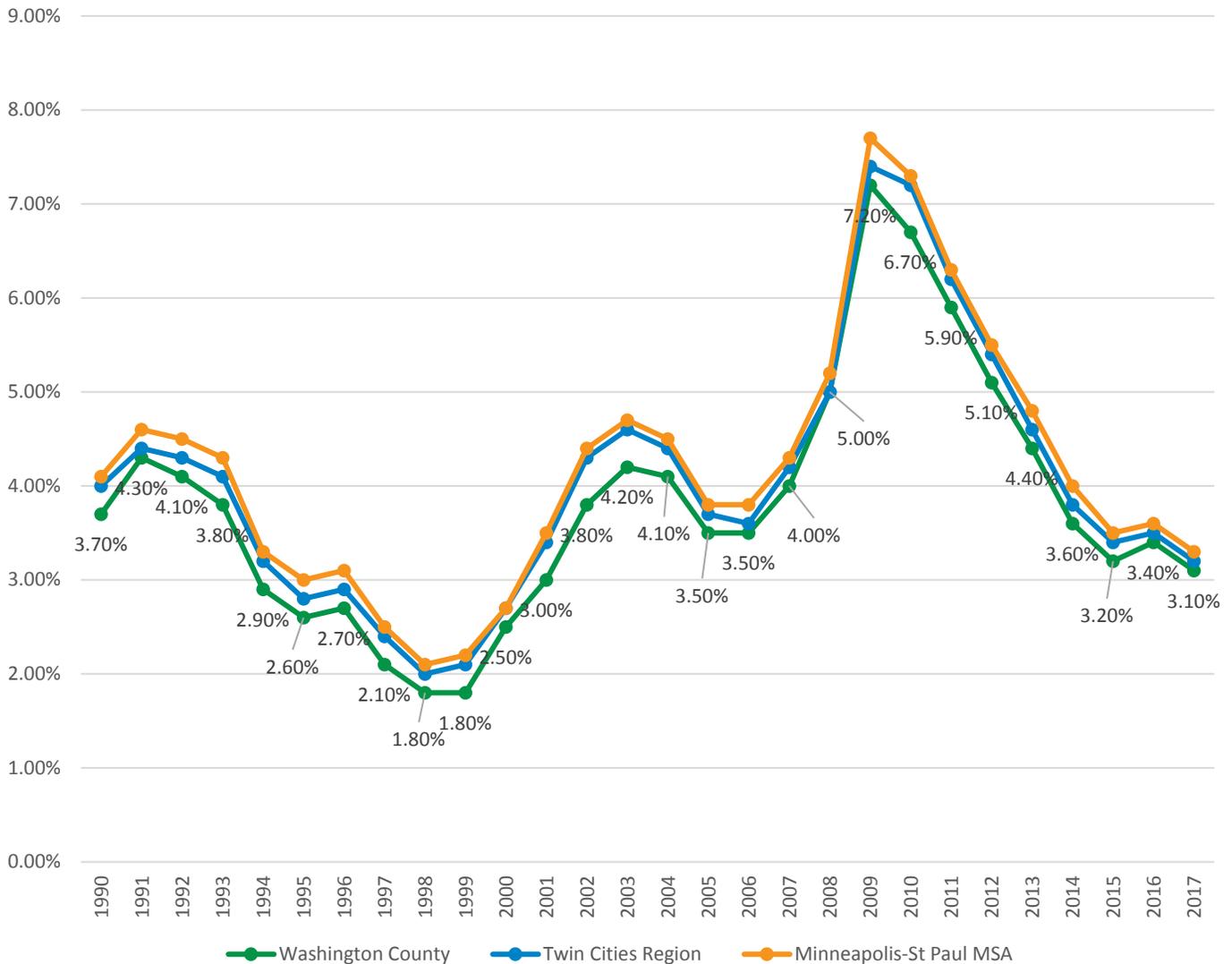


Source: Metropolitan Council, Community Profile Washington County

Unemployment

Washington County’s unemployment rate has historically followed regional trends for both the Twin Cities 7-county region and the Minneapolis-St. Paul Metropolitan Statistical Area (MSA). However, the Washington County unemployment rate has trended lower than both regional totals. The county’s unemployment rate highest rate in 2010 with 7.2 percent, and the lowest in 1998 and 1999 at 1.8 percent. The 2017 unemployment rate is reported as 3.1 percent.

Figure 4: Average Annual Unemployment Rates



Workforce Development



The availability of a skilled workforce is a key component of economic development. Without an available workforce, employers cannot grow local businesses and reinvest in a community. Varying levels of workforce development are needed to support a diverse economy and include all ages, educational backgrounds and industries.

As the county’s population grows and changes, so will the ages of available employees. Washington County experienced an overall increase in the total labor force between 2010 and 2016 of 4.2 percent. However, the labor force between the ages of 25 to 44 and 45 to 54 experienced a decrease of 7.5 percent and 1.3 percent respectively (see Table 4).

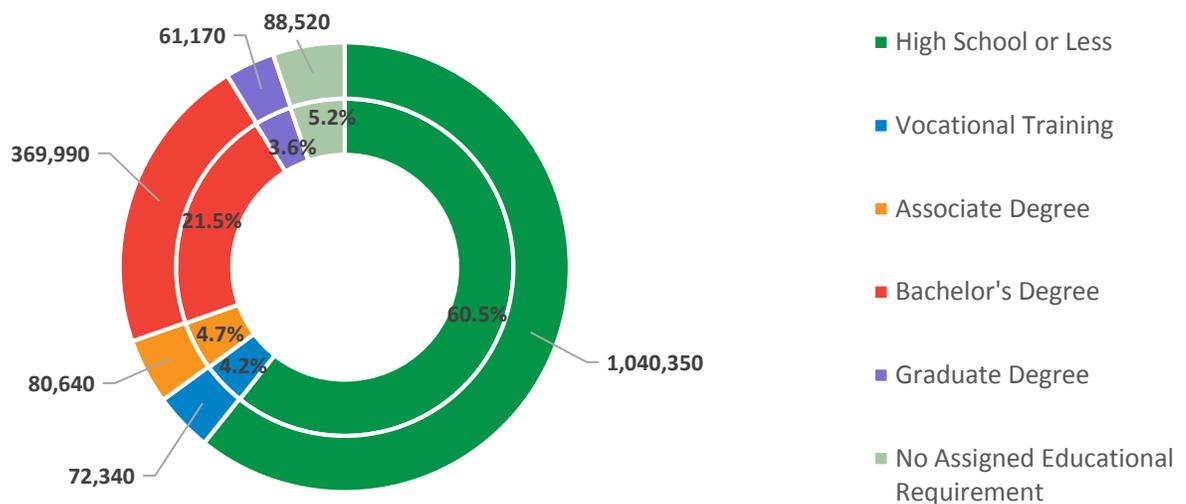
Table 4: Washington County Labor Force

Labor Force Age Cohort	2010 Labor Force	2016 Labor Force	Percent Change
16 to 19	12,436	13,519	8.7%
20 to 24	11,474	13,729	19.7%
25 to 44	67,137	62,097	-7.5%
45 to 54	39,579	39,055	-1.3%
55 to 64	29,816	33,285	11.6%
65 to 74	14,639	19,111	30.5%
75 and over	10,789	12,828	18.9%
Total Labor Force	185,870	193,624	4.2%

Source: American Community Survey Estimates, 2010 and 2016

Washington County’s various industries employ residents with various educational backgrounds. An environment of this nature provides employment opportunities from a diverse group of residents. Economic development can include efforts beyond industry growth and include efforts to develop a diverse available workforce. The Minnesota Department of Employment and Economic Development (MN DEED) monitors the state’s share of jobs by educational requirements. Over 60 percent of jobs in metro area require a high school diploma or less as a requirement (see Figure 5). A bachelor’s or graduate degree is required for 21.5 percent of the jobs throughout the area.

Figure 5: Metro Minnesota Share of Jobs by Educational Requirements



Source: DEED Occupational Employment Statistics (OES), Quarter 1, 2016

Washington County’s labor force includes residents of all educational levels. The largest percentage (44.9 percent) of the county’s labor force over the age of 25 holds a bachelor’s degree or higher in 2016 (see Table 5). This group also represents the lowest unemployment rate among the four educational attainment categories.

Table 5: Educational Attainment for Washington County’s Labor Force between 25 and 64 years old

	Total Labor Force	Percent of Labor Force	Unemployment Rate
Less than high school graduate	4,200	3.1%	5.5%
High School Graduate (includes equivalency)	24,986	18.6%	5.4%
Some college or associate's degree	44,849	33.4%	2.8%
Bachelor's degree or higher	60,402	44.9%	2.5%
Total	134,437	100%	3.1%

Source: American Community Survey Estimates, 2016

Key Industries/Centers of Employment

As shown in Figure 2, Washington County’s economy is largely serviced-based. Washington County’s top four fastest growing sectors of employment from 2010 to 2017 are Wholesale Trade (80.6 percent), Arts, Entertainment, and Recreation (45.4 percent), Other Services (38.4 percent), and Professional, Scientific, and Technical Services (37.9 percent). Retail Trade, Health Care and Social Assistance, Accommodation and Food Services, Manufacturing comprised over 50 percent of the county’s total workforce in 2017.

Each city and township within Washington County supports economic development by providing their share of employment. Figure 6 shows the distribution of Washington County’s employment between each local government unit in 2010. Woodbury provides the largest percentage of county jobs, providing 27 percent. Each municipality is forecasted by the Metropolitan Council to experience employment growth into 2040. Figure 7 displays the distribution of 2040 employment throughout the county. In 2040, Woodbury will continue to provide 27 percent of the county’s jobs. Employment center growth is anticipated near transit and transportation corridors. Economic growth in these areas helps to support the growth of future transportation needs and transit corridors, including the METRO Gold Line along Interstate 94 and other transitways under development and provides connectivity for future businesses.

The Metropolitan Council provides forecasts for employment for each city and township within Washington County (see Table 6). Figure 8 displays the overall growth forecasted for each local unit. The City of Hugo is also forecasted to experience a doubling of its employment totals by 2040, growing from 1,973 in 2010 to 4,000 employees in 2040. The cities providing the greatest number of jobs within Washington County are forecasted to experience increases as well (Woodbury at 47.5 percent, Oakdale at 62.0 percent, Stillwater at 21.5 percent, and Forest Lake at 42.7 percent). Employment centers in these areas is supported near transportation and transit corridors, as it provides connectivity to growing areas and supports transportation improvements throughout the county.

Figure 6: 2010 Washington County Employment Distribution by City/Township

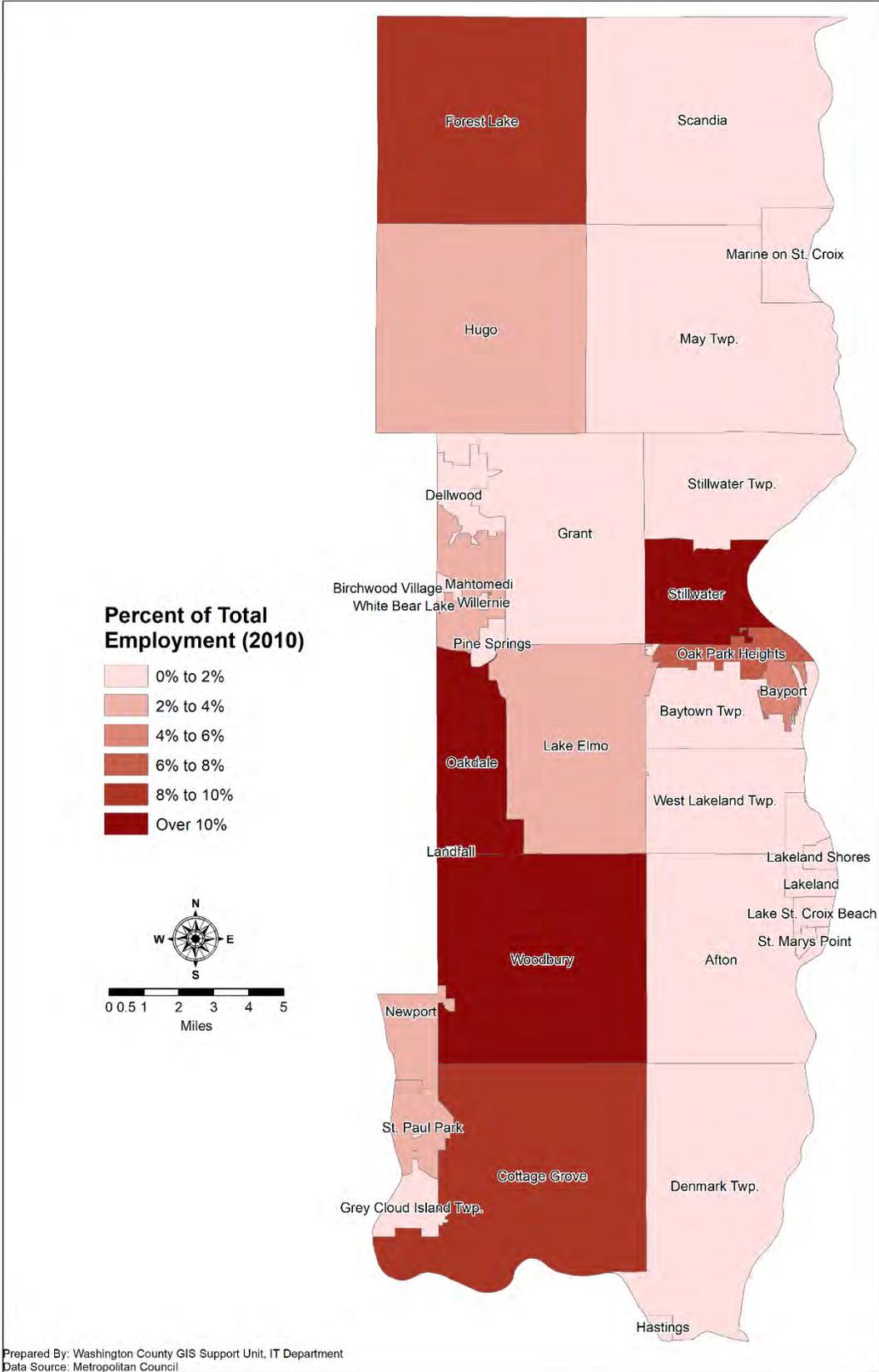


Figure 7: 2040 Forecasted Washington County Employment Distribution by City/Township

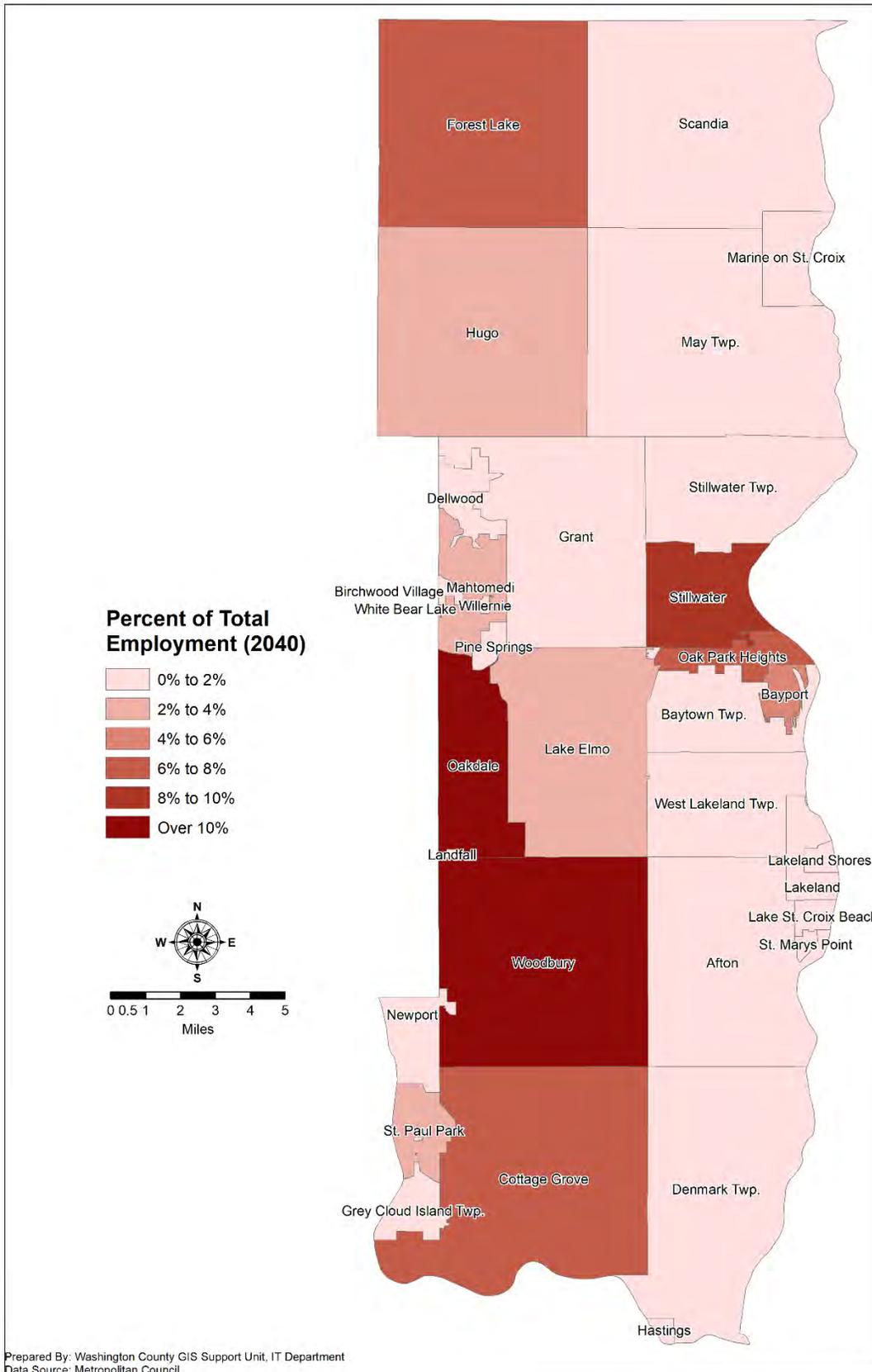
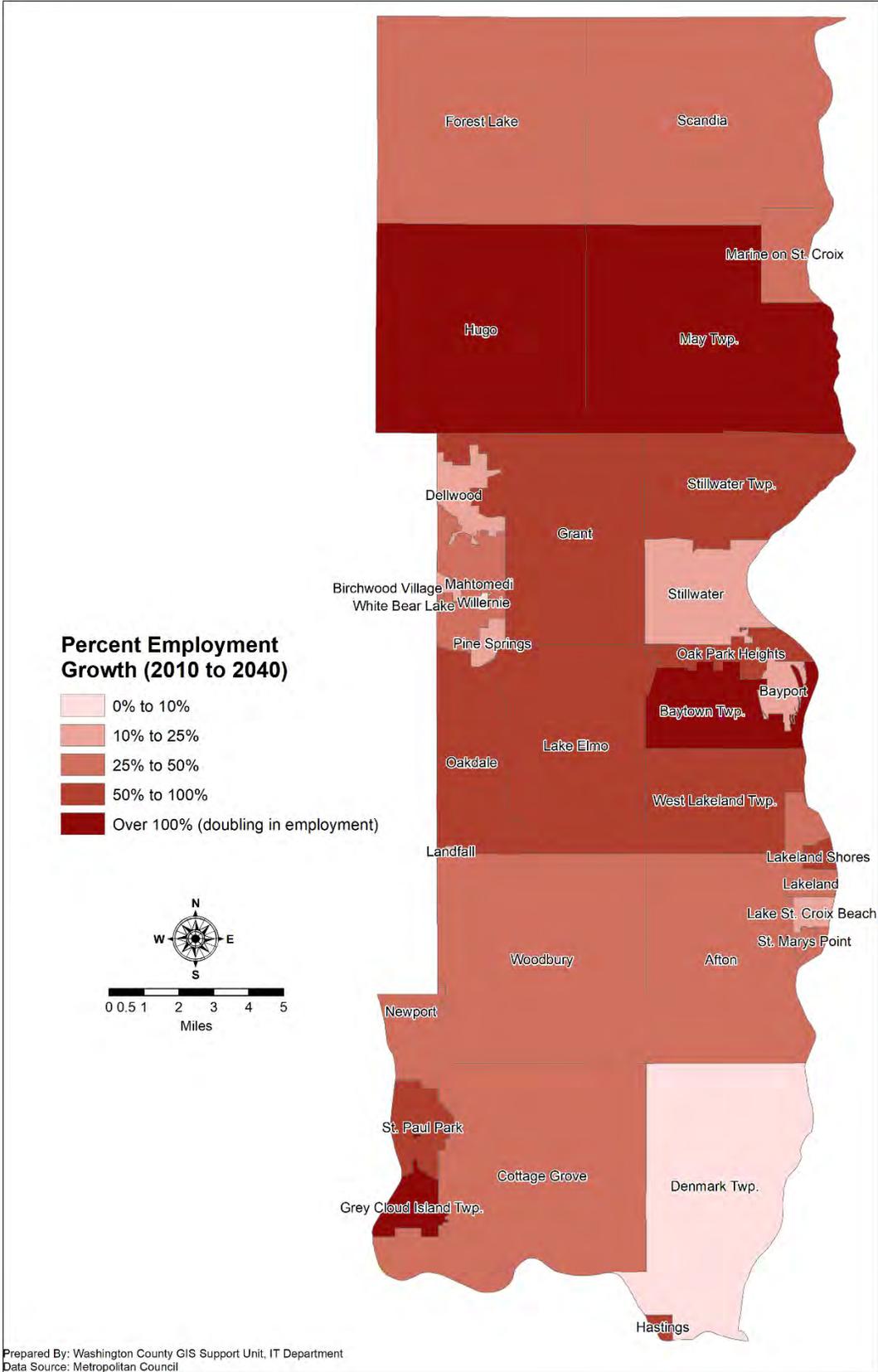


Table 6: Forecasted Employment Growth by City/Township, 2010 to 2040

City/Township	2010 Employment	2040 Employment	Percent Change
Woodbury	19,438	28,700	47.6%
Oakdale	8,651	14,000	61.8%
Stillwater	9,628	11,700	21.5%
Forest Lake	6,449	9,200	42.7%
Cottage Grove	6,484	9,000	38.8%
Oak Park Heights	4,358	7,500	72.1%
Bayport	3,790	4,600	21.4%
Hugo	1,973	4,000	102.7%
Lake Elmo	1,941	3,800	95.8%
Mahtomedi	2,090	2,700	29.2%
St. Paul Park	1,515	2,400	58.4%
Newport	1,605	2,100	30.8%
Grant	449	840	87.1%
Scandia	519	730	40.7%
Denmark Twp.	629	650	3.3%
Afton	411	550	33.8%
Lakeland	302	440	45.7%
West Lakeland Twp.	232	370	59.5%
Dellwood	277	330	19.1%
Baytown Twp.	69	260	276.8%
Stillwater Twp.	165	250	51.5%
White Bear Lake*	184	240	30.4%
Willernie	182	200	9.9%
May Twp.	66	180	172.7%
Lake St. Croix Beach	129	160	24.0%
Marine on St. Croix	124	160	29.0%
Hastings*	64	100	56.3%
Pine Springs	72	80	11.1%
Lakeland Shores	26	50	92.3%
Grey Cloud Island Twp.	10	40	300.0%
Birchwood Village	25	30	20.0%
Landfall	25	30	20.0%
St. Mary's Point	15	20	33.3%

*Employment totals for only the portions of the communities within Washington County
Source: Metropolitan Council

Figure 8: Forecasted Employment Growth by City/Township, 2010 to 2040



Opportunities and Challenges

To support Washington County’s economic competitiveness and support development throughout the county, several opportunities and challenges have been identified (see Table 7). Realization of these items helps to identify programs and actions that can be put into place by the CDA and Washington County to continue to grow the county’s thriving economy.

Table 7: Economic Development Opportunities and Challenges

Economic Development Opportunities
Small businesses are vital to Washington County’s economy. 86 percent of the Washington County businesses have less than 20 employees. Washington County is home to 17,847 self-employed businesses or “non-employers” in 2014 (defined as businesses without employees that are subject to federal income tax). An opportunity exists to support and grow the existing businesses and business owners.
Washington County has a highly-valued quality of life, rich diverse communities and many assets and amenities. An opportunity exists to market and promote these amenities to site selectors and businesses looking to expand or relocate.
Washington County has a growing population and a growing labor force. An opportunity exists to leverage the quality of this growing labor force to attract new business development.
Technical and financial resources for small businesses are available through the Open to Business Program.
Economic Development Challenges
Currently, businesses who are searching for sites may not know about the assets and advantages of locating in Washington County. A county wide marketing effort is cohesive, strong, and unique will help Washington County stand out to businesses, in addition to a robust spectrum of promotion tools. The CDA Economic Development Director can serve as a critical point of contact for referral to opportunities in communities.
Over 100,000 working residents commute outside of the county to work every day (76.9 percent). A focus should be to work with the private sector and communities within Washington County to increase the opportunities for people to both live and work in the county.
Several communities have identified that highspeed broadband networks are not available. This is equally important as other typical utilities for growing businesses.
There are limited shovel ready sites for new commercial and industrial development to take place. Any activities to take place under this category will need to be coordinated with the local communities within the county.

Goals, Policies, and Strategies

To guide future decision making and county actions, goals, policies and strategies have been developed specific to the economic competitiveness element. The following pages outline five goals with corresponding policies and strategies that set the course for the county’s future. The policies and strategies identified for economic competitiveness collectively respond to the element’s five goals. This comprehensive approach provides an opportunity to utilize the policy or to employ strategies in a manner that supports one or more of the defined goals. Chapter 3, Goals, Policies, and Strategies, also provides the information contained within this section, along with the goals for the other plan elements. Chapter 11, Implementation, provides tools that can be utilized while working to achieve these goals.

Economic Competitiveness Goals				
Goal 1: Promote and market the quality of life, rich diversity and assets of the county.	Goal 2: Provide resources to help entrepreneurs get started and existing businesses grow.	Goal 3: Be a value-added partner to other public and private entities.	Goal 4: Find ways to help our businesses attract and retain talent and find ways to keep our working residents here in the county.	Goal 5: Promote strong infrastructure, multi-modal transportation and highspeed broadband.
Economic Competitiveness Policy		Economic Competitiveness Strategy		
The private sector is the lead that drive the economy.	The County will work in partnership with the private sector.			
	Help existing businesses grow and entrepreneurs get started.			
The County will not duplicate or replace the work of cities and other public and private partners.	The County will work in collaboration with public and private partners, and will provide leadership where the County can make the most difference when asked.			
	Promote multi-modal transportation, transit and highspeed broadband opportunities that will stimulate economic growth in Washington County.			
Business attraction and business retention are essential policy objectives.	A balanced approach to pursue both of businesses attraction and business retention policy areas is required.			
	Market and promote Washington County, enhancing the efforts currently being implemented by our public and private sector partners.			
The County supports a strong collaborative approach to economic development.	No matter the location, economic development is a benefit to the entire County.			
	Support efforts to ensure a highly skilled workforce and adequate workforce housing.			

Economic Competitiveness Policy	Economic Competitiveness Strategy
<p>The County supports a strong collaborative approach to economic development. (Continued)</p>	<p>Provide resources to cities, townships and local government economic development authorities located in Washington County. Assist communities and local area chambers of commerce with Business Retention and Enhancement visits when requested.</p>
<p>The diversity of the County requires an adaptable and open-minded approach.</p>	<p>The distinctive qualities of the County require flexibility.</p> <p>Promote the quality of life and assets of the county including the rich diversity of communities with unique micro-markets.</p>



Chapter 11- Implementation



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Executive Summary

The previous chapters of the 2040 Comprehensive Plan provide goals, policies and strategies that set a course for achieving Washington County’s vision for the next 20 years. County staff, appointed and elected officials, partner agencies, and residents will work together to implement this vision. The specific actions that will be taken are identified within each chapter as the strategies that respond to each goal and policy. This chapter identifies available resources and tools that can be used during plan implementation.

The following pages provide a list of tools and resources and their purpose, and identifies partner agencies for each of the plan elements. The identified tools do not provide a holistic view of all available resources or avenues for implementation, but serve as a resource for individuals who are taking action. This list should be tweaked and modified to respond to changes and accomplishments.

In addition to the tools listed within this Chapter, Washington County will continue to monitor the implementation of the plan, and the success of each outcome. The use of performance management tools and defined processes will aid in this process.

Performance Management

Washington County is committed to providing quality public services to its residents in an efficient, cost-effective, and responsive manner. The county’s performance management system uses data to guide decision-making, by setting objectives, measuring and reporting progress toward those objectives, and engaging in quality improvement activities when desired progress toward those objectives is not being made. The county recently adopted a Quality Improvement Plan to establish a framework for agency-wide quality improvement efforts. The plan will help programs to identify and select improvements to processes. The system has four primary components:

- Results and Standards – *Where do we want to be?*
- Measurement – *How will we know?*
- Quality Improvement – *How will we improve?*
- Monitoring and Communicating Progress – *How well are we doing?*

Departments have implemented performance management and continuous improvement into many of the programs and services discussed throughout the plan. Many county-level plans, including the Groundwater Plan, Solid Waste Master Plan, and Community Health Improvement Plan, define desired health and environmental results and further include methods for monitoring, evaluation, and quality improvement to track and improve progress. Much of this work contributes to the results outlined in this plan and activities will be measured by the system already in place.

At the county level, monitoring and communicating progress is achieved by the county’s Performance Measurement and Improvement Team. The team collaborates to develop the annual Performance Measures and Indicators report that highlights performance measures across all twelve departments and selects and prepares measures for participation in the annual State Standard Measures Program.

Chapter 4: Land Use

Plan Tool	Purpose	Partner/Agency
Washington County Zoning Control	Manage rivers, lakes, streams and environmentally sensitive areas for the health safety and welfare of county residents.	Washington County
Washington County Strategic Plan	Guiding strategies for implementing the county’s vision, mission, goals and values.	Washington County
Buffer Ordinance	Enforce buffer along agricultural land adjacent to water bodies	Washington County
Shoreland Ordinance	Manage land within shoreline areas	Washington County
St. Croix Bluffland and Shoreland Management Ordinance	Manage Land within the St. Croix River District	Washington County
Washington County Floodplain Ordinance	Manage development within floodplains	Washington County
Subsurface Sewage Treatment System (SSTS) Ordinance	Enforce SSTS regulations	Washington County
Mining Ordinance	Manage mining operations	Washington County
Minnesota Statutes Chapter 138 (Historical Preservation)	Preserve historic resources where feasible	State of Minnesota
Washington County Historical Society	Interpret and preserve historic buildings, sites and properties	Washington County Historical Society
Official Map	Manage land within mapped area	Washington County

Chapter 5: Transportation

Plan Tool	Purpose	Partner/Agency
Access Spacing Guidelines and Right-of-way Ordinance and Permitting	Used to enhance safety and maintain the capacity and mobility of important transportation corridors	Washington County
Cost Participation Policy	Determines the appropriate division of cost in funding cooperative highway projects, traffic signals, and bridge construction projects with MnDOT, municipalities, and other agencies	State of Minnesota, Municipalities, Other Agencies
County Highway Safety Plan	Statewide highway safety planning process to assist counties to proactively submit low-cost systematic safety projects for MnDOT to consider for Highway Safety Improvement Program funding	State of Minnesota
Eminent Domain	Legal process as guided by Minnesota Statute by which Washington County can take control of private land for the betterment or improved safety of the community	State of Minnesota
Maintenance Policy	Development and implementation of a maintenance policy will document the responsibility to maintain transportation facilities with MnDOT, municipalities, and other agencies	State of Minnesota, Municipalities, Other Agencies
Washington County Capital Improvement Plan (CIP)	Annual process by which Washington County sets aside funds dedicated to infrastructure improvements (e.g., roadway paving, pedestrian improvements, bicycle facilities, etc.)	Washington County, Municipalities

Chapter 6: Water Resources

Plan Tool	Purpose	Partner/Agency
One Watershed One Plan Initiative	County-wide initiative dedicated to preserving and protecting the County's water resources	Minnesota Board of Soil and Water Services
Groundwater Management Area	State-designated area created for the protection and correct usage of water resources	Minnesota Department of Natural Resources
Green Infrastructure Pilot Grant Program Application	Financial assistance for communities looking to implement integrated water management solutions into their infrastructure	Metropolitan Council
Manufactured Home Park Preservation Equity Grant	Financial assistance to allow manufactured home parks to connect to the regional wastewater collection and treatment system	Metropolitan Council
Water Efficiency Grant Program	Financial assistance to support technical and behavioral changes that improve municipal water use efficiency	Metropolitan Council
Inflow/Infiltration Grant Programs	Financial assistance for communities to make capital improvements to public infrastructure to mitigate inflow and infiltration	Metropolitan Council
Stormwater Grant Application	Financial assistance to provide promotional/educational signage for the benefit of cities and the public	Metropolitan Council
Washington County Groundwater Plan	Official document designed to guide groundwater protection	Washington County
Washington County Waste Management Master Plan	Comprehensive plan for waste management in Washington County, designed to be used as a guiding document for waste management decisions in the County	Washington County
Washington Conservation District	Organization charged with the protection and conservation of soil and water resources in Washington County	Washington Conservation District
Washington County Water Consortium	Multi-organizational group charged with preserving and improving the County's water resources by collaborating with watersheds, communities, state and local agencies, and county departments	Washington County
Land and Water Legacy Program	To protect and keep land in natural condition by purchasing land throughout the County	Washington County

Chapter 7: Parks, Trails, and Open Space

Plan Tool	Purpose	Partner/Agency
Minnesota Environment and Natural Resources Trust Fund	Financial resource for the protection, conservation, preservation, and enhancement of the state's air, water, land, fish, wildlife, and other natural resources	State of Minnesota, Minnesota's Legacy Amendment
Parks and Trails Fund	Financial resource used to support parks and trails of regional or statewide significance	State of Minnesota, Minnesota's Legacy Amendment
Outdoor Heritage Fund	Financial resource used to restore, protect, and enhance wetlands, prairies, forest and habitat for fish, game, and wildlife	State of Minnesota, Minnesota's Legacy Amendment
Clean Water Fund	Financial resource used to protect, enhance, and restore water quality in lakes, rivers, and streams and to protect groundwater from degradation	State of Minnesota, Minnesota's Legacy Amendment
Park Acquisition Opportunity Fund Grant Program	Financial assistance program intended to help regional park agencies acquire land	Metropolitan Council
Regional Parks Operation and Maintenance Funds	Financial resources used to cover a share of annual costs of parks operation and maintenance	Metropolitan Council
Washington County Aquatic Invasive Species Prevention Activities Report	Official report used to inform decision makers and guide future development and conservation efforts as they relate to the infiltration of invasive aquatic species	Washington County
Parks and Open Space Commission	Organization charged with bringing resident perspectives to the operation of Washington County Parks	Washington County
Washington County Land and Water Legacy (LWLP) Bond Funds	Financial resource used to protect and conserve the county's water resources	Washington County
Washington County Capital Improvement Program (CIP)	Annual process by which Washington County sets asides funds dedicated to infrastructural improvements (i.e. roadway paving, street lights, pedestrian improvements)	Washington County
Donations	Financial resource from residents, directed towards maintenance and upkeep of County parks and trails	Washington County

Chapter 8: Housing

Plan Tool	Purpose	Partner/Agency
Minnesota Housing Finance Agency Financing Programs – Multifamily Development	Financial assistance programs to develop or acquire and rehabilitate affordable rental properties	State of Minnesota
Minnesota Housing Finance Agency Financing Programs – Single Family Development	Financial assistance programs to develop or acquire and rehabilitate affordable owner-occupied properties	State of Minnesota
Minnesota Housing Finance Agency Financing Programs – Homeownership Assistance	Financial assistance programs to assist homebuyers and homeowners	State of Minnesota
Local Housing Incentives Account (LHIA)	Financial assistance for affordable housing development	Metropolitan Council
Washington County Comprehensive Housing Needs Report	Periodic report commissioned by the CDA on housing trends and forecasts	Washington County Community Development Agency
Washington County Consolidated Plan	Five-year plan prioritizing use of HOME and CDBG funds	Washington County Community Development Agency
Washington County Housing Programs – Rental Assistance	Federal and state tenant-based rental assistance	Washington County Community Development Agency
Washington County Housing Program – Homeownership	Education, advisory services, and financial assistance for homebuyers and homeowners	Washington County Community Development Agency
Washington County Housing Programs – Development	Financial resources and technical assistance services for developers of affordable housing	Washington County Community Development Agency
Washington County Homelessness Services	Assistance for persons at risk for homelessness	Washington County
City of Woodbury Housing Programs	Financial resources for homebuyers, homeowners, and developers of affordable housing (Woodbury only)	City of Woodbury HRA

Chapter 9: Resilience and Sustainability

Plan Tool	Purpose	Partner/Agency
Minnesota Department of Health Grant Programs	Financial assistance programs designed to increase the health of Minnesotans	Minnesota Health Department
Minnesota Department of Human Services Grant Programs	Financial assistance programs designed to help improve communities and the lives of Minnesotans	Minnesota Department of Human Services
Minnesota Conservation Improvement Program	Financial assistance program to help Minnesota households and businesses use electricity and natural gas more efficiently	State of Minnesota
Threat and Hazard Identification and Risk Assessment (THIRA)	Process to help communities understand the normal set of risks it faces and give leaders the information needed to manage and avoid future risks	Minnesota Department of Public Safety
Minnesota Pollution Control Agency (MPCA) Solid Waste Management Policy Plan	Official plan for managing the Metropolitan Area’s solid waste	Minnesota Pollution Control Agency
Living Healthy in Washington County	County program to make long lasting economic and health impacts through education and training initiatives	Washington County
Washington County Public Health and Environment Services	County department that provides services to protect, promote, and improve the environment in Washington County	Washington County
Washington County Community Health Improvement Plan (CHIP)	Long-term, systematic effort to address public health priorities identified during the Community Health Assessment (CHA) and community health improvement processes	Washington County
Community Health Assessment 2013	Health assessment conducted every five years carried out to learn about the health status of the people living in Washington County and identify areas for improvement	Washington County
Washington County Economic Support Programs	Programs that provide support to low income residents of Washington County	Washington County

Washington County Performance Measures and Indicators Report 2016	Annual report carried out to focus attention on improving critical programs and services, make effective decisions, and communicate results to residents	Washington County
Washington County Emergency Operations Plan	Plan that is responsible for coordinating emergency preparedness throughout the county	Washington County
Washington County All Hazard Mitigation Plan	Plan that is aimed at helping cities and townships in the county to mitigate (prepare) for a variety of hazards such as flooding, tornadoes, and terrorism before they occur	Washington County
Washington County Energy Plan	Comprehensive plan designed to guide residents and businesses in Washington County in becoming more energy efficient	Washington County
Washington County Waste Management Master Plan	Comprehensive plan for waste management in Washington County, designed to be used as a guiding document for waste management decisions in the County	Washington County
Washington County Continuity of Operations Plan (COOP)		Washington County
Metro SHAPE 2014 Adult Survey	Survey conducted throughout the Metropolitan Area to better understand the overall health status of residents	Washington County
Targeted SHAPE Sample	Sub-section of the SHAPE survey which looked at the health disparities of low-income residents of Washington County	Washington County
XCEL Energy Rebate Program	Various programs designed to reward residents who install energy efficient appliances, lightbulbs, or renewable energy technology.	XCEL Energy

Chapter 10: Economic Competitiveness

Plan Tool	Purpose	Partner/Agency
Minnesota Department of Employment and Economic Development Funding Programs	Financial assistance programs to improve economic opportunities for people of color, women, people with disabilities, veterans, and/or youth in Minnesota	Minnesota Department of Employment and Economic Development
Tax Base Revitalization Account (TBRA)	Financial program designed to provide key support for a wide range of projects, from affordable and market rate multi-family housing to commercial and industrial redevelopment	Metropolitan Council
Washington County CDA Economic Development Strategic Plan	Strategic plan designed to improve the economic well-being of the County through efforts that entail job creation, job retention, tax base enhancements and quality of life	Washington County CDA