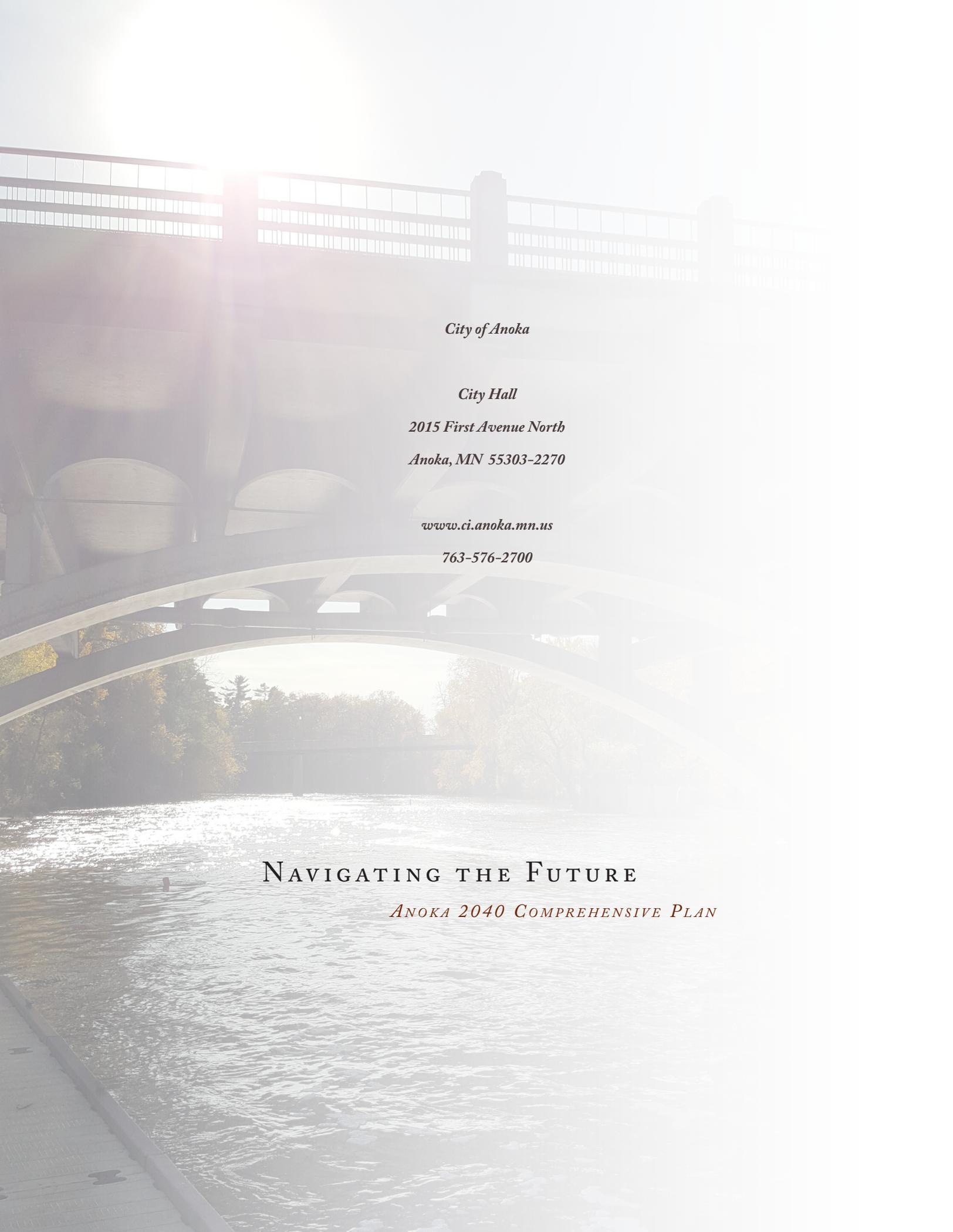


# NAVIGATING THE FUTURE

*Anoka 2040 Comprehensive Plan*





*City of Anoka*

*City Hall*

*2015 First Avenue North*

*Anoka, MN 55303-2270*

*[www.ci.anoka.mn.us](http://www.ci.anoka.mn.us)*

*763-576-2700*

## NAVIGATING THE FUTURE

*ANOKA 2040 COMPREHENSIVE PLAN*

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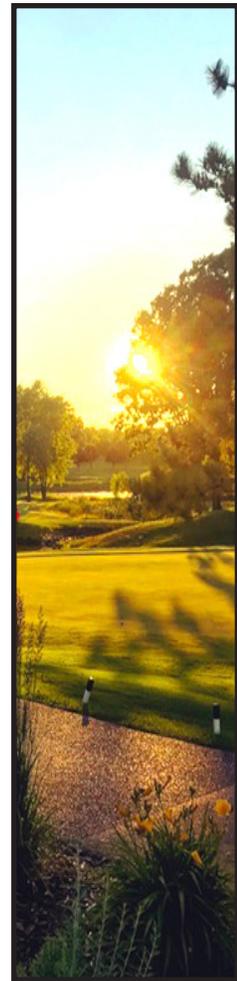


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# 1. PLANNING FOR ANOKA

Comprehensive Planning  
History of Anoka  
Anoka Today  
Resident Survey  
Major Trends in Anoka  
Vision & Guiding Principles



## COMPREHENSIVE PLANNING

### WHAT IS COMPREHENSIVE PLANNING?

A Comprehensive Plan guides the overall growth and development of the city. The Plan is the umbrella document guiding future land use management decisions to encourage vitality, fulfill responsibilities, and reach community goals in the near future. It includes goals and policies for land use, transportation, water supply, sanitary and stormwater systems, parks and open space, solar access protection, housing, the Mississippi River Corridor Critical Area, and wetlands protection. Goals and policies for the City's electric utility, economic development, historic preservation, recycling, and additional community information are also contained in this Plan.

Comprehensive planning is mandated in the Twin Cities Metropolitan Area in Minnesota. Prior to 1976, local comprehensive planning efforts were the result of local initiative alone and were often uncoordinated, inefficient, and even conflicting at times. Problems of urbanization and development transcend local governmental boundaries. In 1976, the Minnesota State Legislature passed the Metropolitan Land Planning Act (MLPA), which required all municipalities in the Twin Cities area to prepare new comprehensive plans, or revise existing ones. Guided by the Metropolitan Council's requirements, each city reviews the plans of adjacent cities in order to minimize conflicts and maximize mutual benefits. Anoka's last comprehensive plan was published in 2008. In conjunction with the Met Council's regional comprehensive plan *Thrive MSP 2040*, the City of Anoka has released this updated plan.



## THE ANOKA 2040 COMPREHENSIVE PLAN

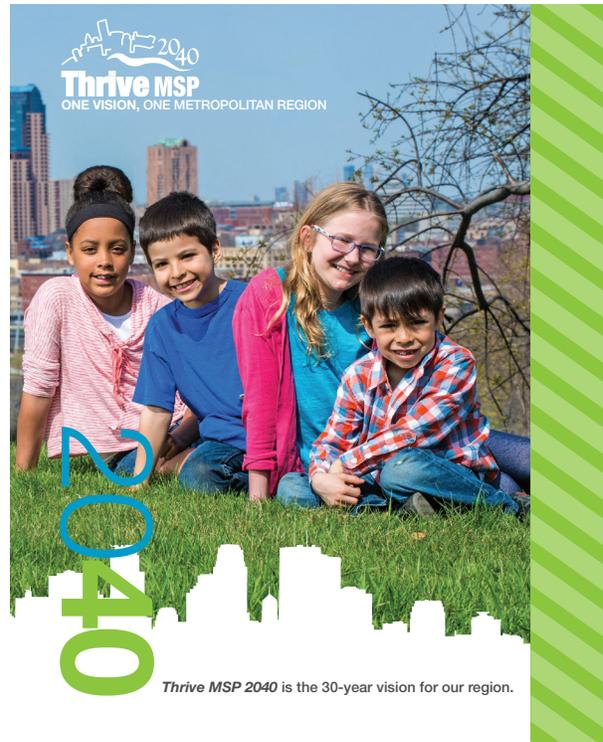
*Navigating the Future: Anoka 2040 Comprehensive Plan* is the City’s 2018 updated plan in accordance with Metropolitan Council and State of Minnesota rules. It is a guide for elected and appointed officials, staff, developers, and the citizens of Anoka in making development and redevelopment decisions, updating ordinances and regulations, and allocating funds. Additionally, it documents the values, principles, assets, challenges, and policies that affect land use and resource allocation decisions.

The goals and policies identified throughout this plan resulted from an open dialogue among elected officials, Anoka citizens, and City staff about the future of the community. Citizen involvement is very important in the successful creation and implementation of the plan. Also considered were multiple economic and demographic studies, regional projections, viewpoints from key stakeholders, and expert opinions.

### RELATIONSHIP TO LOCAL CONTROLS AND PROJECTS

The Comprehensive Plan provides a legal basis for establishing local controls. Local controls include, but may not be limited to: the zoning ordinance; the subdivision ordinance; and flood plain or shoreland management ordinances. The capital improvement program, while not a “local control,” is also an invaluable tool for implementation of the Comprehensive Plan.

It is important to note that local controls should be revised following the update of the Comprehensive Plan so as to assure consistency between the measures. Other types of activities and/or projects may also require evaluation for consistency with the Comprehensive Plan. For example, prior to the City Council approving a tax increment finance plan, the



*Thrive MSP 2040, the Metropolitan Council’s regional comprehensive plan.*

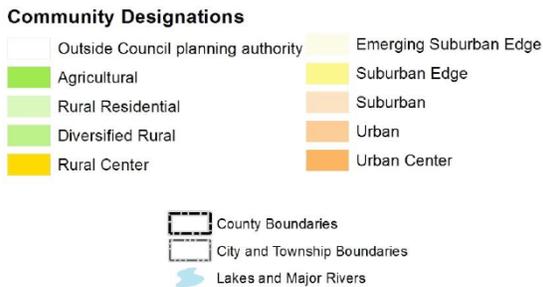
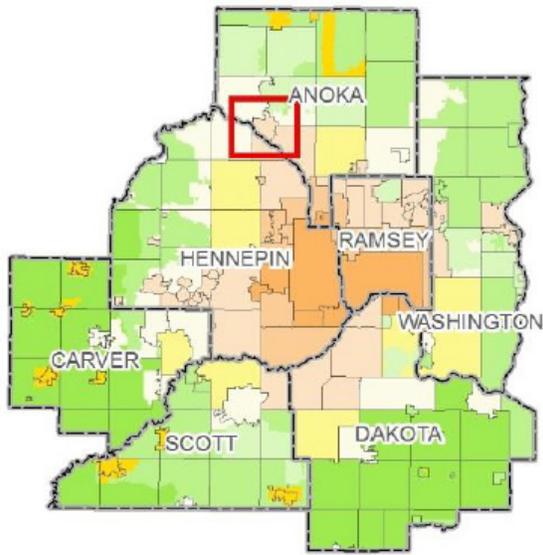
Planning Commission must approve a resolution certifying the proposed project complies with the Comprehensive Plan. If a proposed project is not consistent with the Comprehensive Plan, it may be revised so as to attain consistency.

### ANOKA AND THE SEVEN-COUNTY METRO

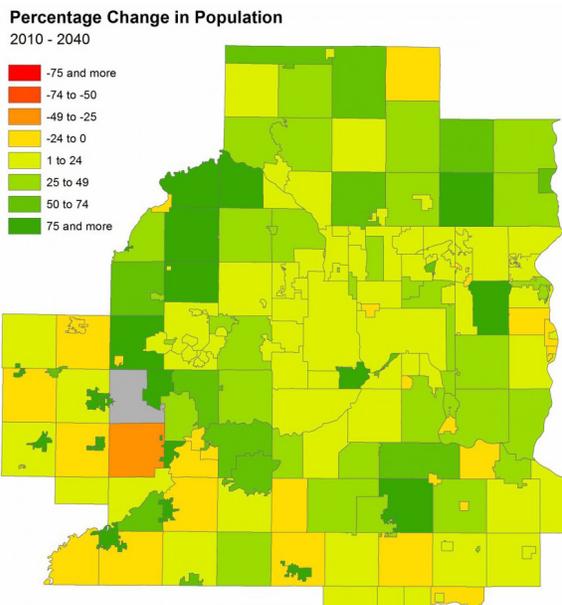
The City of Anoka exists in the larger contexts of Anoka County, the seven-county Metro region, and the State of Minnesota. As society grows and changes over time, Anoka also grows and changes in its own unique way. The Metropolitan Council supports communities in the Metro through data-gathering, analysis, and coordination with adjacent municipalities.

Anoka has been designated by the Metropolitan Council as a “Suburban” community:

Suburban communities experienced



Map from the Metropolitan Council Community Pages



Map from Streets.mn // Data from Thrive MSP 2040

continued growth and expansion during the 1980s and early 1990s, and typically have automobile-oriented development patterns at significantly lower densities than in previous eras. Suburban communities are expected to plan for forecasted population and household growth at average densities of at least 5 units per acre for new development and redevelopment. In addition, Suburban communities are expected to target opportunities for more intensive development near regional transit investments at densities and in a manner articulated in the 2040 Transportation Policy Plan. (Thrive MSP 2040)

As a part of the Metropolitan Council’s regular analysis of Anoka they have provided estimates for population, household, and employment for the years 2020, 2030 and 2040.

This growth is a part of larger regional growth in population, employment, and housing across the Metro (also known as the Twin Cities Region).

By 2040, the region is set to gain 824,000 residents, two thirds of which will come from births, with the remaining third being migrants from outside the state and country. The region is projected to add 550,000 new jobs to the 1.6 million existing jobs, with a Gross Metropolitan Product of \$400 billion. Transportation, infrastructure, environment, and social implications of this growth spill over into Anoka County and the City of Anoka. The Met Council has also paid special attention to Anoka’s transportation, water resources, and parks activity within the regional framework. Each of these elements provides an opportunity to work in tandem with adjacent communities.

---

## HISTORY OF ANOKA

Located at the confluence of the Mississippi and Rum Rivers, “Anoka” - a combination of Dakotah and Ojibway words meaning “both sides of the river” and “working on the water” - is aptly named. From its early Township days of small immigrant homesteads to the logging days of the mid and late 1800’s, Anoka has been well served by the rivers. Now, the river’s use has changed to recreational activities and the rivers serve the City in a different, but no less important, manner.

Initially, the Rum and Mississippi Rivers served as highways of transport for Native American hunting parties, explorers of the river tributaries, steamboats bearing settlers and immigrants and log drives guiding their harvest to market at the mills in Anoka and St. Anthony. Later, these rivers became barriers as overland travel became the predominant mode of transportation.

With the discovery of vast stands of white pine on the upper Rum River, Anoka became a logical place for investment by New England timber interests. Timber mills established in the 1850’s and 1860’s fueled Anoka’s economic growth for nearly four decades. The surrounding sand plain area also provided appropriate soil for the production of potatoes, creating a major industry in Anoka after the turn of the century.

Anoka’s development was also enhanced by its location along early transportation routes, including the Red River Trail and Military Road, which later became U.S. Highway 10. In addition, one of the first extensions of railroad from St. Anthony reached Anoka in 1864 and was later extended westerly. Today, this route is a main line for the Burlington Northern Railroad.

Construction of a bridge over the Rum River in 1853 made it possible to develop commercial property on both sides of the Rum River. The first bridge and



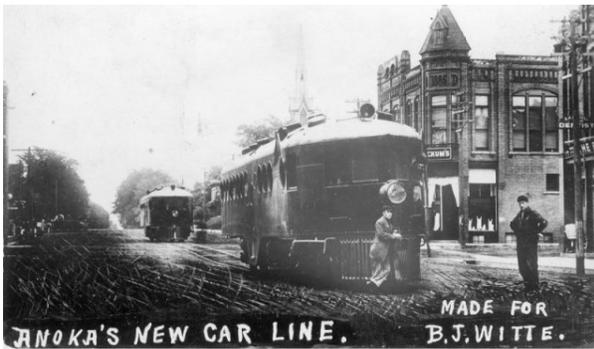
*Early pioneers demonstrating the girth of the trees in the area during the 19th Century.*

many others were washed away, but were always reconstructed. In 1884, a bridge was constructed over the Mississippi River to provide access to Anoka from Hennepin County. Replacement and expansion of these river crossings and related access roads have been key elements in the economic development of the City.

Like many other midwestern communities, immigrants migrating westward settled the town. New England lumber barons established the early basic industry of lumber milling, followed by Scandinavian immigrants who worked in the logging camps and lumber mills. From 1860 to 1885, the City grew dramatically, from 600 people to 4,600. Rapid industrial growth fueled residential construction and commercial development in the Central Business District. When the lumbering industry declined due to exhausted forest resources,



*Main Street Anoka, 1909*



*Anoka's new street car line circa 1913*



*Early swimmers at Rice Street Beach, circa 1940*



*Cottage Grove Motel, 1950s*

the City population fell below 3,800 people and forty years passed before the population again exceeded 4,600.

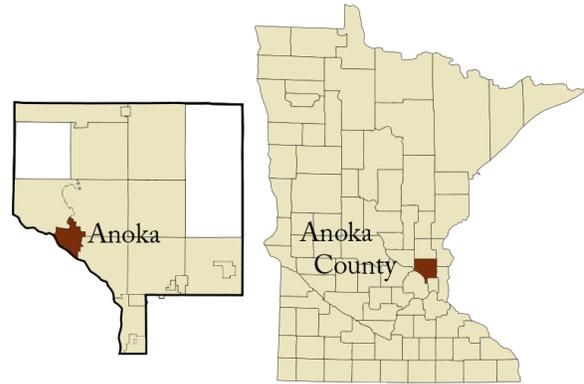
Anoka's early neighborhoods portrayed the different ethnic and social identities of the City. The east side of the Rum River was known as Christian Hill and contained several churches and homes of the original New England settlers. North of Main Street, between Fourth and Seventh Avenue, was Swede Town - home of Scandinavian immigrants. The smaller neighborhoods of Wet Flats and Cutterville Flats were along the banks of the Rum River. On the north end of the City, near the railroad tracks, was Northtown (also known as Uppertown), which included both residential and commercial development near the railroad depot. On the west side of the City was Slab Town - Inhabited by workers in the lumber mills and Frog Town - a French settlement. Residents near Main and Ferry Streets considered themselves to live in Rum River, which was the original settlement area of the community. South of Rum River was Fireman's grove and the Point. West of Rum River was the area known as Whiskey Flats - adjacent to the ferry docks and known for early brewing of whiskey. These neighborhoods retained their identity through the 1940's.

As the county seat and the agricultural market center in the area, Anoka was a free standing community until the 1940's. As St. Anthony and the Twin Cities of Minneapolis and St. Paul became the economic center of the state in the 1950's and 1960's, Anoka became a distant suburb. During the 1970's and 1980's, Anoka was considered a free standing growth center. In the 1990's Anoka was reclassified as a developing area based on the rapid growth of surrounding bedroom communities. Currently, Anoka is essentially fully developed and is entering an era of redevelopment.

# ANOKA TODAY

## Location

The City of Anoka is located at the confluence of the Rum and Mississippi Rivers, about 18 miles north of Minneapolis and 25 miles northwest of St. Paul. Anoka is seven square miles in size with a population of approximately 17,586 (2014 estimates). The City of Anoka serves as the county seat for Anoka County, which is one of the fastest growing counties in Minnesota.



## City Structure

The Anoka City Council is comprised of four council members and a Mayor, all of whom are elected at-large. Two Council members and the Mayor are elected at each City election held every even numbered year. Council members' terms are four years; the Mayor's term is two years. The Mayor presides at City Council meetings and has equal voting rights with the Council members. The Mayor does not have veto power. The Mayor also serves as the City's representative for civic occasions.

The City Manager serves as the Chief Executive Officer of the City and is responsible for the day to day operations of the City and carrying out Council policies. The City Manager serves at the discretion of the City Council for an indefinite term.



*City Hall at 2015 First Avenue North.*

A number of appointed citizen boards and commissions serve in an advisory capacity to the City Council. The boards and commissions include: Charter Commission, Economic Development Commission, Heritage Preservation Commission, Housing and Redevelopment Authority, Human Rights Commission, Park and Recreation Advisory Board, Parking Advisory Board, Planning Commission, Utility Advisory Board, and Waste Reduction and Recycling Board. As vacancies occur on the various boards and commissions, new members are sought through advertisement in the local newspaper. All members serve without compensation.

## Cable TV

Anoka is served by Quad Cities Community Television system. A Quad Cities Cable Commission, comprised of two members, each, from Anoka, Champlin, Andover, and Ramsey administers the franchise ordinance that governs the system.

## City-Operated Facilities

Anoka operates its own golf course (Greenhaven), two municipal liquor stores, and two cemeteries. The largest enterprise run by the City is the electric utility. Anoka has been operating its own electric utility - Anoka Municipal Utility (AMU) - since 1909. The City purchases electricity from the "Minnesota Municipal Power Agency", of which it



*Art by Young Artists of Anoka in the pedestrian tunnel.*

is a member. AMU then supplies that energy to about 11,500 customers in Anoka and surrounding areas. This system provides competitive electric rates for residents and also contributes to government capital and operating funds which reduces overall general property tax needs.

**Water and Sewer**

Anoka draws its water from six municipal wells and three storage tanks with a capacity of 2.4 million gallons. Anoka’s sewage is treated by the Metropolitan Council Environmental Services at Pigs Eye Treatment Plant in St. Paul.

**Fire Department**

The Anoka Fire Department was first organized in 1854. In March of 1985, a combined fire department was formed with Champlin, known as the Anoka-Champlin Fire Department. The department is also a member of the North Suburban Mutual Aid Association and Anoka County Protection

Mutual Aid. It is eligible to receive or provide mutual aid services per agreement with eighteen other area communities. The Anoka-Champlin Fire Department operates under a Joint Powers Agreement between the two communities. The Department has two fire stations. The headquarter station is located in Anoka and the satellite station is located in Champlin. Currently, there are 41 paid-on-call firefighters between the two stations. The Anoka station staffs a full-time Fire Chief and three Duty Inspectors on rotating 24-hour shifts. The Anoka station is staffed 24 hours a day.

**Police Department**

The Anoka Police Department provides a full range of law enforcement services. Communications for the service area are provided by a Anoka County Central Dispatch system that includes enhanced computer aided 911 dispatching. Police emergency response and criminal investigations are handled by the Anoka Police Department. Follow-up investigations regarding all death, sexual assault, and felony child abuse incidents and detentions are handled by the Anoka County Sheriff’s Office.

The Anoka Police Department employs 34 full time employees, consisting of 27 sworn peace officers and 7 civilian support positions. The agency has a trained volunteer Police Reserve Unit and Police Explorer Unit. The agency provides animal control services and maintains an animal pound facility. The agency has two trained police canine units as well as an actively trained S.W.A.T. Team.

The Department is organized into three components that report to the Captain, who in turn reports to the Chief of Police. The Patrol Section is the largest unit within the APD and is supervised by three Watch Commanders (Sergeants). The Criminal Investigations Section Sergeant supervises the investigators and school liaison officers. The Support Services Section Sergeant supervises all of the non-sworn (civilian) support staff that includes;

Community Service Officers, Police Technicians and Security Officers.

**Schools**

Anoka is in Anoka-Hennepin School District 11, which is the largest school district in Minnesota. Within the City of Anoka there are three elementary schools, one middle school, a parochial school, a Montessori school, a senior high school, a Secondary Technical Education High School (STEP), the Anoka-Hennepin Technical College, and the Anoka-Hennepin Learning/District Complex.

**Recreation**

Anoka has a total of 802 acres of publicly-owned recreational property, with over 300 acres yet undeveloped. There are 35 parks and playgrounds (including four major park complexes). The system includes 27 ballfields, 14 tennis courts, 11 municipal buildings, two swimming pools, an 18-hole golf course, a band shelter, a senior citizens activity center, and a bikeway connecting the central business district with historic sites and the Anoka County Fairgrounds. The Anoka Area Ice Arena and Greenhaven Country Club are also located in Anoka.

**The Mississippi River Corridor**

“Ol’ Man River” forms the southwestern border of Anoka, providing a priceless resource for recreation, health, access to nature, scenic views, community

events, and more. From the city’s conception, the Mississippi River has brought a wealth of opportunity to Anokans; in turn, Anoka takes its stewardship of the river seriously, cooperating with surround communities in preserving its ecosystem, beauty, and pristine shoreline.

**Halloween Capital of the World**

It is believed that Anoka is the first city in the United States to hold a Halloween celebration. In early 1923, Anoka merchants and other interested citizens joined together in a move to stop Halloween pranks. The group decided to hold a big Halloween party for all the children. The party included free candy and a variety of entertainment. The concept rapidly caught on and in October of 1923, Anoka had its first Halloween celebration.

The celebration has been held every year since, with the exception of two years during World War II. Anoka considers itself to be the “Halloween Capital of the World.” Anoka celebrates Halloween with such festivities as a Kiddie Parade, a Grande Day Parade, a Coronation, a Pumpkin Bowl Football Game, block parties, the Grey Ghost 5K run, and costume parties. Anoka merchants also participate in the celebration by putting colorful paintings of Halloween scenes on their store front windows.



## RESIDENT SURVEY

From July to September 2017, the City of Anoka conducted a survey on the City website. The goal was to get public input on issues like physical improvements, community affairs, and neighborhood concerns to incorporate into the City’s planning efforts. About 180 community members responded to the survey questions.

### Key Points from the Survey

- Over half of the respondents chose the character of the city as one of the reasons they live in Anoka, followed by parks, open space, recreation and rivers, and the downtown area.
- Other reasons people reported enjoying living in Anoka:
  - Housing affordability
  - Friendly people
  - The restaurants
  - Opportunities for an active lifestyle
- Top goals for the future include:
  - Protection of the rivers, open space, and recreation areas;
  - Expanding/enhancing the park system;
  - Preserving historic buildings; and
  - Decreasing traffic congestion.
  - Bring in more small businesses.
- The most commonly listed issues facing Anoka were:
  - The large amount of rental housing;
  - The unkempt character of many properties;



*Volunteers at the 2017 Tree Lighting*

- Vacant commercial buildings;
- Perception of crime and drug activity;
- Traffic congestion;
- The most common responses to the question: “If you could change one thing about Anoka, what would it be?”
  - Clean up the appearance of Downtown;
  - Address traffic issues;
  - Address the homeless and transient populations;
  - Limit or reduce the amount of rental housing;
- The kinds of buildings or businesses needed:
  - Upscale restaurants;
  - A grocery store;
  - Mom and Pop shops;
  - Community center;

# 2017 Resident Survey



## Top Reasons Residents Love Anoka



● Character ● Downtown ● Parks

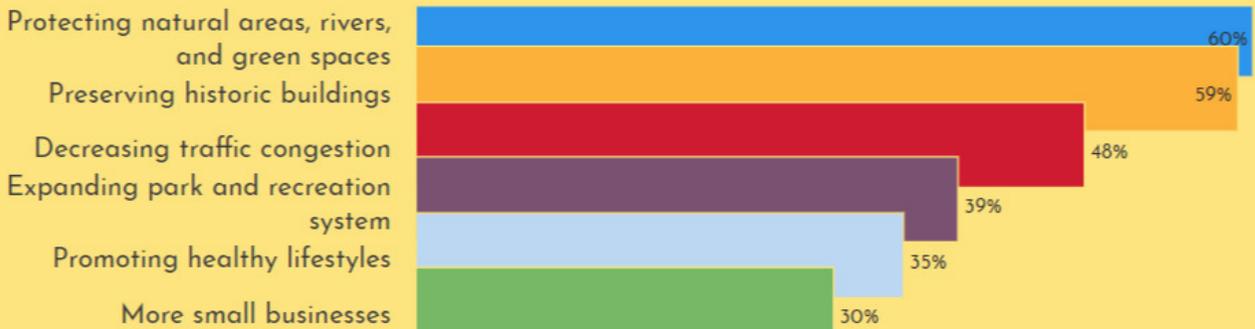
"Short commute" "Great location" "Active lifestyle opportunities" "Shopping" "Diverse community" "Lots to do" "Downtown" "Family-oriented" "Safety" "City character" "Arts & culture" "Schools & education" "Restaurants" "Parks & rivers" "Tax affordability" "Housing affordability" "Friendly people" "Childhood home"

## Most Significant Challenges for Anoka

"Traffic issues"  
"Deteriorating housing stock"  
"Lack of high-quality apartments"

"Aging population"  
"Behind on retail and restaurants"

## Priorities for Anoka through 2040



[www.ci.anoka.mn.us](http://www.ci.anoka.mn.us)

Figure 1-1: 2017 Resident Survey

## MAJOR TRENDS IN ANOKA

### Aging Housing Stock

More than 63% of Anoka’s housing was constructed prior to 1980, and almost 9% of housing was constructed prior to 1940. Old housing cycles downward and becomes more affordable compared to newer housing. When neglected by owners and landlords, this type of housing can become detrimental to a neighborhood; however, when kept up, this type of housing can be affordable for first-time buyers or renters.

### Increasing Population

Anoka is projected to pass 21,000 by 2040, adding approximately 1,600 new households. These households will be living, working, shopping, and playing in the City, requiring updated housing and infrastructure. Table 1-1 demonstrates the projected growth in population, households, and employment in Anoka.

### Road Improvements

Small improvements around the City are complemented by major upgrades to major thoroughfares, such as those to Highway 10 at Thurston and Fair Oak Avenues. Although Anoka is a small community, enough traffic passes through on Highway 10, Highway 169, and Main Street,

that the wear and tear on roads is disproportionately increased along with danger to pedestrians.

### Redevelopment and Infill

The City is continuing its push to transform areas around the Northstar Rail, the Greenhaven Golf Course, and other vacant or older properties into up-to-date housing, retail, and commercial establishments. As a community that is developed to its edges, the City must be proactive about making the best use of its land.

### Aging Community

From the year 2000 to 2015, the median age of Anoka’s population increased from 33.9 years old to 40.5. This follows regional trends, and impacts the type of housing needed in Anoka’s future, as well as what ages of population the City can work to draw.

### Changing Retail Trends

While Anoka does not have any large retail chains or malls, smaller retailers still have to deal with the arrival of online shopping. Anoka is encouraging the combination of activities and community life with retail and commercial establishments to create unique shopping experiences that the regional customer base cannot find anywhere else.



TABLE 1-1: POPULATION, HOUSEHOLD, AND EMPLOYMENT PROJECTIONS FOR ANOKA, 2018

Year	Population	Households	Employment
2010 (actual)	17,142	7,060	12,840
2014 (est.)	17,586	7,252	13,910
2020	18,700	7,900	13,800
2030	20,000	8,400	14,200
2040	21,200	8,900	14,400

Source: Metropolitan Council 2015 Systems Statement - Anoka

*The recently built CityView Senior Apartments at Plaza just off of downtown and the Rum River.*

## VISION & GUIDING PRINCIPLES

Building on the public visioning activities carried through previous Comprehensive Plans, our vision for Anoka in the year 2040 guides the City’s growth and change through community priorities and consistent guiding principles.

### VISION COMPONENTS

#### 1. Lasting Community Character

Anokans recognize and appreciate the distinctive character of their community and take pride in their neighborhoods, families, and enduring friendships. In the future, Anoka...

- has a unique downtown that preserves the “Main Street” image, blending merchants, professionals, residents, and visitors in an active trade and service center.
- recognizes its heritage, and plans for a future that preserves and celebrates its history, culture and distinctive physical features.
- is clean and takes pride in the appearance and condition of buildings, parks, streets, and natural features.

#### 2. Civic Vitality

Anokans recognize the importance of their human resources, the character provided by each generation, and the power of human networks to provide for the needs of all citizens. Anoka will continue to be a community that:

- encourages cooperation with and



*Greenhaven Golf Course at sunset*

support for the cities that make up the “Community of Anoka,” combining energy and resources when possible to create the best situation for all cities involved.

- deters drugs, crime, and violence, with a Police Department working together with citizens to maintain a peaceful and secure environment.
- values and encourages “volunteerism,” enabling citizens to enjoy rewards and see the results of giving their energies to the improvement of their community
- responds to the needs of youth with a variety of entertainment options
- provides personal development opportunities, and social activities.
- views persons of diverse ethnic and cultural backgrounds, physical and mental abilities, age, and economic conditions as valuable members of the community.

- recognizes the importance of leisure time and fun for well-balanced living by promoting diverse and exciting entertainment and activities for all ages.

### 3. Sound Development

Anokans recognize the importance of an economy which provides opportunities for all residents. Anoka will continue to be a community that:

- realizes the economic benefits of riverfront development.
- is open minded and aggressive in exploring options for development that will not only benefit business but also address the long-range needs of the community.
- encourages and promotes business enterprises which provide needed products and services not only to the people of the area but also to populations and businesses throughout the world.
- provides a variety of rewarding



*Over 300 veterans rode north to Anoka from Kansas for the American Legion Legacy Run 2018.*



*Yoga at the Woodbury House.*

employment opportunities for the people of the area.

- promotes and supports the efforts of businesses to maintain viability to change, expand, or improve services and products; to improve efficiency and competitiveness; and to operate in an environmentally sensitive manner.

### 4. Environmental Responsibility

Anokans value the environment, recognize the unique resources represent by their rivers, and enjoy the many opportunities that such resources offer. Anoka will continue to be a community that:

- appreciates the economic and recreational value of rivers, lakes, and wetlands while respecting and protecting native wildlife and valuable habitat areas.
- strives to operate with a minimum of pollution and waste, encouraging residents and businesses to participate in waste management programs that are both effective and convenient.

## 5. Strong Services

Anokans recognize the importance of many services in maintaining their quality of life. These services will continue to be important to them; today and in the future Anoka will be a community that:

- has transportation systems that are modern, well-maintained, low-polluting, and energy efficient.
- has a road and bridges system which supports development opportunities.
- recognizes the importance of parks and recreational facilities which are clean, safe, well-managed, and accessible, and develops properties with consideration for such facilities.
- is committed to a high-quality educational system which makes the most of its physical, financial, and human resources to provide educational opportunities for all citizens.
- promotes the physical and mental health of all its residents, and supports the industries, professionals, and agencies which provide such services.



*Scene from the 2018 Food Truck Festival in downtown Anoka.*

## GUIDING PRINCIPLES

Several guiding principles have been identified by community members in past visioning meetings as vital for a fair, responsible, resilient City. These principles, listed below, continue to be used as the basis for all that the City of Anoka does.

### ***Invoke a sense of place.***

Establish a physical setting for development that says, “This is Anoka.”

### ***Invest in the public realm.***

Create a network of streets, trails, sidewalks and parks that are safe and vibrant

### ***Amplify the mix of uses.***

Create and restore a downtown that allows people to work, live, and play.

### ***Ameliorate connectivity.***

Provide people with ways to move between their neighborhoods and downtown that are safe and convenient.

### ***Insure that buildings support broader city building goals.***

Design and restore Anoka’s historic architecture.

### ***Amplify existing strengths.***

As the city rebuilds, cherish what we already treasure - our historic buildings, parks, and the Rum an Mississippi Rivers.

### ***Sustain and strengthen heritage resources.***

Preserve historic buildings and public spaces

### ***Promote the use of public spaces.***

Increase the number of people in our public spaces, downtown, along the riverfront, and in our neighborhoods.

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## 2. LAND USE

- Introduction
- Community & Context
- Existing Land Use
- Future Land Use
- Zoning
- Planning Areas
- Natural Resources
- Goals and Policies



## INTRODUCTION

The Land Use chapter of the Comprehensive Plan provides direction for the overall physical layout of the City of Anoka. The goals and policies set forth in this chapter are designed to improve the quality of life for residents, workers, and visitors in Anoka according to the Community Principles laid out at the beginning of the comprehensive plan. Regional context is also a major factor in making land use decisions in Anoka.

Anoka’s land use decisions have evolved along with transportation trends, economic conditions, and past community decisions. Natural features such as the Rum and Mississippi Rivers have determined many of the city’s current uses, while zoning regulations and community preferences have affected land use behind the scenes. Anoka’s existing land use is at the intersection of all these forces.

In 2018, Anoka is a fully built-out city with limited open land available for new development. Anoka’s future development is anticipated to derive from the redevelopment of existing properties. The Land Use Chapter examines Anoka’s existing land use patterns and discusses future land use directions as guided by Anoka’s Community Principles.

This chapter will examine the following:

### *Community and Context*

This section addresses the role of land use and built form in Anoka, as well as how the city’s growth fits into the Twin Cities Metro and State of Minnesota.

### *Existing Land Use*

This section describes the current land use map, land use designations, and distribution of land uses.

### *Future Land Use*

This section describes intended land uses through the year 2040.

### *Zoning*

This section describes zoning designations as of 2018.

### *Planning Areas*

This section describes planned redevelopment areas.

### *Natural Resources*

This section touches on natural resources in Anoka and solar access.

### *Goals & Policies*

This section identifies specific goals and policies to assist in future land use decisions.



## COMMUNITY & CONTEXT

In the Metropolitan Council’s Thrive MSP 2040 plan, communities within the Twin Cities Metropolitan Area are given community designations. These designations come with responsibilities and coordinated roles that aid in guiding community leaders within their regional context.

Anoka’s community designation is “Suburban” (Figure 2-1). The Metropolitan Council describes suburban communities in this way:

TABLE 2-1: POPULATION, HOUSEHOLD, AND EMPLOYMENT PROJECTIONS FOR ANOKA, 2018

	Population	Households	Employment
2010 (actual)	17,142	7,060	12,840
2014 (est.)	17,586	7,252	13,910
2020	18,700	7,900	13,800
2030	20,000	8,400	14,200
2040	21,200	8,900	14,400

“Suburban communities have experienced continued growth and expansion during the 1980s and early 1990s, and typically have automobile-oriented development patterns at significantly lower densities than in previous eras. Suburban communities are expected to plan for forecasted population and household growth at average densities of at least 5 units per acre for new development and redevelopment. In addition, Suburban communities are expected to target opportunities for more intensive development near regional transit investments at densities and in a manner articulated in the 2040 Transportation Policy Plan.”

Part of each community’s role is aligning land use goals and policies with those of the Metropolitan Council. Communities have responsibilities

that coincide with the Council and adjacent municipalities. The responsibilities are broken down into topics:

1. Orderly and Efficient Land Use

*Plan according to forecasted population growth, raising its overall housing density and guiding development toward transit hubs and connectivity between housing and jobs; lead infrastructural projects that support growth integrate local and regional systems.*

2. Natural Resource Protection

*Integrate natural resource conservation, restoration, and reclamation policies and programs into the comprehensive plan, local ordinances, and development and redevelopment projects.*

3. Water Sustainability

*Combine best practices and alternative water management and supply resources to ensure adequate water supply in 2040.*

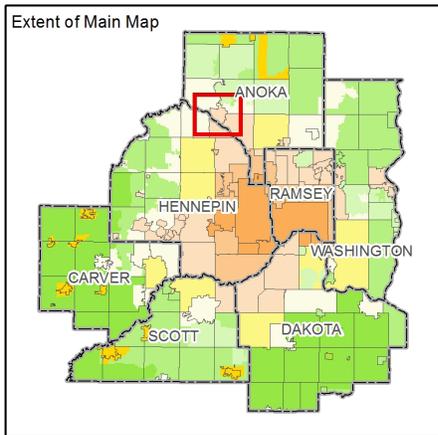
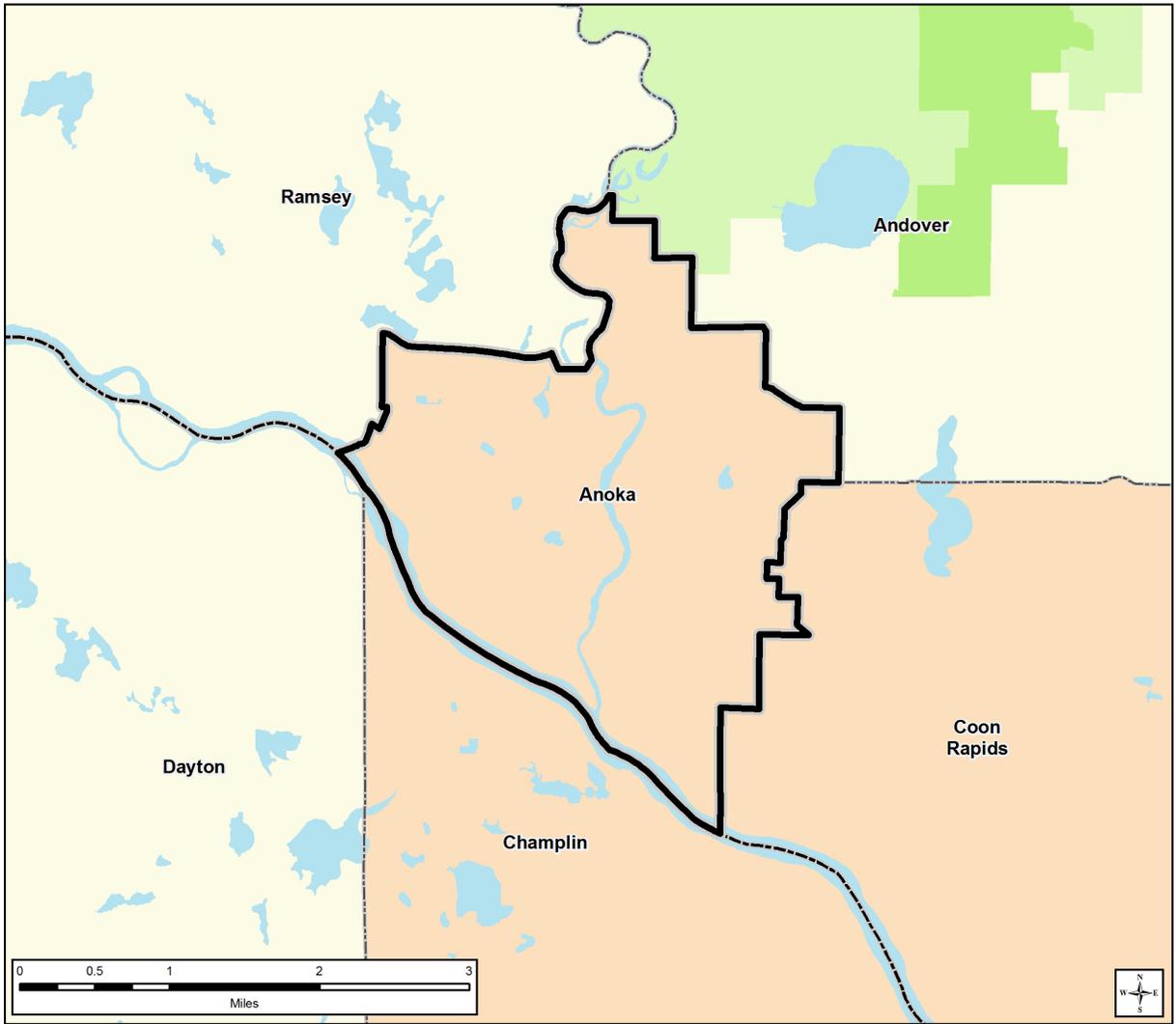
4. Housing Affordability and Choice

*Plan for household growth, accounting for regional affordable housing needs, life cycle and multi-generational housing, and transit-oriented housing.*

5. Access, Mobility, and Transportation Choice

*Focus growth and development plans toward transit sites and active-transportation usage, improving circulation of and access to transit, bicycle, and pedestrian routes. Address land use conflicts by engaging affected private stakeholders and adopting developmental standards that improve the user experience for all right-of-way users.*

**Community Designations  
City of Anoka, Anoka County**



**Community Designations**

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

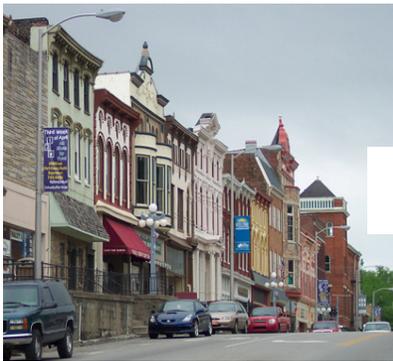
Figure 2-1: Community Designation

6. Economic Competitiveness

*Support the community's commercial and industrial areas through contamination remediation, creation of focused small area plans, consideration of transportation offerings, and planning activities for areas for expansion.*

7. Building in Resilience

*Identify and address infrastructural vulnerabilities, wind and solar power generation opportunities, travel demand management methods, and growth of vegetative cover and urban forestry initiatives.*



## EXISTING LAND USE

Overall, land use in Anoka can be thought of in terms of community life: where people live, work and shop, come together, as well as what areas are sensitive natural areas that are best protected and left undeveloped.

The 2018 Existing Land Use Map (Figure 2-3) depicts today’s actual uses of property regardless of zoning or intended use. Land use in the City is divided into several categories: Residential, Commercial, Mixed-Use, Industrial, Institutional, Parks, and Open Space. Table 2-2 and Figure 2-2 summarize the distribution of existing land uses in the City.

FIGURE 2-2: EXISTING LAND USE CATEGORIES IN ANOKA, 2018

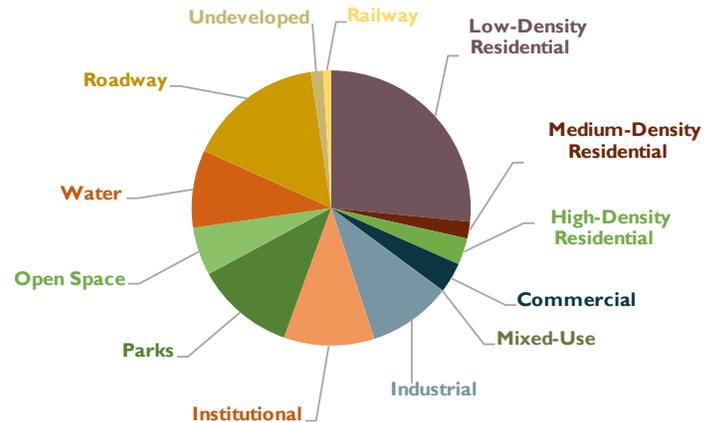
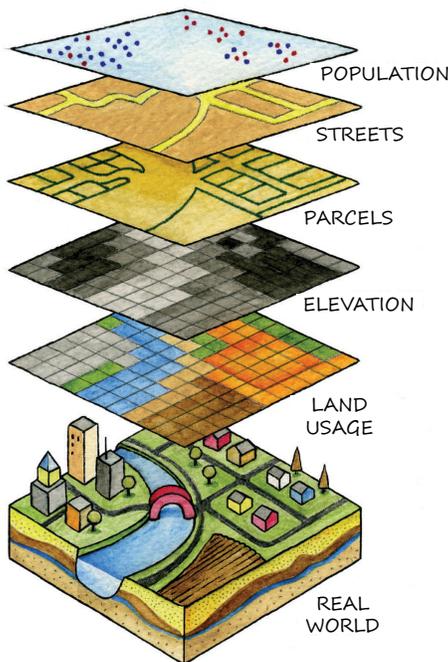


TABLE 2-2: EXISTING LAND USE CATEGORIES IN ANOKA, 2018

Land Use	Acres	Percent of All Acres
All Residential	1447.9	31.7%
Low-Density	1214.4	26.6%
Medium-Density	90.3	2%
High-Density	143.2	3.1%
Commercial	161.6	3.5%
Mixed-Use	1.3	0.2%
Industrial	444.2	9.7%
Institutional	480.4	10.5%
Parks	527	11.5%
Open Space	258.5	5.7%
Water	416.4	9.1%
Roadway	723.7	15.8%
Undeveloped	64.3	1.4%
Railway	42.7	0.9%
<b>Total</b>	<b>4568</b>	<b>100%</b>



# 2018 Existing Land Use Map - City of Anoka

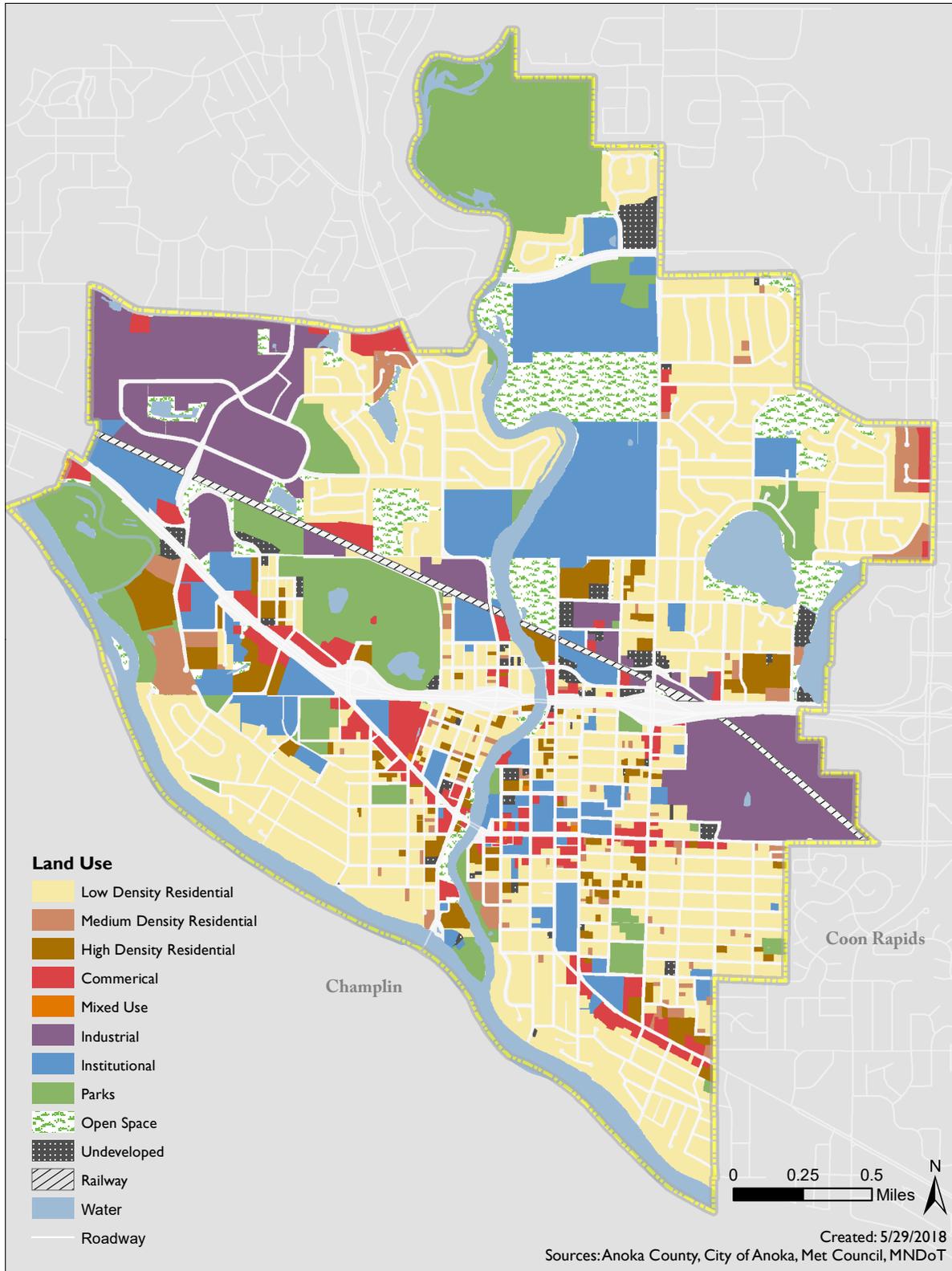


Figure 2-3: 2018 Existing Land Use - City of Anoka

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### **Residential**

Low-density residential, including detached single-family dwellings, comprise 26.6% of total City acreage. Medium-density residential, including townhouses and duplexes, makes up an additional 2%. High-density residential, including multi-family dwellings (3+ units), comprise 3.1% of the total acreage within the City. Residential uses in total comprise 31.7% of the total acreage in the City.

### **Commercial**

Commercial uses comprise 3.5% of the total acreage in the City. Commercial uses are predominately along the major roadway corridors such as Highway 10 between Main Street and the westerly border of the City and East River Road from 5th Avenue to the easterly border of the City.

### **Industrial**

Industrial uses comprise 9.7% of the total acreage in the City. The 2030 Land Use Plan identified two types of industrial use, Light and General. Light industrial use is generally found within and surrounding the Anoka Enterprise Park (AEP). General industrial land use is located primarily along the BNSF rail line.

### **Institutional**

Institutional uses comprise 10.5% of the total acreage within the City. Institutional uses include but are not limited to schools, government buildings, public works and utilities sites, churches, and cemeteries.

### **Parks**

Parks comprise 11.5% of the total acreage within the City. Park uses include city and regional parks, park reserves, and special recreation features including the City's golf course.

### **Open Space**

Open space comprises 5.7% of the acreage within the City. Open space includes areas that serve as a resource protection or buffer, areas that support unorganized public recreational activities which may contain trails and/or picnic areas, and areas that preserve unaltered land in its natural state for environmental, ecological, or aesthetic purposes.

### **Undeveloped**

Undeveloped land comprises 1.4% of the total acreage within the City. Undeveloped land includes developable land prepared or anticipated for future development. Much of the land designated as Undeveloped in the 2030 comprehensive plan has been reclassified for this 2040 plan as either open space, parks, or another intended use.

### **Railway**

Land occupied by the BNSF railway comprises 0.9% of the total acreage within the City.

### **Water**

Water features comprise 9.1% of the total acreage within the City. Water features include the Mississippi River and the Rum River as well as wetlands and storm water ponds.

### **Roadway**

Roadways comprise 15.8% of the total acreage within the City.

## FUTURE LAND USE

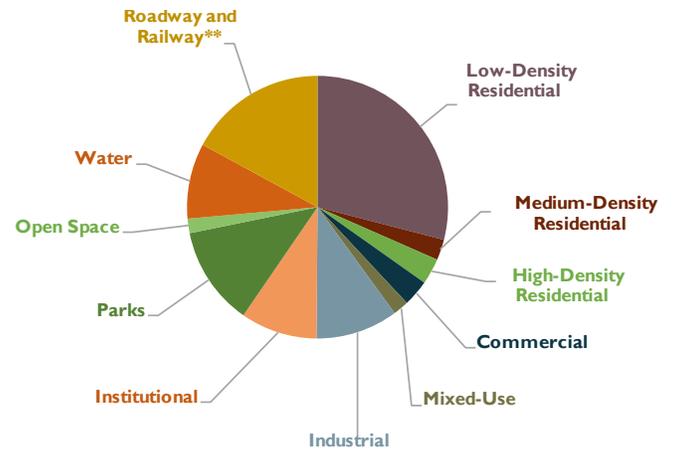
Future land uses are the property uses intended to be manifested by 2040. These future uses encourage certain development patterns in the City and further promote implementation of the comprehensive plan to meet the housing, employment, and service needs for the future. The 2040 Future Land Use Map acts as the guide for many small development decisions.

In the 2040 Future Land Use Map (Figure 2-5), there is now a Transit-Oriented Development category. Additionally, within Residential, Commercial, and Industrial there are several sub-types that help to craft more flexible, appropriate land use areas. These are described below.

Anoka’s “Suburban” community designation endows on it the responsibility planning for forecasted population and household growth at an average density of at least five units per acre for new development and redevelopment. Anoka is also expected to plan for higher densities near regional transportation investment. Table 2-3 and Figure 2-4 summarize the distribution of future land uses in the City.

Each land use is broken down into more specific designations describing the ideal use of an area in more detail. These are not zoning designations in that they describe the ideal use in the overall city land use plan rather than legal restrictions on how a property may be used.

FIGURE 2-4: FUTURE LAND USES OF ANOKA, 2018 - 2040



\*\*Roadway and Railway combines the Roadway and Railway categories from the Existing Land Use Map.

TABLE 2-3: FUTURE LAND USE CATEGORIES IN ANOKA, 2018 - 2040\*

Land Use	Acres	Percent of All Acres	Change in Acres from Existing Land Use
Residential	1560	35%	113
Low-Density	1303	29%	89
Medium-Density	124	3%	34
High-Density	133	3%	-10
Commercial	156	3%	-6
Mixed-Use	87	2%	86
Industrial	447	10%	3
Institutional	426	9%	-44
Parks	548	12%	12
Open Space*	80	2%	-243
Water	416	9%	0
Roadway & Railway**	769	17%	0
Transit-Oriented Development	79	2%	79
<b>Total</b>	<b>4568</b>	<b>100%</b>	

\*Currently undeveloped land was included in other categories - mostly moved from “Open Space” - as it is to be guided for other specific land uses.

\*\*Existing railway land was included in right-of-way land use.

# 2040 Future Land Use Map

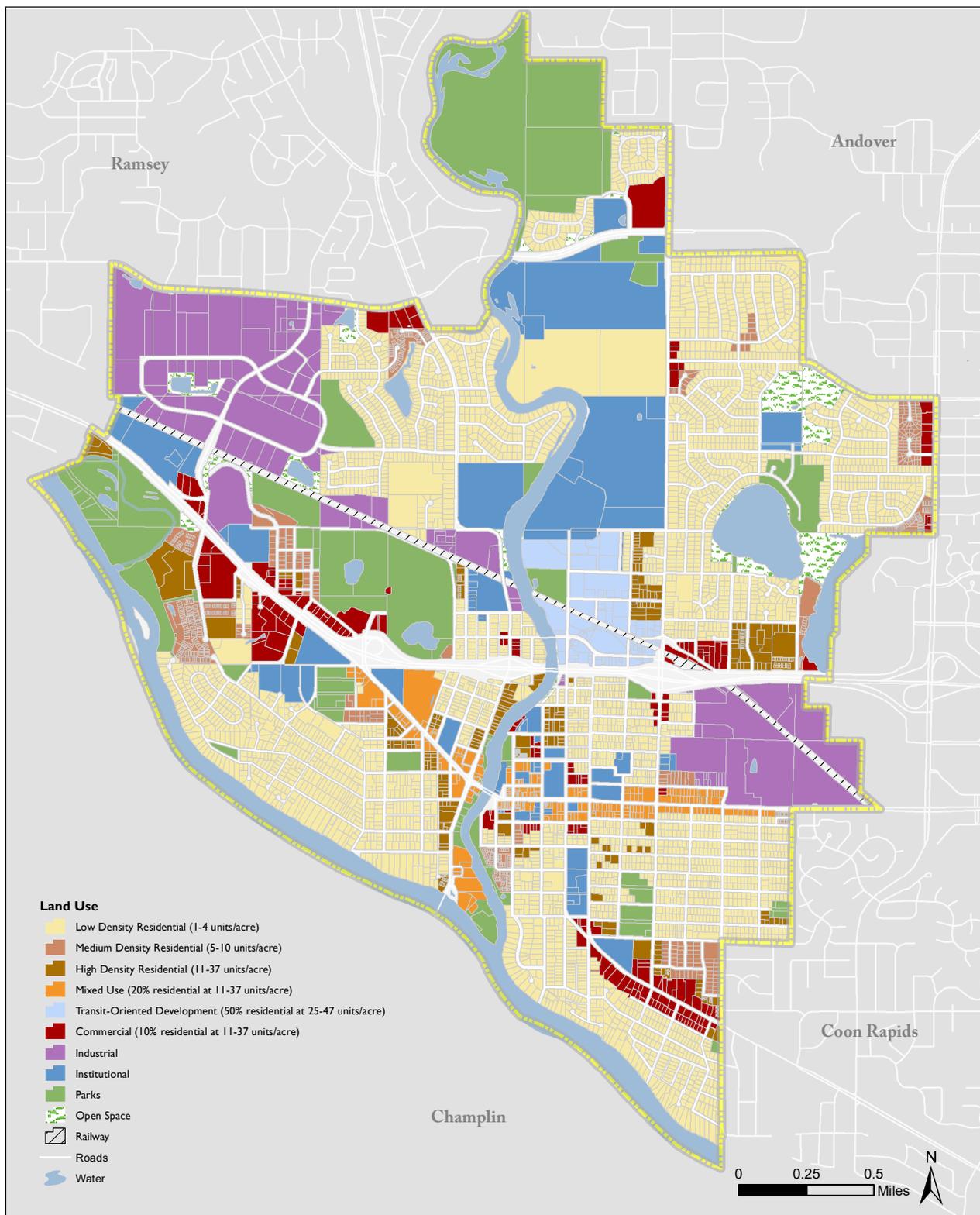


Figure 2-5: 2040 Future Land Use - City of Anoka

Sources: Anoka County, City of Anoka, Met Council, MNDot

**RESIDENTIAL**

***RL – Low Density Residential***

The Low Density Residential (RL) category defines areas consisting primarily of detached single-family houses. One to four units per acre are allowed.

***RM – Medium Density Residential***

The Medium Density Residential (RM) category defines areas suitable for both detached and attached townhouses as well as single-family houses at higher densities than compared to the Low Density Residential category. In larger developments, a variety of housing types and densities are encouraged. RM may act as a transitional zone between low and high density uses. Five to ten units per acre are allowed. Units here are intended to abut or have reasonably direct access to arterials and collectors. These areas are ideally located near community amenities and institutional uses, as well as shopping and service facilities.

***RH – High Density Residential***

The High Density Residential (RH) category provides the highest density range. The associated land use pattern would generally consist of multifamily dwellings including apartments, condos, coops, and senior housing. 11 to 37 units per acre are allowed. RH areas should abut and have reasonably direct access to minor, intermediate, and principal arterials. They are intended to be in close proximity to commercial, park, institutional, and public uses.



*RL - Low Density Residential.*



*RM - Medium Density Residential.*



*RH - High Density Residential.*

**COMMERCIAL**

The Commercial land use category identifies and represents places where, generally speaking, businesses that provide goods and services are planned to be located. This category is designed to accommodate land uses that provide a wide range of goods and services such as restaurants, convenience stores, hotels, retail sales, professional and personal services, office uses, and other specialized service businesses. A typical building footprint/land coverage ratio is 0.46 for commercial land. High density residential uses are also encouraged where appropriate at densities of 11 - 37 units per acre. The City estimates 10% high density residential redevelopment in the commercial land use category by 2040.



Commercial land uses sometimes produce undesirable effects on abutting residential uses due to things like traffic, noise, or lighting. When possible, these areas should be buffered from low-density residential areas by plantings, berms, fences, or other buffers.

---

## MIXED USE

### **MU – Mixed-Use**

The purpose of the Mixed-Use land use category is to create vibrant, pedestrian-scale buildings with a portion of retail, service, or other commercial uses on the ground floor and residential and/or office uses on upper floors. Mixed-use development is intended to maintain the visual character of the City, facilitate community interaction, discourage auto-dependency, and create central nodes of activity. Through mandatory design and appearance standards, these properties will support property values, economic vitality, tourist attraction, and a sense of community identity.

The Mixed-Use category is intended to encourage creativity, innovation, and variety in architectural design and building composition. It is also meant to reinforce and expand a development pattern that supports healthy living by diminishing proximity between compatible destinations. Mixed-use allows for many types of uses, including those that may typically be included in other land use categories, but without the same adverse effects. For instance, art studios, live-work spaces, or light makerspaces may be included in Mixed-Use if noise and activity do not affect surrounding uses adversely. A flexible approach to zoning and innovative building design can lead to lively, unique experiences in conjunction with experiential retail and community activity. High density residential uses are also encouraged where appropriate at densities of 11 - 37 units per acre. The City estimates 20% high density residential redevelopment in the mixed-use land use category by 2040. The remaining 80% of the mixed-use land use category is anticipated to consist of 40% retail and 40% office. A typical building footprint/land coverage ratio is 0.5 for non-commercial uses.

## TRANSIT-ORIENTED DEVELOPMENT

The Transit-Oriented Development (TOD) land use category defines an area of land that surrounds the Northstar Commuter Rail Station in Anoka. The category is designed and intended to encourage a mixture of residential, commercial, and civic uses in proximity to the commuter rail station at densities that support transit use. Goals include encouraging a safe pedestrian-oriented environment, maximizing transit use, and creating a sense of activity along local streets. 25 to 47 units per acre are allowed. The City must also plan for an average minimum residential density of at least 20 units per acre within a one-half mile radius of the commuter rail station. The City estimates 50% high density residential redevelopment in the TOD land use category by 2040. The remaining 50% of the TOD land use category is anticipated to consist of a variety of commercial uses including office and retail. The minimum building footprint/land coverage ratio is 0.5 for all development sites in the TOD.

## INDUSTRIAL

The Industrial land use category defines areas suitable for uses of land specializing in the manufacturing, warehousing, and wholesaling of goods. The category may provide for businesses that require areas for outdoor storage if appropriately screened from public streets and neighboring properties. A typical building footprint/land coverage ratio is 0.32 for industrial land.

Industrial land uses should ideally not be located near or adjoin residential land uses in a manner that may create a conflict or nuisance.

## INSTITUTIONAL

### *IS – Institutional*



Institutional uses are those that are engaged in long-term civic work or public service, which may be private, public, or quasi-public organizations. These include uses like government facilities, community and recreation centers, libraries, corrective facilities, and schools. It also may include uses such as religious institutions, private educational facilities, hospitals or primary care facilities, and some communities include arts and culture, nonprofit, and charitable organizations. Institutions contribute to the stability and wellbeing of the local and regional community, and often act as anchors for surrounding neighborhoods.

Institutional uses should remain highly accessible to community members of all modes of transportation. The importance of architectural quality and character is high for these uses, as well as innovative design for integration with other institutions, housing, and commercial activity.

## ZONING

Zoning is used to achieve the desired land use designations. Land use is the intended function of a land area within a community; zoning is the legal regulation used to accomplish that intended function. Municipalities produce a Future Land Use map with goals and intended uses for decades ahead – zoning defines and implements the unique “flavor” of land use in Anoka.

The roots of zoning regulations are found in early 20th century law. A landmark Supreme Court case in 1926 - *Village of Euclid, Ohio v. Ambler Realty Co.* - established a city’s authority to separate certain land uses from others when one was deemed harmful to the safety or wellbeing of the users of the other. General regulations are enacted to make room for the vitality of daily community life, which means sometimes prohibiting certain land uses and other times combining compatible uses in innovative and beneficial ways.

The Zoning Map (Figure 2-6) divides the City into various zoning districts. The Zoning Ordinance sets forth the standards and criteria required for the use and development of land within these districts. Standards related to yards, opens space, lot area, building height limits, and building or hard surface lot coverage are typically included in the Zoning Ordinance and are identical for all properties within a particular district, unless further regulated by an overlapping district such as an Overlay Zone or a natural resources zone set by state or federal authorities.



# City of Anoka Zoning Map (Official)

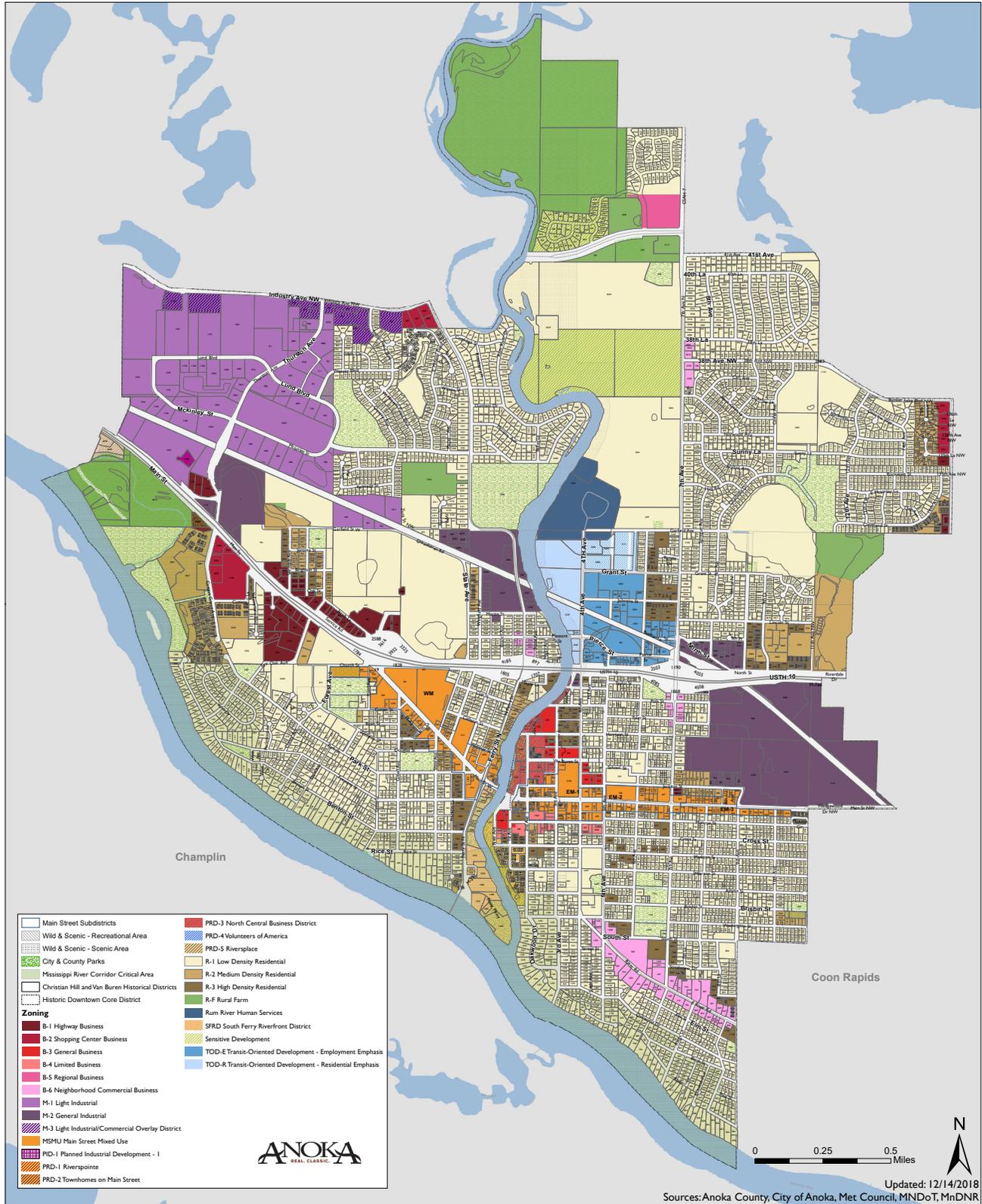


Figure 2-6: Zoning Map - City of Anoka

## PLANNING AREAS

### Commuter Rail Transit Village

The Commuter Rail Transit Village (CRTV) is a planned unit development of about 130 acres of public and privately-owned land centered on the Northstar Commuter Rail Station. Beginning operation in 2009, the Anoka Rail Station is located ¾ mile from the City’s central business district and is bounded by the Rum River on the west, the Anoka County Rum River Human Services Center (the former Anoka Metro Regional Treatment Center) on the north, County Road 7 (7th Avenue) on the east, and Highway 10 on the south. Having undergone multiple studies, this area is currently developing according to 2012’s Anoka Station Plan which addresses residential, commercial, public, and transportation land uses and infrastructure.

Approximately 40% of the CRTV area is vacant land, most of which is publicly owned. This area was previously used as a commercial/industrial area and much of the land is underutilized. Included in the

area are approximately 1.5 miles of river frontage along the east bank of the Rum River, as well as a segment of Rum River Trail along the riverfront, creating pedestrian and bicycle access to Anoka Station. This frontage is protected by Minnesota Wild and Scenic River regulations, and, in part, by a scenic conservation easement.

The transit-oriented development master plan for the CRTV includes construction of approximately 800 to 900 units of housing, 36,000 square feet of retail, 105,000 square feet of office, and 218,000 square feet of industrial/office showroom. This area is one of two primary redevelopment areas in the City, as shown in Figure 2-10, a portion of which is now shown as park in the Redevelopment Areas map on page 34 and Future Land Use Map (Figure 2-5) on page 26. This is because since development of the master plan, the city is planning for a park and canoe landing between the Rum River and 4th Avenue, just north of the BNSF railroad.



Figure 2-7: Map of proposed land uses for the Commuter Rail Transit Village area by Hoisington Koezler Group Inc.

### The Greens of Anoka

The Greens of Anoka is an area of roughly 233 acres (Figure 2-8) that is undergoing redevelopment planning. The area is bounded to the south by Highway 10, to the north by the BNSF railroad, to the west by Thurston Avenue, and to the east by State Avenue. It includes the Greenhaven Golf Course, Highland Park neighborhood, Castle Field, and other industrial, residential, and park uses. Key goals of redevelopment are the transferal of city-owned property to private ownership, improvement of connectivity in the area, and identification of appropriate and beneficial future land uses.

One of the primary goals established by the Housing Redevelopment Authority for this project is to develop design standards and determine appropriate land uses for this area. A distinctive environment that better integrates residential and commercial land uses and connects them to the surrounding community will further housing and economic development efforts. Part of this design focus, the Green Haven Golf Course is exploring a restructuring of its greens, fairways, and holes to create developable land while maintaining a competitive challenge for patrons.

### Highland Park Redevelopment

The Highland Park neighborhood is an area within the Greens of Anoka project that contains a mix of single-family and multi-family housing and has mix of commercial properties fronting along Highway 10. The City is currently working to acquire properties in the neighborhood to make room for a new parkway that will connect Thurston Avenue to the west and West Main Street to the east. The City is considering alignment options (Figure 2-9) of the planned parkway but no final decisions have been made. Creation of the new parkway is anticipated to create redevelopment opportunities along the adjacent roadway and golf course, consistent with the Greens of Anoka master plan.

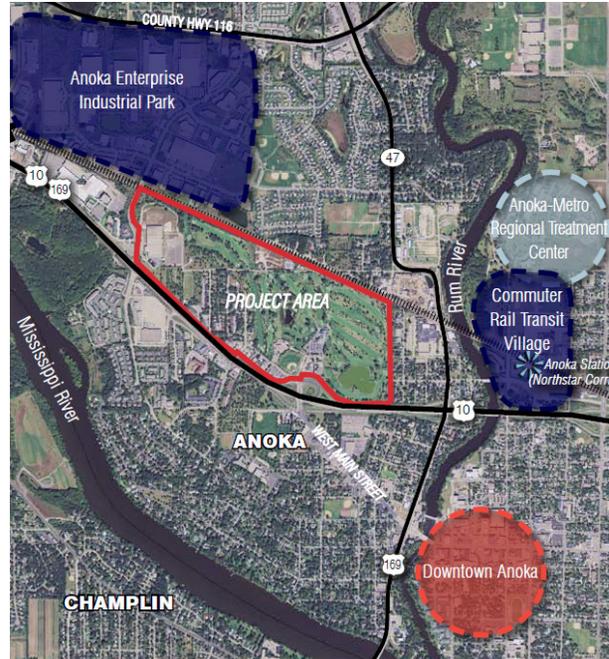


Figure 2-8: Contextual Map by the Hoisington Kogler Group Inc. with the Greens of Anoka project area outlined in red.

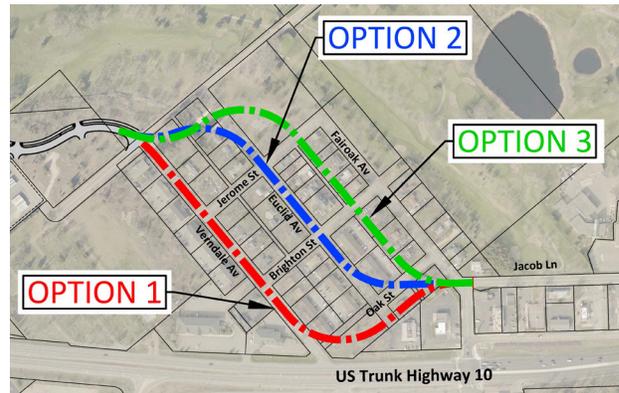


Figure 2-9: Future Green Haven Parkway alignment options.

# Redevelopment Areas

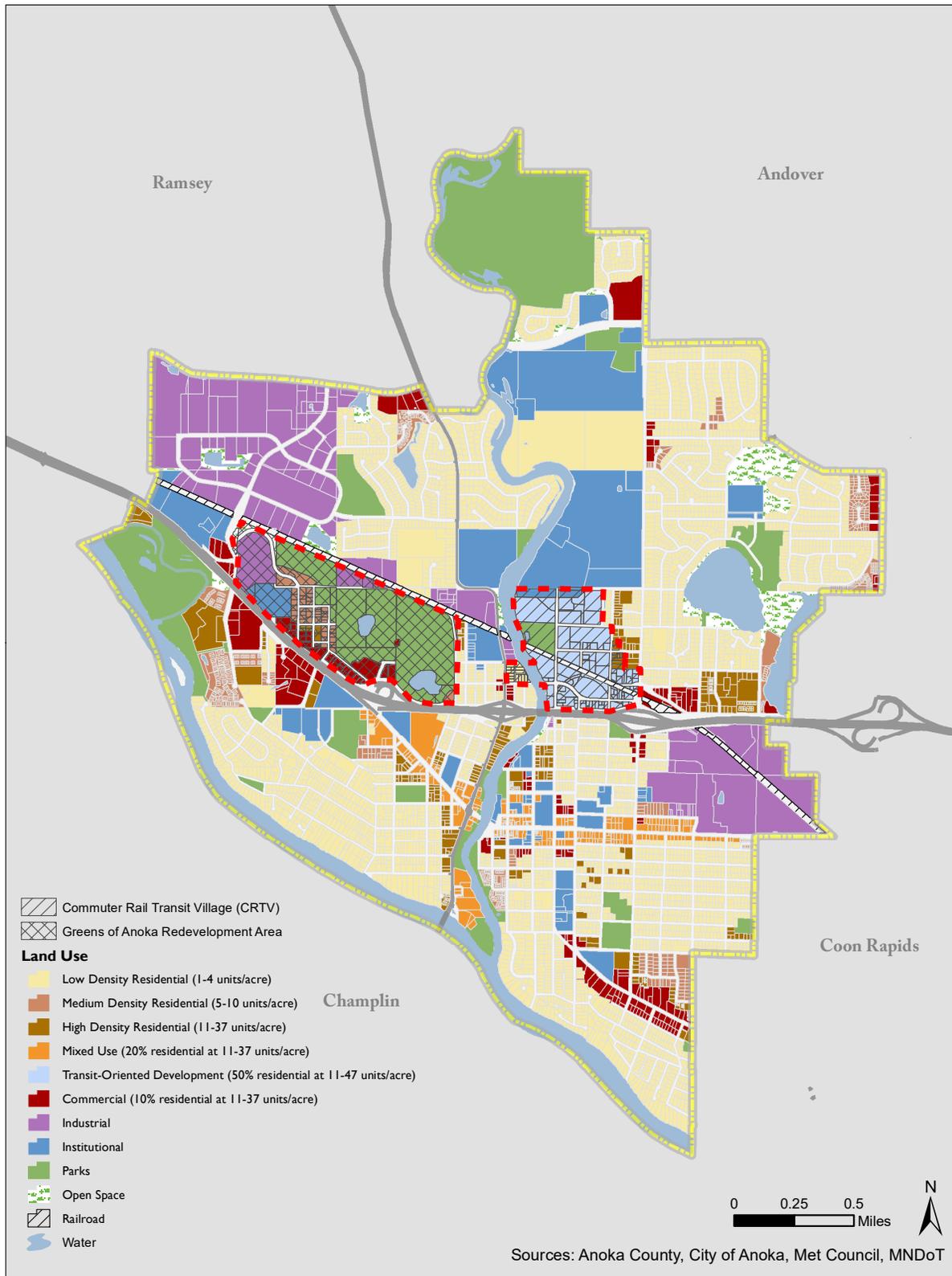


Figure 2-10: Redevelopment areas.

Residential Redevelopment Areas	Residential Land Use	Dev. Res. Acres	Current - 2021	2021 - 2030	2030-2040	Density Range			Planning Periods Units						Total units by 2040 (based on min. density range)	Net Residential Density (based on min. density range)
						Min.	Mid.	High	Min	Max	Min	Max	Min	Max		
Greens of Anoka	RL	11.35	5.675	5.675	0	1	2.5	4	5.675	22.7	5.675	22.7	0	0	11.35	3.9 units per acre
	RM	5.94	2.97	2.97	0	5	7.5	10	14.85	29.7	14.85	29.7	0	0	29.7	
	RH	1.83	0.915	0.915	0	11	24	37	10.065	33.855	10.065	33.855	0	0	20.13	
	Commercial (10% Residential)	18.39 x 10% = 1.839	0.613	0.613	0.613	11	24	37	6.743	22.681	6.743	22.681	6.743	22.681	20.229	
	Subtotal	20.959	1.23	1.23	1.23	1	2.5	4	1.23	4.92	1.23	4.92	1.23	4.92	81.409	
Commuter Rail Transit Village	RL	3.7	1.23	1.23	1.23	1	2.5	4	1.23	4.92	1.23	4.92	1.23	4.92	3.7	22.2 units per acre
	RH	3	1	1	1	11	24	37	11	37	11	37	11	37	33	
	TOD (50% Residential)	79 x 50% = 39.5	13.16	13.16	13.16	25	36	47	329	618.52	329	618.52	329	618.52	987	
Subtotal	46.2	1023.7														

Figure 2-11: Residential redevelopment staging and net residential density table.

## NATURAL RESOURCES

The City of Anoka engages in preservation, conservation, and restoration of the unique and distinctive natural features, ecosystems and landscapes of the city using sound resource management principles and practices at both a site-specific level and on a broader, landscape scale. Anoka’s important natural resources include naturally occurring ecosystems and their native species populations. Natural watercourses such as the Rum and Mississippi River receive a great amount of attention as assets to the city, region, and country. Stormwater and wetland management are continuing factors that affect development and land use, as well as vegetative stands, soils, slopes, and floodplains. These resources receive dedicated attention in the Environmental Resources and Mississippi River Corridor Critical Area chapters of this comprehensive plan.

## SOLAR ACCESS PROTECTION

Anoka’s solar resources are receiving new attention as a gateway to a wealth of renewable energy. A solar access protection element is included in the Comprehensive Plan to assure the availability of direct sunlight to solar energy systems. Solar energy can be used for all of our daily energy needs, and is used around the world without emissions that are harmful to our environment. Techniques for incorporating solar technology into residential, commercial, and industrial facilities are advanced and easily-integrated into power systems. Increasing our usage of solar energy would decrease our reliance on fossil fuels and nuclear power. These systems can be adopted and installed by governmental entities, corporate groups, and private residents. To ensure that direct sunlight access to solar panels is not subjected to shading from nearby trees, buildings, or other structures, access to sunlight is treated as a natural resource that must be guarded through a coordinated effort.

Below are Anoka’s solar resource calculations and Solar Suitability Map. Goals, policies, and strategies related to solar resources can be found with the rest from this chapter.

### Solar Resource Calculations

The gross solar potential and gross solar rooftop generation potential are estimates of how much electricity could be generated using existing technology and assumptions on the efficiency of conversion. The calculations estimate the total potential solar electricity before removing areas unsuitable for solar development or factors related to solar energy efficiency. The conversion efficiency of 10% is based on benchmarking analyses for converting the Solar Suitability Map to actual production, and solar industry standards used for site-level assessment.

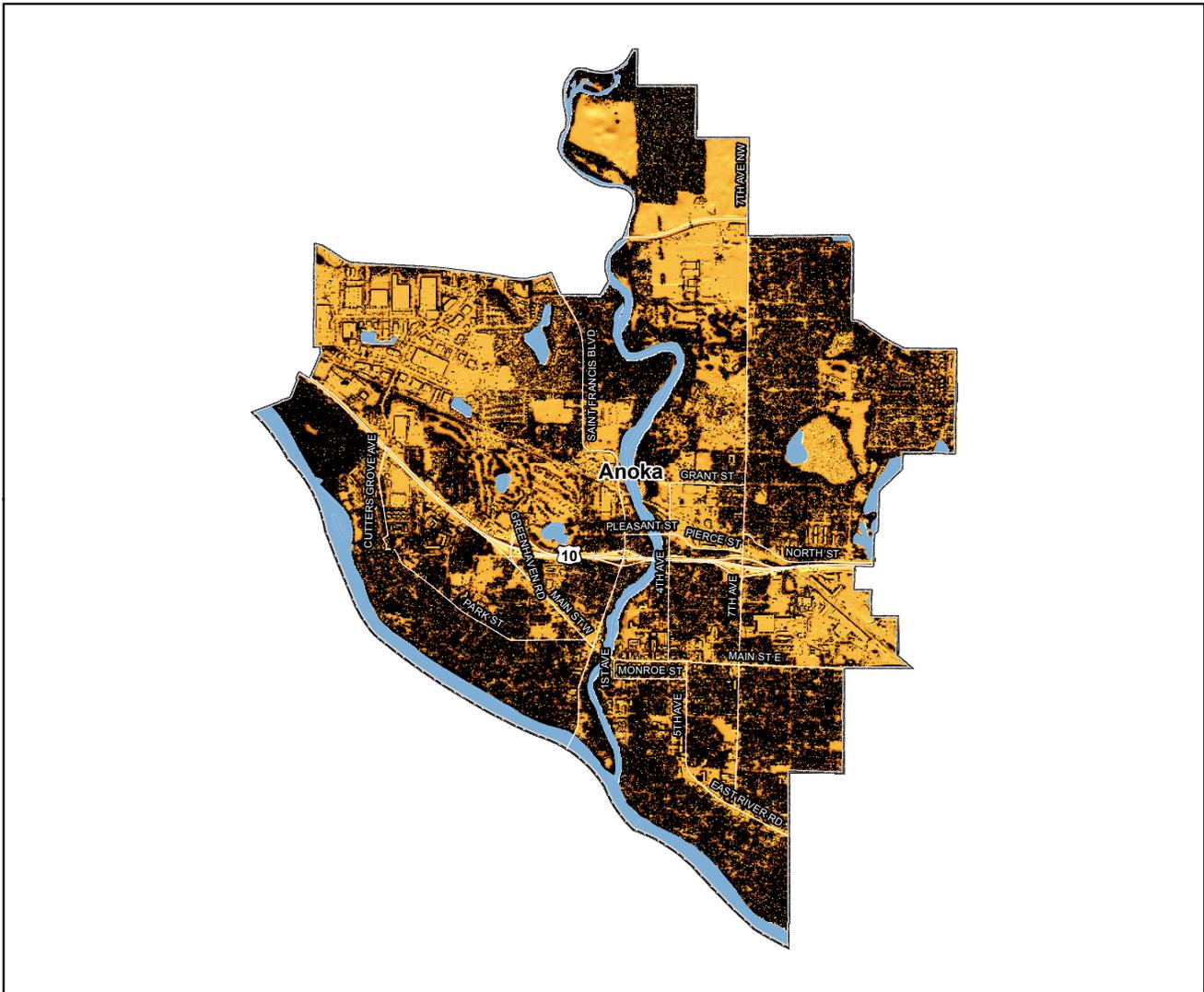
TABLE 2-5: SOLAR RESOURCES

Megawatts per year	Single-Family
Gross Potential	9,478,004
Rooftop-only Potential	1,219,562

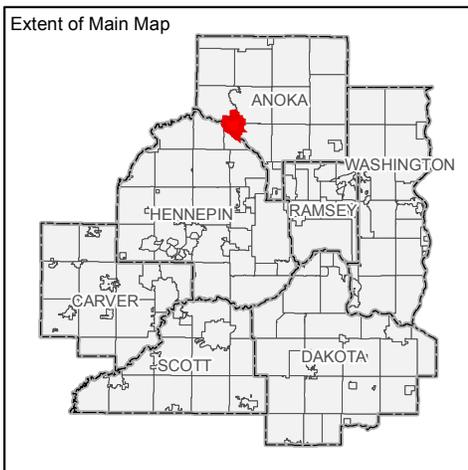
### Analysis of Solar Potential

As shown in the Gross Solar Potential map (Figure 2-10), Anoka’s industrial areas provide the community with immense capacity for capturing solar energy. Other areas with high potential are those without a heavy tree canopy like the Greenhaven Golf Course, Anoka high School sports fields, and the agricultural area near Rum River Shores. Development of solar technology in these areas is largely infeasible due to their current uses. Therefore, Anoka’s primary solar access policies focus on efficient integration of solar technology into commercial and residential properties.

# Gross Solar Potential City of Anoka, Anoka County



11/30/2016



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

High : 1265527  
Low : 900001

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

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

Figure 2-12: 2018 Gross Solar Potential - City of Anoka

## LAND USE GOALS & POLICIES

The purpose of this section is to provide a plan for guidance in assessing and analyzing changes in the City’s land use. As such, the following land use goals provide the basis for the City’s Land Use plans:

### GOAL LU-1

Consider physical development within a community-wide framework which recognizes the unique aspects of the City’s setting and ensures top quality design of new construction and development.

- Promote the application of urban design considerations which define and enhance the City’s unique character; define and improve the City’s desired physical characteristics and form, visual quality and order, and overall image and identity.

Urban design deals with the quality of the built environment -- how it looks, feels, functions, and how it embodies local culture and context. Urban design concerns both the built environment and the effects of urban development on the natural environment and the quality of life.

- Support programs and activities that foster community spirit and identity.
- Improve the image and appearance of existing commercial and industrial areas, with particular emphasis on the appearance of buildings, signage, and landscaping.
- Ensure that commercial, industrial, and residential sites and buildings are adequately maintained, and that corrective maintenance is undertaken as required.

### GOAL LU-2

Encourage a land use balance within the City to promote the efficient provision of City services, the generation of revenues to cover the cost of those services, and a mix of employment and housing opportunities. Land use balance refers to an appropriate mix of various land uses that are interdependent and mutually supportive.

- Ensure that public properties are maintained in a timely manner.
- Improve and upgrade older public utility and infrastructure facilities through a program of scheduled improvements.
- Continue to expand and continue to diversify the economic base.
- Encourage the provision of life cycle housing.

### GOAL LU-3

Assure that the City’s land development regulations provide for efficiency, compatibility, compliance, variety, flexibility, and innovations.

- Grant zoning changes only when it can be demonstrated that rezoning will result in a community or neighborhood benefit that outweighs any potential adverse impact upon surrounding properties. (Conformance with policies of the Community Plan and other adopted City plans may be used to demonstrate community or neighborhood benefit.)
- Incorporate performance standards, where appropriate, into land development regulations and criteria.

- Periodically review City ordinances and development regulations and amend, if necessary.

### GOAL LU-4

Protect and maintain the stability and diversity of the City’s neighborhoods.

- Prepare Neighborhood Master Plans.

Neighborhood Master Plans are intended to implement the goals of this comprehensive plan at a neighborhood level. Development of each Master Plan will include development of a generalized map which includes proposed uses, transportation systems, utility systems, drainage systems, and open space. Each plan should also establish minimum and maximum densities and be consistent with the overall comprehensive plan. The actual use of the land and existing zoning should be considered in preparation of master plans. Adoption of a Master Plan by the City Council may result in changes in the land use designations and zoning districts. In those instances, the Land Use Plan and Zoning Ordinance will be amended to reflect the change(s).

- Involve affected neighborhoods and property owners in proposed land use, development, and capital construction projects.
- Recognize and support the unique physical character and development patterns of neighborhoods.
- Ensure zoning changes in neighborhoods are compatible with the scale and physical character of the neighborhood.
- Encourage discussion between developers, the neighborhood, and the City, where appropriate, as part of the process of determining land use changes in neighborhoods.

- When reviewing master plans and rezoning requests, consider the impact on nearby neighborhoods, including neighborhood integrity, change in traffic volumes and patterns, changes in surface drainage, the effect of lighting and noise levels, and other changes that produce a clearly undesirable effect.

### GOAL LU-5

Promote, reinforce and maintain the Central Business District as the heart of the City and as a center for business, government, culture, arts, and special community events.

- Preserve, maintain, and enhance the historic character of the Central Business District as an important and irreplaceable community asset.
- Invite pedestrian activity, exhibit visual and physical quality in design to attract visitors and residents, and support economic vitality.
- Promote easy access to the Central Business District from all parts of the City.
- Strengthen the circulation and parking system in the Central Business District to provide safe and convenient vehicular travel that complements and enhances pedestrian movement.
- Encourage rehabilitation of buildings that are in disrepair.
- Further link and utilize the riverfront in and near the Central Business District.
- Continue landscaping, beautification, and maintenance efforts in the public areas of the Central Business District.

**GOAL LU-6**

Develop the Commuter Rail Transit Village

- Consider economic development, housing needs, and other land use needs in the city when developing the plans and determining future land use of these areas.
- Provide a compatible mix of land uses that support and complement transit oriented development near the station area.
- Concentrate a mix of complementary, well integrated land uses within walking distance of the transit station.
- Provides uses of a density and configuration that will capitalize on the presence of commuter rail service.
- Encourage a mix of commercial/office/light industrial uses that will create new jobs, generate tax revenue, attract new residents, and provide new amenities.
- Encourage development of higher-density housing options.
- Encourage and provide access to the riverfront.
- Incorporate standards for security (CPTED).
- Use urban design to enhance the community identity of the station area and make the area attractive, safe and convenient.
- Develop a marketing strategy to enhance the use of the Northstar light rail that will bring value to City property.



**GOAL LU-7**

Evaluate future use of City owned lands.

- Periodically update the City Council on City owned land that is under-utilized and could be used for future economic development where appropriate.
- Consider the citywide benefit of selling/developing City owned land.

**GOAL LU-8**

Set responsible protections around Anoka's renewable solar energy resources in order to enable Anoka residents and employees to maximize solar energy.

- Incorporate solar energy technology into existing and new residential, industrial, and commercial development;
  - Increase energy resilience of critical public facilities such as police, fire, and emergency and hazard response centers;
  - Amend Zoning Ordinance to exempt solar energy systems from applicable coverage and setback provisions;
  - Review City Code and future development plans for opportunities to implement requirements and incentives encouraging the use of solar technology;
- Engage in regulatory and financing best practices and solar energy programs such as the Department of Energy's SolSmart program and PACE financing.

# 3. HOUSING & COMMUNITY

Introduction  
Socioeconomic Conditions  
Housing Supply  
Housing Demand  
Goals & Strategies  
Implementation  
Strategy Glossary



## INTRODUCTION

Every ten years the City is required to update its Comprehensive Plan, and addressing and planning for the City’s Housing stock is a required part of that process. The purpose of this chapter is to evaluate the City’s existing housing stock and to plan for future housing needs based on household and population projections as required in the City’s 2015 System Statement prepared by the Metropolitan Council.

The existing neighborhood pattern and housing stock tells the story of how and where people live in the City today, and how neighborhoods and housing have developed over time in the community. In conjunction with understanding the physical qualities of the housing stock and neighborhood pattern, it is equally important to understand the demographic and socioeconomic trends that may influence where people choose to live, and what types of products may be demanded over the next 10-20 years. The following chapter summarizes the who, what, when and where of the housing stock in the community and concludes with some practical implementation tools to help the City achieve its housing goals and strategies identified within this chapter.

## HOUSING AND REDEVELOPMENT AUTHORITY (HRA)

The City’s Housing and Redevelopment Authority (HRA) prepared this chapter to comply with the 2015 System Statement and to reflect the City’s aspirations for the housing stock in the City over the next 20 years. The HRA is a separate legal entity governed by the laws of the State of Minnesota and will be responsible for administering and complying with many of the City’s implementation efforts, as described in Table 3032. The Anoka HRA has five commissioners who are appointed by the City Council for a five-year term.



**T&T DESIGNS** Plot Map Proof for Rum River Shores  
 T&T Designs, Inc. / T&T Advertising / T&T Art Studio  
 651.945.8582 | ttd@tandonline.com | www.tandonline.com

Please review and proof ALL parts, contact with feedback. Thank You

## SOCIOECONOMIC CONTEXT

A key consideration in preparation of the housing chapter of the Comprehensive Plan (“2040 Plan”) is to understand the socioeconomic conditions in the City today, and to plan for projected changes to population, households and employment over the next 20-years. As part of the comprehensive planning process, the Metropolitan Council prepares a System Statement for each community that includes projections for each of the main demographic and socioeconomic categories through 2040. These forecasts are meant to inform every element of the 2040 Plan development, and this data is particularly important to consider when preparing the housing chapter.

Table 3-1 and Figure 3-1 present the data as provided within the System Statement. While a significant portion of the land in the City of Anoka is developed, there remains some undeveloped areas that are available for development. A portion of that land, as demonstrated within the following tables, is projected to be developed with new households, while the remaining projected increase would likely be accommodated through redevelopment opportunities. As shown on Table 3-1, the City is projected to add approximately 1,600 new Households in the community, which correlates to an approximately 23% increase in households from the 2014 estimated number of households (per

Anoka County Parcel data, there are approximately 7,350 households in the community as of 2017, approximately 100-more units than the 2014 US Census estimate).

## POPULATION

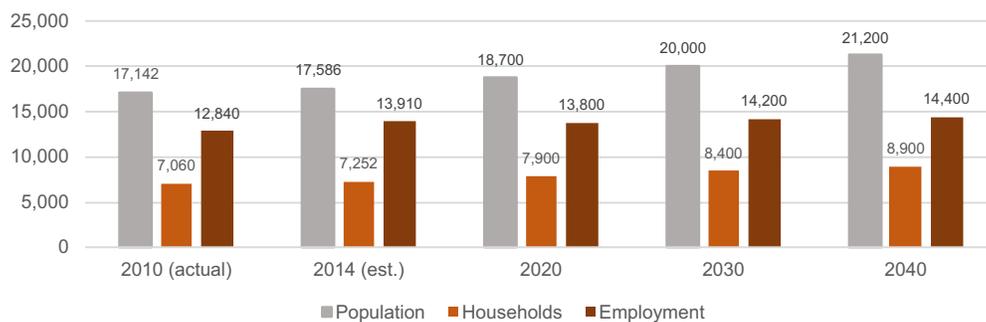
As shown in the Metropolitan Council projections, the City is expected to continue to increase in population over the next 20 years. As shown in Table 3-2: Population by Age, the estimated 2015 total population in the City was 17,244 people, which is slightly less than shown in the 2014 estimate provided by the Metropolitan Council (Table 3-1). While some new developments have been platted since 2015 and the new population is likely not reflected, the data still provides a good baseline to consider who is living in the community today.

TABLE 3-1: POPULATION, HOUSEHOLD, AND EMPLOYMENT PROJECTIONS FOR ANOKA, 2018

Year	Population	Households	Employment
2010 (actual)	17,142	7,060	12,840
2014 (est.)	17,586	7,252	13,910
2020	18,700	7,900	13,800
2030	20,000	8,400	14,200
2040	21,200	8,900	14,400

Source: Metropolitan Council 2015 Systems Statement – Anoka

FIGURE 3-1: METROPOLITAN COUNCIL THRIVE FORECASTS FOR POPULATION, HOUSING, AND EMPLOYMENT



Source: Metropolitan Council 2015 Systems Statement – Anoka

**Age of Population**

As shown in Table 3-2 and Figure 3-2, the City’s population age is following regional and national trends with respect to an increasing senior population. This is demonstrated clearly by the accelerated Median age from 2010 when the Median Age of the population was just under 34 years of age, and by 2015 the Median age is over 40-years of age. This increase in Median age is slightly higher than the 2015 estimated Median Age in the County which is approximately 38-years of age; and older than the Median age of the 7-County Metropolitan Area which is approximately 36.5 years of age. The City’s population is slightly older, and aging slightly faster, than Anoka County and the region as a whole.

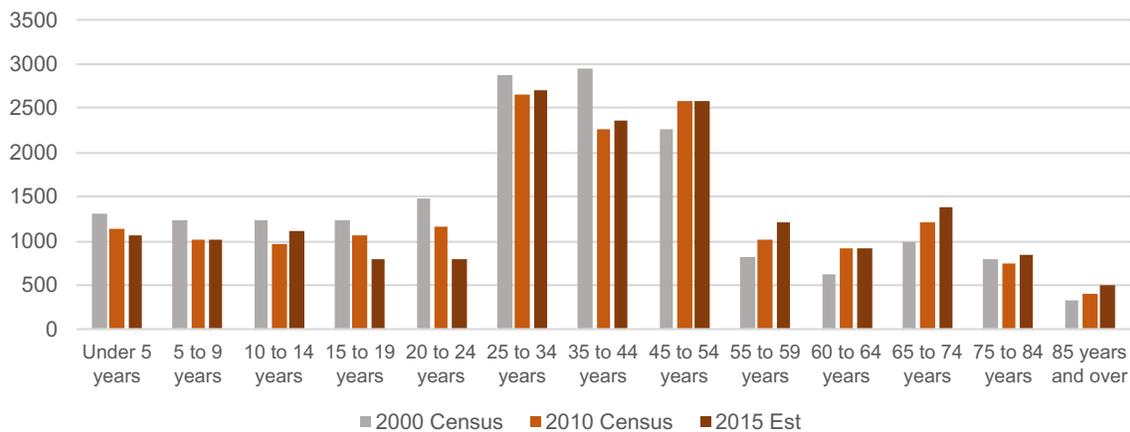
The age of the City’s population and surrounding areas is directly correlated to the types of housing, price points, and styles that current and future residents will demand. The age distribution is important to consider when planning for the future of the City’s housing stock, because demands of the existing population may change as they age and their family composition evolves.

TABLE 3-2: POPULATION BY AGE

Age Group	2000 Census	2010 Census	2015 Est.	% Change 2010 - 2015
Under 5	1,305	1,146	1,059	-7.6%
5 to 9	1,225	1,010	1,005	-0.5%
10 to 14	1,224	973	1,113	14.4%
15 to 19	1,230	1,071	784	-26.8%
20 to 24	1,468	1,166	794	-31.9%
25 to 34	2,877	2,661	2,709	1.8%
35 to 44	2,952	2,251	2,351	4.4%
45 to 54	2,266	2,573	2,570	-0.1%
55 to 59	818	1,016	1,210	19.1%
60 to 64	618	918	924	0.7%
65 to 74	988	1,206	1,391	15.3%
75 to 84	782	747	846	13.3%
85 and over	323	404	488	20.8%
<b>Total</b>	<b>18,076</b>	<b>17,142</b>	<b>17,244</b>	
<b>Median Age</b>	<b>33.9</b>	<b>37.6</b>	<b>40.5</b>	

Source: US Census, 2015 American Community Survey

FIGURE 3-2: POPULATION BY AGE



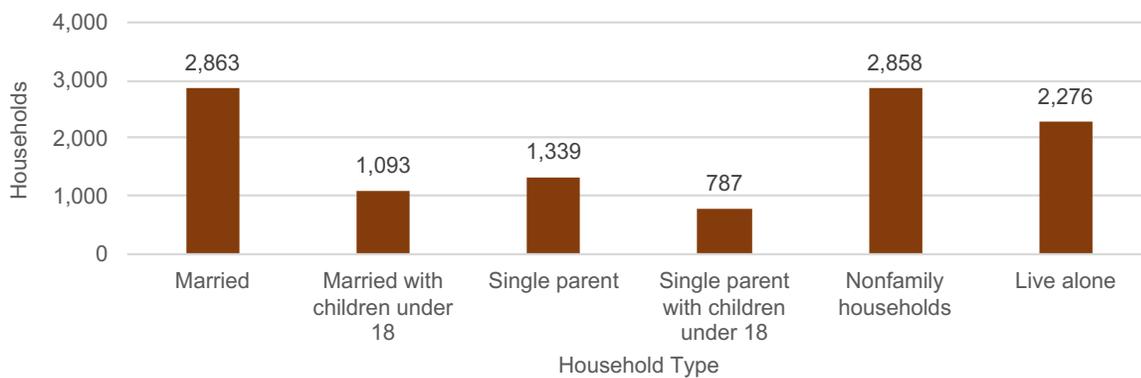
Source: US Census, 2015 American Community Survey

As shown in Table 3-2, approximately 28% of the City’s population is over 55 years old, and an additional approximately 15% of the population is over 45 years old. This represents over 40% of the City’s population, which is a significant percentage of the population that may desire housing styles other than a traditional single-family residence, particularly as some of these households become empty-nesters.



This trend was emerging in the 2030 Plan but has accelerated in recent years, as demonstrated by the percent change in the senior cohorts. The percent of the population over the age of 60 is expected to increase not only in the City, but in the County and throughout the 7-County Metropolitan Area with the aging of the baby boomer generation. This will likely continue to impact the types of housing demanded, which subsequently will likely impact the City’s existing housing stock.

FIGURE 3-3: HOUSEHOLD TYPE IN 2015



Source: US Census, 2015 American Community Survey

**Family Composition**

The Household type describes the family composition of the households in the community, which are described in terms of how many people, generally, may reside in a household; whether there are children in the home; or whether a person lives alone. As shown on Figure 3-3, approximately 27% of the households have children under the age of 18. This is slightly higher than Anoka County, and the 7-County Metropolitan Area. However, it does represent a decrease in the percent of households with children from 2000, where approximately 32% of the households had children under the age of 18 living in the home.

**Ethnicity (Diversity of Residents)**

The City’s population is becoming more diverse, which is consistent with the demographic trends of Anoka County and the 7-County Metropolitan Area. As shown in Table 3-3, an increasing percent of the population in the community identifies as more than one race. Approximately 90% of the population identifies as white, which is about 5% less than identified in the 2030 Plan, and about 6% identify as black or African American which is the race that experienced the most population gains in

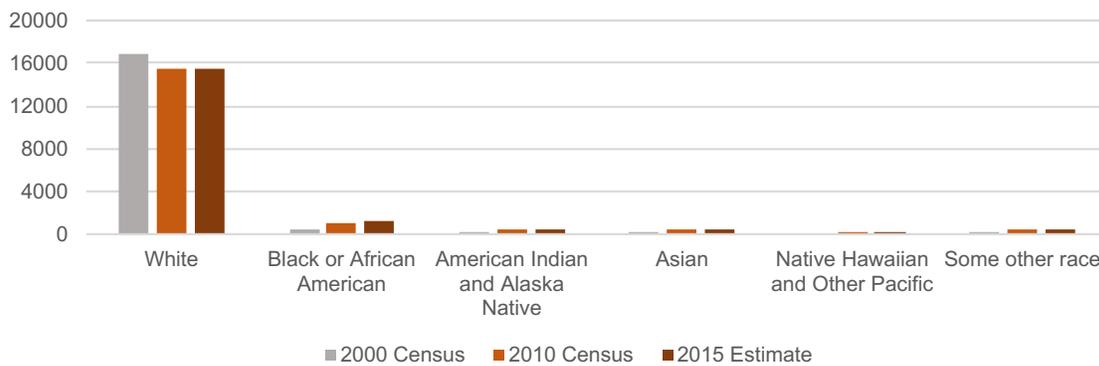
the City over the last decade. As the community becomes more diverse it will be important to evaluate what types of housing are needed to meet the demands of the changing population.

**TABLE 3-3: ETHNICITY (RACE ALONE OR IN COMBINATION)**

Ethnicity	2000 Census	2010 Census	2015 Est.	Percent of Population
White	16,837	15,543	15,452	89.6%
Black or African American	446	1,033	1,259	7.3%
American Indian and Alaska Native	190	357	378	2.2%
Asian	173	394	424	2.5%
Native Hawaiian and Other Pacific	0	13	1	0.0%
Some other race	93	345	401	2.3%
<b>Total Population</b>			<b>17,277</b>	<b>100%</b>

*Source: US Census, 2015 American Community Survey*

**FIGURE 3-4: ETHNICITY (RACE ALONE OR IN COMBINATION)**



*Source: US Census, 2015 American Community Survey*

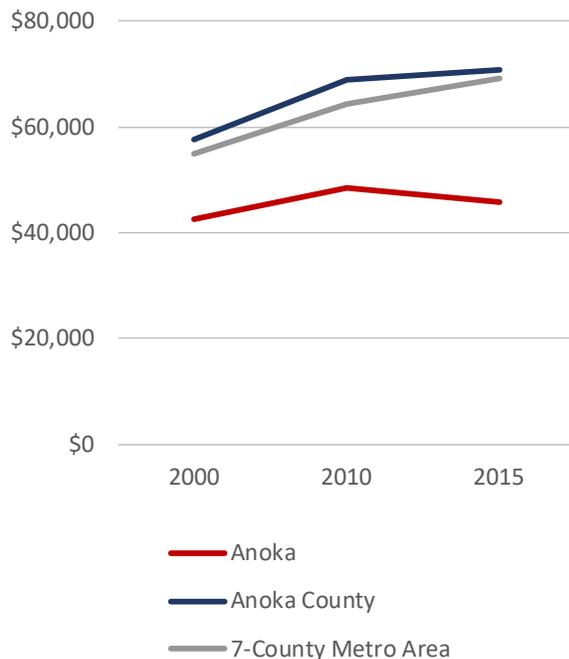
## INCOME AND EMPLOYMENT

It is important to consider the economic characteristics of the community’s residents because it helps inform what types of housing, and at what price points, might be most needed or necessary to preserve. The following section provides a brief summary and analysis of incomes in the community as well as what types of industries/jobs that residents in the City are employed. Other chapters of this plan will provide more detail regarding these characteristics, so the following summary focuses on how these characteristics are correlated to the existing and future housing stock.

### Median Income

As shown in Table 3-4 and Figure 3-5, the Median Incomes of residents in Anoka are about 35% less than the Median Incomes in the County, which is similar when compared to the 7-County Metropolitan Area.

FIGURE 3-5: MEDIAN HOUSEHOLD INCOME



Source: US Census, 2015 American Community Survey

TABLE 3-4: RESIDENT MEDIAN INCOMES IN THE CITY OF ANOKA, ANOKA COUNTY AND THE 7-COUNTY METRO AREA 2000-2015

Region	2000	2010	2015	% Change (2000 - 2015)
Anoka (City)	\$42,659	\$48,616	\$45,850	7.41%
Anoka (County)	\$57,754	\$69,028	\$70,873	22.72%
7-County Metro Area	\$54,807	\$64,471	\$69,266	26.32%

Source: US Census, 2015 American Community Survey

As shown in Table 3-4, the percent change between 2000 and 2015 indicates that the City’s Median Income increased, but did not change as much, or grow as fast as incomes in the County or the region in the same time period. Some of this can be explained by the characteristics of the existing housing stock, including the high percentage of multi-family and rental properties in the community. Additionally, it should be noted, that these numbers likely do not reflect or include new neighborhoods such as Rum River Shores. This may have an impact on Median Incomes of the City, given the anticipated market values of new homes being constructed (this is discussed further in subsequent sections of this chapter).

### Jobs and Industries

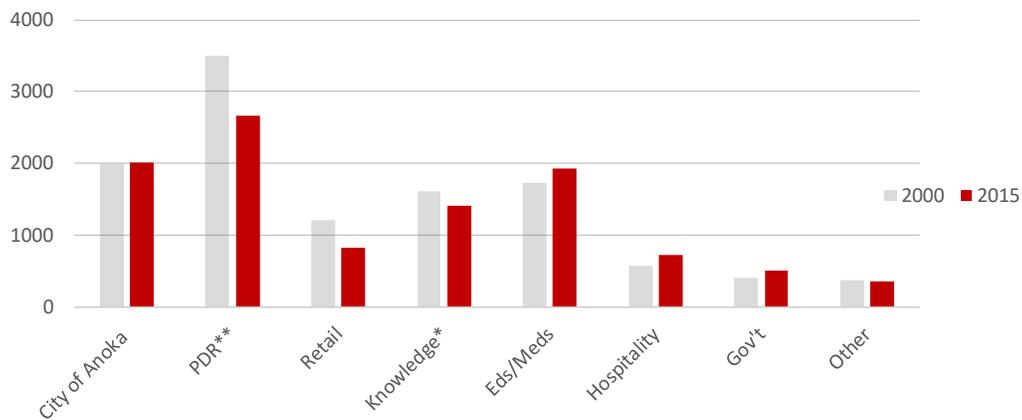
Income and jobs are often directly correlated, and it is important to understand what types of industries and jobs Anoka’s residents work because it can inform what types of housing may be needed today and in the future. As shown in Figure 3-6, Anoka’s residents are employed most in the industries of Production Distribution and Repair (PDR, which includes manufacturing, construction, utilities); the City of Anoka, and Education/Medical. Like many areas of the Twin Cities, residents experienced a fairly significant decline in the PDR industry, while

seeing some growth in the Education/Medical industries. (Full Data related to this information can be found on Table 3-5).

As shown on Table 3-5, across all industries, the total number of residents employed declined by approximately 961, while Anoka County and the 7-County Metropolitan increased employment.

This chapter does not attempt to answer why the employment changed, though age of the population is likely the most significant factor as residents enter retirement. However, if there is something else contributing to this decline, and it were to continue, it could have a significant impact on the housing stock, and the demand for affordable housing for example.

FIGURE 3-6: EMPLOYMENT CHANGE BY INDUSTRY 2000-2015



Source: US Census, 2015 American Community Survey

TABLE 3-5: EMPLOYMENT CHANGE BY INDUSTRY

City of Anoka																					
Industry	2000			2010			2015			Distribution			2000			2010			2015		
	2000	2010	2015	2000	2010	2015	2000	2010	2015	2000	2010	2015	'00-'10	'10-'15	'00-'15	'00-'10	'10-'15	'00-'15	'00-'10	'10-'15	
PDR**	3,499	2,655	2,673	37.2%	31.4%	31.7%	-844	18	-826	-24.1%	0.7%	-23.6%									
Retail	1,203	1,094	830	12.8%	12.9%	9.8%	-109	-264	-373	-9.1%	-24.1%	-31.0%									
Knowledge*	1,611	1,420	1,409	17.1%	16.8%	16.7%	-191	-11	-202	-11.9%	-0.8%	-12.5%									
Eds/Meds	1,731	1,953	1,928	18.4%	23.1%	22.8%	222	-25	197	12.8%	-1.3%	11.4%									
Hospitality	574	781	727	6.1%	9.2%	8.6%	207	-54	153	36.1%	-6.9%	26.7%									
Gov't	412	278	515	4.4%	3.3%	6.1%	-134	237	103	-32.5%	85.3%	25.0%									
Other	369	276	356	3.9%	3.3%	4.2%	-93	80	-13	-25.2%	29.0%	-3.5%									
Total	9,399	8,457	8,438	100%	100.0%	100.0%	-942	-19	-961	-10.0%	-0.2%	-10.2%									
Anoka County																					
Industry	2000			2010			2015			Distribution			2000			2010			2015		
	2000	2010	2015	2000	2010	2015	2000	2010	2015	2000	2010	2015	'00-'10	'10-'15	'00-'15	'00-'10	'10-'15	'00-'15	'00-'10	'15-'15	
PDR**	63,995	60,008	57,774	38.8%	34.2%	31.9%	-3,987	-2,234	-6,221	-6.2%	-3.7%	-9.7%									
Retail	20,667	20,723	20,526	12.5%	11.8%	11.3%	56	-197	-141	0.3%	-1.0%	-0.7%									
Knowledge*	30,087	33,147	35,231	18.2%	18.9%	19.4%	3,060	2,084	5,144	10.2%	6.3%	17.1%									
Eds/Meds	28,902	36,648	38,995	17.5%	20.9%	21.5%	7,746	2,347	10,093	26.8%	6.4%	34.9%									
Hospitality	8,450	11,406	13,202	5.1%	6.5%	7.3%	2,956	1,796	4,752	35.0%	15.7%	56.2%									
Gov't	7,599	7,833	8,849	4.6%	4.5%	4.9%	234	1,016	1,250	3.1%	13.0%	16.4%									
Other	5,401	5,669	6,613	3.3%	3.2%	3.6%	268	944	1,212	5.0%	16.7%	22.4%									
Total	165,101	175,434	181,190	100.0%	100.0%	100.0%	10,333	5,756	16,089	6.3%	3.3%	9.7%									
7-COUNTY METRO AREA																					
Industry	2000			2010			2015			Distribution			2000			2010			2015		
	2000	2010	2015	2000	2010	2015	2000	2010	2015	2000	2010	2015	'00-'10	'10-'15	'00-'15	'00-'10	'10-'15	'00-'15	'00-'10	'15-'15	
PDR**	468,424	356,457	392,961	28.8%	22.9%	23.1%	-111,967	36,504	-75,463	-23.9%	10.2%	-16.1%									
Retail	181,371	157,279	168,012	11.1%	10.1%	9.9%	-24,092	10,733	-13,359	-13.3%	6.8%	-7.4%									
Knowledge*	451,059	430,823	456,173	27.7%	27.6%	26.9%	-20,236	25,350	5,114	-4.5%	5.9%	1.1%									
Eds/Meds	274,382	348,911	392,590	16.9%	22.4%	23.1%	74,529	43,679	118,208	27.2%	12.5%	43.1%									
Hospitality	137,828	147,182	163,371	8.5%	9.4%	9.6%	9,354	16,189	25,543	6.8%	11.0%	18.5%									
Gov't	58,384	65,974	68,131	3.6%	4.2%	4.0%	7,590	2,157	9,747	13.0%	3.3%	16.7%									
Other	56,212	52,403	56,250	3.5%	3.4%	3.3%	-3,809	3,847	38	-6.8%	7.3%	0.1%									
Total	1,627,660	1,559,029	1,697,488	100.0%	100.0%	100.0%	-68,631	138,459	69,828	-4.2%	8.9%	4.3%									
United States																					
Industry	2000			2010			2015			Distribution			2000			2010			2015		
	2000	2010	2015	2000	2010	2015	2000	2010	2015	2000	2010	2015	'00-'10	'10-'15	'00-'15	'00-'10	'10-'15	'00-'15	'00-'10	'15-'15	
PDR**	37,900,038	30,226,593	32,787,642	29.3%	23.7%	23.8%	-7,673,445	2,561,048	-5,112,396	-20.2%	8.5%	-13.5%									
Retail	15,344,488	14,547,773	15,459,457	11.8%	11.4%	11.2%	-796,715	911,683	114,969	-5.2%	6.3%	0.7%									
Knowledge*	28,238,310	27,236,236	30,212,264	21.8%	21.3%	21.9%	-1,002,074	2,976,028	1,973,954	-3.5%	10.9%	7.0%									
Eds/Meds	24,788,001	30,235,490	32,782,750	19.1%	23.7%	23.7%	5,447,489	2,547,261	7,994,749	22.0%	8.4%	32.3%									
Hospitality	12,127,146	13,479,279	15,297,094	9.4%	10.6%	11.1%	1,352,133	1,817,815	3,169,948	11.1%	13.5%	26.1%									
Gov't	6,961,572	7,543,200	7,202,374	5.4%	5.9%	5.2%	581,628	-340,826	240,801	8.4%	-4.5%	3.5%									
Other	4,200,335	4,404,848	4,305,658	3.2%	3.5%	3.1%	204,513	-99,190	105,323	4.9%	-2.3%	2.5%									
Total	129,559,890	127,673,418	138,047,236	100.0%	100.0%	100.0%	-1,886,472	10,373,818	8,487,347	-1.5%	8.1%	6.6%									

\*\*PDR = Production, Distribution, and Repair industry sectors (i.e., Manufacturing, Construction, Transportation, Utilities, etc.)

## HOUSING SUPPLY

In order to plan for future housing needs in the City, it is important to first understand current neighborhood patterns and the existing housing stock. While a full analysis of land uses and neighborhoods are contained within other chapters of this 2040 Plan, it is important to understand how existing neighborhoods define the housing supply.

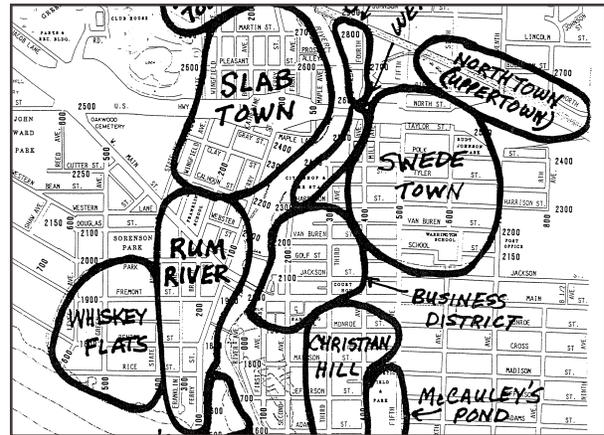
### Neighborhood Structure

The City has a balanced and diverse housing supply that includes single-family residential, townhomes and multi-family neighborhoods (See Table 3-7: Housing Structure Type for unit breakdown). The diversity in the housing stock establishes neighborhood patterns that influence the types of housing and options available in a specific area of the community, and also naturally constrains or establishes the square footage of housing and lots within an area. For example, many of the single-family neighborhoods were all constructed within a similar period making lot sizes, housing types, square footages and styles fairly homogeneous and/or similar. This creates a natural set of characteristics within the housing stock.

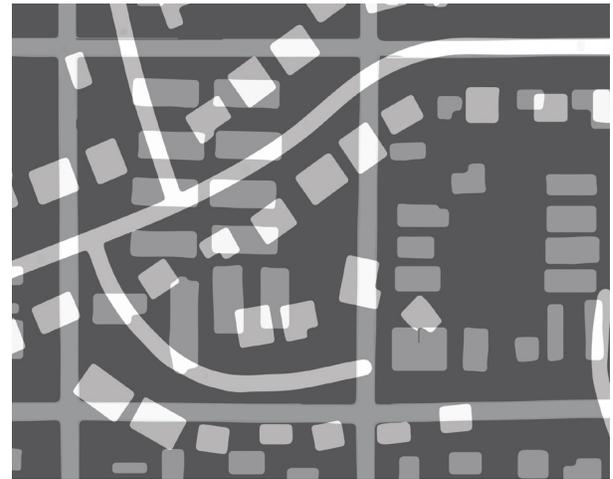
Existing neighborhood pattern is important to consider in conjunction with the changing population and household makeup since demands of the housing stock may change from what has traditionally been available in the community.

Analyzing the existing housing supply and neighborhood pattern helps inform decision-makers about what exists, the condition of housing, and what types of housing are readily available (enough supply) and what types of housing may not be available (not enough supply).

This section describes the structure, tenure, quality, and affordability of the housing stock in Anoka. These attributes compared with resident household characteristics provide a comprehensive overview



*Anoka has always valued the impact of stable, diverse neighborhoods.*



*Graphic by Meghan Teichmann.*



*This 1880s house at 210 Monroe was moved by its owners to 314 Monroe two blocks away to avoid demolition.*

of the existing housing stock and conditions that can be used to assist decision-makers to create solid housing policies and programs.

### Housing Structure

Just over half of the City’s existing housing stock is single-family detached homes, and there is a fairly large supply of multifamily homes to accommodate a wide variety of residential preferences and lifestyles. According to the 2015 American Community Survey (ACS) data collected by the US Census, there are a total of 7,526 housing units in the City, an increase of approximately 264 units since

the 2030 Plan. Of those units, approximately 52 percent (3,890 units) are single family, 42 percent (3,164 units) are multifamily and 6.0 percent (452 units) are townhomes. (Table 3-7).

According to Building Permit data, and as reflected on Table 3-6, since 2008 the City has added an additional 197 multi-family units, and 93 single-family detached homes further diversifying the housing options available.

**TABLE 3-6: BUILDING PERMITS SINCE 2008-2016**

Year	Multifamily (5 units or more)	Duplex, triplex & quad	Townhomes (single-family attached)	Single-Family Detached
2008	22	0	0	2
2009	0	0	0	2
2010	18	0	0	2
2011	0	0	0	2
2012	60	0	0	4
2013	0	0	0	11
2014	97	0	0	24
2015	0	0	0	26
2016	0	0	0	20
<b>TOTAL</b>	<b>197</b>	<b>0</b>	<b>0</b>	<b>93</b>

*Source: US Census, 2015 American Community Survey*

**New Developments**

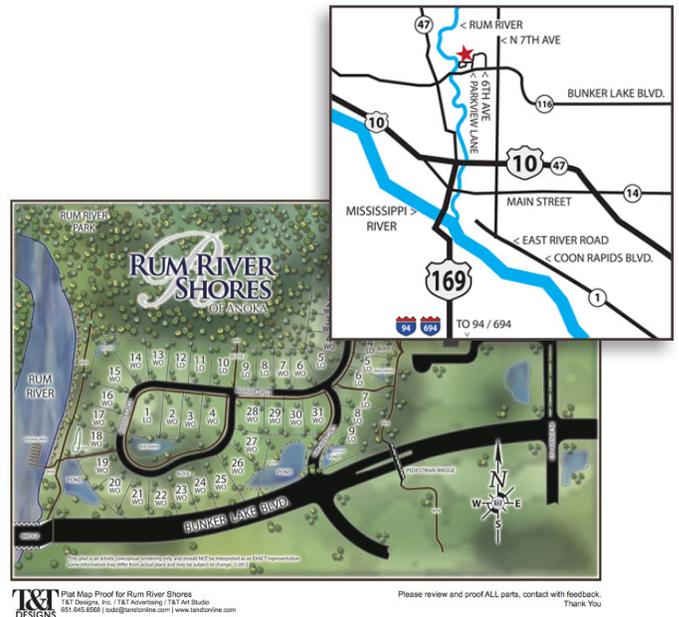
- Rum River Shores

Rum Rivers Shores is a new neighborhood located on the Rum River with 44 new lots available for development. The neighborhood provides opportunities for higher-end price points, with estimated market values of the new homes ranging in price from \$355,700 to \$789,800 with a median estimated market value (EMV) of \$355,700. The neighborhood includes four custom home builders, and based on the project development website (accessed in December 2017) 26 of the lots are currently occupied and/or sold, and 18 lots remain available.

Per the project website, lots range in price from approximately \$85,900 to \$120,900.

- 2nd Avenue and Monroe Street Urban Townhomes (Lennar)

The new project at 2nd Avenue and Moroe Street is a recently approved 16-unit attached urban townhome project to be developed by Lennar. The neighborhood is located near the City’s downtown and will offer a new owner-occupied urban townhome style product to the community that is not currently available in the area. The townhomes will be marketed starting at \$300,000 and are expected to be available beginning in late 2018.



*Rum River Shores is one of the recent developments of beautiful, high-quality, market-rate housing in Anoka.*



*Conceptual drawing by Lennar for the townhomes at 2nd Avenue and Monroe Street.*

TABLE 3-7: HOUSING STRUCTURE TYPE

7-County Metropolitan Area					Distribution by Type				Distribution by Tenure		
Structure Type	Total	Owned	Rented	Vacant	Total	Owned	Rented	Vacant	Owned	Rented	Vacant
1, detached unit	705,956	632,367	50,228	23,361	58.5%	80.5%	13.8%	41.3%	89.6%	7.1%	3.3%
1, attached unit	136,368	93,048	37,318	6,002	11.3%	11.8%	10.2%	10.6%	68.2%	27.4%	4.4%
2 units	32,815	6,727	23,053	3,035	2.7%	0.9%	6.3%	5.4%	20.5%	70.3%	9.2%
3 or 4 units	26,100	5,410	18,481	2,209	2.2%	0.7%	5.1%	3.9%	20.7%	70.8%	8.5%
5 to 9 units	29,698	5,610	22,420	1,668	2.5%	0.7%	6.1%	2.9%	18.9%	75.5%	5.6%
10 to 19 units	50,258	3,355	43,460	3,443	4.2%	0.4%	11.9%	6.1%	6.7%	86.5%	6.9%
20 to 49 units	76,693	7,767	63,623	5,303	6.4%	1.0%	17.4%	9.4%	10.1%	83.0%	6.9%
50 or more units	133,131	18,628	104,067	10,436	11.0%	2.4%	28.5%	18.4%	14.0%	78.2%	7.8%
Mobile Home	15,366	12,395	1,844	1,127	1.3%	1.6%	0.5%	2.0%	80.7%	12.0%	7.3%
Boat, RV, Van, etc.	353	105	248	0	0.0%	0.0%	0.1%	0.0%	29.7%	70.3%	0.0%
<b>Total Units</b>	<b>1,206,738</b>	<b>785,412</b>	<b>364,742</b>	<b>56,584</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>65.1%</b>	<b>30.2%</b>	<b>4.7%</b>

Anoka County					Distribution by Type				Distribution by Tenure		
Structure Type	Total	Owned	Rented	Vacant	Total	Owned	Rented	Vacant	Owned	Rented	Vacant
1, detached unit	91,438	83,698	5,166	2,574	71.0%	84.1%	20.7%	59.8%	91.5%	5.6%	2.8%
1, attached unit	15,371	10,748	4,143	480	11.9%	10.8%	16.6%	11.2%	69.9%	27.0%	3.1%
2 units	1,389	199	1,073	117	1.1%	0.2%	4.3%	2.7%	14.3%	77.2%	8.4%
3 or 4 units	1,291	299	948	44	1.0%	0.3%	3.8%	1.0%	23.2%	73.4%	3.4%
5 to 9 units	2,201	299	1,772	130	1.7%	0.3%	7.1%	3.0%	13.6%	80.5%	5.9%
10 or more units	12,926	697	11,454	775	10.0%	0.7%	45.9%	18.0%	5.4%	88.6%	6.0%
Mobile Home or other type	4,164	3,583	399	182	3.2%	3.6%	1.6%	4.2%	86.0%	9.6%	4.4%
<b>Total Units</b>	<b>128,780</b>	<b>99,522</b>	<b>24,955</b>	<b>4,302</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>77.3%</b>	<b>19.4%</b>	<b>3.3%</b>

Anoka (City)					Distribution by Type				Distribution by Tenure		
Structure Type	Total	Owned	Rented	Vacant	Total	Owned	Rented	Vacant	Owned	Rented	Vacant
1, detached unit	3,898	3,303	486	109	52.0%	88.3%	14.0%	36.4%	84.7%	12.5%	2.8%
1, attached unit	452	379	63	10	6.0%	10.1%	1.8%	3.5%	83.9%	13.8%	2.3%
2 units	341	11	299	31	4.6%	0.3%	8.6%	10.3%	3.3%	87.6%	9.1%
3 or 4 units	189	8	181	1	2.5%	0.2%	5.2%	0.3%	4.0%	95.6%	0.5%
5 to 9 units	489	0	469	20	6.5%	0.0%	13.6%	6.7%	0.0%	95.9%	4.1%
10 or more units	2,131	41	1,962	128	28.4%	1.1%	56.8%	42.5%	1.9%	92.1%	6.0%
Mobile Home	0	0	0	0	0%	0%	0%	0%	0%	0%	0%
<b>Total Units</b>	<b>7,500</b>	<b>3,742</b>	<b>3,460</b>	<b>299</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>49.9%</b>	<b>46.1%</b>	<b>4.0%</b>

Source: US Census, 2015 American Community Survey

**Housing Tenure and Average Household Size by Tenure**

In addition to the type of housing units, Anoka has an equally diverse and stable distribution of ownership and rental housing. Based on the US Census data, over the past 20-years, there has been a slight shift in the distribution of owner-occupied and renter-occupied housing in the community. As shown in Table 3-8, approximately 50% of the housing in Anoka is owner occupied, approximately 46% is renter occupied and approximately 4% of the housing units are vacant. When comparing the City of Anoka to Anoka County and 7-County Metropolitan Area, the City’s homeownership rates are significantly lower, while the percentage of renter-occupied units is significantly higher. This is important to consider when planning for new households, or addressing potential demands within existing neighborhoods over the next 20-years. The higher percentage and distribution of renter occupied housing was the impetus for the city’s recent moratorium that was adopted in an effort to study the city’s housing supply and to identify ways to encourage and promote development and maintenance of owner-occupied housing. As a result of that study, the City amended the rental licensing section of the city code by adopting a density cap ordinance. The City also reviewed and amended the permitted land uses and standards to assist in protecting and maintaining neighborhood character.

**TABLE 3-8: TENURE BY HOUSING TYPES**

	Owned	Rented	Vacant
7-County Metropolitan Area	65.1%	30.2%	4.7%
Anoka County	77.3%	19.4%	3.3%
City of Anoka	49.9%	46.1%	4.0%

*Source: US Census, 2015 American Community Survey*

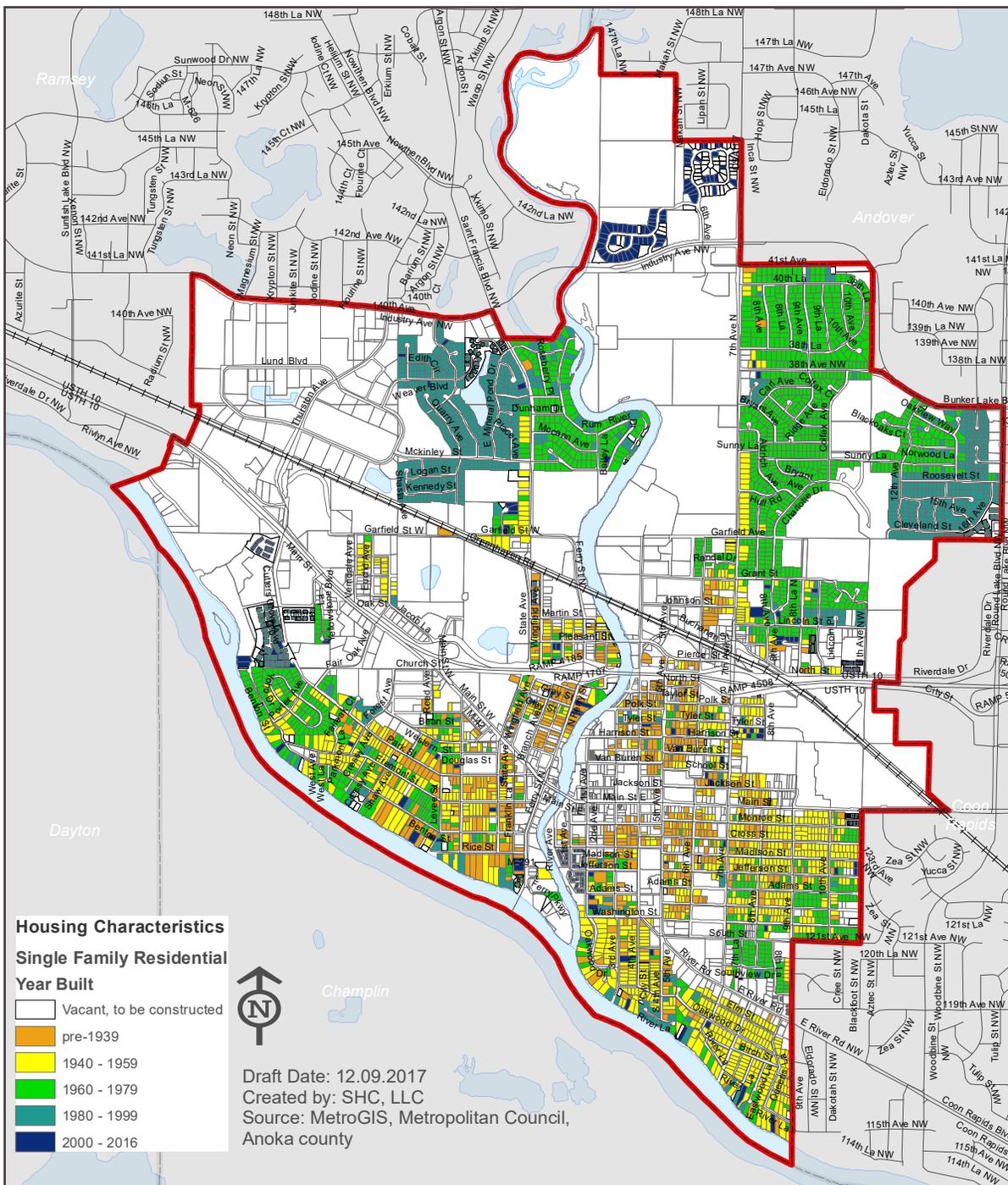
Table 3-9: 2015 Average Household Size also demonstrates a departure from the 2030 Plan data with respect to the average number of people living in a household in owner and rental occupied housing. As shown, the City has an average household size of 2.5 person in owner occupied units and 2.06 persons per household in renter-occupied housing. This is important to consider with respect to household types and mix because smaller household sizes may be reflective of the type of product available, or, it may be indicative of the aging population, or some combination of both.

**TABLE 3-9: 2015 AVERAGE NUMBER OF PERSONS PER HOUSEHOLD**

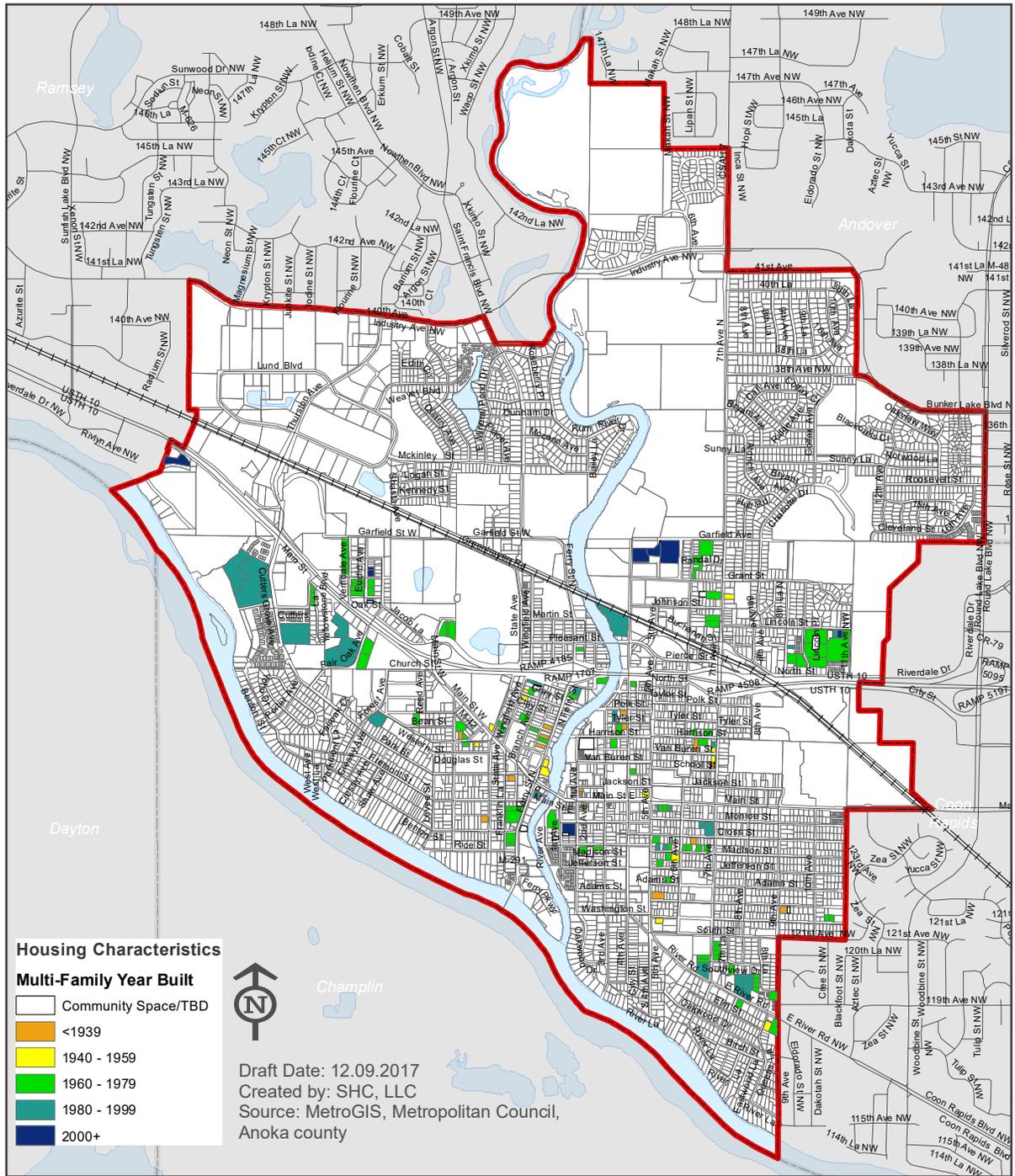
	City of Anoka	Anoka County
Owner-Occupied	2.5	2.76
Renter-Occupied	2.06	2.46

*Source: US Census, 2015 American Community Survey*

MAP 3-1: AGE OF SINGLE FAMILY STRUCTURES



MAP 3-2: AGE OF MULTI-FAMILY STRUCTURES



### Housing Quality

The quality of the existing housing stock is as important as the diversity of the housing types because it directly correlated to neighborhood and community character. Table 3-10: Year Housing Structure Built, shows that more than 80 percent of Anoka’s housing stock is more than 28 years old, and nearly 9.0% of the housing stock was constructed in 1939 or before. Anoka’s housing stock is some of the oldest in the county, so maintenance and management of these properties becomes increasingly more important as the structures, and oftentimes the neighborhoods in which they are located, continue to age. (See Map 3-1: Age of Single Family Structures and Map 3-2: Age of Multi-Family Structures.)



TABLE 3-10: YEAR HOUSING STRUCTURE BUILT

Year Built	City of Anoka	Anoka County	7-County Metro Area	Distribution		
				City of Anoka	Anoka County	7-County Metro Area
2010 or later	89	1,809	63,920	1.2%	1.4%	5.1%
2000-2009	332	21,536	160,119	4.4%	16.7%	12.8%
1990-1999	822	26,218	168,283	10.9%	20.4%	13.4%
1980-1989	1,240	22,757	182,888	16.5%	17.7%	14.6%
1970-1979	1,645	21,444	186,473	21.9%	16.7%	14.9%
1960-1969	1,358	16,272	129,086	18.0%	12.6%	10.3%
1950-1959	932	12,128	130,991	12.4%	9.4%	10.4%
1940-1949	435	2,852	50,459	5.8%	2.2%	4.0%
1939 or earlier	673	3,764	182,727	8.9%	2.9%	14.6%
Total Units	7,526	128,780	1,254,946	100.0%	100.0%	100.0%

Source: US Census, 2015 American Community Survey

Adequately maintaining the older housing stock is critical to the stabilization of neighborhood value and marketability of housing. In general, homes approximately 30 years of age or more require some level of maintenance and repair, particularly if some deferred maintenance has begun to take hold of as structure. Additionally, oftentimes structures 30-years or more require some modernization to remain functional and desirable to prospective buyers to effectively compete with modern amenities and construction. One of the most significant issues associated with neighborhood decline is if there is deferred maintenance of homes or lack of modernization of a older housing stock, so it is important for the City to be proactive in programs and services to help residents maintain their properties.

In Anoka, the housing maintenance and general housing condition issues are determined and monitored through the housing maintenance code and rental inspection process. In addition to identifying houses in need of maintenance, structures beyond repair have been identified and addressed over the years. The Anoka Housing and Redevelopment Authority (HRA) plays an active role in both promoting and creating housing programs which assist with the general maintenance and upgrade of housing in the City. The HRA's goal is to assist in providing solutions related to housing maintenance to help prevent blight and deterioration.

In April of 1994, the City of Anoka adopted Ordinance No. 1994-933, "Housing Maintenance Standards," which is now located in Chapter 48 of the City Code. These standards were created to help preserve the housing stock within the City of Anoka. In 2005, the City hired their first full time Property Maintenance Coordinator. Since that time, numerous properties in violation of this ordinance have been identified through resident complaints and more proactive City staff inspections. As a result, the housing stock in the City of Anoka is



being upgraded through general maintenance or demolition of dilapidated or nuisance properties.

In an effort to provide a safe living environment for the rental population the City of Anoka passed Chapter 48 Article II, a rental licensing ordinance, at its August 15, 2005 council meeting. Rental licensing requires all rental properties within the City of Anoka to obtain a rental license and be inspected. Rental licensing assures that rental housing in the City of Anoka is decent, safe, and sanitary and is operated and maintained so as not to become a nuisance to the neighborhood, foster blight and deterioration, or create a disincentive to reinvestment in the community. Rental licensing standards have been updated throughout the years.

The operation of rental residential properties is a business enterprise that entails certain responsibilities. Operators are responsible to take such reasonable steps as are necessary to assure that the citizens of the city who occupy rental units may pursue the quiet enjoyment of the normal activities of life in surroundings that are:

- safe, secure and sanitary;
- free from crimes and criminal activity, noise, nuisances or annoyances;
- free from reasonable fears about safety of persons and security of property;
- and suitable for raising children.

## HOUSING AFFORDABILITY

One of the most important factors in analyzing the housing stock is its affordability and marketability. Anoka has a very affordable housing stock and provides affordable home-ownership and rental options. Some of the characteristics that contribute to a more affordable housing stock can be attributed to the age of the housing stock, the smaller size of the homes, and also Anoka’s geographic location in the region. These same factors also contribute to the City’s marketability and housing value. With older and smaller homes, the average market value of the homes is less than that of other communities that may have more typical suburban size larger lots, homes and a newer housing stock.

Included within the 2015 System Statement provided by the Metropolitan Council, is an allocation of affordable housing need for the City of Anoka. The System Statement requires the City to plan for an additional 113 Affordable Units over the next 20 years (Table 3-11) While a substantial portion of the existing housing stock falls within an affordable ranges, the Metropolitan Council is establishing an allocation for the projected newly created households. As such, land use designations contained within other chapters of the 2040 Plan assign appropriate densities to developing or redevelopment areas to meet the Metropolitan Council’s affordable allocation.

**TABLE 3-11: AFFORDABLE HOUSING NEED ALLOCATION FOR ANOKA**

Percent of Area Median Income (AMI)	Units
At or below 30% AMI	58
31 to 50% AMI	0
51 to 80% AMI	55
Total Units	113

Source: Metropolitan Council 2015 Systems Statement - Anoka

### Definition of Affordability

There are several different definitions of affordable housing. The definition of affordable housing most frequently cited and measured in this chapter is that housing is affordable when households do not pay more than 30 percent of their income on housing costs. (Defined by the Federal Housing and Urban Development or “HUD”). When households have incomes at or below 80 percent of the area median income (AMI), costs associated with market rate housing (whether ownership or rental) become a challenge. This household group tends to pay more than 30 percent of their income on housing and has less disposable income to pay for other goods and services such as clothing, food, child care, transportation and medical expenses. In addition, those residents with lower incomes have significantly fewer housing choices to meet their family needs.

Per the Metropolitan Council’s directive within the 2015 System Statement, Cities within the 7-County Metropolitan Area are required to plan for the allocated number affordable housing units based on three levels of affordability which were prescribed by HUD for the Twin Cities Region. The three levels are: Extremely Low Income (30% of AMI or less); Very Low Income (31-50% of AMI); and Low Income (51-80% of AMI) where AMI is Area Median Income.

Table 3-12: 2015 Affordability of Housing Stock compiles an inventory of the estimated market value of ownership housing and of rental rates to determine what percentage of the City’s housing stock would be considered Affordable based on the levels established by HUD for the region. As shown, nearly 93% of the City’s housing stock is at or below the 80% of AMI, with nearly 50% of the housing stock at or below 50% of AMI. The City’s overall housing stock is affordable, and is more affordable than the County and the 7-County Metropolitan Area.

TABLE 3-12: 2015 AFFORDABILITY OF HOUSING STOCK

		Units	Total Units (2015 Est.)	% of Total Housing Stock
Number of Ownership Housing Units	Affordable at or below 30% of Area Median Income	9		
Number of Rental Housing Units	Affordable at or below 30% of Area Median Income	425		
<b>Total All Housing Units at or Below 30%</b>		434	7,526	5.8%
Number of Ownership Housing Units	Affordable at 31-50% of Area Median Income	1,355		
Number of Rental Housing Units	Affordable at 31-50% of Area Median Income	1,780		
<b>Total All Housing Units at 31-50%</b>		3,135	7,526	41.7%
Number of Ownership Housing Units	Affordable at 51-60% of Area Median Income	1,467		
Number of Rental Housing Units	Affordable at 51-60% of Area Median Income	800		
<b>Total All Housing Units at 51-60%</b>		2,267	7,526	30.1%
Number of Ownership Housing Units	Affordable at 61-80% of Area Median Income	654		
Number of Rental Housing Units	Affordable at 61-80% of Area Median Income	478		
<b>Total All Housing Units at 61-80%</b>		1,132	7,526	15.0%
Number of Ownership Housing Units	Affordable at 81-115% of Area Median Income	183		
Number of Ownership Housing Units	Affordable above 115% of Area Median Income	110		
Number of Rental Housing Units	Affordable above 80% of Area Median Income	415		
<b>Total All Housing Units at 80-115%</b>		708	7,526	9.4%
<b>Total at 80% or Below</b>		<b>6,968</b>	<b>7,526</b>	<b>92.6%</b>

Source: US Census, 2015 American Community Survey

### Ownership Housing Affordability

Table 3-12: 2015 Affordability of Housing Stock shows that there are 3,668 existing ownership households available out of a total of 3,753 ownership households in the City. This is over 95% of the ownership households in the City.

The Table 3-13: Affordable Purchase Price for Owner Occupied Housing identifies what housing costs/prices would meet each of the affordability levels for home ownership in the City of Anoka:

**TABLE 3-13: AFFORDABLE PURCHASE PRICE FOR OWNER OCCUPIED HOUSING**

Year of Purchase	Price at 30% of AMI	Price at 50% of AMI	Price at 80% of AMI
2016	\$82,800	\$148,000	\$235,000
2015	\$84,500	\$151,500	\$238,500

Source: Metropolitan Council

The median estimated market value (EMV) of owner occupied housing in the City is approximately \$164,700 which falls between the 50-80% AMI levels as shown on Table 3-13. The City’s median EMV is less than Anoka County that has a median EMV of \$187,000, further demonstrating the relative affordability of the City as compared to the region. Map 3-3 also shows median values of homes demonstrating that affordable housing is available throughout most neighborhoods in the community.

### Rental Density Cap

On September 17, 2018, the Anoka City Council adopted an ordinance regulating the density of single-family rental dwellings in the City of Anoka. In any R-1, R-2, R-3, R-4, or MS zoning district, no more than 10% of single-family homes on single-family lots on any block shall be eligible to obtain a rental license. Rental dwellings of two or more

units are not affected. The ordinance took effect on September 28, 2018.

This amendment was motivated by Anoka’s high proportion of rental units compared to owner-occupied units, standing at about 48% rental. Concerns over speculative home purchases, code violations, and nuisance calls to police prompted staff to study methods for addressing rental housing. Anoka follows cities like West Saint Paul and North Mankato in enacting this 10% cap.

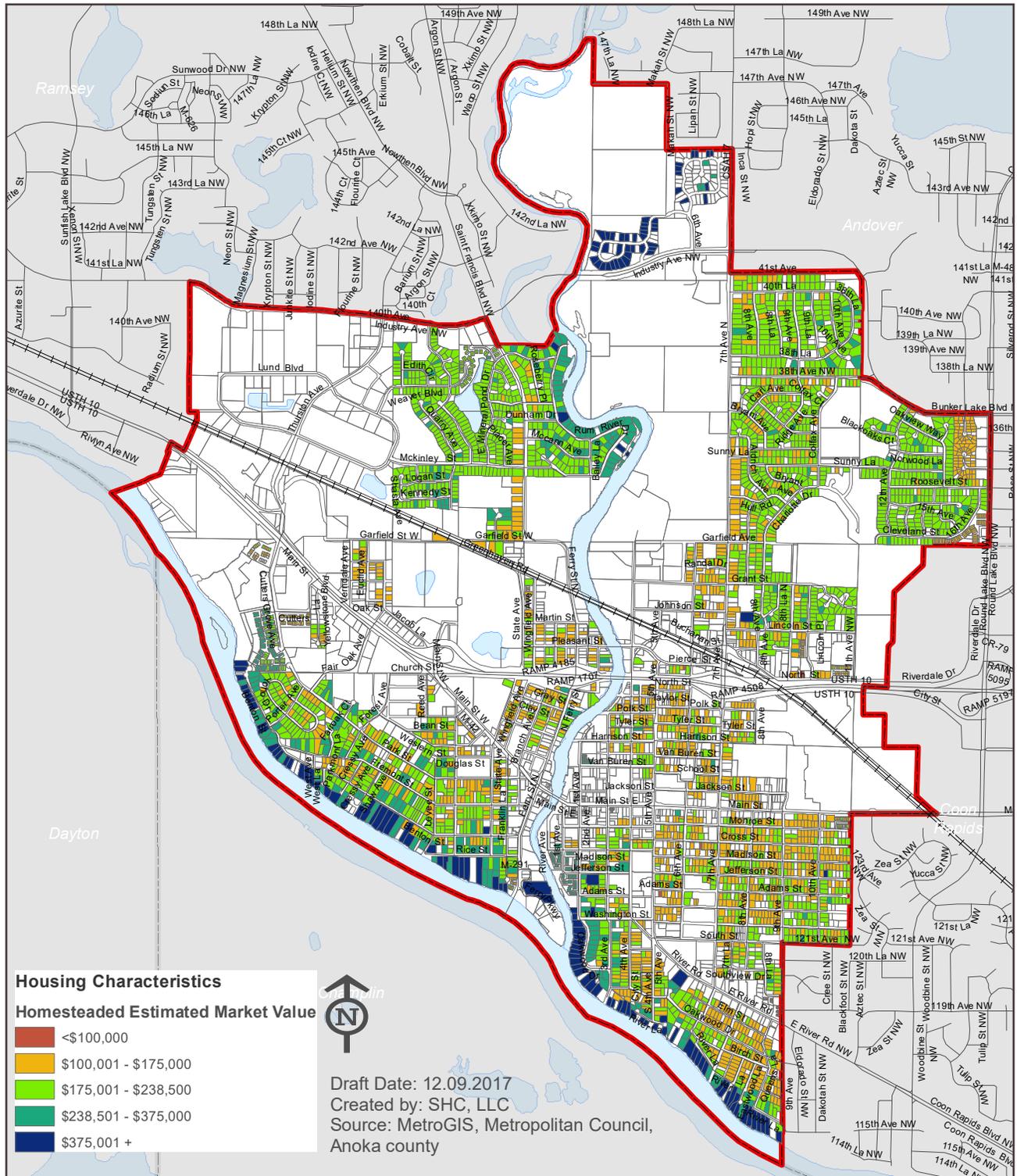
**TABLE 3-14: ESTIMATED MARKET VALUE OF OWNER OCCUPIED HOUSING**

Estimated Market Value of Owner Occupied Housing	Number of Units	Percentage
Less than \$50,000	123	3.3%
\$50,000 to \$99,999	240	6.4%
\$100,000 to \$149,999	982	26.2%
\$150,000 to \$199,999	1,447	38.6%
\$200,000 to \$299,999	672	17.9%
\$300,000 to \$499,999	157	4.2%
\$500,000 to \$999,999	131	3.5%
\$1,000,000 or more	1	>0.1%
<b>Total</b>	<b>3,753</b>	<b>100.0%</b>
<b>Median (dollars)</b>	<b>\$164,700</b>	

Source: US Census, 2015 American Community Survey, Anoka County GIS



MAP 3-3: ESTIMATED MARKET VALUE OF OWNER-OCCUPIED HOUSING



### Rental Housing Affordability

The 2015 ACS estimates that there are approximately 3,356 rental units in the City, which includes apartments, senior complexes, and single-family homes. Since the housing bust, cities have experienced strong rental demand which is continuing even as the economy recovers. The City continues to have a vacancy rates at less than 5%, and that trend is expected to continue as millennials,

price since pricing is often based on a price-per-foot calculation.

### Distressed Housing and Foreclosures

Home foreclosures and distressed housing can impact a neighborhood, resale values, and the overall community. Oftentimes when homeowners are in a position of short sale or foreclosure their properties can fall into disrepair, experience deferred

TABLE 3-15: AFFORDABLE RENTAL RATES

Housing Type	Affordable rent (including utilities) at 30% of AMI	Affordable rent (including utilities) at 50% of AMI	Affordable rent (including utilities) at 80% of AMI
Studio	\$450	\$751	\$1,201
1-BR	\$483	\$805	\$1,288
2-BR	\$579	\$966	\$1,545
3-BR	\$669	\$1,115	\$1,784
4-BR	\$747	\$1,245	\$1,992

Source: Metropolitan Council

seniors, and those with limited incomes continue to participate in the rental market. The City's rental market has remained strong over the past decade likely due to market and economic conditions, the relatively affordability of units and range of choices available. As shown in Table 3-16, the Median rent in the City is \$856/month, that would be within the affordable range at 80% of AMI, for a 1-bedroom, and at 30-50% AMI for a 2-bedroom. As shown in the table, Anoka's median rent is approximately 12% less than the median rent of Anoka County, which makes the City one of the more affordable places to rent in the county.

maintenance and potentially become vacant homes. After the housing bust of the late 2000s, the number of foreclosure and short sales have slowly declined, however, distressed properties continue to be present in the market. Over the last five years (2012) there have been 271 distressed sales in the

TABLE 3-16: ESTIMATED RENTAL RATES

Gross Rents Paid (2015 Estimates)	City # of Units	Anoka County
Less than \$500	271	1,464
\$500 to \$999	2,014	11,383
\$1,000 to \$1,499	724	7,907
\$1,500 to \$1,999	242	2,735
\$2,000 to \$2,499	88	391
\$2,500 to \$2,999	0	94
\$3,000 or more	17	42
Total Units w/Rent	3,356	24,016
Median (dollars)	\$856	\$971

Source: US Census, 2015 American Community Survey

There are several factors contributing to why the City's rental stock is relatively affordable as compared to the region. First, the multi-family housing stock is aging similarly to the single family housing stock, and few new projects have been constructed recently. Second, unit sizes, including single-family rentals, have smaller square footages due to their age which also affects the overall rental

City according to sales data collected from the MLS and the Minneapolis Association of Realtors.

While the foreclosure crisis has subsided, it continues to be a part of the real estate market place. Some homes may go unoccupied and not be maintained properly for a period of time, potentially putting additional burden on code enforcement staff and increasing the potential for a declining appearance of neighborhood housing and home values. These potential newly vacant homes may be an opportunity for affordable housing purchases. Conversely, the vacant homes may also attract investment buyers who in turn rent the homes given the demand for rental properties in the area.

Prior to the 2030 Plan, the city updated its vacant building registration ordinance to better identify, inventory, and monitor vacant buildings. The program addresses buildings with code compliance issues by requiring the owner to submit a plan of action to address code violations even though the property is vacant. This ordinance, coupled with a strong housing foreclosure plan, will help the city to overcome many of the negative effects of increasing foreclosed properties.

**Publicly Subsidized Units**

There are a total of 264 subsidized housing units in the City. The following table summarizes the available subsidized units in the community. There is currently a one to two year waiting list for subsidized senior housing in Anoka with a longer waiting list for subsidized family housing.

**TABLE 3-17: PROPERTIES WITH SUBSIDIZED HOUSING BY POPULATION SERVED**

Building/Complex	Units	Affordability Level	Population Served	Expiration
Walker on the River	45	30% AMI	Senior	2032
Bridge Square	101	30% AMI	Senior	2001
Sunny Acres	52	30% AMI	Family	2009
Franklin Lake	66	60% AMI	Senior/Disabled	2030

Source: HUD

**Cost Burdened Households**

The lower Median Income of Anoka is correlated with the aging of the City’s residents and the higher than average single parent households. The lower Median income and higher housing cost burden of a community may affect a resident’s ability to reinvest and maintain their home and may be justification to provide resources for home

**TABLE 3-18: HOUSEHOLDS COST-BURDENED BY AFFORDABILITY LEVEL**

Income level	Households that are burdened at this affordability level
At or below 30% AMI	1056
31% to 50% of AMI	903
51% to 80% of AMI	482

Source: Metropolitan Council, 2015 American Community Survey

improvement and other programs to assist cost burdened households. Support for providing home improvement resources is also justified by the percentage of households that pay over 30 percent of their income on housing, and are thus burdened by the cost of housing which reduces the amount of income available for other needs such as food, medical, transportation, etc. According to 2015 ACS Census data, approximately 2,441 households are burdened by housing costs at some level (Table 3-18).

# HOUSING DEMAND

## FUTURE HOUSING OPPORTUNITIES AND CHALLENGES

As described in the Land Use chapter of this 2040 Plan, the City is designated by the Metropolitan Council as “Suburban” which is defined as, “... communities [which] experienced continued growth and expansion during the 1980s and early 1990s, and typically have automobile-oriented development



patterns at significantly lower densities than in previous eras. Suburban communities are expected to plan for forecasted population and household growth at average densities of at least 5 units per acre for new development and redevelopment. In addition, Suburban communities are expected to target opportunities for more intensive development near regional transit investments...” Given the community’s designation, the following considerations regarding housing in the City are provided:

### Land Uses and New Developments in the City

Vacant and underutilized land continues to be developed and redeveloped in the city consistent with the City’s Future Land Use Plan. The Land Use chapter of this 2040 Plan describes anticipated uses per land use designation, and specifically identifies anticipated densities within each residential land use designation. The following table is a reference to the Land Use chapter, which contains more details:

TABLE 3-19: FUTURE LAND USE & HOUSEHOLD PROJECTIONS

Future Land Use Designation	Density	Uses/Development Pattern	Change in Acres from ELU	Units available by 2040
Low Density Residential (RL)	1-4 Dwelling Units/Acre	Primarily single-family neighborhoods, includes older established neighborhoods and new developments such as Rum River Shores.	+89	89 - 356
Medium Density Residential (RM)	5-10 Dwelling Units/Acre	This includes attached and detached products, such as small-lot single family, villas, townhomes and row homes	+34	170 - 340
High Density Residential (RH)	11 -37 Dwelling Units/Acre (eligible to increase with PUD)	This land use is primarily multi-family product, including condominium and apartment style products – this land use designation and available acreage fulfills the Metropolitan Council’s requirements regarding Affordable Housing Allocation	-10	NA - no known redevelopment of RH, existing units projected to remain
Transit Oriented Development (20% High Density Residential)	11-37 Units/Acre (up to 50 with PUD)	This land use designation is a mix of uses, and allows for high density residential uses including apartments, condominiums, senior facilities, etc.	+15.8 (Acres is 20% of 79 total TOD Acres)	174 - 585 (eligible to increase with PUD)

As of March 2017, the City had several sites for sale within the Transit Oriented Development designated land use. These properties represent an example where new housing product could be developed to meet the population and household projections provided within the Metropolitan Council's System Statement. These sites are included in the City's continually-updated Development Opportunities booklet.

According to Anoka County GIS records, average Single-family livable square footage is 1,297 square feet, which includes newly constructed homes such as those located in the Rum River Shores development. It is important to note that new homes tend to have significantly more square footage than those constructed prior to 1990, so while the average total square footage may seem comparable to other communities, once the new developments are removed from the calculation, the older housing stock causes the average to drop closer to an average finished square footage of 1,000 feet or less. This can become a challenge, particularly as seniors move from existing single-family homes, and younger generations expect more square footage with more modern amenities. This dynamic naturally encourages a more affordable housing stock, but also presents an opportunity for the city to rethink how smaller single-family homes might be retrofitted, reconfigured, or designed to meet the demands of new and younger families.

### Increasing Median Sales Price

It is worth noting, that since 2013 the City's Median Sales price is increasing year over year. This is likely due in part to new developments, but also is likely due to some recovery in the marketplace.

TABLE 3-21: MEDIAN SALES PRICE – SINGLE FAMILY

Year	Number of Sales	Median Price	Percent Change
2013	185	\$147,000	NA
2014	171	\$167,500	13.95%
2015	185	\$180,000	7.46%
2016	245	\$197,000	9.44%
2017	221	\$208,000	5.58%

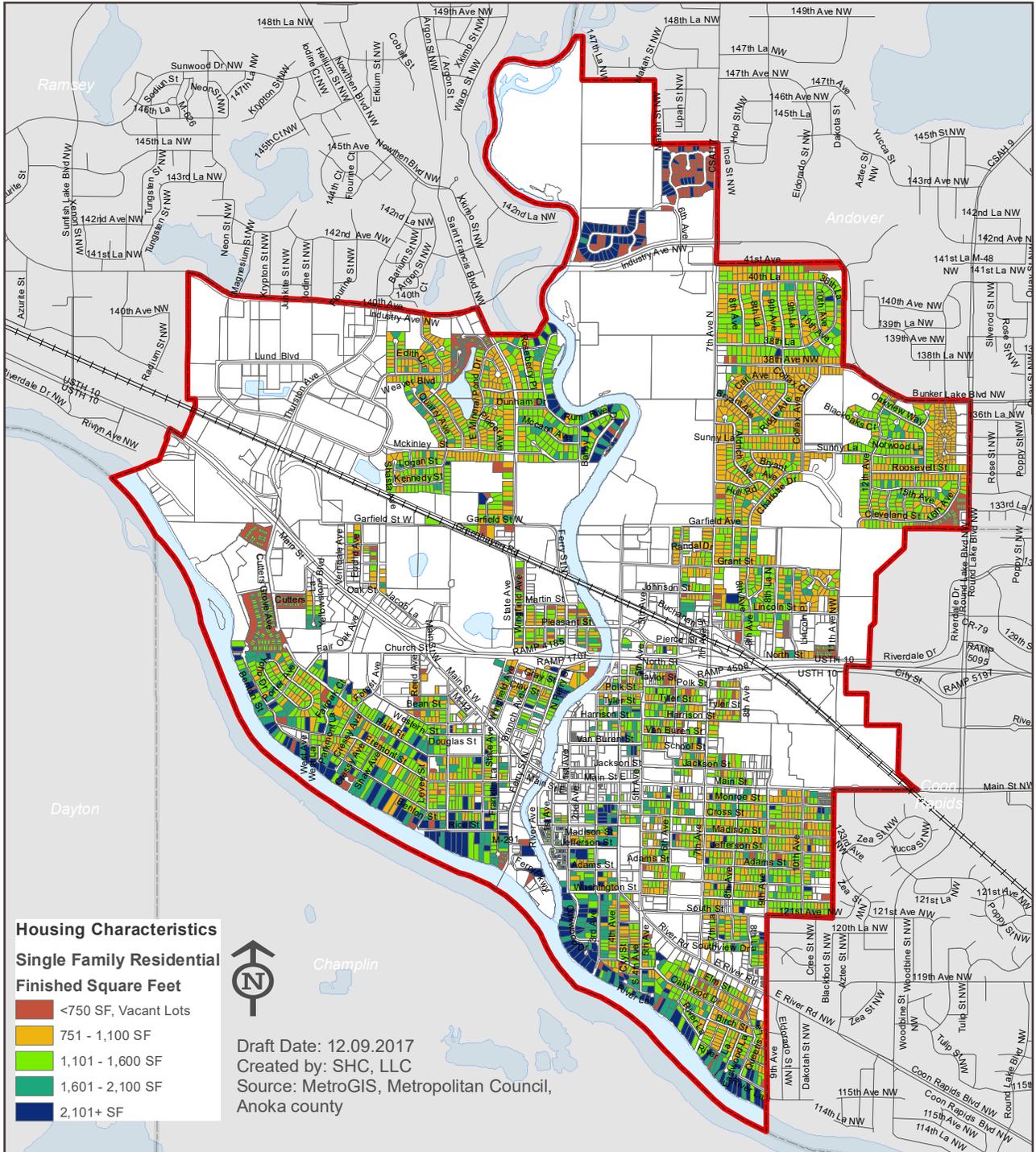
Source: Northstar MLS, as of December 6, 2017

TABLE 3-22: MEDIAN SALES PRICE – MULTI-FAMILY (TOWNHOMES, CONDOS)

Year	Number of Sales	Median Price	Percent Change
2013	28	\$147,500	NA
2014	26	\$145,700	-1.24%
2015	31	\$156,900	7.14%
2016	39	\$167,000	6.05%
2017	39	\$172,000	2.91%

Source: Northstar MLS, as of December 6, 2017

MAP 3-4: SINGLE-FAMILY FINISHED SQUARE FEET



## HOUSING GOALS AND STRATEGIES

The following goals, strategies and implementation tools were developed and refined by the City's HRA to reflect the community's aspirations for the housing stock over the next 20 years. As demonstrated in previous sections of this chapter, a significant portion of the City's housing stock is aging which can present several challenges, and opportunities, in the community's neighborhoods. The goals and strategies that follow acknowledge some of those challenges through actionable goals and strategies that provide a framework from which the City can capitalize on opportunities to enhance and maintain its current and future neighborhoods.

The following goal and strategy statements all begin with an action word - that's on purpose. It is important to clearly define what action is intended to be accomplished by the goal or strategy, and to make sure everyone understands those action words to have the same definition. To that end, contained at the end of this chapter is an action word Glossary that assigns value and commitment to each of the action words. This Glossary is important to ensure that the meaning of each of the following statements is consistent for the reader or user of this document.

### GOAL H-1

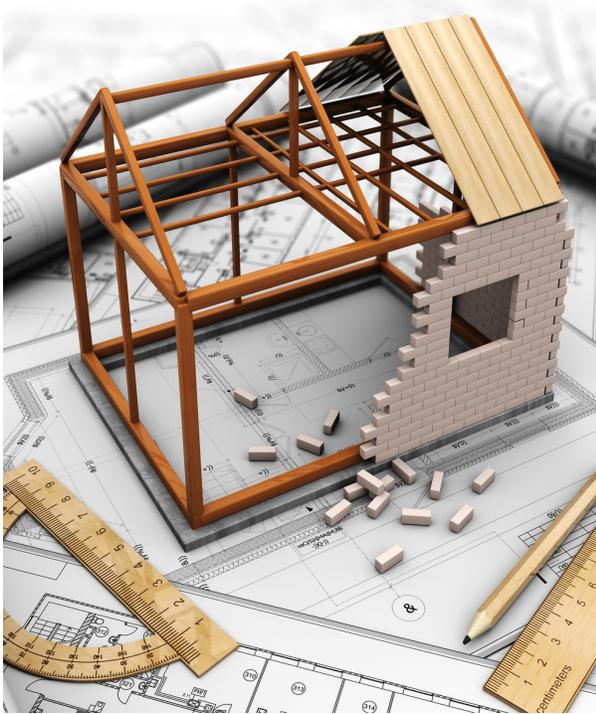
Enhance the quality and value of the existing single family and multifamily housing units in the City of Anoka.

#### **Strategies:**

1. Continue to provide home renovation programs.
  - a. Encourage participation in the CHORE program, paint-up/fix-up programs such

as the Metro Paint-A-Thon Program and the Community Fix-up Fund.

- b. Continue to hold clean-up/pick-up days for appliances and furniture and the annual home improvement show.
  - c. Continue to offer HRA home renovation loans and rebates.
  - d. Continue to provide access to Construction Management Advice and to educate residents on the benefit of this service for renovation projects.
2. Support the removal of blighted housing in residential areas to increase home and neighborhood value.
  - a. Continue the Scattered Site Replacement Program.
  - b. Promote volunteer programs and partnerships to facilitate exterior renovations to prevent deferred maintenance of homes.
  - c. Continue to enforce Property Maintenance Standards.
3. Encourage homeowners and developers to incorporate energy efficiency and sustainability in home renovation and new construction.
  - a. Educate residents on energy rebates available through utility companies.
  - b. Provide access to resources for improvements to homes that use green building techniques.
  - c. Evaluate the potential for providing specific rebate or loan programs for home renovations utilizing green building methods.



- d. Explore regulations to stabilize and enhance the value of single-family neighborhoods.

### GOAL H-2:

Sustain quality living conditions for all residents through the enforcement of ownership and rental housing maintenance codes and housing programs.

**Strategies:**

1. Encourage the continued and timely enforcement of all maintenance codes.
  - a. Provide education to residents regarding maintenance expectations.
  - b. Continue the City “PACE” program for proactive identification of code violations.
2. Encourage code compliance of homes prior to resale.
  - a. Explore the costs and benefits of

establishing a truth-in-housing or point-of-sale program in the City.

3. Continue to monitor and inspect rental properties.
  - a. Increase communication with landlords on current codes and good rental practices.
4. Promote rehabilitation of rental properties.
  - a. Create a rental rehabilitation program with a focus on older rental properties through the City.
5. Monitor properties in foreclosure.
  - a. Create a foreclosure plan with a focus on housing maintenance and a process to encourage resale of homes.

### GOAL H-3:

Encourage and promote the expansion, redevelopment and renovation of older, smaller homes.

**Strategies:**

1. Promote design ideas associated with smaller home renovation.
  - a. Explore options to provide architectural assistance and ideas to residents and builders.
  - b. Provide design and renovation information to assist in historic home renovation.
2. Promote use of city, county and state renovation loan programs such as the fix-up funds for home renovation.
3. Evaluate lot combinations where small, non-

conforming homes exist for replacement with move-up and higher value housing.

### GOAL H-4:

Promote and increase home ownership of all housing types and values.

#### **Strategies:**

1. Provide workforce housing options in the City that are targeted to first-time home-buyers and young families.
  - a. Promote the value of quality affordable homes near established city services and schools.
  - b. Promote community benefits including parks, trails, recreational opportunities, small community downtown and good schools.
2. Create a plan to link new jobs to existing and new housing in the City.
3. Identify opportunities to develop higher valued housing for move-up housing that allows people to live and work in the City.
  - a. Encourage development of owner-occupied condos and housing co-ops.
4. Promote increases of density allowances for housing projects that provide community benefits.

### GOAL H-5:

Promote opportunities for older residents to remain living in the City.

#### **Strategies:**

1. Explore methods for older adults to age in place and/or transition to alternate housing.
  - a. Support the transition of seniors leaving existing homes and selling to new young buyers.
  - b. Identify resources and services available for home maintenance and renovation that assist older adults in maintain their homes so that they can age in place.
  - c. Explore opportunities to develop cooperative homes for older adults with shared centralized services.

### GOAL H-6:

Identify opportunities to incorporate affordable housing in development and redevelopment that achieves the Metropolitan Council Livable Communities goals.

#### **Strategies:**

1. Continue to designate and guide land uses that encourage a more affordable price for new housing units in the City.
2. Endorse new home ownership opportunities for those with incomes at or below 80 percent of the area median incomes such as Habitat for Humanity and land trust housing.

# IMPLEMENTATION: HOUSING RESOURCES, STRATEGIES, & TOOLS

Table 23 summarizes example resources, strategies, and tools available to implement Anoka’s housing needs and stated housing goals. There are many resources available beyond those identified on the following table, but the following table provides a valuable starting point from which the City can begin to implement this chapter. As the city’s housing needs evolve or transition, the following table can be modified, expanded or updated.

TABLE 3-23: HOUSING RESOURCES, STRATEGIES AND TOOLS

Housing Goal & Needs	Tool/Resource/Strategy	Description	Affordability Target
<p>Enhance quality and value of existing housing stock</p> <p>Identified Need: To maintain the existing housing diversity including single-family, multi-family, market rate and affordable options. This is an immediate, and on-going, priority.</p>	City of Anoka HRA Loans	Fund home improvement projects with City of Anoka HRA loan funds for low and moderate income homeowners	<30% AMI 30-50% AMI 51-80% AMI
	Anoka County Community Development Department	Continue to coordinate with County staff to best align their resources with the City’s housing needs and goals. Anoka County has funding resources and expertise that can support the City’s residents.	<30% AMI 30-50% AMI 51-80% AMI
	CDBG Funds	Work with Anoka County in its use of CDBG funds to help low and moderate income homeowners with rehabilitation assistance. The HRA and City intend to support the County, but are not likely to use CDBG funds as a primary source to assist in its redevelopment efforts.	<30% AMI 30-50% AMI 51-80% AMI
	Referrals	Review and create, if necessary, procedures and plan to maintain ability to refer residents to any applicable housing programs outside the scope of local services.	<30% AMI 30-50% AMI 51-80% AMI
	Preserve LIHTC Properties	The HRA and the City will explore potential tools and opportunities to preserve LIHTC properties, and will prioritize properties with known expiration dates and/or timelines.	<30% AMI 30-50% AMI
	City code and appropriate staff	Explore potential city code amendments in this planning period to the rental licensing procedure that establishes a rental license density cap and clarification of related terminology so that the policy is clear and easy to understand.  Explore potential standards for AirBNB’s and other short-term rentals	<30% AMI 30-50% AMI 51-80% AMI  51-80% AMI
<p>Sustain quality living conditions through enforcement of maintenance codes and housing programs</p> <p>Identified Need: To maintain the existing housing diversity including single-family, multi-family, market rate and affordable options. This is an immediate, and on-going, priority.</p>	Code enforcement officers, adequate staff	Ensure staff are continually educated on maintenance codes, housing policies and ordinances and follow proper enforcement; continue to monitor and enforce rental licenses and properties.	<30% AMI 30-50% AMI 51-80% AMI

<p>Encourage and promote expansion, redevelopment and renovation of older homes</p> <p>Identified Need: To ensure review process makes it easy to develop housing products that support the City's housing goals. This is an immediate priority.</p>	<p>Zoning and subdivision ordinances</p>	<p>Review zoning and subdivision ordinances within nine-months of adoption of this Plan to identify any regulations that inhibit the housing priorities in this document</p>	<p>&lt;30% AMI 30-50% AMI 51-80% AMI</p>
	<p>Low or No Cost Home Loans</p>	<p>Continue to collaborate with the Center for Energy and Environment in their efforts to provide low or no-cost loans to help homeowners repair heating, plumbing, or electrical systems helps preserve existing housing. For example, Minnesota Housing's Rehabilitation Loan and Emergency Loan programs make zero percent, deferred loans that are forgivable if the borrower lives in the home for 30 years. Minnesota Housing's Community Fix Up Program offers lower-cost home improvement loans, often with discounted interest rates, remodeling advising, or home energy services, through a trained lender network.</p>	<p>&lt;30% AMI 30-50% AMI 51-80% AMI</p>
<p>Promote home ownership of all housing types and values</p> <p>Identified Need: Homeownership is an important aspect of wealth building for our residents. This is an immediate, and on-going, priority of the City.</p>	<p>Foreclosure Prevention</p>	<p>In established neighborhoods, multiple foreclosures in proximity to one another can have significant effect on surrounding neighborhood. The HRA will continue to monitor and be aware of foreclosures, and will direct homeowners in finding resources that can help.</p>	<p>&lt;30% AMI 30-50% AMI 51-80% AMI</p>
	<p>Housing Bonds</p>	<p>The HRA and City have not previously issued housing specific bonds, but would consider housing bonds if a specific project meets the City's Housing's goals and objectives.</p>	<p>51-80% AMI</p>
	<p>Zoning and subdivision ordinances</p>	<p>Over the next nine months the City in collaboration with the HRA will explore amendments to the zoning ordinance that clarify housing type definitions and add standards for multi-family housing to ensure the ordinances support the City's housing goals and objectives.</p>	<p>&lt;30% AMI 30-50% AMI 51-80% AMI</p>
		<p>Over the next nine months the City in collaboration with the HRA Identify necessary or beneficial updates or amendments to existing Planned-Unit Developments</p>	<p>&lt;30% AMI 30-50% AMI 51-80% AMI</p>
<p>Promote opportunities for older residents to remain living in the city</p> <p>Identified Need: The City's population is aging and many wish to remain in the community. The City will work to support and provide options for increase senior living options.</p>	<p>Tax Increment Financing</p>	<p>The City and HRA will continue to use TIF districts to support the City's redevelopment goals and objectives, and will continue to prioritize the use of the tool when a project meets the stated housing goals and objectives.</p>	<p>&lt;30% AMI 30-50% AMI 51-80% AMI</p>
	<p>Livable Communities Demonstration Account</p>	<p>If a proposed project meets the stated goals and objectives in this chapter, the HRA and/or City will consider supporting/sponsoring an application to LCDA programs for multi-family proposals in areas guided for high density residential and mixed-use</p>	<p>&lt;30% AMI 30-50% AMI 51-80% AMI</p>

<p>Identify opportunities to incorporate affordable housing</p> <p>Identified Need: The majority of the City's existing housing stock is affordable and it is important to support housing stability through a safe and affordable housing stock.</p>	Brownfield Clean-up	Explore EPA and MN DEED grant programs that provide funding and assistance with planning assessment and site clean up in potential redevelopment areas	<30% AMI 30-50% AMI 51-80% AMI
	Site Assembly	The HRA and/or City will continue to assemble, or assist with assembly, of parcels and sites when such assembly will result in a project that achieves the stated goals and objectives of this Plan.	<30% AMI 30-50% AMI 51-80% AMI
	Tax Abatement	The HRA will consider the use of tax abatement, and will further explore such tool if a project proposal is made that meets the stated goals and objectives of this Plan.	<30% AMI 30-50% AMI 51-80% AMI
	HOME Investment Partnership Program	The HRA does not currently use this program to support its stated housing goals and objectives. If a project is proposed that could benefit from this Fund, the HRA will explore if it is the best tool to meet the goals of the project.	<30% AMI 30-50% AMI 51-80% AMI
	4D for NOAH Properties	The City and HRA will explore the use of the 4D classification when rehabilitation or redevelopment results in a higher-quality, safer, cleaner housing units.	<30% AMI 30-50% AMI
	Fair Housing Policy	The City will consider, and if appropriate or needed, will work to incorporate a Fair Housing policy into its ordinances and policies.	<30% AMI 30-50% AMI 51-80% AMI

## STRATEGY GLOSSARY

The terms Goal and Strategy can mean different things to people and may not always be viewed with the same level of importance or commitment. Throughout the Housing Chapter update the terms Goal and Strategy will have the following meaning and definition:

**Goal:** A general statement of a desired objectives indicating broad social, economic or physical conditions to which the community officially agrees to try to achieve in various ways, one of which is the implementation of the Comprehensive Plan.

**Strategy:** An officially adopted course of action or position to implement the community goals.

Goals and strategies assign various roles, commitments, and responsibilities to the City and HRA. To assist with defining the role for each *goal and strategy*, the following key terms are defined and indicate the city's corresponding responsibility:

**Create:** Bring about the desired goal, with city staff involved in all levels, from planning to implementation, and which may involve city financial assistance.

**Continue:** Follow past and present procedures to maintain the desired goal, usually with city staff involved in all levels, from planning to implementation.

**Encourage:** Foster the desired goal through city policies, which may involve city financial assistance.

**Endorse:** Subscribe to the desired goal by adopting supportive city policies.

**Enhance:** Improve the current goal through the use of policies, which may include financial support, and the involvement of city staff at all levels of planning.

**Explore:** Investigate the stated method of achieving the desired goal, which may involve city staff and financial resources to research and analyze such method.

**Identify:** Catalogue and confirm resource(s) or desired item(s), which may involve city staff and may require financial resources.

**Maintain:** Preserve the desired state of affairs through the use of city policies. Financial assistance should be provided if needed.

**Recognize:** Acknowledge the identified state of affairs and take actions or implement policies to preserve or change them.

**Prevent:** Stop described event through the use of appropriate city policies, staff, action and, if needed, finances.

**Promote:** Advance the desired state through the use of city policies and staff activity at all levels of planning.

**Protect:** Guard against a deterioration of the desired state through the use of city policies, staff and, if needed, financial assistance.

**Provide:** Take the lead role in supplying the needed financial and staff support to achieve the desired goal. The city is typically involved in all aspects from planning to implementation to maintenance.

**Strengthen:** Improve and reinforce the desired goal through the use of city policies, staff and financial assistance, if needed.

**Work:** Cooperate and act in a manner to create the desired goal through the use of city staff, actions and policies.

**Support:** Supply the needed staff support, policies and financial assistance at all levels to achieve the desired goal.

**Sustain:** Uphold the desired state through city policies, financial resources and staff action to achieve the goal.

TABLE 3-24: ACTION WORD GLOSSARY

No commitment of financial investment, staff resources and policy directives	May include financial investment, staff resources and policy directives	Commitment to financial investment (if needed), staff resources and policy directives
Continue	Create	Prevent
Endorse	Encourage	Protect
Identify	Enhance	Provide
Reserve	Explore	Strengthen
Recognize	Maintain	Support
Promote		Sustain
Work		

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# 4. ECONOMIC DEVELOPMENT

Background  
Companies, Employment, & Wages  
Economic Development Planning  
Elements of Anoka's Development  
Goals & Implementation



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## BACKGROUND

### THE ANOKA ADVANTAGE

The City of Anoka is a historic community with a diverse mix of land uses and unique physical characteristics. The City is 91% developed but is undergoing continued market pressure to change, upgrade or redevelop to compete in the world economy. While Anoka's mature character is one of its greatest assets, it also acts as a foundation for adaptation to an ever-changing world.

As America's commercial climate shifts away from big-box stores and toward online and experiential retail, Anoka has taken an advantageous position in the market. From its beautiful, walkable downtown and forward-thinking retailers willing to redefine the shopping experience, to the vitality of its manufacturing, retail, healthcare, and technical and professional services, the City of Anoka is taking the opportunity to build a more profitable, resilient, and fair local economy.

Redevelopment opportunities can be costly ventures not supported by market forces and therefore require public involvement and investment. When rehabilitation is not cost-effective, major public action may be needed to guide the community and capture the most beneficial outcomes available in the marketplace.

Financing mechanisms available to the City include general taxation and bonding, enterprise funds, tax abatement, tax increment financing and investment of existing capital assets. Public capital assets include infrastructure, land, buildings and contracts creating income streams to finance public projects. Anoka's economic development staff and elected officials position these assets and deploy these mechanisms to leverage private investment to achieve the goals of the plan.



*A local businesswoman opens for business at Anoka's Food Truck Festival in 2017.*

Infrastructure includes public improvements, the electrical distribution system, transportation systems and communication networks. Specifically, City improvements include utilities (sewer and water systems), streets, parking lots and ramps, many of which generate revenue to enterprise funds. In addition, the City of Anoka operates other business enterprises including the electric utility, liquor stores, and a golf course.

The City of Anoka has demonstrated its economic viability and strength for over 170 years. Community leaders have taken public actions to reposition the City for success in an ever-changing economy. Strategies and forethought are paramount to ensure community viability for the coming decades.

## CURRENT ECONOMIC TRENDS

There are several major economic trends which define Anoka’s position in the larger economy including the following:

1. The rise in online shopping has triggered a reinvention of the brick-and-mortar shopping experience to recoup declining in-person sales.
2. Small and mid-sized towns are turning to creative industries to generate economic prosperity across economic sectors.
3. The economic benefits of pedestrian-oriented and bicycle-oriented shopping areas are becoming better understood. Walkable, varied store frontage is expected by consumers.
4. Rapid residential growth along the Northstar Corridor (Minneapolis to Big Lake) places Anoka in the middle of a major transportation corridor via US Highway 10 and the Northstar Commuter Rail line.
5. Location of a Northstar Commuter Rail Station at the 4th Avenue crossing in Anoka creates a major destination and development center.
6. Population growth in Anoka County drives government services expansion in downtown Anoka.
7. Population growth to the north and west



*Downtown Anoka promotional events.*

of Anoka in Andover and Ramsey creates demand for goods and services in the area and offers labor needed by Anoka-based employers.

8. Major commercial developments in surrounding communities such as Riverdale Center in Coon Rapids, The CoR development in Ramsey, and Highway 169 Corridor development in Champlin, absorb retail and service demand that once was supplied by businesses in the City of Anoka.



## HISTORICAL PERSPECTIVE

From its earliest settlement days in the 1850's, Anoka has been an industrial and commercial center. The City also has a long history of promoting economic development by way of public investments and public-private partnerships.

Anoka began as a major lumber and flour milling center. Great stands of white pine on the upper Rum River and the expanding agricultural areas of Anoka County lured the milling interests. This industrial boom was followed by a commercial boom as merchants opened shops to serve the needs of the growing population employed by the mills. The milling and merchant interests converged where the Rum River is bridged by Main Street. The Rum River was the industrial highway as logs were driven to the mills in Anoka. Main Street was the commercial highway linking Anoka with St. Anthony to the south and Pembina to the far north via the Red River Trail. By 1864, railroad service strengthened this commercial linkage. In short, Anoka was located at the intersection of river and rail manufacturing and distribution.

The link between the industrial and commercial sectors was tight and fortunes of each rose and fell together. Many shop owners held stock in the milling companies and the industrialists invested in community improvements.



*Construction of the Rum River Dam, circa 1853.*

The City experienced rapid growth from 1860-1880 and in the mid 1870's claimed to be the largest milling center in the world measured by total board feet milled. But by the mid 1880's the timber resources on the Rum River were exhausted and the mills moved to other cities further north to be closer to the receding pine forests. As a result, hundreds of Anoka residents were forced to seek employment elsewhere. For an isolated prairie town like Anoka, this massive exodus of residents also reduced the Main Street commercial trade. Anoka had lost its economy and its identity.

In an effort to attract new industries, Anoka citizens formed a Board of Trade in 1885. The purpose of this corporation was "to advance commercial, mercantile, agricultural and manufacturing interests of the City and County of Anoka." This Board made attractive offers and succeeded in bringing several major industries to Anoka including a shoe factory and a starch factory. However, the Board fell into disorganization prior to 1900.

In 1906 a sluggish economy and growing unemployment prompted a City

Alderman to suggest that a permanent body be formed to "show up the advantages of our City to prospective home seekers, investors, and manufacturers." After several public meetings the "Commercial Club of Anoka" was formed. One of its functions was publication of promotional materials about the advantages for business and industry in Anoka and Anoka County. To spur private investment, the Club also entered into financial agreements with companies to raise local capital through the sale of stock shares. Companies as far away as Illinois and the east coast were enthusiastically courted. One such venture was



*A lumber worker in early Anoka.*

the Veerac Motor Company which manufactured automobiles, tractors and railroad inspection cars in Anoka for a few years.

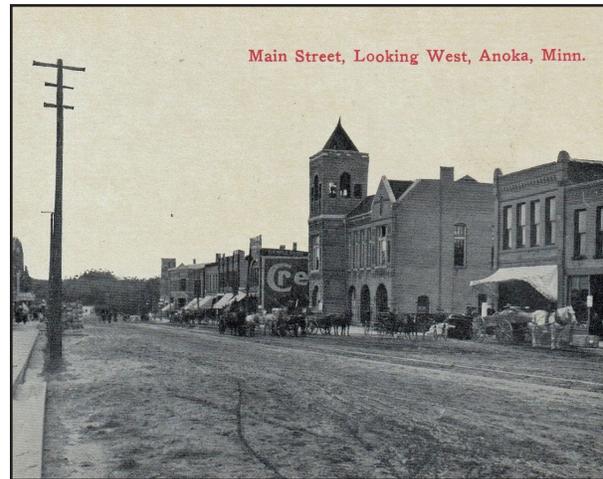
Anoka's fortunes turned upward in 1922 when a local manufacturing company came under the ownership and guidance of Charles L. Horn. He renamed the company Federal Cartridge Corporation and Federal has formed the backbone of Anoka's economy for over 85 years. Now operating as Federal Premium Ammunition, the company is still one of the City's largest employers with over 1,100 employees.

After World War II, Anoka experienced a housing boom and the City became a commuter suburb. During these years the role of the Commercial Club shifted from negotiating development to promoting development. In 1953, the Commercial Club was reorganized and renamed the Anoka Chamber of Commerce. One of their first actions was to produce a promotional film which was shown on Metro area television. As a result of marketing efforts, other local industries such as Cornelius Company and Thermo-Serv relocated to Anoka and grew for several decades.

From 1950 through 1970, the City of Anoka emerged as a growing suburban city. Housing development boomed and the City's major companies, Federal Cartridge, Hoffman Engineering, Cornelius and Thermo-Serv, expanded and provided additional jobs. The Central Business District offered a full array of goods and services. Major retailers included two auto dealerships, several grocery stores, furniture stores and clothing and shoe stores. Branches of Sears, Wards and Ben Franklin were located downtown.

However, change was on the horizon as international markets shifted and metropolitan growth changed the economic position of Anoka. As a result, during the 1980's Cornelius was sold to British interests, Federal-Hoffman Inc. was sold and Thermo-Serv

moved to Texas. Almost all general retail stores downtown closed except Jensen's Department Store and Peterson Shoes. Building vacancies increased and these historic structures showed signs of deterioration due to deferred maintenance. At the same time the downtown began to shift from general to specialty retail.



*Postcard of Main Street, circa 1910. (Photo Courtesy of Anoka County Historical Society)*

In the face of these economic changes, the Anoka Area Chamber of Commerce asked the City of Anoka to establish an Economic Development Commission (EDC) to advise the City Council on economic matters. The City Council established this board on July 9, 1982. The board then led the City to qualify as a Minnesota Star City for Economic Development and undertook projects including development of the Anoka Enterprise Industrial Park.

The Economic Development Commission was the first of several steps taken to build the working relationship between the City and business community for purposes of economic development. In 1982 the City also established the Parking Advisory Board which focused upon parking needs downtown. To further downtown marketing and revitalization, the private Anoka Business and Landowners Association was formed in 1988.

During the 1980's and 1990's the City created several tax increment financing districts and loan programs to financing redevelopment and rehabilitation. Major projects included Walker on the River senior apartments, Walker Plaza senior apartments, the Anoka Enterprise Industrial Park, and downtown commercial rehabilitation. Plans were also laid for redevelopment of the floodplain south of downtown and North Central Business District on the north side.



Federal Cartridge Corporation, circa 1939.

Since the year 2000 the Anoka Enterprise Park has been nearly fully developed and the RiversPointe Town Home project was completed in the filled floodplain south of downtown. In 2009 the Anoka Rail Station opened to accommodate the Northstar

Commuter Train between the northwest exurbs and Minneapolis, spurring transit-oriented development plans for the surrounding area. Several residential developments have been completed, including senior living projects, Housing Redevelopment Authority home renovation programs, and streetscape and infrastructural improvements at various points and corridors.

Current development issues continue to include housing rehabilitation and development, transportation system improvements and revitalization or redevelopment of commercial areas along major traffic corridors. The Greens of Anoka is a phased plan for the 233-acre area in west central Anoka that include the Green Haven Golf Course and Highland Park neighborhood. The banks of the Rum River from Peninsula Point to the Anoka County Rum River Human Services Center are experiencing major investment as the Rum River Trail, Veterans' Memorial, and other public amenities are planned and constructed. Commercial rehabilitation and economic restructuring in the downtown is still at the core of maintaining Anoka's unique historic identity.

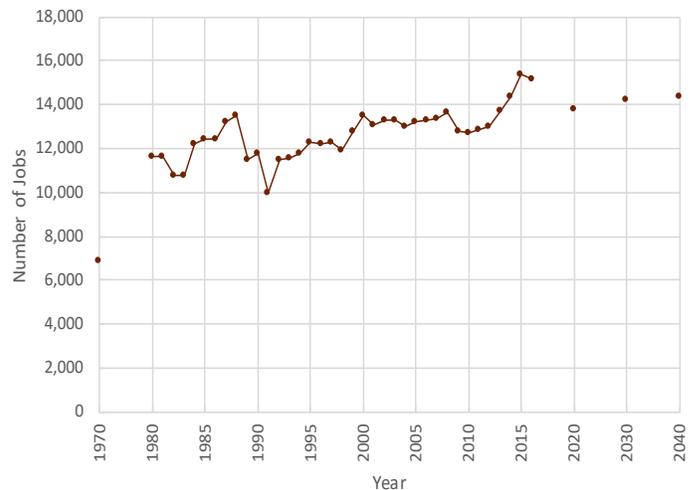


## COMPANIES, EMPLOYMENT, & WAGES

Anoka is home to over 15,600 jobs concentrated in three major sectors: manufacturing, educational services, and government. Employment has gradually grown in recent decades except for a few short-term declines due to changing economic conditions. A hiring bump in 2015 showed Anoka surpassing employment forecasts.

Anoka has a healthy balance among industrial, retail, service and government sectors. The industrial sector has been strengthened by a significant increase in the number of industrial companies in the City through continued development of the Anoka Enterprise Park. The services sector is expanding to meet the needs of a growing population served by

FIGURE 4-1: EMPLOYMENT IN THE CITY OF ANOKA, 1970-2040



Source: Minnesota DEED and Metropolitan Council

TABLE 4-1: COMPANIES, EMPLOYEES, & AVERAGE WEEKLY WAGES IN ANOKA, 2ND QUARTER, 2017

Domain	Number of Companies	Percent of Companies	Number of Employees	Percent of Employees	Average Weekly Wages	Total Wages	Percent of Wages
Total	545	100%	15,609	100%	\$1,069	\$203,649,716	100%
Public	38	7%	5,649	36%	\$1,123	\$82,502,637	41%
Private	507	93%	9,960	64%	\$1,039	\$134,547,079	66%

Sector	Number of Companies	Percent of Companies	Number of Employees	Percent of Employees	Average Weekly Wages	Total Wages	Percent of Wages
Total	545	100%	15,609	100%	\$1,069	\$203,649,716	100%
Manufacturing	40	7%	3,930	25%	\$1,348	\$68,898,922	34%
Trade, Transportation, and Utilities	112	21%	1,975	13%	\$940	\$24,150,073	12%
Information	NA	NA	NA	NA	NA	NA	NA
Financial Activities	59	11%	634	4%	\$1,375	\$11,335,562	6%
Professional and Business Services	75	14%	773	5%	\$1,097	\$11,025,368	5%
Education and Health Services	84	15%	4,283	27%	\$1,016	\$56,579,071	28%
Leisure and Hospitality	55	10%	955	6%	\$279	\$3,469,122	2%
Other Services	NA	NA	NA	NA	NA	NA	NA
Government	12	2%	2,287	15%	\$1,116	\$33,190,224	16%

the County Government Center. The government sector is also growing, particularly the School District and County Government. However, the retail sector is flat or in decline and has been forced into playing specialty or niche roles in the retail economy due to competition from new commercial development in surrounding communities. Finally, the non-profit sector is a significant element of Anoka's economy offering services which enhance the quality of life as well as employment.

## MAJOR JOB CENTER

Anoka is a major job destination from surrounding communities and other places in the Metro Area. According to Minnesota DEED, 92% or about

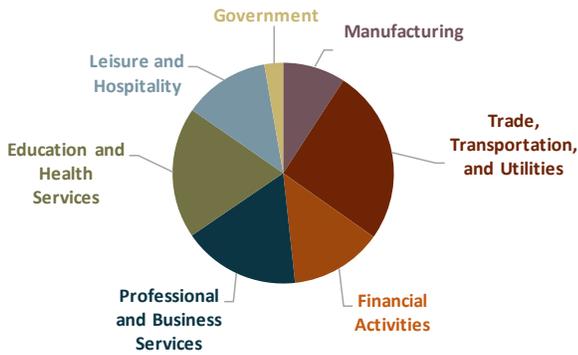
14,300 of the 15,600 jobs based in Anoka are filled by non-residents who commute to and from Anoka each work day. Almost 88% of Anoka residents commute to work in other cities. This is a dramatic change from the days when virtually all Anokans worked in Anoka (1860-1940's) or most work near home (1950-1980's).

Anoka also has one of the highest density of jobs per capita than just about any comparable city, which is a legacy from its earliest days of continued vigilance over its industrial economy.

TABLE 4-2: PRINCIPLE EMPLOYERS IN CITY OF ANOKA, 2017-2018

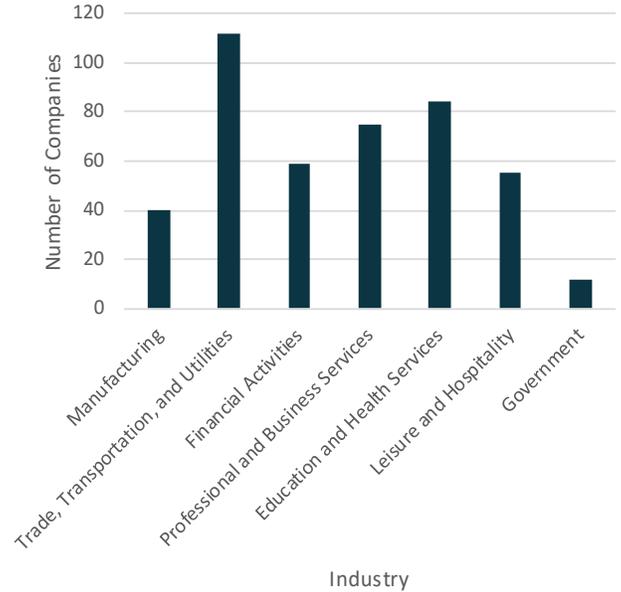
		2017 - 2018		2007 - 2008	
Rank	Employer	Employees	Percent of Total City Employment	Employees	Percent of Total City Employment
	<b>Total</b>	7880	51%	6750	50%
	<b>City-Wide Employment</b>	15,600	100%	13,392	100%
1	Anoka County Government Center	2206	14%	1218	9%
2	Hoffman Enclosures/Pentair Tech	1500	10%	1170	9%
3	Federal Cartridge	1453	9%	1050	8%
4	Anoka-Hennepin ISD #11	1400	9%	1245	9%
5	Anoka-Metro Treatment Center	423	3%	614	5%
6	Mate Precision Tool	308	2%	366	3%
7	DecoPac	285	2%	224	2%
8	Anoka Technical College	160	1%	344	3%
9	Health Partners	145	1%		0%
0	Rural Insurance Group		0%	305	2%
0	Copper Sales/Firestone Metals		0%	214	2%

FIGURE 4-2: COMPANIES BY SECTOR IN THE CITY OF ANOKA - 2017



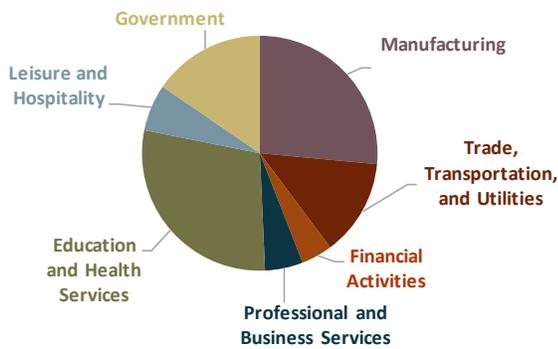
Source: Minnesota DEED

FIGURE 4-5: COMPANIES BY SECTOR IN THE CITY OF ANOKA - 2017



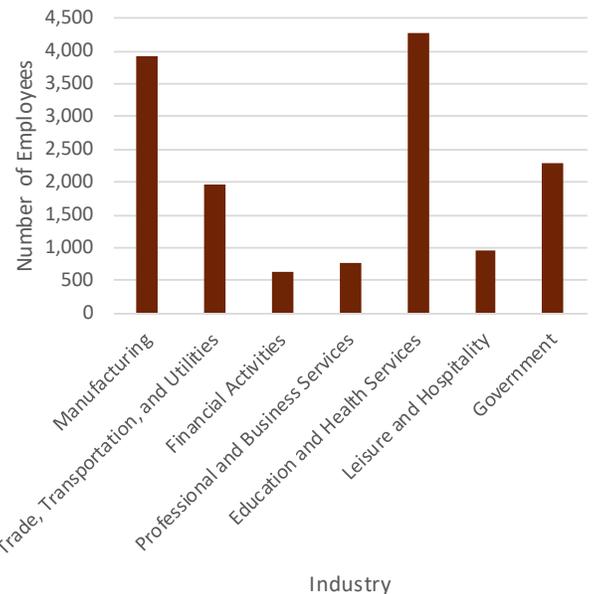
Source: Minnesota DEED

FIGURE 4-3: EMPLOYEES BY SECTOR IN THE CITY OF ANOKA - 2017



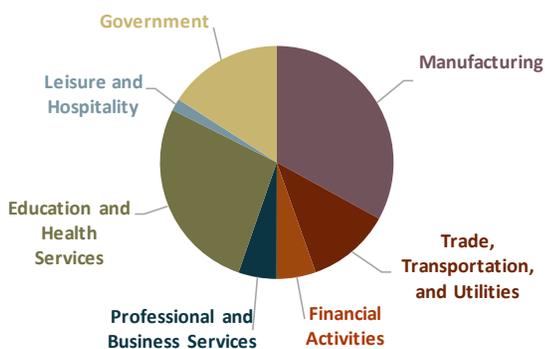
Source: Minnesota DEED

FIGURE 4-6: EMPLOYEES BY SECTOR IN THE CITY OF ANOKA - 2017



Source: Minnesota DEED

FIGURE 4-4: WAGES BY SECTOR IN THE CITY OF ANOKA - 2017



Source: Minnesota DEED

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## ECONOMIC DEVELOPMENT PLANNING

Local economic development is an effort to modify the quantity, quality, or types of local business activities in order to address the current and projected needs of a community and enhance the quality of life. Economic development integrates all land uses and economic forces within the local economy into one mutually supporting system. These elements include public uses, housing, commercial and industrial development, tourism, and recreational amenities. The plan recognizes the synergistic relationships among land uses, economic sectors, and human capital within the community. This type of economic development builds community wealth and enhances quality of life.

A local economic development plan also includes physical, fiscal, infrastructural and human resource development. It may include strategies to enhance quality of life through life cycle housing, recreational facilities, community services and environmental protection. The plan may be implemented in a variety of ways: by building networks and communications systems such as public-private partnerships; by matching people with jobs and services; and by marketing strategies and campaigns.



## ELEMENTS OF ANOKA'S DEVELOPMENT

### CORRIDORS OF COMMERCE AND CULTURE

The City of Anoka encompasses seven square miles and is 91% developed; its landbound geography introduces the importance of strategic redevelopment with a significant public leadership component. Anoka's strategy recognizes its historic corridors of commerce and culture and their impact on quality of life.

Anoka is located along the Mississippi River, on both sides of the Rum River and at the intersection of several major highways. These highways form commercial corridors and the rivers form cultural corridors. Our history demonstrates the wisdom of focusing investments at economic intersections and along corridors of commerce and culture.

#### **Highway Commercial Corridors**

As the historic hub of activity in this region, Anoka is where several major highways converge to cross rivers. US Highways 10 and 169 and MN Trunk Highway 47 form major commercial corridors through the City. County Road 1 and 7 corridors also include commercial areas. These highways provide customer access to local businesses. These commercial corridors also offer opportunities for future investments.

#### **River Cultural Corridors**

The Rum and Mississippi Rivers are historical and present day corridors—once for commerce and transportation and now for culture and quality of life.

Although the Rum River divides the City geographically, industry and commerce used to be centered along the river. For generations, most Anokans worked next to or close to the river. Today,



*Pontoon boats lined up on the Rum River*

Anoka has significant underused or vacant land near the river which is highly valuable to developers. A carefully guided process can control the location, quality and pace of redevelopment. With responsible foresight and attention to leading-edge markets, Anoka is carefully harnessing the river once again to stoke investment opportunities, restructure the tax base, and enhance the quality of life in the City

Our strategy is to marry the Rum River's amenities with prime development sites to produce investment opportunities and enhanced quality of life for existing and new residents. A significant product



*Anoka is the perfect market for riverboat tours and water-oriented entertainment.*

of this marriage will be a substantial restructuring of the tax base to benefit both new and existing taxpayers. In addition to land-based developments, the river itself provides the opportunity for a riverboat, which would provide tours, entertainment, and meeting space along the Rum or Mississippi Rivers. City staff and elected officials are in the early stages of considering this river-based commercial expansion.

## EXPERIENTIAL RETAIL AND WALKABILITY

Anoka's business community is responding to a decade of changes in shopping. Nationally, malls and "big box" stores have seen a major decline in customer trips, while online businesses like Amazon are pioneering digital sales techniques. The convenience of ordering on the internet, however, has not replaced the brick and mortar shopping experience sought after by the 55+ and millennial demographic groups. Young shoppers are shown to be increasing their visits to retail when activities, food, or entertainment are integrated into the business, or when an online purchased may be picked up in person.

Experiential Retail - also known as "shoppertainment" - is the incorporation of features and value-added services into the physical store. These added features include amenities like food and entertainment events, personalized shopping services, joint offers by related business types, and creative use of technology. Some examples of successful in-store experiences are offering a cooking class in a grocery store, a customization kiosk in a clothing

store, or live music at a cafe or brewery. Anoka's Economic Development Commission encourages the city's retailer's to embrace this lively style of commercial activity.

An essential element of this strategy is the quality of storefront interface and right-of-way. A 2017 presentation in Anoka by global design firm Perkins & Will praised Anoka for its current downtown shopping experience. Upon the recent sale of the K-Mart in western Anoka, the city has no big box stores but a highly walkable downtown retail district. Downtown Anoka received a phenomenal score of 80 out of 100 by Walk Score, a company that analyzes a pedestrian's experience in a given area. One study by CEO's for Cities in 2009 linked a one point rise in an area's Walk Score with between a \$500 and \$3,000 increase in home values. Additional reports by Australian and Californian authorities have found that pedestrians, cyclists, and transit-users spend more in aggregate than the average motorist's spending, not by making expensive purchases but by frequently revisiting favorite stores and making multiple, smaller purchases per trip to a cluster of stores.

The City aids its private sector through targeted land use and zoning revisions, sidewalk improvements and traffic-calming measures, promotional resources, investment in access for transit and bicycle users, preference for small business, wealth-development for struggling community members, cultivation of a diverse customer base, dedicated public space, and continuance of Anoka's legacy of community events and activities.



*Downtown Anoka was awarded a laudable Walk Score of 80 out of 100.*



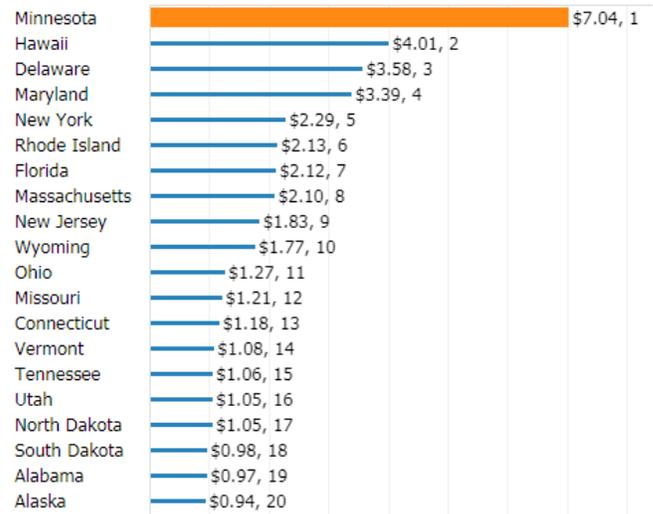
*Anoka's highly walkable downtown supports lively small business events like Anoka's first Food Truck Festival in 2017.*

## COMMUNITY ARTS & EVENTS

Anoka is fortunate to be located in Minnesota, a state that proves its value of art and culture through the highest funding per capita of any state in the U.S. The economic return to small communities who invest in the creative industry has been shown by organizations such as American for the Arts and Minnesota Citizens for the Arts. Not only does the beauty of the rivers and Anoka’s historic building stock lend itself to creative activities: the city’s central position in the northwest Metro makes it center-stage for the talent and expression of the surrounding population. Anokan arts, performances, and creative products are, by their nature, commodities found nowhere else in the world. For this purpose, money that would otherwise flow out of Anoka to other regional art hubs stays in local circulation, and art consumers outside of Anoka have incentive to come spend money in the city. Related job growth and spillover economic benefits add to Anoka’s economy and attract prospective residents.

In 2017 Anoka facilitated a cornucopia of annual events, including, Winterfest, Riverfest & Craft Fair, the Food Truck Festival, Walk a Mile charity event, Independence Day Fireworks, Ice Cream Social, Concerts in the Park, Rockin’ on the Rum concerts, Golf Tournament, Halloween events (Light Up the Night Parade, Big Parade of Little People, Grand Day Parade, the Stamp Unveiling), and the Christmas Tree Lighting. Other community events such as ski and pickleball tournaments, shopping promotionals, and hunting and aquatic events rounded out the year. These events bring tens of thousands of residents and non-residents into Anoka’s shopping district and has garnered the small town a big name across the Twin Cities region.

FIGURE 4-7: TOP 20 STATES BY ARTS FUNDING PER CAPITA IN 2017



Source: National Assembly of State Arts Agencies



The Rum River Art Center offers community classes for all ages.



Live music at the Food Truck Festival in 2017.



The Lyric Arts Main Street Stage sells around 30,000 tickets per year.



Approximately 500 people showed up to “Walk a Mile in Her Shoes” in May of 2017.

## GOALS & IMPLEMENTATION

In an economic development plan, goals are achievements that are valuable in and of themselves. They are reached through implementing strategies toward measurable objectives.

### OVERALL ECONOMIC DEVELOPMENT GOAL

*To promote balanced community growth among a variety of economic sectors, to strengthen the tax base, expand employment opportunities, build community wealth and enhance the quality of life in the City of Anoka.*

#### GOAL ED-1

Maintain and enhance a positive community identity in the marketplace via branding and advertising.

- Continue to utilize Anoka’s brand/logo and tagline.
- Continue to advertise this identity via various relevant media, including social media platforms.
- Update city website regularly to meet and exceed standards for accessibility, usability, and attractiveness.

#### GOAL ED-2

Promote a strong business climate within the City.

- Maintain strong cooperative relationships among the City, Anoka Chamber, Anoka Business & Landowners, Anoka-Ramsey Technical College, and private businesses.
- Promote a healthy balance among various

economic sectors including industry, retail, services and government.

- Promote small business development through provision of business assistance.
- Promote the retention and expansion of existing businesses.
- Promote the unique business niche that Anoka offers within the region and the State.
- Promote Anoka as a tourist destination.
- Promote safety efforts, creating a positive perception of downtown.
- Promote the unique “shoppertainment” experience.

#### GOAL ED-3

Expand the retail sector by attracting specific and targeted retail businesses.

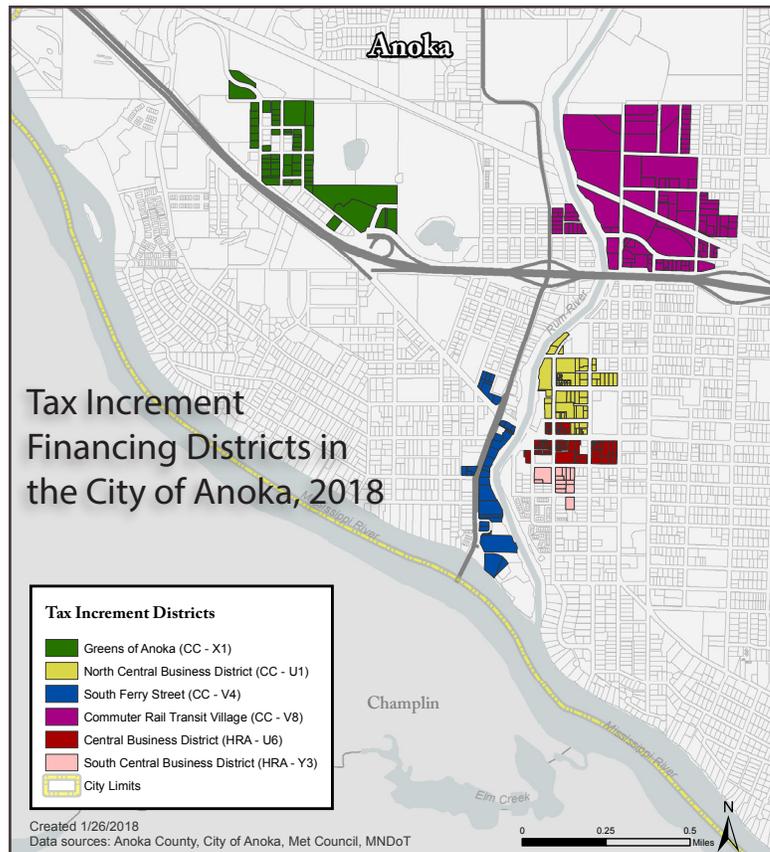
- Attract specific desired retailers including a grocery store and fine dining restaurant.
- Attract retailers that fill gaps in the local mix.
- Attract businesses that offer certain quality of life experiences.
- Maximize occupancy of retail space.
- Increase the number of retail businesses and retail employment.

#### GOAL ED-4

Create and implement a strategic business plan to guide investments in future developments.

- Develop a list of priority projects.

- Create a list of uses of funds for these projects.
- Create a list of sources of funds for these projects.
- Match sources and uses of funds over a 10 to 20 year period.
- Establish a decision-making process to implement the plan.
- Create a Financial Management Plan including the roles of:
  - General Fund
  - Enterprise Funds
  - Tax increment districts
  - Tax abatement
- Grants and other sources
- Prepare project source and use of funds statements
- Use existing Tax Increment Districts
  - North Central Business District / Historic Rum River District (U1)
  - Greens of Anoka (X1)
  - South Central Business District
  - South Ferry Street (V4)
  - Commuter Rail Transit Village (V8)
  - Central Business District (U6)



*Existing Tax Increment Financing in the City of Anoka.*

- Use the Tax Abatement financing according to policy where appropriate
- Issue HRA Commercial Rehabilitation Loans
- Issue HRA Commercial Rehabilitation Grants (Fire Suppression)
- Issue HRA Housing Rehabilitation Loans
- Establish a Capital Asset Reinvestment Plan
- Seek grants for other agencies

### GOAL ED-5

Provide infrastructure and streetscape improvements necessary to carry out economic development activities and support private investments.

- Provide necessary public improvement according to Capital Improvement Program.
- Provide a multi-modal transportation system. (See Transportation Section)
- Promote development of communication and utility networks.
- Promote provision of life-cycle housing. (See Housing Section)
- Provide public and recreational facilities that support economic development.
  - Aquatic Center
  - City Hall
  - Greenhaven Golf Course
  - Park System
  - Public Safety Center
  - Liquor Store(s)



*Anoka City Hall, a focus of recent streetscape improvements.*

- Promote investments at the following gateways:
  - Bunker Lake @ Thurston
  - Bunker Lake @ Highway 47
  - Bunker Lake @ 7th Avenue
  - Bunker Lake @ Round Lake Blvd
  - East River Road
  - Main Street-East @ 11th Avenue
  - North Street @ 11th Avenue
  - U S Highway 10-East
  - U S Highway 10-West
- Recognize the importance of major destinations in Anoka, including:
  - Anoka Enterprise Park
  - Anoka High School
  - Anoka Technical College
  - Central Business District
  - Commuter Rail Village
  - Federal/Hoffman

- Capitalize upon investment/development opportunities at the following intersections:
  - Bunker Lake Blvd/7th Avenue
  - Bunker Lake Blvd/Hwy 47
  - Bunker Lake Blvd/Round Lake Blvd
  - Bunker Lake Blvd/Thurston Avenue
  - Ferry/Pleasant
  - Main/Ferry



*Intersection of Main Street and 2nd Avenue in the summertime.*

- Main/2nd Avenue
- Main/7th Avenue
- 7th Avenue/East River Rd
- 7th Avenue/38th Avenue
- US 10/Thurston
- US 10/Main Street
- US 10/Ferry Street
- US 10/7th Avenue
- Guide and promote development along the following commercial corridors.

- 7th Avenue
- BNSF Railroad
- Bunker Lake Blvd
- East River Road
- Ferry Street-North
- Ferry Street-South
- Main Street-East
- Main Street-West
- MN Highway 47
- Thurston Avenue
- US Highway 10

- Guide and promote developments along cultural corridors including:
  - Mississippi River—MRCCA trail, accesses, Kings Island
  - Rum River—trail, dam, navigation, accesses, public uses
- Invest in sites and neighborhoods ready for growth based upon market conditions
  - Promote development and investment at the following sites.
    - 11th Avenue & North Street
    - 3rd Avenue & Jackson Street
    - 7th Avenue & Main Street
    - 2nd Avenue & Monroe Street
    - 7th Avenue & Buchanan Street
- Promote development and investment in the following neighborhoods.



*Ferry Street-North Corridor, a possible focus of future public investment.*

- Anoka Enterprise Park
- Central Business District-intersection of Main Street and Rum River
- Commuter Rail Village
- Federal/Hoffman
- Franklin School
- Highland Park
- Historic Rum River District
- 7th Avenue & North Street
- Third Avenue, Van Buren to Harrison
- County leased lot redevelopment
- Jackson Street
- Land North of Bunker
- Pinewski/Smith properties
- Alter/Fairgrounds

- Thurston/Bunker
- West Main Shopping Center

### GOAL ED-6

Diversify and expand the tax base through balanced land use and business diversification.

- Promote development of vacant land with uses that achieve city goals and complement existing uses.
- Redevelop vacant or blighted properties for uses that meet city goals and complement existing uses.
- Rehabilitate deteriorated properties to enhance value and use.
- Use redevelopment to create land use balance within the city.
- Attract and establish a riverboat and entertainment component to the Rum and Mississippi Rivers.

### GOAL ED-7

Expand employment opportunities within the City.

- Promote a diversified and balanced economic base which supports a variety of jobs.
- Retain existing companies and support their growth and expansion.
- Foster a mix of jobs that result in laddered wages among jobs within the City.
- Promote or encourage programs that match people and jobs.
- Promote programs that provide labor training to enhance upward mobility.

**GOAL ED-8**

Foster and support development of community leaders through engaging citizens in community decision-making.

- Create ways for citizens to participate in public decision-making.
- Recruit citizens to serve on advisory boards.
- Hold appreciation and recognition events for advisory board members.
- Recognize value of leadership from non-resident stakeholders.
- Promote citizen-initiated projects.



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# 5. HERITAGE PRESERVATION

Executive Summary  
Development of Anoka  
Factors Affecting Development  
Historic Places  
Heritage Preservation Plan  
Goals & Implementation



## EXECUTIVE SUMMARY

The City of Anoka has over 150 years of rich local history. From civic and social organizations to the built and natural environments, Anoka has adapted and prospered through economic, natural, and historical changes. As in any community both sanguine and seasoned, healthy growth and change are guided by the markings of character – those stories, memorials, structures, natural features, social institutions, and aesthetic styles that shape and adorn life in the city today. From the vibrant historic Main Street and downtown, to the endless unique houses along neighborhood streets, to the industrious workers in factories, workshops, and along the river, local heritage propels the city forward.

Anoka recognizes its distinctive spirit and the need to preserve the artifacts of its heritage amidst increasing redevelopment. In the face of many physical and social changes, historic elements must be not only preserved, but also communicated as a living history. This interactive style of preservation

includes pursuing a complete historical perspective, making the benefits of preservation accessible to everyone, proactively inviting current community storytelling, and facilitating innovative, adaptable historic interpretation activities. Anoka's living history can be enhanced with ties to parks and recreational activities, holiday festivities, arts and culture events, downtown establishments, community institutions, and regional initiatives around the Twin Cities Metro and State of Minnesota.

The city's 2030 Comprehensive Plan, published in 2008, established preservation goals, policies, and action steps via its Heritage Preservation Plan (HPP). This chapter of the 2040 Comprehensive Plan updates and expands on the earlier HPP. It contains plans and programs to preserve cultural resources and engage residents and visitors through interactive storytelling techniques and heritage tourism.

## HISTORY OF ANOKA

Prior to the 17th century, the area now called the City of Anoka was populated by the Sioux Native American tribe called the Dakota. French and English settlers were pushing westward forcefully, pressing the Dakota and other tribes toward present-day North and South Dakota and exacerbating ethnic tensions with territorial appropriation and a tangle of trade deals. By the 18th century the northern Ojibwe peoples, an Anishinaabeg tribe, had descended into present-day Michigan, Wisconsin, and Minnesota, and pushed the Dakota westward with the help of French guns and other European goods. Anoka derives its name from the Dakota word meaning “both sides of the river” and Ojibwe word meaning “working waters”.

The area is first mentioned in European history in 1680 when Father Louis Hennepin traveled up and down the Rum River exploring the area for France. He was followed by many other explorers who noted the natural features and natural resources of the area. The discovery of major stands of timber along the upper Rum River made Anoka an enticing place for investment in the lumber milling industry. Westward American migration and European immigration produced this settlement in 1844; by 1856 it was described by a new resident as a “large and handsome village”, and it was incorporated as a city in 1878.

In the ensuing decades, Anoka developed a major milling and food production economy, constructed a state hospital (now Anoka-Metro Regional Treatment Center), and established ferries, bridges, a horse-drawn streetcar system, and rail service to St. Paul. However, five major fires in the late 19th century severely impeded development, the worst of which destroyed 86 buildings in August of 1884. The original wood-framed buildings were rebuilt

in notable 1890’s architectural stylings. Fifty years later in 1939, a tornado destroyed many homes, a church, and the armory on the east side of town. The city completely rebuilt the damaged area.

As the county seat and the agricultural market center in the area, Anoka was a significant regional community from settlement until the 1940’s. As St. Anthony and the Twin Cities of Minneapolis and St. Paul became the economic center of the state, Anoka took on the role of a distant suburban town.



During the 1970’s and 1980’s, Anoka was considered a free standing growth center in the Metropolitan area. However, by 1990 Anoka was reclassified as a developing area because it was surrounded by geographically expansive, rapidly growing bedroom suburbs that would soon have populations greater than the City of Anoka. As a bustling county seat built out to its edges, Anoka is presently in a period of strategic and sensitive redevelopment, cultural growth, economic innovation, and reinvestment in housing and transportation systems.

# Anoka

A brief history.

## Pre-1800s

### Westward Expansion

European and American forces push native tribes westward; Father Louis Hennepin and two others are captured by the Dakota and brought to the confluence of the Rum and Mississippi Rivers.



## 1878

### Anoka Incorporated

Anoka is incorporated as a City; gains representation in State Legislature; volunteer fire department purchases first steam engine due to recent bout of fires.



## 1920

### First Halloween

To curb runaway Halloween antics, the city hosts the nation's first official festivities for the holiday.



## 2018

### 2040 Comprehensive Plan

As Anoka's population pushes 18,000, this small community charges into another 150 years of prosperity.



## 1844

### Anoka Settled

French-Canadian trader Joseph Belanger, born in 1816, builds the first house with four other men.

## 1884

### Fire Destroys Downtown

The fifth major fire in forty years destroys 84 buildings in downtown Anoka, which are rebuilt in significant late-19th Century architectural styles.



## 1950-1960

### Population clears 10,000

Anoka's population begins to skyrocket past 10,500 in 1960 as the Twin Cities region booms.

## FACTORS AFFECTING DEVELOPMENT

The major historical factors shaping the development of Anoka include: natural features and location, early transportation routes, natural resources available for development, migration and immigration trends, economic cycles, and significant historical events. All of these factors have influenced the development of the community.

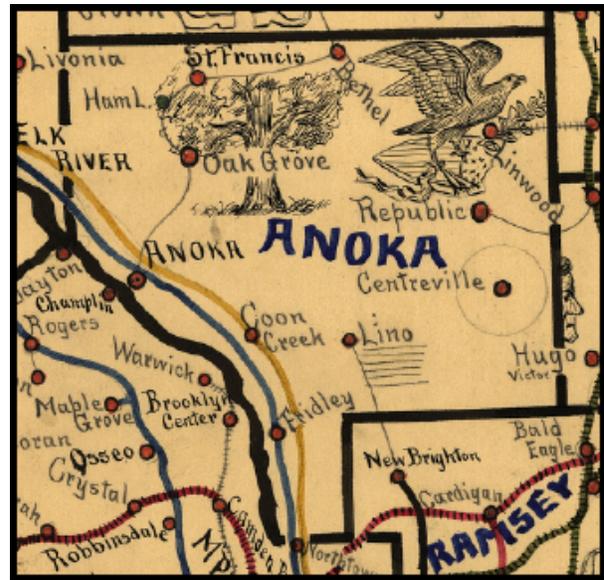
### **Natural Resources**

The primary natural features effecting development of the City are the Rum and Mississippi Rivers. At first, these rivers served as highways of transport for Native American hunting parties, explorers of the rivers' tributaries, steamboats bearing settlers and immigrants, and log drivers guiding their harvest to market at the mills in Anoka and St. Anthony. Later these rivers became barriers as overland travel became the predominant mode of transportation.

Nearby natural resources have also played an important role in the economic growth of Anoka. With the discovery of vast stands of white pine on the upper Rum River, Anoka became a logical place for investment by New England lumber interests. The numerous lumber mills established in Anoka in the 1850's and 1860's fueled economic growth for nearly four decades. The surrounding sand plain area also provided appropriate soil for production of potatoes. The potato became a major agricultural industry in Anoka after the turn of the century.

### **Transportation Routes**

The development of Anoka was enhanced by its location along early transportation routes including the Red River Trail (see map of historic transportation routes) and Military Road, which later became U.S. Highway 10. In addition, one of the first extensions of railroad out of St. Anthony reached Anoka in 1864 and was later extended westerly. Today this route is a main line for the



*An 1889 map of Anoka County that shows the Northern Pacific Railroad (yellow) and St. Paul, Minneapolis, and Manitoba Railway (blue; later named the "Great Northern Railroad").*

Burlington Northern Santa Fe Railroad. Construction of a bridge over the Rum River in 1853 made it possible to develop commercial property on both sides of the Rum River. After this bridge and later bridges were washed away, new bridges were continually constructed to replace them. In 1884 a bridge was constructed over the Mississippi River to provide access to Anoka from Hennepin County. Replacement and expansion of these river crossings and related access roads have always been key elements in fostering economic growth in Anoka.

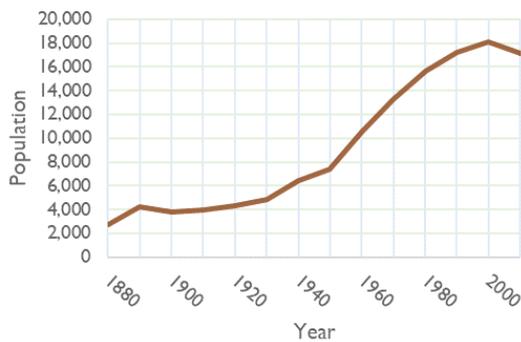


*Union Station, built in 1915 and demolished in the 1980s.*

**Migration and Immigration**

Like many Midwestern communities, Anoka benefitted from westward migration and European immigration. New England lumber barons settled the town and established the basic industry of lumber milling. They were followed by Scandinavian immigrants who came to work in the logging camps and lumber mills. During the period of 1860 through 1885, the City grew dramatically from 600 to over 4,600 people as the logging and milling industry and related wood products companies grew rapidly. This rapid industrial growth fueled residential construction and commercial development in the Central Business District. However, when the forest resources were exhausted the lumbering industry declined and the City population fell below 3,800 people. It was not until 40 years later in 1925, that the population again exceeded 4,600.

TABLE 5-1: POPULATION GROWTH IN ANOKA 1880 TO 2010



The largest increase in population began just after 1950, seeing around 3,000 new residents added every decade into the 1980s. This was a result of the construction of the national highway system – when suburbs became quickly accessible by automobile – as well as federal government actions to make home-ownership more available to certain people across the country. Additionally, during this time Minnesota experienced an influx of migrants from southern states such as Texas, Louisiana, and Arkansas, causing demographic shifts around the Metro.



*Family plays croquet on the front lawn in a stereotypical suburban neighborhood.*



*Senior usher board at St. Peter's AME Church, in the 1960s.*

### **Economic Factors**

The major economic factors affecting the City during the last 40 years have included several major industrial companies, including Hoffman Engineering Company, Federal Cartridge Company, West Bend Thermo-Serv, and Cornelius Company. These companies employed over 3,500 people. During the mid-1990's the development of the Anoka Enterprise Park added 35 additional companies. These additional companies now employ over 1,500 people.

Meanwhile, the Central Business District has been going through substantial change as it evolves from a general retail district to a service and specialty shop district. An anchor of the Central Business District is the Anoka County Courthouse which employs over 1,100 people. The County Government Center anchors other businesses in the Central Business District, such as law firms, real estate agencies, and other service businesses. Large area retailers such as grocery stores and auto dealers, have moved out of the downtown seeking larger sites in response to competition from regional malls and retail power centers. In response to this, the City and Anoka's small businesses are focusing on strengthening the downtown district, exploring experiential retail, and investing in special events and festivals.



*Workers at a VEERAC building in Anoka, circa 1912. The company made several different kinds of vehicles and even small motors to power pumps, washing machines, and small farm implements such as a fanning mill.*

## HISTORIC PLACES

Preserved physical locations are vital to inducing memories and the mood of an era. In addition to reminiscing on the past, the architecture, urban form, and location of Anoka's older settlements also contribute to a more livable community by encouraging more vibrant street life, bringing heritage tourism to Anoka, and inspiring current residents and workers to continue the city's sophisticated physical character. Certain site, structures, and districts have been registered as important historical treasures to receive extra attention through preservation resources and initiatives. This happens at the National, County, and City level.



*409 Van Buren Street, built 1925, is a well-kept example of the popular Craftsman architectural style.*

## HISTORIC NEIGHBORHOODS

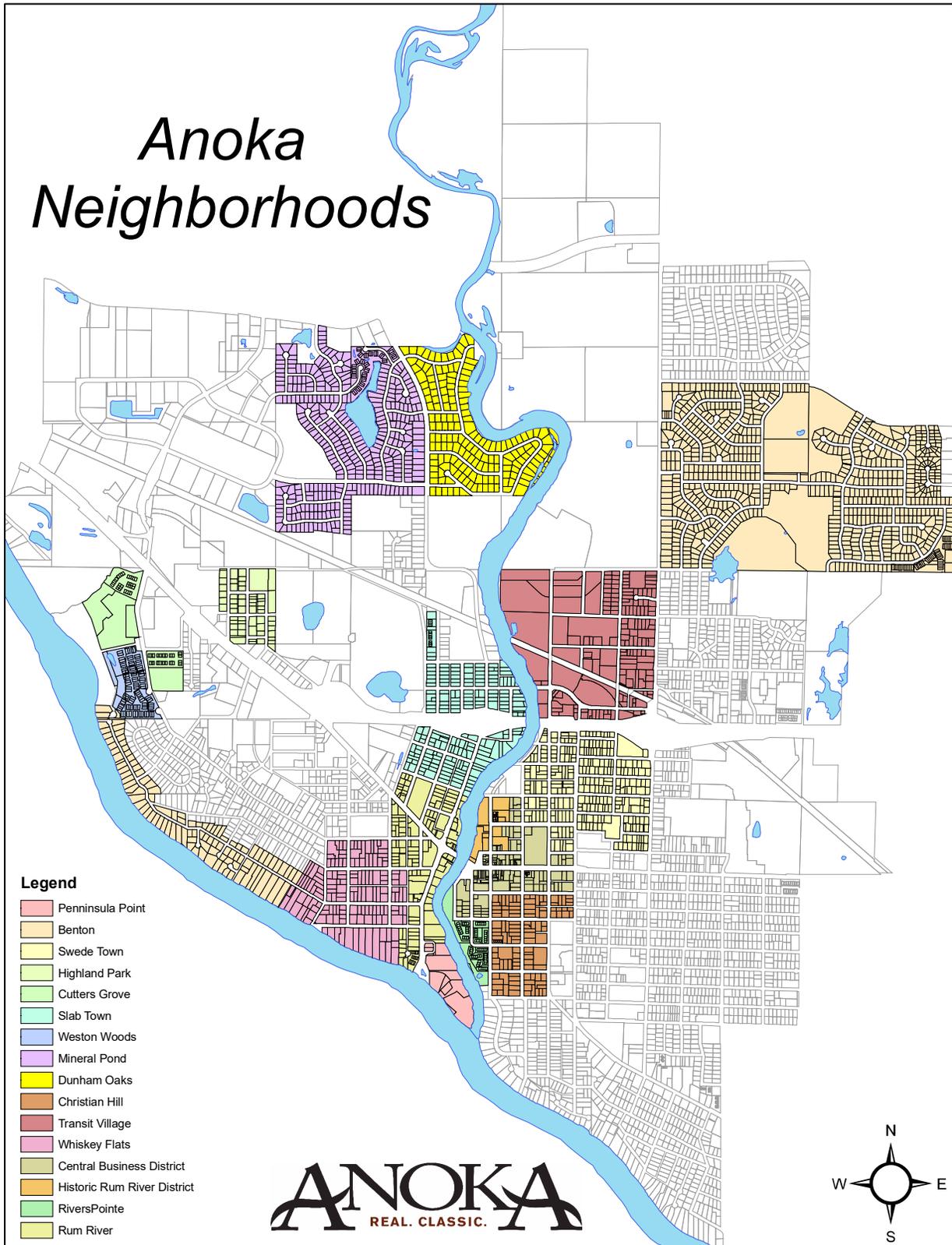
The City of Anoka has a historically diverse community identity. Prior to the impact of post-war suburbanization, Anoka featured neighborhoods of different ethnic and social identity. For example, the east side of the Rum River was known as Christian Hill. This area was southeast of downtown and on both sides of Third Avenue. The area contained several churches and homes of many New Englanders who originally founded the City.



North of Main Street between Fourth and Seventh Avenue, was Swede Town. This area was settled by Scandinavian immigrants. In addition, the smaller neighborhoods of Wet Flats and Cutterville Flats were along the banks of the Rum River.

On the north end of the City near the railroad tracks was Northtown or Uppertown, which included both residential and commercial development near the railroad depot. On the west side of the Rum River were several neighborhoods including Slab Town, which was located north of Main Street along the Rum River. Slab Town was primarily inhabited by workers from the neighborhood lumber mills. Just north of Slab Town was a small French settlement known as Frog Town. Residents near Main and Ferry Street considered themselves to live in Rum River, which was the original settlement area of the community. South of Rum River was Firemen's Grove and the Point. West of Rum River was an area known as Whiskey Flats. This area was known for its early brewing of whiskey and its location adjacent to the ferry dock. These neighborhoods maintained their separate identity through the 1940's and over the years fielded athletic teams that competed with each other in the community.

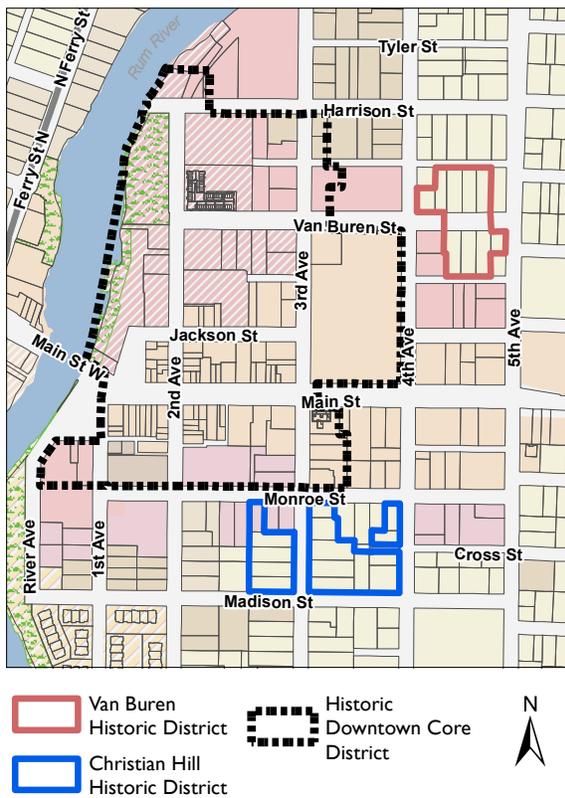
MAP 5-2: HISTORIC NEIGHBORHOODS OF ANOKA



## CITY HERITAGE PRESERVATION DISTRICTS

The City of Anoka Heritage Preservation Commission and City Council have officially designated two Heritage Preservation Districts in the City of Anoka as allowed by Chapter 20 of the Anoka City Code. The purpose of a Heritage Preservation District is to provide for the preservation of buildings, lands and areas that possess historical and architectural significance and promote educational, cultural, and general welfare of residents of the City of Anoka.

MAP 5-2: HISTORIC DISTRICTS - CITY OF ANOKA



A district must meet two of the criteria specified in the City Code, such as embodying a distinguishing characteristic architectural type, being located on the site of a significant historical event, or being identified with a person who or persons who have significantly contributed to the culture or

development of the City. While a neighborhood may be the general site of any of these criteria, a Historic District is made of specific sites its border may not coincide with the border of the neighborhood of the same name.

The two officially-designated historic districts in Anoka are Christian Hill Historic District and Van Buren Historic District, located within the neighborhoods of the same name.

### 1. Christian Hill Historic District

*The Christian Hill Neighborhood is one of the oldest and most historic in Anoka. The neighborhood is located along the east side of the Rum River. This area extends along the river southeast of downtown on both sides of Third Avenue. The neighborhood featured several churches and the homes of many New Englanders who originally founded the City. Christian Hill is located at a higher elevation than the rest of the original settlements of Anoka and was also the most fashionable neighborhood with its grand residences of professional people and community leaders.*

TABLE 5-3: PROPERTIES IN THE CHRISTIAN HILL HISTORIC DISTRICT

1802 3rd Avenue	1832 3rd Avenue
1803 3rd Avenue	321 Madison Street
1808 3rd Avenue	230 Monroe Street
1809 3rd Avenue	334 Monroe Street
1815 3rd Avenue	1801 4th Avenue
1816 3rd Avenue	1815 4th Avenue
1821 3rd Avenue	1821 4th Avenue
1828 3rd Avenue	

2. Van Buren Historic District

*The Van Buren Street District is generally located on Van Buren Street between 4th and 5th Avenues and includes the following properties:*

403 Van Buren Street	421 Van Buren Street
408 Van Buren Street	426 Van Buren Street
409 Van Buren Street	427 Van Buren Street
410 Van Buren Street	432 Van Buren Street

lumber boom period, the Scandinavian immigration, the agricultural town period, the suburban growth period, and the decades in which the City was engulfed in the metropolitan area by surrounding growth and development. Many buildings have been demolished or altered as a result of the City’s evolution. Consequently, the community identity of Anoka has been threatened, or at least changed. Storefronts in the Central Business District have had many different faces applied and removed by succeeding owners and tenants. Residential properties have been remodeled or demolished for new commercial or apartment development. Therefore, a heritage preservation plan is necessary to preserve the historic character of the community for future generations.

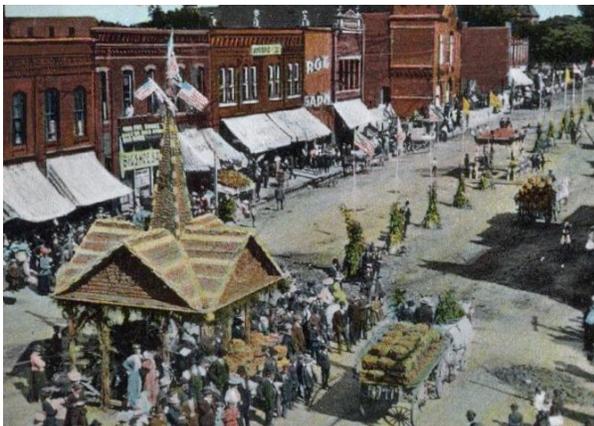
HISTORIC DOWNTOWN

The major historical event that shaped the direction of the City, particularly the Central Business District, was the major fire in August of 1884. This fire destroyed most of the downtown area. Brick structures, which now create the characteristic 1890’s identity of the Central Business District, later replaced the wood framed structures destroyed by the fire. The brick used to construct these buildings is soft and subject to deterioration due to changing weather conditions.

As a result of historical trends, buildings have been constructed in Anoka in every decade since the 1850’s. These buildings reflect the New England



*In December 2017, Anoka’s City Christmas Tree made the newspapers for not only its colossal size, but also the tremendous turnout to the annual Christmas Tree Lighting.*



*A postcard showing Anoka’s Corn and Potato Palace in 1907.*

## NATIONAL REGISTER OF HISTORIC PLACES

The National Register of Historic Places is the official list of the Nation’s historic places worthy of preservation. Authorized by the National Historic Preservation Act of 1966, the National Park Service’s National Register of Historic Places (NRHP) is part of the national program to coordinate and support public and private efforts to identify, evaluate, and protect America’s historic and archeological resources. In Minnesota the NRHP is administered by the Minnesota State Historic Preservation Office.

The following nine properties have been listed on the National Register of Historic Places:



*The Herman L. Ticknor House, built in 1867 and remodeled in 1901, was placed on the National Register based on its association with three generations of an influential local family and three architectural styles: Gothic Revival, Queen Anne, and Neoclassical.*

TABLE 5-2: LOCATIONS IN ANOKA ON THE NATIONAL REGISTER OF HISTORIC PLACES

Property	Street Address	Date Listed	Construction/ Renovation Date(s)
Anoka Post Office	300 E. Main Street	12/31/79	1916
Anoka-Champlin Mississippi River Bridge	U.S. Hwy. 169 over Mississippi River	12/31/79	1929
Colonial Hall and Masonic Lodge No. 30	1900 3 <sup>rd</sup> Avenue S.	12/31/79	1904, 1922
Jackson Hotel	241 Jackson Street	12/08/78	1884, 1888, 1905
Kline Sanitarium	1500 S. Ferry Street	12/26/79	1902
Shaw-Hammons House	302 Fremont Street	12/26/79	Ca. 1852, 1870
Ticknor, Herman L., House	1652 3 <sup>rd</sup> Avenue S.	12/27/79	1867, 1901, 1930
Windego Park Auditorium/Open-air Theater	Between S. Ferry Street and Rum River	01/08/80	1914
Woodbury House	1632 S. Ferry Street	12/26/79	1857

# National Register of Historic Places Location Map



## METRO-REGIONAL TREATMENT CENTER AND THE EAGLE'S HEALING NEST

In September of 2017, a selection of the beautiful historic cottages at the Metro-Regional Treatment Center were leased from Anoka County and turned over to Eagle's Healing Nest for renovation. Eagle's Healing Nest is a nonprofit that offers housing and services to challenged veterans.



Community members from around the state donated time, money, and expertise to renovating the first cottage as a dormitory-style residential hall. Within 57 days, the Nest was operational, with cottage #3 open to men and #2 open to women soon after. Cottage #4 and the auditorium will be renovated in the coming years. This project accomplished three goals: saving veterans' lives, preserving the historic cottages and auditorium from demolition, and saving tax-payer dollars through using only private and in-kind donations to fund the rehabilitation and maintenance.



Originally built by the State of Minnesota as the First State Asylum for the Insane in 1899, the facility quickly became women-only. By 1960, nearly 1,100 people lived there. Along with their treatments, the patients worked jobs such as farming and sewing, and had access to amenities such as an on-site beauty parlor, movies, and religious services. The name eventually changed to the Anoka State Hospital and then the Metro-Regional Treatment Center until it closed in 1999. Finally, the State gave the property to Anoka County, which operates half of it as the Rum River Human Services Center and leases three cottages and the auditorium to Eagle's Healing Nest.



# HERITAGE PRESERVATION PLAN

As the earliest settlement, county seat, and major agricultural and commercial center in Anoka County, the City of Anoka contains the majority of historic properties identified in the County survey. However, these properties are being threatened by deterioration and redevelopment.

The heritage preservation plan is necessary to preserve community identity and specific cultural resources that reflect the heritage of our community.

## PROGRAMS

### Façade Easement

A historic façade easement is a legal agreement that permanently prevents demolition, neglect, and insensitive alterations to the exterior of the historic building. This easement enables the owner of a historic building to establish certain preservation restrictions while retaining possession and use of the building. The goal of these restrictions is to maintain the unique architectural character of Anoka that powers the city's regional appeal and contributes to resident satisfaction. In return for agreeing to the façade

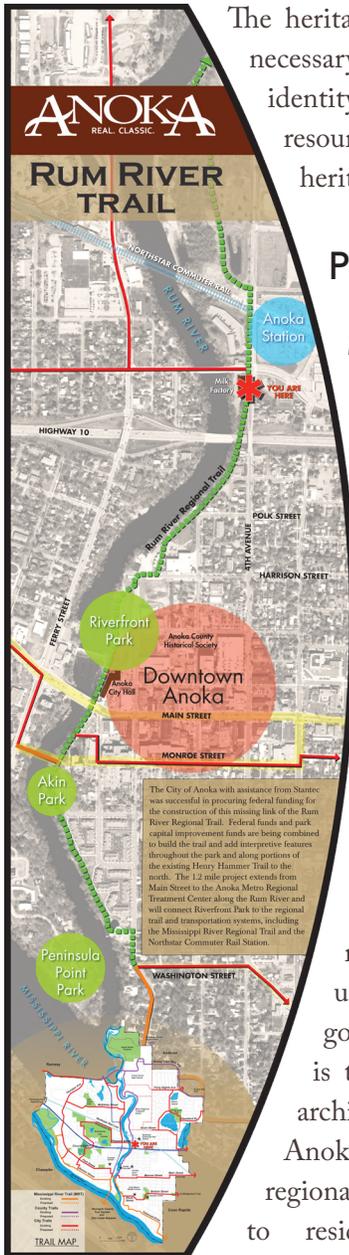
easement, the building owner may benefit from a charitable contribution deduction that can be applied to federal income and gift and estate taxes. To qualify for a historic preservation easement, a property must be either a certified historic structure or occupy a historically important land area.

### Rum River Trail Plaques

Interpretive signs and features have been designed for and placed along the stretch of Rum River Regional Trail between Main Street and the Anoka Regional Treatment Center along the Rum River. They identify sites of significant historical establishments, events, and individuals. This is a rewarding example of incorporating storytelling and historical interpretation into other land uses and developments around Anoka.

### Historic Home Plaques, Sandwich Boards, and Preservation Awards

Owners who want to aid in displaying Anoka's history may apply for a wall-mounted plaque or free-standing sandwich board sign recognizing the age and historic integrity of their property. To qualify for a display, a building must be an original structure over 75 years old (50 years old for a sandwich board) with either historical and/or architectural merit; this includes structures that have been maintained in their original form or have been returned to their original configuration. Furthermore, any existing



*The Woodbury House on Ferry Street exemplifies the benefits of a facade easement to the neighborhood and city.*



*Plaques along the Rum River Trail tell the story of Anoka and its development.*

alterations and additions to the original structure must preserve the architectural integrity of the structure and appear as logical progressive add-ons to the original.

The Heritage Preservation Commission (HPC) also recognizes commercial and residential properties in the City that exemplify historic preservation through restoration or remodeling of a building or home. The Commission awards properties with a Heritage Preservation Award annually.

### **Anoka Heritage Home and Garden Tours**

A cherished annual tradition with as many as 600 ticket-buyers each year, the Anoka Heritage Home and Garden Tour has put Anoka's unique architectural treasures on display for the last fifteen years. The Tour is a fundraising event for the Anoka County Historical Society and Anoka Heritage Preservation Commission, and provides valuable exposure to local businesses.

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## HERITAGE PRESERVATION GOALS & IMPLEMENTATION

### GOAL HP-1

Preserve the distinctive historic character and identity of Anoka as a small town.

- Consider heritage preservation goals as part of land use planning, rezoning, and redevelopment.
- Monitor zoning of areas to protect historically significant structures.
- Work in partnership with the Anoka County Historical Society.

### GOAL HP-4

Preserve and protect the historic aspects of the community.

- Encourage expansion of the Commercial Rehab Revolving Loan Fund.
- Encourage the use of the Revolving Loan Fund for housing rehabilitation.
- Promote architectural guidelines for funded projects which emphasize historically significant rehabilitation.

### GOAL HP-2

Preserve the identity of the historic neighborhoods in the City.

- Promote historically sensitive rehabilitation and infill redevelopment of compatible architectural styles in residential neighborhoods.

### GOAL HP-5

Encourage and promote preservation of local history relating to businesses, civic, social and religious organizations and resident individuals and families.

- Identify and honor Anokans who have made significant contributions to the community.

### GOAL HP-3

Recognize the unique character of the downtown area and preserve the historic “Main Street” image of the Central Business District and residential neighborhoods.

- Promote historically sensitive rehabilitation and infill redevelopment of compatible architectural styles in the Central Business District and residential neighborhoods.

### GOAL HP-6

Research and interpret local history to residents, visitors, and tourists.

- Continue the development of the Rum River Heritage Trail on the east bank of the Rum River.
- Research and create heritage walks in the Central Business District and other appropriate locations.
- Continue to promote the location and maintenance of historical markers or plaques

on appropriate historic resources, along trails, and in City parks to interpret local history.

- Encourage tours or events which interpret local history.

### GOAL HP-7

Maintain and update official controls and administration of heritage preservation in the City.

- Review and strengthen the Historic Preservation ordinance.
- Review proposed Heritage Preservation districts and sites.
- Review and update design guidelines for existing and proposed Heritage Preservation districts and sites.
- Update the inventory of historical aspects of the community.



*The Anoka HPC partners with the Anoka County Historical Society to memorialize Anoka's cherished historic sites.*

# 6. PARKS, OPEN SPACE & TRAILS

Parks & Recreation in Anoka  
Regional Parks & Trails  
Local Parks & Trails  
Goals & Projects  
Department Policies



# PARKS & RECREATION IN ANOKA

## OVERALL DEPARTMENT GOAL

To provide a wide range of recreational opportunities and park facilities for all citizens and visitors while balancing maintenance, acquisition, and development of parks and recreational areas and preservation of open space. As a river community, citizens may enjoy water sports like boating, canoeing, kayaking, and fishing. Trails, athletic fields, parks, open space, an outdoor aquatic center, and a senior center are all included in Anoka’s park system. It continues to be the goal of the City to provide excellence in parks and recreation for generations to come.

## INTRODUCTION

The City of Anoka’s park and open space system provides facilities for active recreation, such as playgrounds, courts, athletic fields, and an aquatic center. The city offers many trails located within its parks and throughout the community to provide connections to other parks, businesses, and community destinations. Anoka’s trail systems also incorporates a portion of the regional trail system including the Mississippi River Regional Trail (Anoka County) and Rum River Regional Trail.

Anoka is unique in that the Mississippi River and Rum River, two of the six state water trails, are accessible in Anoka. The City maintains a boat launch on the lower Rum River, which provides access to the Mississippi River Recreation Area. In addition, there are several locations on the Rum and Mississippi for canoe and kayak launching, as well as shoreline and pier fishing access.



*Advertising Anoka’s Concerts in the Park series.*

## ADVISORY BOARD

The City of Anoka established the Park Board in 1919. The Board, now referred to as the Anoka Park and Recreation Advisory Board, makes recommendations to the City Council on park and recreation issues, the use of recreational facilities by schools in the community, open space, and natural resource areas. The Board also advises the City Council regarding trails and waterways, boat launches and docks, and the boulevards and trees.

The Park and Recreation Department also works with Anoka-Hennepin District #11, as well as athletic organizations, to ensure the provision of recreational facilities throughout the seasons.

## PARK AND RECREATION PLANNING

Structured planning for Anoka’s park system first occurred with the 1975 Oasis Plan prepared by Wehrman Chapman Associates. The Oasis Plan was used in development of the 1980 Parks and Recreation Section of the Comprehensive Plan.

One outcome of this plan was the adoption of shade tree policies and standards for boulevard plantings.

In 1986, the City sent out 6,000 questionnaires to residents to determine recreational park needs. The results of this survey were used to further develop the park program.

Efforts to gain community input regarding parks and recreation in Anoka were under taken during the 1998 Community Planning Fair, held in August at various park locations throughout the City.

In 2005, the City hired Northwest Associated Consultants (NAC) to prepare a Park Facilities Needs Assessment to quantify the demand for active playfield facilities by programmed sports. The assessment involved the following:

- Identify and quantify facility demand to determine surplus or shortfall in active playfield facilities
- Evaluate the ability to improve or expand active playfield facilities within the park system and school sites
- Identify opportunities to respond to facility shortfalls.

The City has completed several goals and projects identified in the Needs Assessment and Park Plan Amendment including the creation of two full size soccer fields, the reconstruction of Sunny Acres Park, and the creation of a preferred development plan for Riverfront Park.

The City has completed eight (8) of the thirteen (13) parks and open space project goals as identified in the 2030 Comprehensive Plan. Completed goals including the following:

- Completion of a trail connection along Hwy 10 from Fair oak to Main Street

- Construction of a section of the Mississippi River Trail through Kings Island
- Reconstruction of Bonnell Fields
- Complete construction of a park within the North Central Business District (NCBD) along the Rum River (Riverfront Park phase 1)
- Creation of a preferred plan for a park within the Commuter Rail Transit Village (CRTV) (referred to as Anoka Station Park)
- Relocation and construction of Castle Field
- Incorporation of bike route signage throughout the city's trail system
- Rum River channel restoration

The applicable remaining uncompleted projects have been updated and included in the 2040 plan.

## HISTORY OF PARKS AND RECREATION

Hunting and fishing provided the earliest forms of recreation in Anoka. During the Civil War, the Armory was used for organized basketball for members of the Minnesota Reserves. In addition, informal baseball games were played.

While still a township, three areas emerged as parks: Akin Riverside Park, Peninsula Point Park and Bridge Square.

In the early 1900s, inspired in part by the Cities Beautiful Movement, Anoka began to actively embrace and construct both nature and planned park and recreation areas. Houseboats provided recreation for summer dwellers from the Minneapolis- St. Paul area. Historic photos also show extensive wood walkways along both sides of the Rum River, as well as steam and paddleboats that brought entertainers to the City. In 1914,

citizens came together to construct an open air amphitheater in Windego Park, across the Rum River from Akin Riverside Park. This provided a space for community events in a natural setting.

During the World Wars, typical recreational events included outdoor band concerts, theatrical performances and recitals from passing musicians, football, baseball and basketball games and swimming in the river. Until the 1950s, the City provided swimming lessons at the Rice Street Beach on the Mississippi River.

In the early 1950s, a new swimming pool was constructed with funds from Charles Horn, President of Federal Cartridge Company. During this time, the City added a recreation department, offering summer activities and after school events.

During the 1960s, organized softball, hockey, baseball, volleyball, basketball, and tennis increased significantly, which created a demand for more park facilities.

In the 1970s, Community Education programs were developed through the Anoka-Hennepin School District. These programs were organized to provide additional youth activities. Also during this time, more City fields were added to accommodate increased participation in tennis and soccer.

In the 1990s, the City completed Mississippi River Community Park and Peninsula Point Park, both

of which include internal trails that link to other pedestrian pathways. In the late 1990s, the City reconstructed the Charles Horn pool creating the Anoka Aquatic Center. The facility was one of the first outdoor zero-depth aquatic facilities in the Twin Cities. In addition, a redevelopment plan was created for George Green and Bonnell Parks to create a large multi-use park complex.

In the early 2000's focus shifted to rejuvenating the older parks in the community and creating new recreational activities for residents and visitors

to enjoy. The majority of neighborhood & community parks received new playground structures with updates to picnic shelters and playfields. Additional renovations included replacing the wood decking at Mississippi Park with permeable pavers; construction of paved parking at Sunny Acres; and resurfacing of tennis courts at multiple parks. Akin Riverside Park was reconstructed to include a new shelter, upgraded boat launch, and heritage trail that received a Certificate of Commendation from the American Association for

State and Local History. New facility construction included two soccer fields north of the High School.

Since about 2010, redevelopment of city owned properties in North Central Business District and revitalization of the downtown has shifted park and recreation focus back toward the River with the master planning of Riverfront Park, Anoka Station Park, and conservation of the Anoka Nature Preserve.



*Rice Street Beach on the Mississippi River*

The upgraded boat launch at Akin Riverside Park provided an opportunity for the city to lease seasonal boat slips providing convenient access to the lower Rum and Mississippi Rivers. The success of the rental slips on the lower Rum led to the installation of day use/rental slips at Riverfront Memorial Park and the Anoka Nature Preserve (referred to as Rum River North). The master plan for Anoka Station Park includes a handicap accessible kayak/canoe launch on the upper Rum River.

Winter recreation in Anoka has traditionally included outdoor skating/hockey at five locations, but recently has been expanded to include cross country skiing and snowmobiling. The City provides groomed cross country ski trails at the Green Haven Golf Course and Event Center and the Anoka Nature Preserve. Each location provides approximately a 5k ski loop perfect for beginning skiers. The city provides a snowmobile corral at Riverfront Memorial Park, which marks the end of the “shortest snowmobile trail” in the state. Snowmobile riders may park for free while they enjoy the shops and restaurants in downtown. The city has provided those that ride their snowmobiles on the Rum River with a second trail that follows the right of way on the south side of Bunker Lake Blvd to 7th Avenue where they may head south for a fuel stop.

The Anoka Nature Preserve (ANP) and Kings Island provide a total of 275 acres of unique recreational opportunities that include archery deer and waterfowl hunting, hiking, grass and gravel trails, cross country skiing, snow-shoeing, and access to nature and the rivers. Archery deer hunting serves as both a wildlife management tool and recreational opportunity on both properties. The City, in collaboration with local hunting enthusiasts, has created the “Waterfowl for Warrior” program which provides organized waterfowl hunting events for area veterans in the ANP.

In addition, the city created the Waterfowl Hunting Zone on the Mississippi River and installation of two permanent shoreline blinds on King Island to provide accessible hunting opportunities during the open waterfowl hunting season.

The vast majority of traditional organized athletic programs and instructional classes are provided by local athletic organizations, private businesses and the school district. The City operates a Senior Center which provide recreationals, social, and educational programs for older adults and operates the Anoka Aquatic Center, and outdoor seasonal swim facility that provide swim instruction. In addition, the city sponsors and organizes many special events such as a Halloween pickleball tournament, “Winterfest”, concerts in the parks, an Ice Cream Social and Fireworks on the 3rd of July, to name a few.

Recreational activities and facilities are being expanded to meet or anticipate the needs of a changing community. The City works closely with the Anoka Ramsey Athletic Association and Anoka Hennepin School District when planning and redeveloping park properties to help ensure facilities are meeting demands and keeping up with trends, including fishing and shooting sports. Recent renovations at George Enloe Park included the conversion of one tennis court into 4 outdoor pickleball courts; future court replacement projects will include conversions to pickle ball as well, as this sport continues to be popular among multiple age groups. Conversions of ag-lime softball fields into grass in-field baseball fields has eliminated a gap in baseball facilities.

## REGIONAL PARKS & TRAILS

### REGIONAL PARKS

According to the Classification System for Local and Regional Park Facilities, a regional park is identified as an area of natural or ornamental quality for nature-oriented outdoor recreation such as picnicking, boating, fishing, swimming, camping and trail uses. Regional parks serve 3 - 5 communities and are 200+ acres in size. There are currently no Regional Park facilities located in or planned to be developed within the City of Anoka.

### REGIONAL TRAIL CORRIDORS

Regional Destination Trails or Regional Linking Trails are areas developed specifically for one or more varying mode of non-motorized recreational travel such as hiking, biking, or cross-country skiing. The City of Anoka has three regional trails located within its borders.

#### **Mississippi River Regional Trail**

The Mississippi River Regional Trail offers unique experiences for bikers and hikers in Anoka County. It is one of the few trails that combines regional, local parks, and attractions and connects with a



*The Mississippi River Regional Trail*

variety of other regional trails in the north-metro area. North of the Coon Rapids Dam Regional Park, the trail continues through the City of Anoka into the City of Ramsey. At the Coon Rapids Dam the trail crosses over the dam walkway and connects to the North Hennepin Regional Trail, which leads to Elm Creek Park Reserve. To the south of the dam, you can connect to Rice Creek West Regional Trail which follows Rice Creek east through the City of Fridley. The southern end of the trail connects with the City of Minneapolis' St. Anthony Parkway system.

#### **Rum River Regional Trail**

The Rum River Regional Trail follows the Rum River from the City of Anoka to the Anoka/Isanti County border. The trail consists of segments connecting different local and regional parks. The plan for this trail is to be twenty miles long when complete and stretch North to South across the county. Currently four segments of this regional trail exist. The first segment stretches from City of Anoka's Akin Riverside Park north through downtown Anoka continuing along the river to the Rum River County library. Users can continue north through the Anoka Nature Preserve on the



*The Rum River Regional Trail*

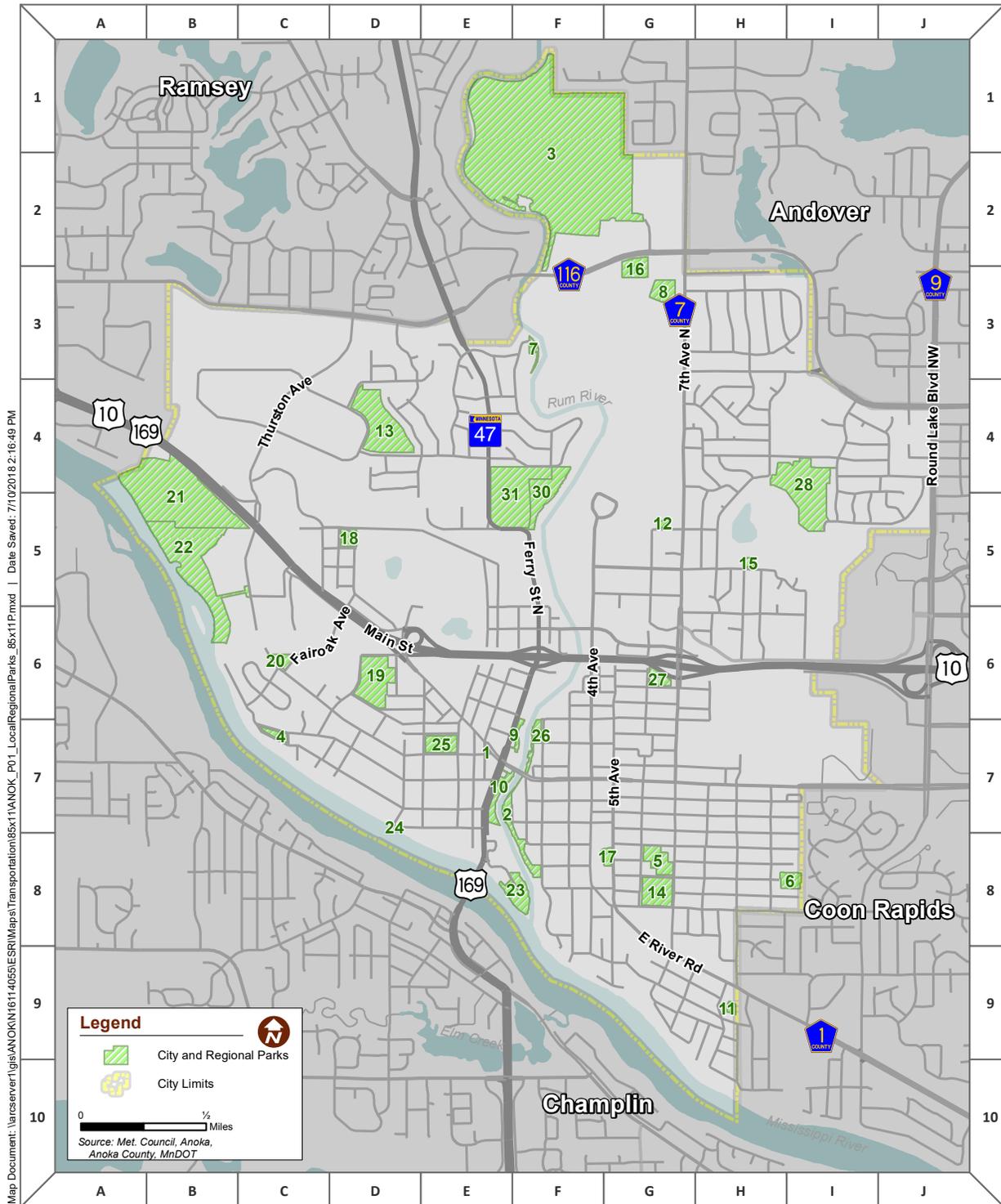


Figure 6-1: Map of City and Regional Parks



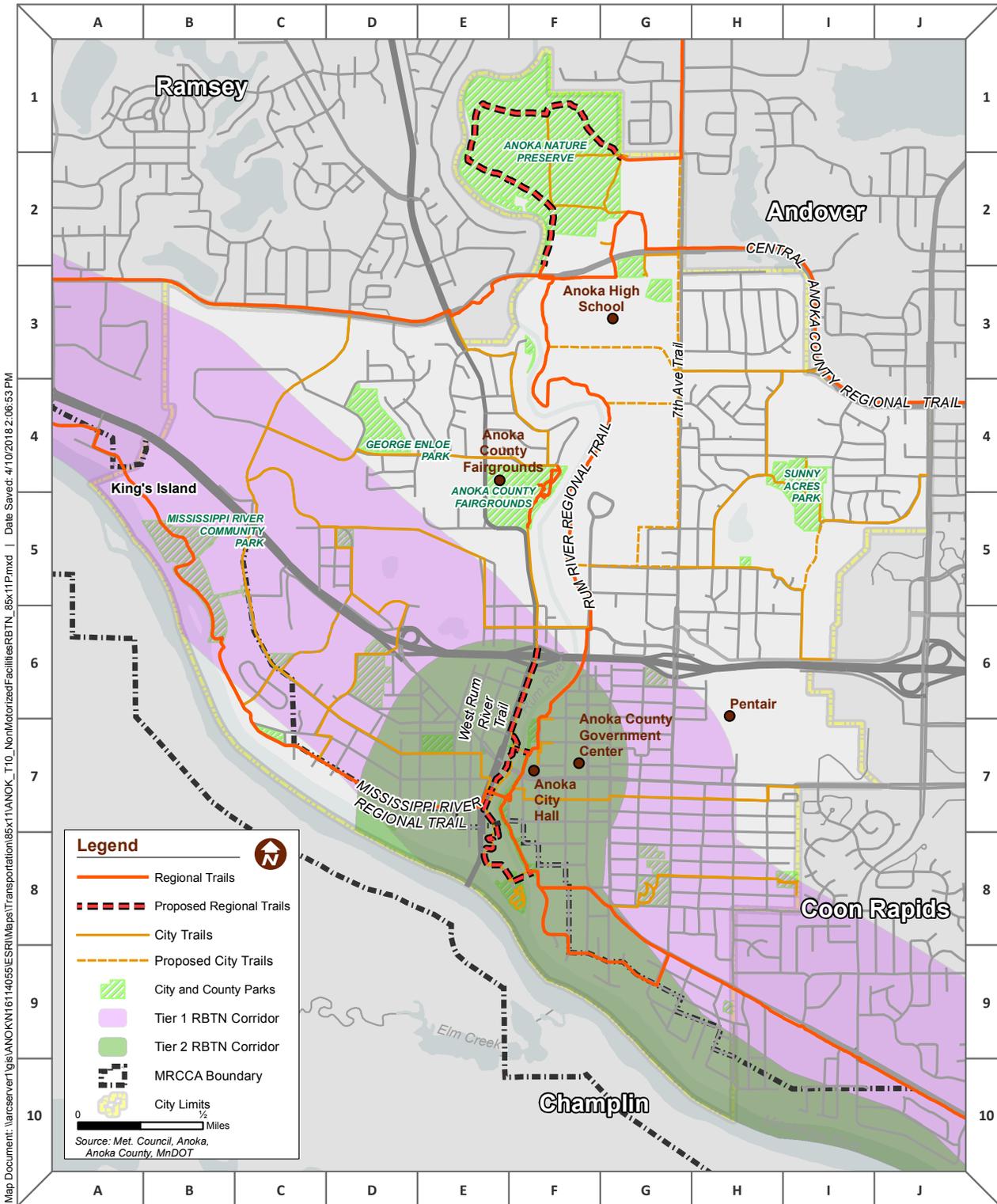


Figure 6-3: Map of existing and planned non-motorized facilities and RBTN

gravel trails, which terminate at 7th Ave on Anoka/Andover border. The second section is 1.2 miles long and explores the Lake George Regional Park. The third segment is just over one mile long and stretches through the Ponds Park in the City of Oak Grove. Finally, the fourth segment of trail is 3.5 miles long and stretches from Lake George Blvd to Poppy Street. Connecting the Dellwood River Park and Rum River North County Park.

The Rum River Regional Trail connects with many other regional trails such as the Mississippi River Regional Trail, Central Anoka County Regional Trail, North Anoka County Regional Trail, and Sugar Hills Regional Trail.

### **Central Anoka County Regional Trail**

The Central Anoka County Regional Trail begins at Mississippi West Regional Park and ends at the Washington County line. This trail provides many opportunities to the community such as exploring city and county parks to shopping along Bunker Lake Blvd and Round Lake Blvd.

Even though only sixteen of the proposed twenty-six miles of trail have been constructed, the trail provides access to other regional trails, which include Rum River Regional Trail, East Anoka County Regional Trail, Bunker - Chain of Lakes Regional Trail, and Chain of Lake - Otter Lake Regional Trail. This trail will also join up with Washington County and Hugo trails.



*The Central Anoka County Regional Trail near the wind turbine.*



*The Central Anoka County Regional Trail farther north in Anoka County.*

## LOCAL PARKS & TRAILS

### PARK CLASSIFICATION SYSTEM

Anoka’s Park Classification System, originally formulated in 1975 as a part of Anoka’s outdoor space inventory, was updated for the 2030 Comprehensive Plan to reflect the park and open space standards established by the Metropolitan Council Classification System and National Recreation and Parks Association. The park classifications were modified according to classification definitions provided in the 2040 Thrive plan.

The City’s park system encompasses a total of 444.76 acres of park and open space.

**TABLE 6-1: ACREAGE OF PARKS AND OPEN SPACE**

Land Use	Acres
Mini Parks	7.2
Neighborhood Parks	10.9
Community Playground/Play Fields	87.41
Community Park and Nature	55.65
Conservancy Lands	269.0
County Parks	14.6

### MINI PARKS

Mini parks provide specialized facilities that serve a concentrated or limited population or specific group, such as tots or senior citizens; and may publicly or privately owned and/or incorporated into a development site, such as an apartment. Mini parks are usually less than 1 acre in size and provide a service area radius of less than ¼ mile.

- **Aaron Greenwald**  
(115 Park Street // 0.1 Acres)

This park is the smallest park in Anoka and functions as a small greenspace on West Main St. The parcel was a gift to the City from

the Grand Army of the Republic (GAR) & Edward B Cutter Legion Post #102. Aaron Greenwald was the first individual from Anoka to register to become a Union Soldier during the Civil War.

- **Bob Ehlen Park**  
(1131 Benton Street // 1.8 acres)

The park provides nearly 2 acres of open green space for the neighborhood. In 2017, the City platted the entire 1.8 acres of open space as park property.

- **Garfield Tot Lot**  
(611 Garfield Street // 0.4 acres)

The park consists of a small picnic shelter, grill, and individual component playground equipment. Upon completion of Anoka Station Park, the city will repurpose the Garfield Tot Lot. The concept play for Anoka Station Park includes installation of playground, parking lot, and a kayak/canoe launch. As a community park, Anoka Station Park, will serve the entire Commuter Rail Transit Village neighborhood.

- **Goodrich Park**  
(1650 4th Avenue // 1.4 acres )

This small park, originally donated to the City by the friends of George H. Goodrich, provides lush green open space adjacent to Goodrich Field. One of two brick fireplaces built in the city by the National Youth Administration in 1939 is located here. There is also a large rock with bronze plaque commemorating the gift.

- Grant Tot Lot  
(3001 9th Avenue // 0.8 acres)

This park includes playground equipment and a picnic shelter. The park borders the southern portion of Sunny Acres wetland area.

- Rice Street Beach  
(532 Rice Street // 0.2 Acres)

Prior to 1957, this area was used as a public swimming beach where the City taught swim lessons. Today, the park functions as scenic vista providing great views of the Mississippi River and provides access to the river for fishing or launching a canoe/kayak. In 1997, the city constructed a large river boulder retaining wall to prevent soil erosion.

- Windego Park Auditorium/Open Air Theater  
(1830 Ferry Street // 0.5 acres)

This 1914 “open air” theater was listed on the National Register of Historic Places in 1980. From 1914 to the early 1940’s, the amphitheater played host to outdoor theater productions and musical concerts. The amphitheater was the brainchild of Anoka resident Thaddeus P. Giddings, one of the



*Windego Park Auditorium, built 1914.*

most important American music educators of the twentieth century. The amphitheater was designed by William Gray Purcell, and is now a part of the upcoming Rum

## NEIGHBORHOOD PARK/PLAYGROUNDS

Neighborhood parks are typically parks targeted for intense recreational use such as field games, court games, crafts, apparatus areas, skating, and neighborhood centers. Neighborhood parks are less than 25 acres in size, easily serving a single neighborhood population, and maybe located near local schools. Anoka’s neighborhood parks fall well below targeted national standard range for both current and projected ten-year populations. Anoka’s current neighborhood parks range in size from 2.0 to 5.5 acres. The small size of the existing neighborhood parks limit capacity for larger sport facilities and support a mix of passive and active recreational activities.

- Brisbin Park  
(1047 Brisbin Street // 2.7 acres)

Brisbin Park includes playground equipment, a large open green space, and a picnic area. The park includes a small parking lot and bituminous trail that links the Anoka



*Swim lessons circa 1965 at Rice Street Beach, opened in 1935.*



*King Memorial Park*

trail system to Coon Rapids Wedgewood Trail. This park also serves as a storm water retention area.

- Elm Street  
(900 Elm Street // 1.0 acre)

This park is tucked into the neighborhood at the cul-de-sac on Elm Street and includes playground equipment and limited parking. The park also provides storm water retention.

- Highland Park  
(3000 Euclid St // 2.5 acres)

Playground equipment, ½-size basketball court, picnic tables, grills and open space. This park will be re-developed and reconfigured as a part of the Green Haven Parkway phase II development project within the neighborhood.

- King Memorial Park  
(1201 Park Street // 2.0 acres)

A covered picnic shelter with tables and grills, playground equipment, picnic area and small t-ball field make up King Park. A statue of Anoka's first K-9 officer, King, winner of the Lassie Award for saving a child's life, is

located in the center of the park watching over the kids as they play.

- Rick Sorenson Park  
(2015 State Avenue // 5.5 acres)

Sorenson Park provides playground equipment, a basketball court, four tennis courts, two skinned ball fields and an open play area, which could be used for soccer or football. A four-season park building doubles as a warming house in winter for the two hockey rinks and general skating rink.

- Rudy Johnson  
(605 Polk Street // 2.7 acres)

This park provides playground equipment, four season recreation buildings with restrooms, picnic area, picnic tables, grills, one ag-lime field, open field, and small hockey rink and mature trees. The park provides a lighted general skating rink and a small hockey rink with supervised warming house and minimum parking. Anoka's Middle School utilize this park for physical education and extracurricular athletic programs.

## COMMUNITY PLAYFIELDS

Community playfields are highly active parks, varying in size from 25 - 50 acres, which serve a programmed intensive recreational use such as athletic fields, aquatic centers and complexes.

In Anoka, these parks serve community-wide outdoor athletic recreational needs. Community playfields provide centralized accessibility with multi-park functions often serving as neighborhood parks as well. Area schools utilize a number of the City's community playfields for physical education classes and after school athletic program. Anoka's parks in this category are grossly undersized when

compared to the Metropolitan Council classification system.

Two of the City’s most significant community play fields (John Ward and Sunny Acres) overlay reclaimed landfills, which complicates both the developed use and maintenance of the parks for larger field sports. Generally valued as the highest in existing amenities of the seven park classifications, community play fields provide the majority of organized sport’s needs.

- **Bonnell Fields**  
(1571 7th Avenue // 6.3 acres)

This park is directly north of the George Green Park complex and provides multi-purpose athletic fields for soccer, football, and softball. Anoka Middle School utilizes the fields for physical education classes and extracurricular programs. This park also serves as a storm water retention area for the southeast quadrant of the city.

- **Castle Memorial Field**  
(600 Castle Field Boulevard // 4.91 acres)

Castle field is Anoka’s premiere lit baseball field for youth and adult baseball. It includes a concession stand, restrooms, scoreboard, dugouts, batting cage, public address system, bleachers and parking.

- **George Enloe Park**  
(631 Lund Boulevard // 23.0 acres)

This is a multi-purpose youth athletic complex with year round recreation activities, including a lit sliding hill, general skating and hockey rinks, and a supervised warming house. Additional amenities include two playground structures, softball fields, one baseball field, soccer field, three parking lots, basketball court, one lit tennis court, picnic

area, restrooms, and a bituminous walking trail.

- **Grey Ghost Fields**  
(559 Castle Field Boulevard // 5.5 acres)

This park, built in 2007, specifically addresses the needs of the growing popularity of soccer and lacrosse. Originally, both fields were regulation size, however, construction of Castle Field Boulevard in 2013 required reconfiguration of the fields and neither field supports regulation soccer.

- **John Ward Park**  
(2400 Forest Avenue // 14.0 acres)

John Ward Park, built atop a decommissioned landfill, is more commonly known in the community as ‘Rocket Park’ due to the large rocket shaped playground structure. The first rocket playground was installed in the late 1960s. Since then, two replacement playground structures have maintained the theme. This park includes three softball fields (two lit), a small soccer field, a restroom facility, two picnic shelters, a skate park, large open space and two parking lots.



*Entrance to Castle Memorial Field*

- Sunny Acres Park  
(3399 Colfax Avenue // 33.7 acres)

Developed in the late 1970s, this athletic field complex has been reclaimed from a decommissioned landfill and is part of the city’s northeast watershed area and wetland. The park consists of a four softball fields, picnic shelter, activity pavilion with restrooms, playground, four tennis courts, three parking lots, and walking trail. Ehe City provides winter skating facilities and a supervised warming house at Wilson Elementary School.



*Bicentennial Band Shell at George Green Park*

## COMMUNITY PARKS

The purpose of this classification is to provide a combination of active and passive recreation areas, such as walking, scenic viewing, and picnicking, which are oriented toward the sites’ natural amenities and beauty. There may be some field and court games located in these parks depending on site suitability and community need.

Anoka has utilized this classification to include facilities that provide an aesthetic appeal to the entire community population due to their proximity to the Rum and Mississippi Rivers or other environmental features. These parks contain open space areas, trails, educational components, and passive recreation opportunities.

- Akin Riverside Park  
(1721 River Avenue // 6.53 acres)

This park borders the eastern shore of the Rum River from Main Street to Washington Street. A pedestrian bridge crosses the Rum River providing a safe connection to Ferry Street. The park provides a view of the historic Windego Park Auditorium and stone house. The park includes playground equipment, picnic shelter with restrooms, picnic tables

and benches, grills, and river access with two fishing platforms, a boat launch and rental boat slips.

- Brom Canoe Rest  
(3812 Rum River Drive // 1.0 acre)

Located off the cul-de-sac on Rum River Drive, the Brom Canoe Rest provides a quaint rest stop and launching location on the west bank of the Rum River.

- City Hall Dam West / Bonnell Overlook  
(2030 Ferry Street // 1.35 acres)

The courtyard provides river access for fishing and picnic tables. An additional ½-acre parcel adjacent to the North was donated to the City from the Bonnell Family in 2007. Development of the West Rum River Trail will provide better utilization of these properties with development of a trail along the river and bluff edge.

- George Green Park  
(Park pavilion: 1498 6th Avenue  
Aquatic Center: 1551 7th Avenue  
Senior Center: 1502 6th Avenue  
// 8.0 acres)

The park is located between Bonnell Fields to its north and Lincoln Elementary School to its south. Large Bur Oaks provide a serene setting for the bicentennial band shell, Senior Center building, and the Anoka Aquatic Center. The park includes three paved parking areas, five tennis courts (three lit), playground equipment, and horseshoe courts.

- **Mississippi River Community Park**  
(2751 Cutters Grove Avenue // 35 acres)

Located on the east bank of the Mississippi River this park provides opportunities to interact with the river via the shoreline and fishing pier. The park offers four shelters, with picnic tables & grills and electrical access within the concession stand. The playground structure is a ship, reminding users of the park connection with the Mississippi River. Additional amenities include open space play area, sand volleyball court, and ½ size basketball court. There are approximately 1.5 miles of interior park trails that provide beautiful views of the river and park. From the north, the Mississippi River Trail enters Anoka at Kings Island, as the trail enters the park it closely follows the river and then moves on street following Benton Street.



*Peninsula Point Two Rivers Historical Park*

- **Peninsula Point Two Rivers Historical Park**  
(1460 South Ferry Road // 8.3 acres)

Located at the confluence of the Rum and Mississippi Rivers, this property served as a primary entry point of Anoka for fur traders, loggers and Native Americans. In 1995, with the assistance of Legislative Commission on Minnesota's Resources (LCMR) grant, the City converted the site from a wastewater treatment plant into a beautiful park. This park includes a seasonal building that offers restrooms, a meeting room, concession service area and a shelter. There is also river overlook, daily use boat docks, multiple historic plaques detailing Anoka's rich river history, playground equipment and open space.

- **Riverfront Park**  
(2201 2nd Avenue // 2.3 acres)

The park includes river frontage from the Main Street Bridge to the Henry Hammer Overlook at Harrison Street providing visitors with multiple opportunities to interact with the Rum River. One of the key features of the park is the Rum River Dam. The existing dam, built in 1941, attracts thousands of tourists and residents who enjoy the river walk and fishing. Accessible daily docking



*Riverfront Park by City Hall*

facilities, both upstream and downstream of the dam, are provided for boaters. The Port of Anoka overlook and the walkway on the dam are favorite fishing spots. Upstream of the dam, the city also provides rental boat slips for citizens that do not live on the river. The Rum River Regional Trail goes through the center of park. The park also includes history boards detailing Anoka’s industrial history as it relates to the Rum River, several overlooks, a rain garden and will soon include the Veterans Memorial. Plans for Riverfront Park include the creation of a plaza near the dam with grand staircase/water feature, restroom facilities, and performance pavilion in the likeness of the Carnegie Library that once stood in the historic downtown.

## COUNTY PARKS

County Parks are areas of natural or ornamental features for outdoor recreation such as walking, viewing/sitting, or picnicking. County Parks are smaller facilities than regional parks.

- Rum River South County Park  
(3000 St. Francis Boulevard // 14.6 acres)

The park offers visitors a chance to enjoy the scenic Rum River while enjoying a picnic or walking the trail. Amenities include a fishing pier and boat launch, parking, playground and picnic area.

## CONSERVANCY LANDS

Conservancy lands are areas of natural quality such as watercourses and wetlands that are preserved for environmental or aesthetic benefits to the community and/or because the negative

environmental or economic effects of development in them.

- Anoka Nature Preserve  
(4301 Parkview Lane // 212 acres)

The Anoka Nature Preserve, formerly referred to as the Rum River Nature Area, is a 200+ acre natural area on the northern boundary of Anoka with the Rum River forming its westerly border. The Anoka Conservation District (ACD) holds the conservation easement. The City and ACD



*Anoka Nature Preserve*

have jointly adopted a management plan for the Anoka Nature Preserve and has begun work to mitigate the buckthorn overgrowth. The ANP is available to the community for walking, hiking, snowshoeing and cross-country skiing/skijoring. The City organizes an archery deer-hunting program, which is consistent with the management plan.

- Kings Island  
(Eastbank of the Mississippi bordered by Mississippi River Community Park, the City of Ramsey, and Highway 10 // 57.0 acres)



*The channel around King's Island*

This property has been City owned since 1996. An oxbow channel from the Mississippi River formed the island. Previous owners created earthen dams that blocked the water flow from the river making the channel unnavigable. In 2012, the city dedicated the area as the Federal Premium Ammunition Wildlife Conservation Area on Kings Island to honor the business' commitment to local and national conservation efforts. In 2013, the City cleared the channel of fallen trees and removed the earthen dams; and excavated the channel to restore water flow allowing small watercraft to navigate it. A year later, through collaboration with Anoka County and the city of Ramsey, the Mississippi River Trail (MRT) was constructed across the island. Construction of this segment was essential in completing the Anoka County MRT. The City has designated a waterfowl-hunting zone on the Mississippi River adjacent to Kings Island, offers two permanent hunting blinds, and issues archery deer hunting permits as part of the wildlife management program.

- Station Park  
(East bank of the Rum River north of

BNSF Rail line and west of 4th Avenue // 15 acres)

The City purchased these properties in 1999 from the State of Minnesota. The lower portion contains a conveyance of a Scenic Easement under custodial control of the Minnesota Department of Natural Resources, applicable on approximately five acres of the property. Portions of this area are in either the Recreation or Scenic designated river zones.

The City plans to create a trailhead and parking area to serve the Rum River Regional Trail and future park for the Commuter Rail Transit Village. Park features will include an accessible canoe/kayak launch in the backwater channel of the Rum River, a series of boardwalks and nature trails creating interaction with the Rum River and natural area, playground, and river overlook. Station Park features a unique, hand-laid stone wall that is identical to walls located on the adjacent grounds of the historic Anoka State Hospital.

## INSTITUTIONAL

Within the City of Anoka, there are other government entities in addition to Anoka Hennepin Schools that own property that contributes to the outdoor recreation system.

- Anoka County Fair Grounds  
(3200 St. Francis Boulevard // 20 acres)

## LOCAL LINEAR PARKS, TRAILS, CORRIDORS, & PARKWAYS

Linear parks, trails, and parkways are corridors developed for one or more modes of recreational travel such as biking, walking, or cross-country skiing in areas that may/may not traverse scenic areas but do not negatively affect the natural

resource base. Where needed, these trails provide necessary links to neighborhoods, points of interest, and community facilities such as schools or commercial areas, or provide links to neighboring municipalities.

- Henry Hammer Trail

This trail is part of the Rum River Regional Trail. This trail begins at the Henry Hammer overlook within Riverfront Park. The trail, named in honor of past Park Board member Henry Hammer, moves north past the feed mill to an overlook then meanders along the river crossing Hwy 10 on a converted rail bridge. The Henry Hammer trail terminates at the Milk Factory, but the Rum River Regional Trail continues to the northern border of Anoka.

- Stout Pond Trail

This 8 acre site contains the man-made storm water pond for the industrial park but provides wildlife habitat for waterfowl and other animals. The pond/trail was dedicated in 1997 in memory of Gary Stout, a planner of the City's Enterprise Park. The property

contains a paved trail around the pond with multiple sitting areas. This ½-mile trail is accessible from Lund Blvd, McKinley St, and Thurston Blvd.

- East Main Street Trail Corridor

The East Main Street Trail Corridor begins at the eastern corporate limits of the City, providing pedestrian access to the downtown area on the Main Street sidewalks to 5th Avenue. This trail continues through the Central Business District for foot traffic only from 5th Avenue to 1st Avenue. Bike traffic is redirected to Monroe Street located one block south of Main Street. The trail crosses the Main Street Bridge and connects to the Ferry Street Trail Corridor and the Hwy 10 / West Main Street Trail Corridor.

- West Rum River Trail River Walk

Located along the South Ferry Street (TH 169) corridor, this will trail provide pedestrians with their first glimpse of Anoka as they enter the city from the south. The trail will follow the west side of the Rum River from the Mississippi Bridge to the Rum River Dam. Plans include a pedestrian bridge connection from Peninsula Point



*Envisioning sketch of the West Rum River Trail section near the pedestrian bridge over the Rum River. Sketch by Kimley-Horn.*

Park to Akin Riverside Park, a bluff line trail from the Woodbury House to the Windego Amphitheater, and a water's edge trail from the amphitheater north to the Rum River Dam.

- Seventh Avenue Trail Corridor

The Seventh Avenue Trail Corridor begins at its connection point to the Mississippi River Regional Trail on Oakwood Lane and continues north to the City's north corporate limits at Bunker Lake Blvd. Pedestrians must utilize the sidewalks and bicycles ride on street. The corridor connects several parks and facilities including the Aquatic Center and Rum River Library. The corridor provides links to several local trail corridors and the Central Anoka County Regional Trail.

- North Street Trail Corridor

The North Street Trail Corridor begins at the corporate limits of Anoka and Coon Rapids and follows North Street to 11th Avenue where the trail moves on street. The trail follows 11th Avenue north where it connects to Grant Street and takes pedestrians west toward 7th Avenue taking advantage of the traffic light to cross 7th Avenue. It then continues west on Grant Street to 4th Avenue where the trail turns back to the south to connect to Pierce Street heading west again to cross Ferry Street. The trail follows Wingfield Avenue to Garfield Street around the perimeter of Green Haven Golf Course. The trail stays on Garfield Street where it makes the connection from Green Haven Parkway to Thurston Avenue, users can then join the Mississippi River Regional Trail to the south or follow Thurston Avenue to the north and link to the Central Anoka County Regional Trail.

- Brisbin Trail Corridor

The Brisbin Trail Corridor begins at its junction with the City of Coon Rapids Wedgewood Trail in Brisbin Park at the eastern limit of Anoka. The trail moves westward on Brisbin Street where it enter George Green Park and continues through the park to South Street. The trail moves back on street and crosses 5th Avenue following Military Road, at the pumpkin roundabout, the trails heads west on Washington Street taking pedestrians to 2nd Avenue. At this point users have an option to link up with the Rum River Regional trail heading north through Akin Riverside Park or following the Mississippi River Trail on Oakwood Drive.

- Highway 10/West Main Street Corridor

Highway 10/West Main Street Corridor begins at Ferry St and Main Street traveling west to Cutters Grove Avenue/Thurston Avenue where users can opt to connect to the Mississippi River Trail (in Mississippi River Community Park) or follow Thurston Avenue to Bunker Lake Boulevard where they can connect to the Anoka Central Regional Trail. Currently only the segment of the trail, from Fairoak Street to West Main Street along Forest Hill Cemetery, is located off-street. The Highway 10/TH169 reconstruction project will improve pedestrian travel with the creation of the West Main Extension.

## GOALS & PROJECTS

### GOAL PRO-1

Invest in Anoka’s existing park properties to improve functionality, increase recreational opportunities with upgraded and/or highly maintained amenities, and anticipate and embrace innovative and trending recreational activities

**Objective:**

To be proactive in the implementation of recreation trends, adapting to community needs, and responding to changes in community demographics

**Strategies:**

- Stay current in regional and national recreation trends.
- Foster partnerships with neighboring communities to increase service capability.
- Coordinate with school district to share implementation costs for updated facilities/amenities used for physical education curriculum and afterschool athletics.

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**PROJECT 1.1:** *Revitalization of George Green Park*

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**Objective:**

To improve the overall functionality by upgrading/relocating park amenities.

**Strategies:**

- Parking: Create additional off-street parking adjacent to the Senior Center on the site of the current pavilion.
- Site Structures:



*George Green Park contains many Anoka staples include the Band Shell, Aquatic Center, and Pavilion.*

- » Pavilion: Remove the existing picnic pavilion. Construct a new shelter with restrooms, which will create a focal point and increased functionality for the park. The existing picnic shelter lacks the utilities to serve as a quality rental space and the location to function as the park’s main identifier.
- » Band shell: Replace and improve overhead lighting. Remove the ag-lime area in front of the stage. Consider converting band shell into a picnic shelter.
- » Aquatic Center: Regular maintenance and introduction of new features will enhance the facility, help sustain aesthetics, and make it a main stay in the community for many years to come.
- Access and Circulation: Address access to and from park at each of the corners.
  - » An interior park trail connects all of the major park elements and provides a nice walking path through the park.

- » Access to the elementary school to the south and to the middle school to the west requires improvement.
- » Add sidewalk on the south side of Brisbin Street with midblock crosswalk connection from George Green Park and Bonnell Fields with street renewal project.
- Playground:
  - » Installation of playground apparatus for 2 – 5 year olds to help serve a broader cross-section of park users.
  - » Regular maintenance of the net playground structure (installed in 1998) will ensure many years of safe, imaginative play in the park for youth 5 – 12 years of age.
- Play fields and Courts:
  - » In 2015, the city Bonnell Fields underwent reconstruction for storm water drainage; field sizes and layouts modified.
    - Full size football, lacrosse, and/or soccer field fits without obstruction.
    - North ag-lime field converted to a little league grass baseball field with 200' outfield
    - South skinned ag-lime infield resized for baseball/ girls fast pitch with 200' outfield
  - » Currently there are five tennis courts located in George Green Park (2 courts/3 courts with lights). Consider reconstruct the north tennis courts as pickle ball courts.

- Vegetation:
  - » Mature Bur Oak trees enhance George Green Park's character and charm. Consider planting a variety of tree species in the future as a lack of diversity in the park creates a monoculture that could be devastated by disease.
  - » Careful placement of boulevard trees should occur at Bonnell to increase connectivity of these parks.

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**PROJECT 1.2:** *Refurbishment of Rudy Johnson Park*

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**Objective:**

To improve the overall functionality of the park for the neighborhood, Anoka Middle School – Washington campus, and overall community use.

**Strategies:**

- Parking: Address parking issues with creation of improved parking lot sized appropriately for park amenities.



*The ice rink at Rudy Johnson Park.*

- Site Structures:
  - » Four Season Building: Repair exterior façade and replace broken windows; paint the building.
  - » Hockey Rink: Evaluate the relocation of the paved hockey rink within the park to help create a large open play field free of obstructions to better serve middle school physical education classes.



*John Ward Park hosts Anoka's iconic rocketship play area.*

- Access and Circulation:
  - » Address issues with accessibility from parking lot to amenities
  - » Implement Safe Routes to Parks for neighborhood

activities associated with the Highway 10 solution will eliminate on street parking on Church Street and access to the dirt overflow parking lot.

- Playground:
  - » Installation of playground apparatus for 2 – 5 year olds and 5 – 12 year old with appropriate fall surfacing that meets standards for ADA compliance
- Play fields and Courts:
  - » Evaluate needs for play fields or courts within this park.

- Site Structures:
  - » Relocate/reconstruct Restroom Building: Existing restroom facility is substandard; no interior lighting, does not meet ADA regulations
  - » Shelter 2: Evaluate existing location and need for small wooden shelter; primarily serves as an enclosure for the field lighting controls.

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### PROJECT 1.3: *Renewal of John Ward Park*

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**Objective:**

- To improve the overall functionality of this community park.

**Strategies:**

- Parking:
  - » Reconfiguration or construction of new parking area for Field 1. Construction

- Access and Circulation:
  - » There are currently no internal trails or sidewalks that provide connection between park amenities.

- Play fields and Courts:
  - » Replace equipment or fully reconstruct the existing skate park to suit the changing trends in skate park design; determine if this is the best location for an upgraded facility
  - » Reconfiguration of the softball field

1 and 3 maybe required following the Highway 10 construction and redevelopment of properties adjacent to the park.

- Minimize implementation cost by utilizing park with existing parking and restroom facilities

**PROJECT 1.4:** *Creation of Disc Golf Course within City park system*

**Objectives:**

- To enhance the recreation amenities offered to citizens
- To stay current with recreation trends

**Strategies:**

- Incorporate industry standards for optimal course design
- Insure a high quality design by working with local user groups
- Park location should include natural features that enhance course design (i.e. woods, elevation changes, water)



*A disc golf course would include natural features to challenge players and enhance contact with nature.*

**PROJECT 1.5:** *Construct restroom facility at Anoka Nature Preserve trailhead.*

**Objective:**

- To provide multi-seasonal restroom facility for this popular park location and users of the Rum River Regional Trail.

**Strategies:**

- Sewer and water stubs installed with Rum River Shores development
- Explore funding opportunities for amenity located on a regional trail



*Project 1.5 initiates planning for a restroom facility at the trail head of the Anoka Nature Preserve.*

**GOAL PRO-2**

Improve connectivity, accessibility, and interaction with the Rum River and Mississippi River natural environment while preserving and improving the natural character/beauty

**Objective:**

- To provide residents and visitors to Anoka multiple opportunities to access and interact with the Rum and Mississippi Rivers.

**Strategies:**

- Preserve the natural landscape features to ensure environmental protection while simultaneously providing access for public use and enjoyment.
- Provide a diversified open space system that preserves and enhances significant environmental resources and features to preserve habitat and protect water resources.
- Create river access points, interpretive areas and overlooks.

**PROJECT 2.1:** *Continue to implement Anoka Nature Preserve management plan.*

**Objective:**

- Create passive recreation areas, which include paved trails for hiking, grass trails for running, hunting, wildlife watching, fishing, picnicking and interpretive areas.

**Strategy:**

- Work with Anoka Conservation District to rehabilitate the Oak Savanna with on-going treatment/harvest of Buckthorn, non-native and invasive species.

- Work with Anoka County to pave the interior trail designated for future extension of the Rum River Regional Trail.

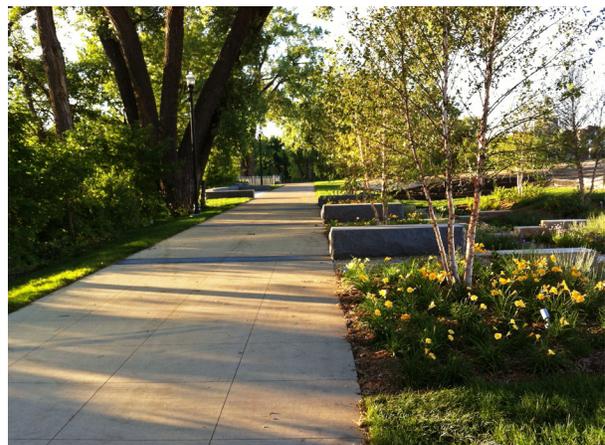
**PROJECT 2.2:** *Complete construction of Riverfront Park.*

**Objectives:**

- To create a prominent park and public gathering place that celebrates Anoka’s rich history and connection to the Rum River.

**Strategies:**

- To complete construction of future phases of Riverfront Park as planned.
  - » Construction of the performance stage and Veterans Memorial in 2018
- Preserve the natural landscape features to ensure environmental protection while simultaneously providing access for public use and enjoyment.
- Apply for grants and identify potential funding sources



*The completed walkway leading along the Rum River from City Hall to the Veteran’s Memorial.*

## PROJECT 2.3: Develop Anoka Station Park

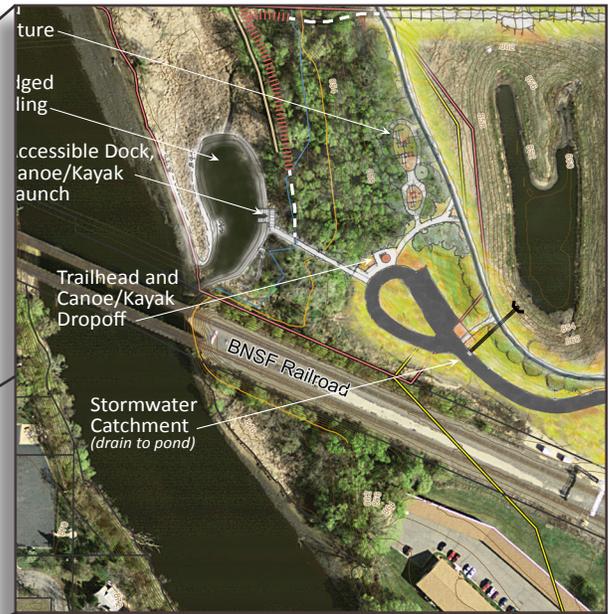
### Objective:

- To provide increased access to the Rum River and a high degree of interaction with the environment in natural areas while preserving the beauty of the natural landscape.

### Strategies:

- Creation of a trailhead and accessible canoe/kayak launch area in an existing backwater area of the Rum River

- Improve interaction with nature by constructing trails with innovative/low impact construction techniques such as boardwalks and natural surface trails.
- Create an active play environment for the community and neighborhood currently served by the Garfield Tot Lot
- Celebrate Anoka's unique history by creating access to interact with the rock wall, river and natural landscape.



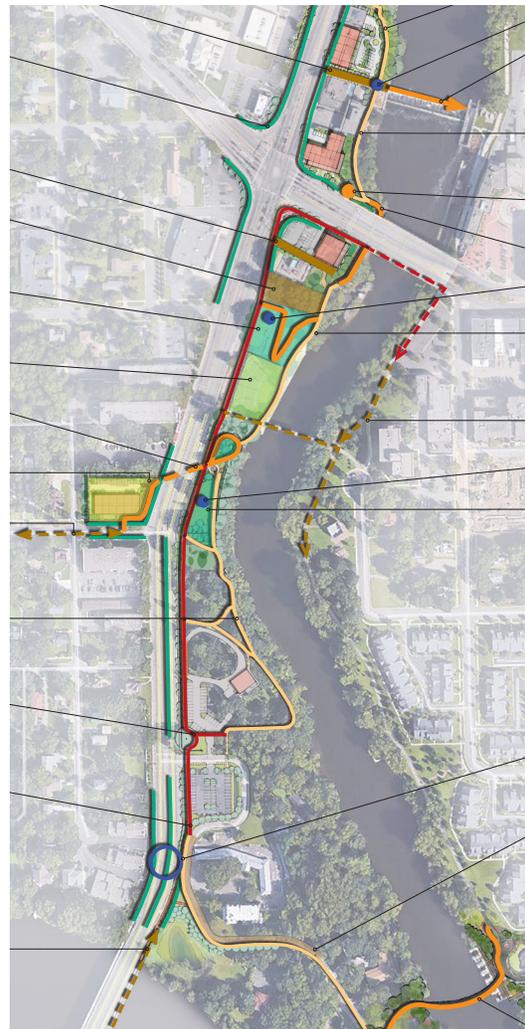
**PROJECT 2.4:** *West Rum River Trail & River Walk*

**Objectives:**

- Improve the Ferry Street Corridor as a Gateway to the City
- Preserve and Maintain Historical Assets
- Improve the Natural Character of the River
- Improve Connectivity and Accessibility to the Rum River
- Improve the corridor as a recreational and economic development amenity to attract tourism, residents, and businesses.

**Strategy:**

- Complete master planning process and begin implementation of the master plan.
- Create a safe pedestrian corridor along Ferry Street
- Establish a rehabilitation/stabilization plan for the historic Windigo Park Auditorium
- Construct a pedestrian bridge from Peninsula Point Park to Akin Riverside Park connecting to the Rum River Regional Trail and Mississippi River Trail.
- Complete the Rum River Walk trail loop with multiple river crossing points that extends on both sides of the Rum River from the dam to the confluence of the Mississippi & Rum Rivers.
- Balance the desire for public river access and interaction with the preservation of environmentally sensitive areas and sites within the MRRCA and Wild and Scenic designations.



## GOAL PRO-3

Provide a system of accessible multi-use trails and corridors that offer pedestrians access to significant environmental features, public facilities, neighborhoods and business districts.

### Objective:

- To provide a comprehensive system of sidewalks, multi-modal trails and on-road designated bicycle routes/share-right of ways (ROW)

### Strategies:

- Link neighborhoods to community facilities like parks, special use areas, the riverfront, downtown and other unique or special destinations.
- Promote links to the Regional Trail System and neighboring communities.
- Provide adequate funding to maintain existing and build new trails.
- Implement the Safe Routes to Parks within neighborhoods

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### PROJECT 3.1: *Construction of the 4th Avenue Rail Crossing for Rum River Trail*

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### Objective:

- To provide safe pedestrian and bicycle crossing on the west side of 4th Avenue

### Strategies:

- Acquire easements from adjacent properties (2727 4th Ave, 2701 4th Ave, 2665 4th Ave)
- Coordinate construction with BNSF to install pedestrian crossing arm

- Seek grant funding to assist with improvement costs

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### PROJECT 3.2: *Regional Trail connection to 7th Avenue through the Anoka Nature Preserve*

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### Objective:

- To extend the Rum River Regional Trail through the Anoka Nature Preserve providing river views and a scenic experience

### Strategies:

- Coordinate with Anoka County Parks for funding options as regional trail improvement
- Seek grant funding for trail construction

---

### PROJECT 3.3: *Construct 11th Avenue Trail Connection*

---

### Objective:

- To provide a 10' bituminous trail connection from Sunny Acres Park/Cleveland Street to the North Street Corridor Trail

### Strategies:

- Gravel trail currently in place from Cleveland St to Grant St.
- Construct trail on 11th Ave with future street renewal project

---

**PROJECT 3.4:** *Construct trail on west side of 7th Avenue from Garfield Street to Castle Field Blvd*

---

**Objective:**

- Construct a 10' bituminous trail on the west side of 7th Avenue creating safe pedestrian and bicycle route for the 7th Avenue Trail Corridor

**Strategies:**

- Coordinate trail construction with the Anoka County CSAH 7 road reconstruction project

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**PROJECT 3.5:** *Construct trail on west side of 7th Avenue from Bunker Lake Boulevard to northern City limits*

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**Objective:**

- Construct a 10' bituminous trail on the west side of 7th Avenue creating safe pedestrian and bicycle route for 7th Avenue Trail Corridor

**Strategies:**

- Coordinate with future commercial development of city owned property at 7th/Bunker
- Trail bed was graded as part of Rum River Shores 2nd edition

**GOAL PRO-4**

Continue collaboration with Anoka Hennepin Schools regarding shared recreational programming and playfield usage.

**Objective:**

- To coordinate City and school district park facilities and recreation programming for more effective utilization of existing athletic facilities, to ensure quality programming, and avoid duplication of services.



*Anoka Tornados lacrosse game in 2015.*

**Strategies:**

- Active participation on the Community Education Advisory Board
- Continued financial support of the Community Schools Programming
- Reconstruct park facilities/amenities to complement school programming and curriculum
- Supplement Community Education programming with unduplicated and/or coordinated recreational programs

## GOAL PRO-5

Enhance the city’s historic, cultural and artistic assets

### Objective:

- Incorporate art, sculptures, and interpretive elements into future park design and redevelopment
- Restore, improve and recognize Anoka’s historic landmarks

### Strategy:

- Collaborate with the Anoka History Center and Heritage Preservation Committee to identify and research Anoka’s landmarks, significant people and accomplishments.
- Celebrate Anoka’s history through the incorporation of interpretive markers
- Work with local and regional artists and Young Artists of Anoka to enhance and beautify Anoka



*Young Artists of Anoka transformed the Anoka Pedestrian Tunnel in 2015.*

## GOAL PRO-6

Facilitate community involvement and stewardship of Anoka’s parks and public open spaces.

### Objective:

- To foster stewardship, ownership, and pride as a means to increase use of Anoka’s park system and trails; and as a means to deter vandalism and destruction of public property.

### Strategies:

- Continue with and expand the implementation of community service projects within the parks and trails.
- Promote the Adopt-a-Park program.



*Anoka County bluebird coordinator Jeanne Wilkinson cares for 39 bluebird houses across the City of Anoka. (Photo by Richard Sennott)*

## DEPARTMENT POLICIES

The Anoka Park and Recreation Advisory Board (Board) has existed since 1919. Policies and principles of the City Code guide the Board. The Board has many functions including overseeing the parks, recreation, facility users, performing arts, urban forestry, trails, and the aquatic center.

The Public Services Department at the City of Anoka administer the following policies:

### DESIGN

- Identify high quality natural, scenic and historical areas to preserve and enhance them for public use and enjoyment.
- Develop and build our trail corridors, parkways and linear parks to maximize recreational opportunities, interconnect neighborhoods and promote community distinction and regional facilities.
- Meet the American with Disabilities Act (ADA) standards and federal safety standards at all municipal owned facilities, including parks and trails.
- Integrate the historical significance of the community through interpretive elements integrated into the park and recreation areas.
- Maintain existing and plant new boulevard trees on the rights-of-ways for neighborhood beautification and vitality

### PROCESS

- Develop conservation planning techniques that identify the importance of preservation of natural resources and open space.

- Develop a recreational capital improvement plan and provide for an annual update.
- Provide the highest quality of park maintenance services and routinely review service needs.
- Make efforts to provide the appropriate level of staff, equipment and facilities.
- Routinely review park and trail dedication requirements when modifications are needed.
- Routinely evaluate athletic field needs of local athletic organizations.
- Annually review and coordinate all Parks and Recreation goals as directed by the Anoka City Council and as advised by the Parks and Recreation Advisory Board.

### PUBLIC INVOLVEMENT

- Inform and educate the public about recreational opportunities in and around the City.
- Create the opportunity for citizens to participate in recreation activities that focus on the Rum and Mississippi Rivers.
- Develop a sense of stewardship and responsibility to preserve natural resources for recreational opportunities for current users and future generations.
- Actively encourage the support of civic organizations and corporate/business community and education systems through funding, developing, volunteering and maintaining the recreation system.

## SCHOOL DISTRICT

- Continue Joint Powers Agreements, amended in 2005, with Anoka-Hennepin Schools to share recreational facilities, programs and services where feasible.
- Coordinate with school district to consolidate programmed sports into specialized play fields.
- Routinely meet with school district to discuss coordination of facility needs and programming.

## FUNDING

Develop a funding resource that meets the needs for maintenance and replacement of the City's parks and recreation program.

## FINANCING

Understanding the resources and tools available for implementation of the Parks, Trails and Open Space Plan will aid in the decision making process for future development. Routinely analyze the financial resources to determine the availability of funding for recreational facilities and programs:

1. Park Dedication Fees
2. User Fees
3. Donations
4. General Tax Levy
5. Grants
6. Partnerships with other governmental agencies and/or private corporations

## FINANCING POLICIES

Adhere to the following City policies regarding park and trail facility financing:

- Apply park dedication standards to all new subdivision and redevelopment projects to address the growing need for recreation associated with community growth.
- Establish fees to cover costs associated with the development, maintenance and operation of community recreational facilities and programs where appropriate.
- Work with Anoka Hennepin Schools and local athletic groups to provide equitable use of available facilities and fair distribution of program costs.
- Budget park and trail maintenance operations and capital outlay into the City annual financial budget.
- Establish a five-year capital improvement plan for system improvements, renovations and maintenance.
- Pursue applicable grants to supplement local financing.
- Investigate corporate partnerships with other government agencies and /or private organizations when the objectives are consistent with City goals.
- Unsolicited gifts or donations will be accepted if they are free of obligations which may limit the use of a facility, do not offend other segments of community and do not come with a hidden or later cost for development, maintenance, or operation, which is outside the City's best interest.

# 7. ENVIRONMENTAL RESOURCES

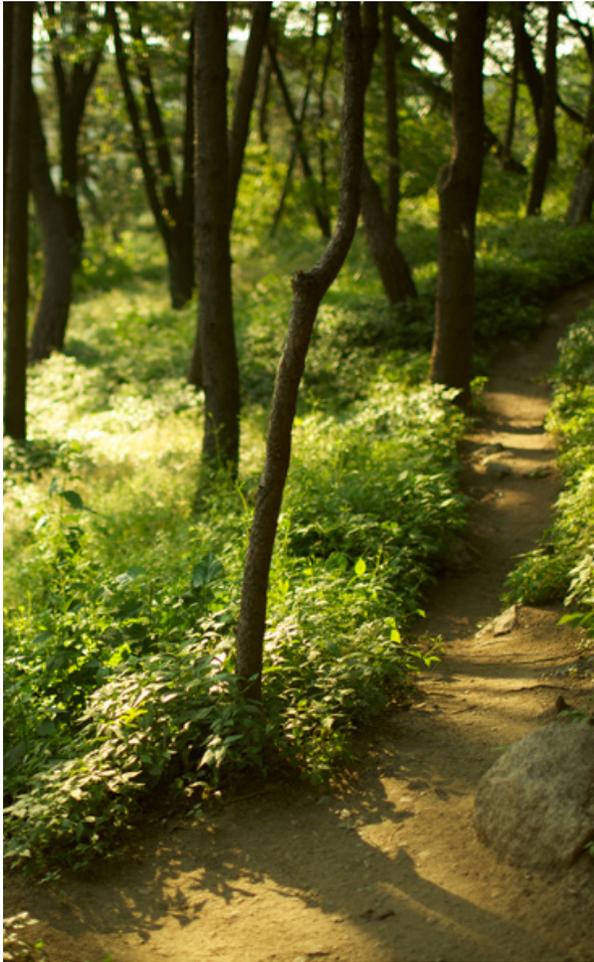
Introduction  
Natural Resource Elements  
Goals & Policies



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## INTRODUCTION

The natural environment sets the scene for all the activities, events, and intentions of a community. While enjoying nature is a cherished activity among Minnesotans, the elements of the environment must be cared for in order to maintain healthy, resilient, valuable resources. These resources support economic development, housing, transportation, utilities, and the overall livability of a community - as long as they are respected and stewarded wisely. To that end, Anoka's natural resources deserve special attention in the City's plan for the next decades.



## NATURAL RESOURCE ELEMENTS

### NATURAL WATERCOURSES

A natural watercourse is a channel for water movement, such as a creek, stream, or river. Anoka is unique because it's only watercourses are the Mississippi and Rum Rivers. Because of the flat, sandy soil, there are no creeks, streams or intermittent streams in the community. A high percentage of the water in the undeveloped portions of Anoka simply drains to low areas where it percolates into the ground, evaporates or creates a wetland area.

#### **Rum River**

The Rum River is part of Minnesota's Wild, Scenic, and Recreational River System. The City of Anoka has been classified as "recreational," however, along with upstream Rum River cities, all of the City of Anoka has been given a special "urban" designation which allows for reduced setbacks in urban areas. In addition to regulating building setbacks, building width, and minimum lot size, the standards also regulate the amount of impervious surface permitted. Regulations relating to development along the Rum River are found in the City Code under Chapter 74, Article VI.

#### **Mississippi River & the MRCCA**

The area along the banks of the Mississippi River are included in the Mississippi River Corridor Critical Area and are subject to development regulations. In 1979, at the instigation of the State of Minnesota, the City of Anoka adopted a Critical Area Plan that included goals, policies, and standards for development in the Corridor. With the newly adopted Minnesota Rules 6106, the City of Anoka is updating its approach to this corridor. The MRCCA chapter of this comprehensive plan addresses natural elements, environmental

and developmental issues, and goals and policies pertaining to this corridor specifically.

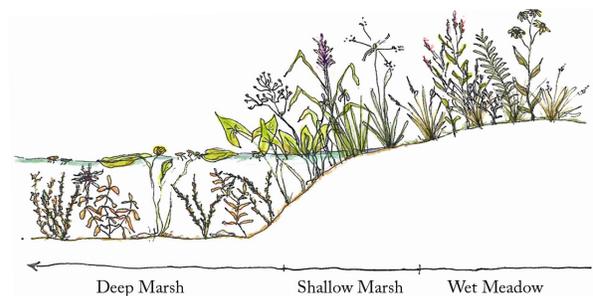
### SHORELAND

Most of the shoreland area in the City of Anoka is regulated under the Minnesota Scenic and Recreational Rivers standards or under the Environmental Protection Section of the City Code. As a result, the Minnesota Department of Natural Resources (DNR) ranks the City as a low priority for development of shoreland regulations. Shoreland regulations will be reviewed and implemented, if necessary, during review of the Environmental Protection Section of the City Code. Within the Mississippi River Corridor Critical Area, Minnesota Rules 6106 require extra regulatory processes and policies to shoreland development.

### WETLANDS

Wetlands are low-lying areas which are normally covered with shallow or intermittent waters. Swamps, marshes, and other areas are all wetlands and may occur as part of a river, stream, drainage way, or as a free-standing low area. Wetlands provide desirable open space, are recognized as havens for a multitude of wildlife and also provide a natural filtering system and storage basin to absorb and hold storm water runoff. They also reduce the potential for erosion and flooding.

The DNR uses the Corps of Engineers' classification system for wetlands (Table 7-1) and currently



requires a permit for alteration of wetland types 3-5 which are 2.5 acres or larger.

Wetland types 2 and 6, and wetlands as small as one acre, are recognized as having importance as storm water ponding basins. However, the DNR does not presently require permits for alteration of these areas.

The importance of wetlands can be summarized as follows:

1. Wetlands affect the quality of water by acting as a filter and storing organic materials in the leaves of aquatic plants.
2. Wetlands are important as a natural ponding basin. These areas help recharge the water table and reduce peak storm water runoff flows, thereby reducing flood levels.
3. Wetlands provide an essential breeding, nesting, and feeding ground for wildlife.
4. Marshes occurring in upland depressional areas can reduce soil erosion by slowing the velocity of runoff.
5. Wetlands reduce the impact of pollutants.
6. Wetlands provide shoreland protection for adjacent lakes, rivers, or streams.
7. Wetlands provide recreation, aesthetic, and educational experiences.

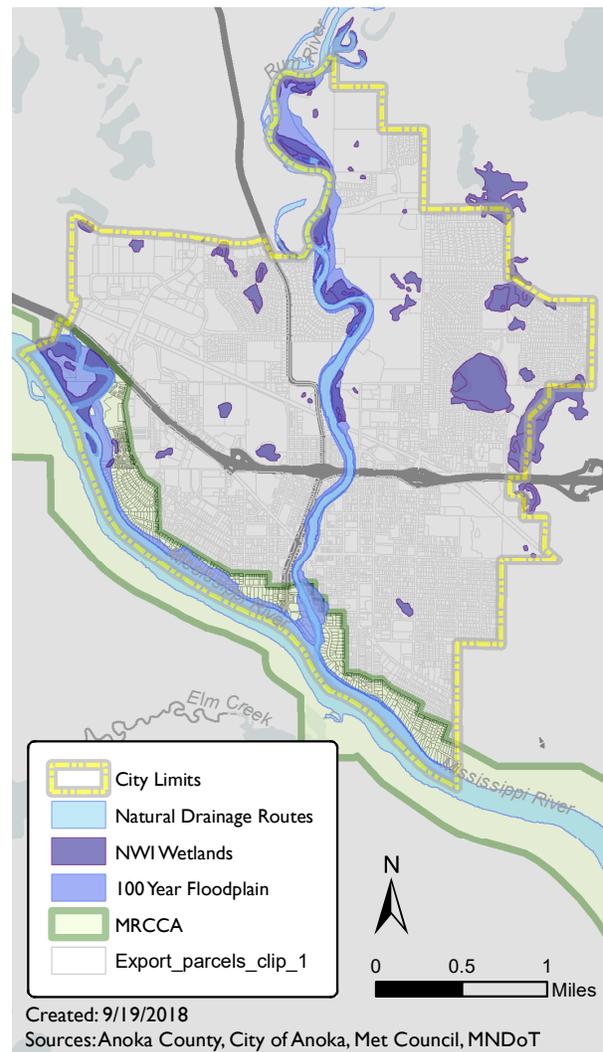
The size and location of wetlands is important in determining their value for maintaining water quality, minimizing flood damage, and preserving wildlife habitat. Most of the wetlands in Anoka are found along the edges of the Mississippi and Rum Rivers. In addition, a small number of wetlands that collect local storm water runoff are found in the north central and eastern portions of the City.

The Minnesota Wetland Conservation Act (WCA),

TABLE 7-1: MINNESOTA DNR WETLAND TYPES

Wetland Type	Wetland Description
Type 1	Floodplain forest and seasonally-flooded basin
Type 2	Wet meadow or prairie
Type 3	Shallow marsh
Type 4	Deep marsh
Type 5	Open water (pond)
Type 6	Scrub shrub swamp
Type 7	Wooded swamp
Type 8	Bog

FIGURE 7-1: WETLANDS & FLOODPLAINS IN THE CITY OF ANOKA



enacted in 1991 and subsequently amended, outlines the standards for wetland conservation. The WCA is administered through the Minnesota Board of Water and Soil Resources (BWSR) with the DNR acting as the enforcement agency. The WCA places implementation at the local level. The Lower Rum River Watershed Management Organization (LRRWMO) monitors wetland activities in the City of Anoka. The DNR’s inventory includes those wetlands that are classified as Type 3, 4 or 5.

## FLOOD PLAIN

The State of Minnesota adopted the Flood Plain Management Act in 1969. The Act requires all local units of government to adopt, enforce, and administer a flood plain ordinance.

In the City of Anoka, there are flood plain areas along the Mississippi and Rum Rivers. The flood plain regulations for the City of Anoka were approved by the DNR and are included as a separate chapter in the City’s Zoning Ordinance.

## SLOPES

Hillsides are a geological feature whose equilibrium depends on a balance between slopes, soil, vegetation, underlying geology, and the amount of precipitation. Removal of vegetation on steep slopes for development purposes reduces soil stability, which increases erosion and may affect water quality from filtration. Removal of vegetation from slopes also decreases percolation, which reduces groundwater recharge and increases downstream runoff.

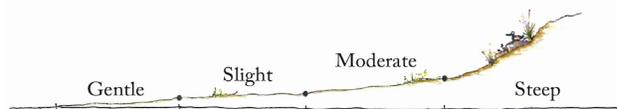
The Anoka County Soil Survey has not identified upland erosion as a serious problem in Anoka. In fact, the only areas with steep slopes are escarpments along portions of the Rum and Mississippi Rivers. It may be possible, however, to find lots or parcels of land in Anoka which have slopes over 18%.

Categories of slopes are shown in Table 7-2:

TABLE 7-2: SLOPE CATEGORIES

Slope Category	Slope %
Gentle	0 - 6%
Slight	6 - 12%
Moderate	12 - 18%
Steep	over 18%

Because of the sandy soil in Anoka, slopes of 18% or more are susceptible to erosion.



## SOILS

The Soil Conservation Service in Anoka County conducted soil surveys and developed a functional classification of soils within the County. These soil classifications have been categorized according to suitability for urban development to provide the following information:

1. The suitability of soils for intensive residential, commercial, recreational, or agricultural land uses; and
2. The suitability of soils for septic tank absorption fields and building foundations.

The combination of soils and slopes together determine the general suitability of the land to support various types of urban development. Anoka is generally located on soils of the Hubbard - Nymore association consisting of soils of outwash plains that are on a nearly level elevation with occasional drainageways and depressions. In this area, the soil association is generally located on the northeast side of the Mississippi River ranging in



width from one to three miles. The most prevalent soil is the Hubbard class which is a loamy coarse sand. The water table is commonly eight to twelve feet below the ground surface but ranges from four feet to twenty feet or more. Slopes range from nearly level to steep but commonly are in the range of 1 - 6%.

City of Anoka soils have moderate development limitations, including low water holding capacity, which makes establishment of vegetation difficult without extensive replacement of top soil. The soils are also highly erodible by wind and water until a vegetative cover is established. Excavation for construction may require particular attention to avoid caving in and erosion. The rapid percolation rate also increases the danger of contamination to underground water supplies, lakes, and streams.

However, the characteristics of these soils make them easily adaptable to building sites due to the ease of handling and grading with earthmoving equipment. In addition, quick drainage is a positive factor when considering the relatively short construction season.

The northwest area of the City contains a combination of the previously discussed Hubbard classification with areas of Dickman soils. Dickman soils, generally described as a sandy loam, are very similar to Hubbard soils for building capacities.

Immediately joining the Mississippi and Rum Rivers are small areas of fine sandy loam and mixed alluvial soils. Many of these areas are low and subject to occasional flooding. These areas are protected by the City's Flood Plain Ordinance.

There are several small areas throughout Anoka with severe soil limitations that are generally located around the periphery of wetland areas. Development in these areas is limited due to the high water table.

## WOODLANDS

A woodland differs from a forest because of its smaller land area. It includes farm woodlots, shelterbelts, and windbreaks. A general tree cover includes the scattered trees in urban areas.

In Anoka, woodland areas currently exist along the rivers adjacent to some of the wetlands, on some of the City's public property, and on boulevards. In addition, there are other scattered, small concentrations of trees in Anoka.

Woodlands are impacted by urban development as well as by disease, natural disasters, and an aging tree population. The importance of protecting woodlands extends beyond their recreational and aesthetic benefits. Woodlands can act as a moderator of climatic phenomenon, high winds and flooding.



In addition, the ground within a woodland area can act as a filter to recharge groundwater reservoirs, and the trees themselves act as natural air filters, absorbing some air pollutants. Finally, woodlands can act as a temperature moderator by helping reduce the greater daily fluctuation of temperature.

Total preservation of woodlands may not be desired or in the best public interest. Replacement of trees in an urban setting such as Anoka requires a managed effort, including development controls, disease controls, plans concerned with tree loss from natural disasters or aging populations, planting programs for public lands and boulevards, and education and assistance to private property owners who have lost trees.

The City of Anoka adopted a Tree Preservation Ordinance in 2008. This ordinance requires replacement for trees removed as part of a commercial, residential, or industrial development project requiring site plan or plat approval. More restrictive tree preservation techniques in the MNRRA and Rum River Wild, Scenic and Recreational District are regulated by the Environmental Section of the ordinance.



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## GOALS & POLICIES

The policies stated below act in cooperation with those in the Land Use, Parks, Open Space, & Recreation, MRCCA, and Water Resources chapters.

### GOAL ER-1

Conserve Anoka's natural environment, ecology, and heritage through planning, regulation, and cooperation.

- Review and update the Environmental Protection section of the City Code for consistency with Statute requirements and other agency environmental protection policies.
- Protect natural watercourses to minimize public investment in storm sewers and improve the quality of stormwater runoff.
- Protect wetlands of one acre or more in size.
- Periodically review the flood plain regulations to minimize flood risk and comply with the National Flood Insurance Program.
- Development shall not be allowed in areas identified as having severe soil limitations unless corrective measures are taken.
- Private sewer systems shall not be allowed in areas identified as having severe soil limitations.
- Conserve concentrated woodland areas as well as all established trees through clearance limits and replacement mandates.
- Recognize and avoid, where possible, significant natural features in the placement of infrastructure, in areas of development or redevelopment.
- Continue to support efforts for community education and awareness of air quality issues.
- Consider the effect of soil disturbance and grading on air quality and soil erosion in review of development plans.
- Enhance community awareness about the importance of the urban forest and the positive impact trees and shrubs have on the environment. Urban forest includes all trees and shrubbery on public and private property within the City.
- Promote public and private tree planting, replacement, and preservation programs to sustain the urban forest.
- Make conservation and efficient utilization of all energy sources a high priority in the City's operation and development of facilities.

# 8. MISSISSIPPI RIVER CORRIDOR CRITICAL AREA (MRCCA)

## ANOKA & THE MISSISSIPPI

Summary of the MRCCA

Anoka & the River

Districts

## LIFE IN THE CORRIDOR

Land Use

Recreation

Transportation

## STEWARDSHIP OF THE RIVER

Primary Conservation Areas

Priorities for Restoration

River Scenes

## MOVING FORWARD

Opportunities

Goals, Policies, & Implementation





## ANOKA & THE MISSISSIPPI

*The Mississippi River is one of America's greatest natural resources. Generations of residents and lawmakers alike are affected by it, sharing in its enjoyment as well as in responsibility for its protection and supervision. Anoka has long participated in efforts to protect and preserve the river corridor, taking pride in the river's pristine waters, healthy shorelines, and robust ecosystem. In 2019, Anoka continues its commitment to responsible stewardship of the river by updating its activities in accordance with state, federal, and regional authorities.*

## SUMMARY OF THE MRCCA

The City of Anoka shares the shoreline of the Mississippi River in the Minneapolis-Saint Paul Metropolitan Area, placing part of the city within the Mississippi River Corridor Critical Area (MRCCA). This area is overseen by the Minnesota Department of Natural Resources in partnership with the National Park Service and the Metropolitan Council.

Totalling 54,000 acres of land and 72 miles of water across 30 local jurisdictions, the MRCCA corridor is the responsibility of the Minnesota Department of Natural Resources (DNR). Special development regulations set by the DNR protect and preserve the unique natural, recreational, transportation, and cultural features of the river corridor across the Metro area. The MRCCA was designated in 1976 by Governor's Executive Order 130, and is just one

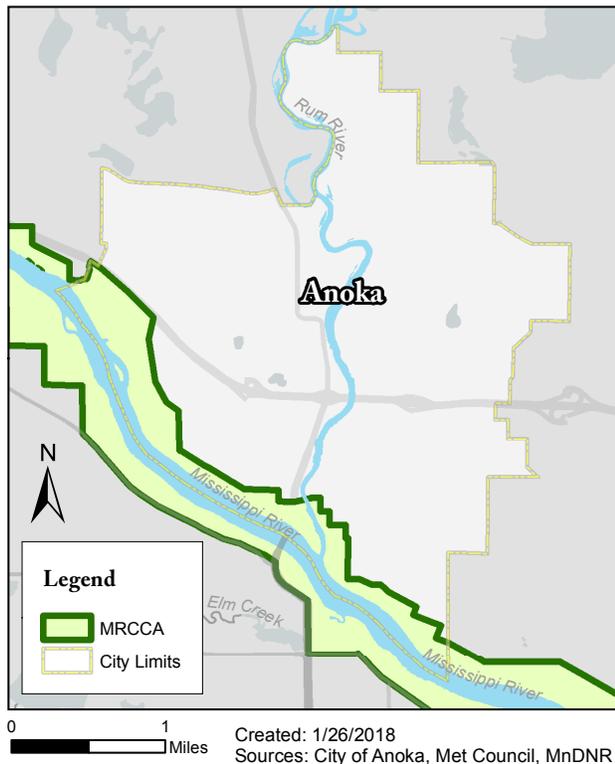
region included in Minnesota's Critical Areas Act of 1973.

Over time, the original MRCCA rules fell out of sync with development, making them difficult for state and local governments to administer. In January 2017, it was replaced with the comparable but modernized Minnesota Rules 6106.

Local municipalities are required to create and update plans for the caretaking of the MRCCA. The DNR has instructed cities in the Twin Cities Metro Area to update their local MRCCA plans, ordinances, and comprehensive plan sections to reflect and implement the new Minn. Rules 6106.

The river corridor benefits not only the state, but the entire American community, and so receives special attention from the federal government. In addition to the MRCCA, United States Congress simultaneously designated the 54,000 acre corridor as the Mississippi National River Recreation Area (MNRRA) in 1988.

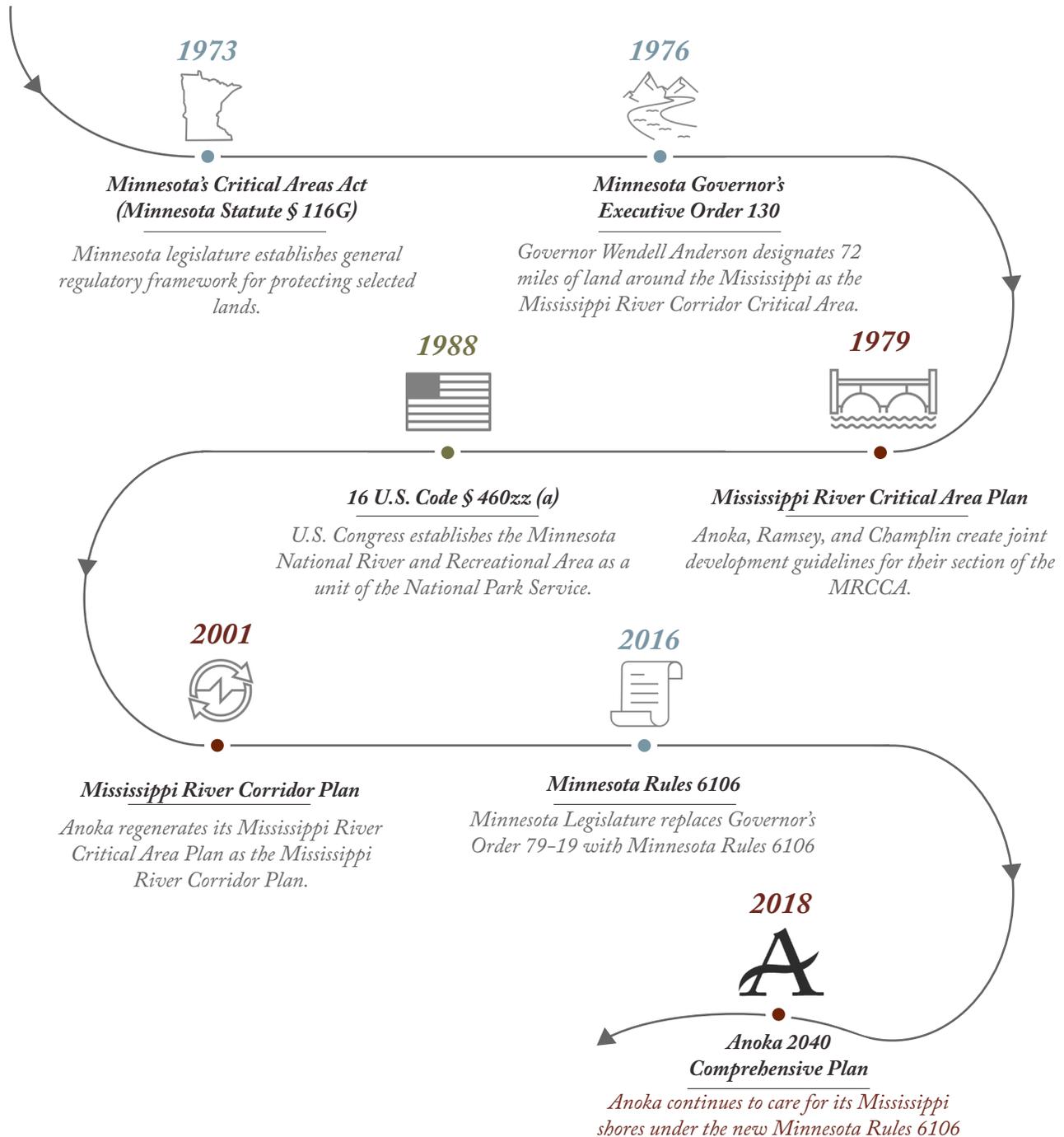
This MNRRA designation provides "Tier II" recommendations: these are optional preservation strategies intended to encourage and assist local units of government in ensuring orderly and environmentally friendly development along the Mississippi. ("Tier 1" simply refers to minimum state-required protection criteria.) Federal oversight through the NPS does not add more mandatory regulatory controls; rather, it offers voluntary coordinative guidance to address education, heritage, image, recreation, and other river-related issues.



Map 8-1: The Mississippi River Corridor Critical Area boundaries in the City of Anoka

## MRCCA TIMELINE

The DNR and Met Council will notify each local government (according to a staggered timeline) to begin their land use update process. Once notified, the local government will have one year to update their environmental and Critical Area plans, create or modify applicable development ordinances, and implement policy decisions. The DNR anticipates that it will notify all affected local governments to update their zoning ordinances between 2019 and 2021.



## STATE GOALS FOR THE MRCCA

The goals for the MRCCA program are outlined in Executive Order 130 and renewed in Minnesota Rules 6106. They are:

- a. To protect and preserve a unique and valuable state and regional resource for the benefit of the health, safety and welfare of the citizens for the state, region, and nation;
- b. To prevent and mitigate irreversible damage to this state, regional, and national resource;
- c. To preserve and enhance its natural, aesthetic, cultural, and historical value for the public use;
- d. To protect and preserve the river as an essential element in the national, state and regional transportation, sewer and water and recreational systems; and
- e. To protect and preserve the biological and ecological functions of the corridor.

## ANOKA & THE RIVER

The Anoka stretch of the Mississippi River Corridor is designated as a critical area in part because it has seen its riverbank developed over the years into primarily residential uses and has seen its pristine views from the river threatened by urban development. This stretch of the river also serves as a transitional point from an urban development pattern to a rural one, experiencing an increasing amount of new urban construction and activity.

In 1979, the City of Anoka created the Mississippi River Critical Area Plan in coordination with neighboring cities Ramsey and Champlin; in 2001, this was overhauled and updated as the “Mississippi River Corridor Plan”. Now, under the



new Minnesota Rules 6106, Anoka is taking the opportunity to reevaluate and refresh management of our treasured Mississippi River shores.

The Mississippi River Corridor provides physical, mental, and social health benefits to Anoka residents. The MRCCA regulations are meant to protect this community health resource for all its residents. This includes actions that:

- Ensure safe pedestrian access to the river
- Offer recreational opportunities for diverse ages, cultures, and economic and mobility levels in the MRCCA boundaries
- Support a variety of greenscapes that contribute to physical and mental well-being

Anokans value the environment, recognize the unique resources represented by their rivers, and enjoy the many opportunities that such resources offer. Anoka is and will remain a community that appreciates the economic, recreational, and health value of rivers, lakes, and wetlands while respecting and protecting native wildlife and valuable habitat areas.

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## PUBLIC PROCESS

Development of the MRCCA plan included public participation. The following outreach and participation methods were used to engage the public:

- Community survey
- Public meeting announcements and work sessions
- Comp Plan specific email and updates
- Quad Cities Community Television updates
- Posts on the Anoka Reader Board

## PROGRESS ON 2030 COMP PLAN GOALS

The City of Anoka continues to work toward goals identified in 2030 Comprehensive Plan. Progress toward these goals include:

- Continued protection of the corridor through careful inspection and documentation of proposed improvements within the corridor.
- Continued enforcement of adopted flood plain and zoning regulations.
- Maintained predominate land use of low density residential within corridor.
- Continued telling the story the Mississippi River and its importance to the City of Anoka through the dedication of an interpretive historic sign at Rice Street Beach July 2011.
- Continued maintenance and enhancement of city trails within corridor.
- Continued maintenance of shoreland to prevent erosion.

## DISTRICTS

Six districts are defined in the MRCCA rules. The districts are based on the natural and built character of different areas of the river corridor. Structure setbacks from the Ordinary High Water Line (OHWL) and bluffs, building height limits, and the amount of open space required for subdivisions/redevelopment vary by district. These are the only standards in the MRCCA rules that vary by district; all other standards apply uniformly throughout the corridor.

The original MRCCA rules defined four typological districts along the Critical Area, of which Anoka contained only the “Urban Developed District”. Minnesota Rules 6016 has expanded the four districts to six, due to increasing variety in the Critical Area development landscape, as well as updated community goals held by adjacent municipalities. The districts and their land use designations are as follows:

- Rural and Open Space (CA-ROS)
- River Neighborhood (CA-RN)
- River Towns and Crossings (CA-RTC)
- Separated from River (CA-SR)
- Urban Mixed (CA-UM)
- Urban Core (CA-UC)

These districts were designated by the DNR based on the variety of topographical character, vegetation cover, and development patterns along the 72-mile corridor. Work groups, local governments, and other interests helped to identify these distinct districts. See the DNR’s Statement of Need and Reasonableness (SONAR) on their website for a more in-depth description of this process and designation.

Over the years, Anoka’s Mississippi riverbank has developed into primarily residential uses. Along this stretch of the river, development patterns transition from a denser, urban type to a dispersed, rural one. Anoka contains four of the six districts:

## DISTRICT DEFINITIONS

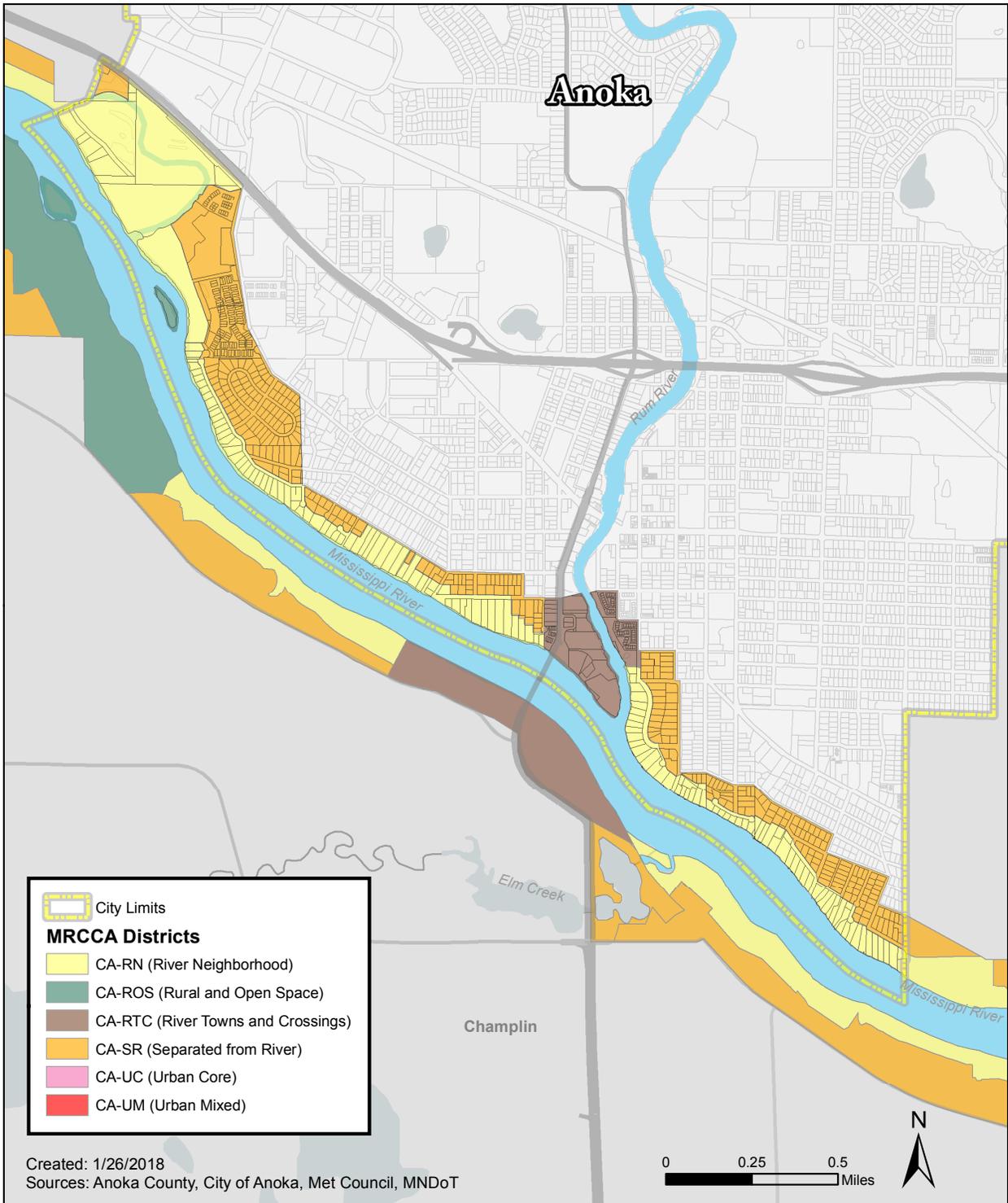
Four of the six designate districts exist in Anoka.

- Rural and Open Space (CA-ROS)

The rural and open space district (CA-ROS) is characterized by rural and low-density development patterns and land uses, and includes land that is riparian or visible from the river, as well as large, undeveloped tracts of high ecological and scenic value, floodplain, and undeveloped islands. Many primary conservation areas exist in the district. The CA-ROS district must be managed to sustain and restore the rural and natural character of the corridor and to protect and enhance habitat, parks and open space, public river corridor views, and scenic, natural, and historic areas.

- River Neighborhood (CA-RN)

The river neighborhood district (CA-RN) is characterized by primarily residential neighborhoods that are riparian or readily visible from the river or that abut the riparian parkland. The district includes parks and open space, limited commercial development, marinas, and related land uses. The CA-RN district must be managed to maintain the character of the river corridor within the context of existing residential and related neighborhood development, and to protect and enhance habitat, parks and open space, public river corridor views, and scenic,



Map8-2: The Mississippi River Corridor Critical Area (MRCCA) districts in the City of Anoka

natural, and historic areas. Minimizing erosion and the flow of untreated storm water into the river and enhancing habitat and shoreline vegetation are priorities in the district.

- River Towns and Crossings (CA-RTC)

The river towns and crossings district (CA-RTC) is characterized by historic downtown areas and limited nodes of intense development at specific river crossings, as well as institutional campuses that predate designation of the Mississippi River Critical Corridor Area and include taller buildings. The CA-RTC district must be managed in a manner that allows continued growth and redevelopment in historic downtowns and more intensive redevelopment in limited areas at river crossings to accommodate compact walkable development patterns and connections to the river. Minimizing erosion and the flow of untreated storm water into the river, providing public access to and public views of the river, and restoring

natural vegetation in riparian areas and tree canopy are priorities in the district.

- Separated from River (CA-SR)

The separated from river district (CA-SR) is characterized by its physical and visual distance from the Mississippi River. The district includes land separated from the river by distance, topography, development, or a transportation corridor. The land in this district is not readily visible from the Mississippi River. The CA-SR district provides flexibility in managing development without negatively affecting the key resources and features of the river corridor. Minimizing negative impacts to primary conservation areas and minimizing erosion and flow of untreated storm water into the Mississippi River are priorities in the district.



Map 8-3: Cutter's Island near Mississippi River Community Park is the only CA-ROS district in Anoka.



Map 8-4: Peninsula Point Two Rivers Historical Park is within Anoka's CA-RTC district.



## LIFE IN THE CORRIDOR

*Anokans have found fun, relaxation, and rejuvenation on the shores of the Mississippi for generations. The physical, mental, and social health benefits that come from interacting with the natural river environment are woven into the fabric of the community. While activity along the river is encouraged, it is necessary to prepare responsibly for a sustainable community life in the corridor.*

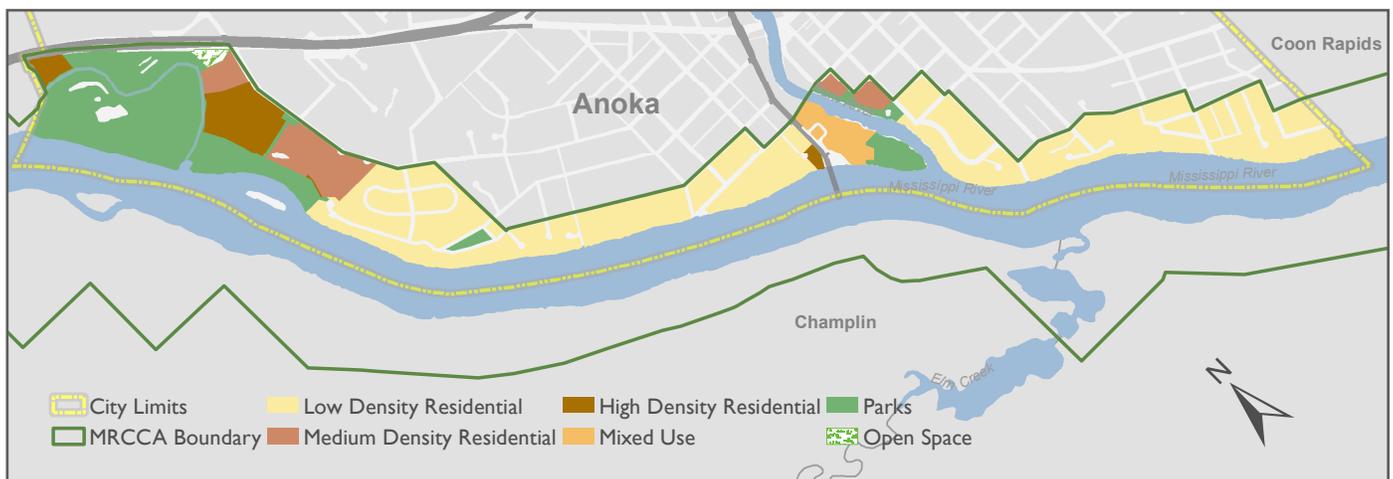
## LAND USE

The City of Anoka is essentially a fully developed community. Future development will occur either as infill development or through site-specific or area-wide redevelopment. Existing and future land use patterns are analyzed in greater detail within the Land Use chapter of this Comprehensive Plan.

The predominant land use pattern within the Mississippi River Corridor is low density residential consisting mostly of single-family detached homes with some duplexes integrated into the neighborhoods. A few clusters of medium and high density residential consisting of apartments and townhomes can be found on the northern edges of the corridor and along the Rum River.

which is designated a “Special Use Public Open Space.”

Existing and guides land uses within the corridor align well with the purpose of the MRCCA districts. There are no specific conflicts. However, potential land use related conflicts often result from past development patterns and the subsequent adoption of development regulations that imposed new standards for lot sizes, lot dimensions, setback lines and other dimensional standards. Many homes built prior to the adoption of these standards may exist on nonconforming lots because their lot dimensions do not meet the current zoning standards, or the structures may be considered



Map 8-5: Future land uses in Anoka. Mostly low-density residential, the area also contains some higher density residential, mixed-use, and open space land.

Two clusters of commercial uses are also located within the corridor. These clusters include the Pierce Motel on TH 169, and a vacant area at the southwest corner of TH 10 and Cutters Grove Avenue. There are a series of parks located within the corridor including Mississippi River Community Park, Bob Ehlen Park, Akin Riverside Park, Rice and Levee Beaches, and Peninsula Point Park. These parks are described in detail in the Parks, Recreation, & Open Space chapter of the Comprehensive Plan. Also of note is Kings Island,

dimensionally substandard because they do not meet current setback or lot coverage requirements. It is the general policy of the City of Anoka to allow uses or structures that came into existence legally to continue to exist and be put to productive use, and simultaneously to bring as many aspects of such situations into compliance with existing regulations as is reasonably possible. The policies in this plan are intended to:

1. Recognize the interests of property owners in continuing to use their property;
2. Promote reuse and rehabilitation of existing structures;
3. Allow for reconstruction of existing residential uses that are involuntarily destroyed in residential zoning districts; and
4. Place reasonable limits on the expansion of nonconformities that have the potential to adversely affect surrounding properties, the City as a whole, and the character of the applicable districts.
5. The primary land use pattern in the corridor will remain as low-density residential with some areas of park and open space, neighborhood commercial, and higher density housing.

## WATER-ORIENTED & SURFACE-WATER USES

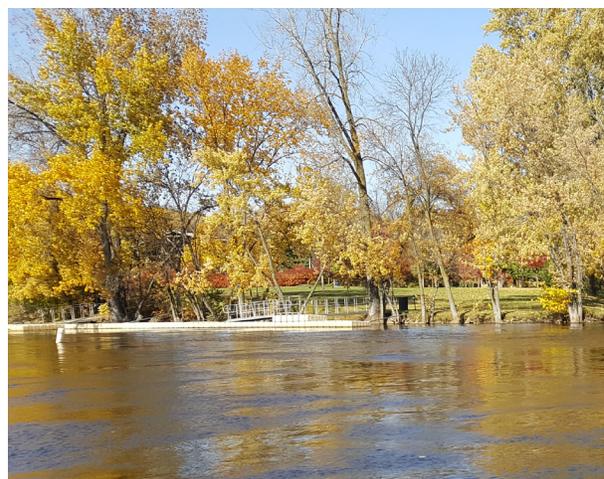
Because Anoka has so much riverfront area for its small size, surface-water and water-oriented land uses must be carefully considered. Water-oriented uses include existing and future commercial and industrial uses that require water access, including barge terminals and recreational marinas. Anoka currently has no water-oriented uses. Surface-water uses include docks, boat slips, and organized boating and riverboat activities. The City of Anoka owns several docks and slips, seasonally leased, which contribute extremely light footprints on the river shores. Additionally, Anoka’s advantageous position at the confluence of the Rum and Mississippi Rivers makes the prospect of an entertainment riverboat highly appealing. There are no existing or potential surface water use conflicts or negative impacts in the City of Anoka.

## SURFACE-WATER USE REGULATIONS

A slow-no wake speed shall be in effect 24 hours per day on the Mississippi River between River Mile 879 upstream (upstream of the upstream tip of Goodin Island, located between Dayton and Ramsey) and River Mile 866.2 downstream (the Coon Rapids Dam) when the river level on the Mississippi River exceeds 837 feet above sea level, as measured at Gauge C, Peninsula Point Park, Anoka, Minnesota and located at the confluence of the Rum and Mississippi Rivers. The City of Anoka has no other surface-water use regulations.



(Above and below) *The dock at Peninsula Point Two Rivers Historical Park.*



## OPEN-SPACE AND RECREATIONAL FACILITIES

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

Anoka's recreational offerings within the MRCCA boundaries are substantial:

### ***Kings Island***

Originally developed for gravel mining, this 75-acre natural space is a significant existing vegetative stand crossed by the Mississippi River Trail via two beautiful stone bridges. It is also the location of two duck blinds, one of which is handicap-accessible. The City has designated a Waterfowl hunting Zone along the Mississippi River. The oxbow between Anoka mainland and Kings Island is navigable for canoes and kayaks and some small fishing boats with motors.

### ***Peninsula Point Two Rivers Historical Park***

Located at the confluence of the Rum and Mississippi Rivers, this historical park is known in the history books as the 'Gathering Place in Fireman's Grove.' In 1995 the City took possession of the site, transforming it from a sewage treatment plant to a pristine park. Cut stone from the original 1850's St. Paul County Courthouse have been integrated into the landscaping elements throughout the park. The park has won national recognition for its design and incorporation of historic elements. In addition, Peninsula Point Park offers a backdrop of mature trees and is the site of a State Champion Green Ash Heritage Tree. The park features a playground, patio shelter,

gathering room, concession stand, restrooms, boat docks, fishing access, and a well-maintained scenic overlook.

### ***Mississippi River Community Park***

This 18-acre community park is directly adjacent to the Mississippi River. It incorporates the natural beauty of a wooded flood plain area with passive recreation, including a 1.7 mile paved trail through a beautiful natural prairie flower area. The playground structure is in the form of a boat, reminding users of the parks connection with the Mississippi River. This park features four picnic shelters with grills, a concession stand with electric and water, a playground, volleyball court, basketball court, shoeshoe pits, canoe launch, and a fishing dock.

### ***Akin Riverside Park***

Located one block south of Main Street, this 6.5-acre park borders the eastern shore of the Rum River from Bridge Square to Jefferson Street. It includes a pedestrian bridge that crosses the Rum River connecting the park/trail to Ferry Street and provides a view of the historic Eastman Amphitheater and stone house. This park received



*Wedding scene on a fishing pier at Akin Riverside Park.*

a national commendation for the historic elements located throughout the park and on the trail. Park amenities includes playground equipment, picnic shelter with restrooms, picnic tables and benches, grills, and river access with two fishing platforms and a boat launch.

## SCENIC OVERLOOKS

Parks and open space areas will continue to play an important role in the corridor. Future plans for the City’s park and recreation system are outlined in the Parks & Trails chapter of the Comprehensive Plan.

Scenic overlooks are constructed to draw public attention to the beauty of the river corridor. Existing overlooks or public viewing areas of the Mississippi River can be found at Peninsula Point Park and Mississippi River Community Park. Rice and Levee Beach also provide opportunities for viewing of the river as does the Ferry Street Bridge. Additional overlook opportunities are present at several streets that dead-end at the river (some with a cul-de-sac and others that simply end.) These streets include Shaw Avenue, Levee Avenue, Third Avenue and Kings Lane. Storm sewer pipes located under these streets outlet surface water run-off into the Mississippi River.

These dead-ends are public property and provide access to the river in an informal manner. The Third Street dead-end is maintained and its shoreline is rip-rapped. Other dead-ends are typically overgrown with vegetation and often used as a place to dump grass clippings or brush. In several cases, a beaten path has developed were people make their way down to the water’s edge. Previous planning for the critical area stated that “...existing rights-of-way should not receive any intensive recreational improvements, but should be maintained so local residents will be able to gain access to the river. To prevent users from encroaching on private property,



*Peninsula Point Park’s overlooks of the Mississippi River bring the park national attention.*

*natural screening should be provided.”* This plan supports these previous planning efforts.

Opportunity exists to improve these areas and define public spaces while distinguishing between adjacent private spaces. All of these locations present desirable views of the river; however, protection of the private realm must be considered in any improvement that may occur.

The viewing points at Peninsula Point Park are good examples of well-maintained scenic overlooks. Plans or designs of these scenic overlooks should seek to:

- Optimize views to the river
- Clearly define the public realm vs. private property
- Minimize impervious surface areas (Parking would be on street. They would not need to provide off-street parking as they are intended as a pedestrian destination.)
- Present a design theme that relates to the neighborhood and tells a story of the river
- Connect to the community and remain embedded within the neighborhood

- Determine appropriateness of public access to the river
- Establish responsibility, funding and schedule for maintenance
- Maintain consistency with Minnesota Rules 6106.

Future planning and design efforts to improve these areas should include adjacent property owners and the neighborhood as well as members of the broader community.

## TRAIL CORRIDORS

The City's trail plan is mapped in the Parks & Trails chapter of this comprehensive plan. Within the Mississippi River Critical Area Corridor, there are a number of sidewalks but few off-street trails, except for some trails located within City parks. Trails are indicated in the plan, many of which are identified as on-street trails. No trails are planned to cross private property between the river's edge and private homes. Map 8-6 shows existing and proposed trails and corridors in Anoka and their relationship to the MRCCA border.

### **Mississippi River Regional Trail Corridor**

Mississippi River Regional Trail Corridor is a regional trail corridor that is intended to provide a continuous trail for biking, walking and other non-motorized travel modes linking the communities along the Mississippi River. Through the City of Anoka, this trail is planned to be on-street except where it traverses through city parks and crosses the Rum River. A pedestrian bridge is proposed to cross the Rum River from Akin Riverside Park to Peninsula Point Park. In 2018, this trail connects Coon Rapids to the southeast to Ramsey in the northwest, extending over King's Island.



*Mississippi River Regional Trail Corridor extending onto King's Island.*

### **Rum River Trail**

The Rum River Trail begins in the Mississippi River Corridor at Peninsula Point Park and extends along the Rum River to the northern boundaries of the City of Anoka. Connections to this corridor also provide greater connections to other key corridors in the community.

### **Ferry Street Trail Corridor**

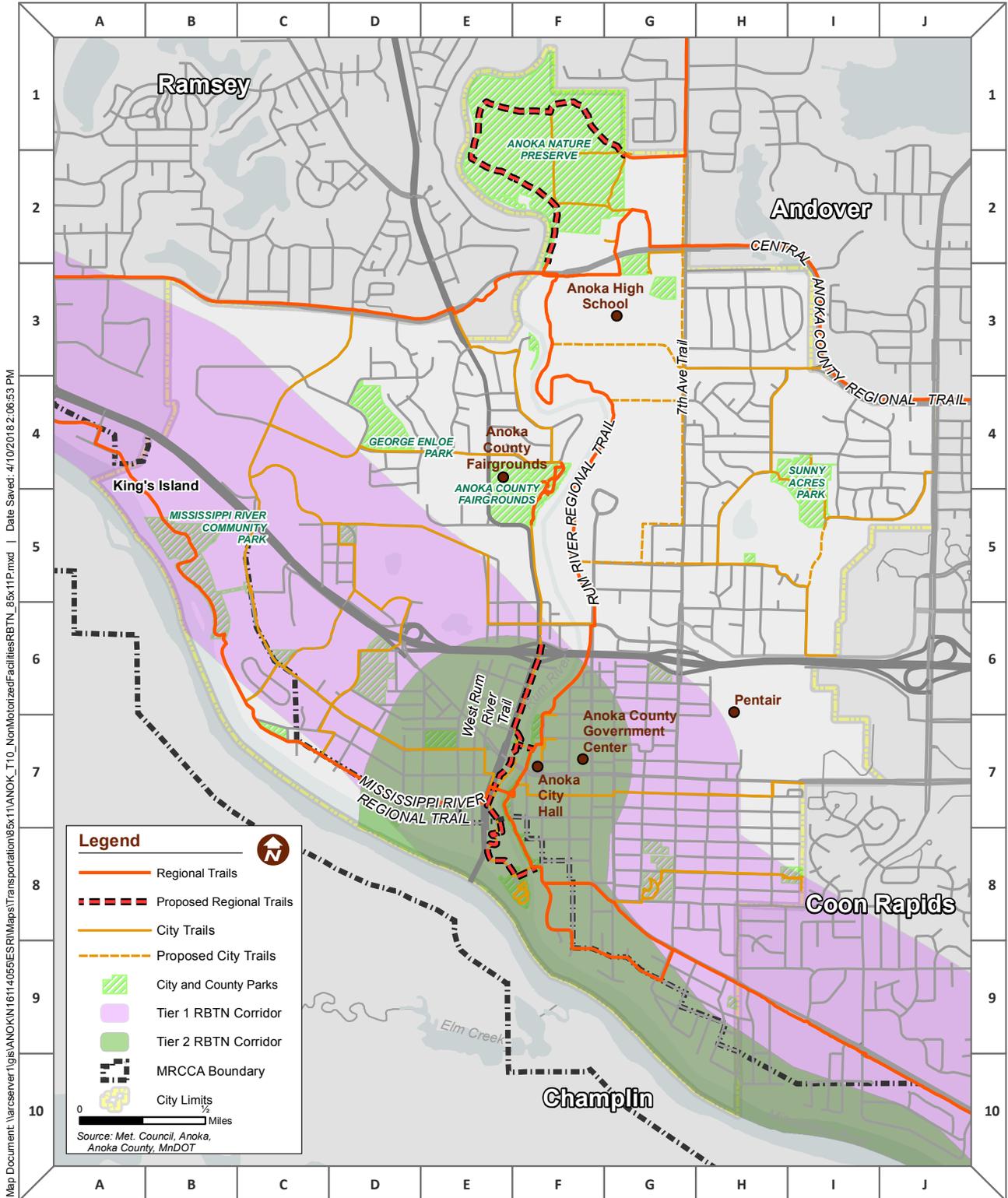
The Ferry Street Trail Corridor begins at the Mississippi River along Ferry Street and extends all the way to Ramsey via a combination of sidewalks and bituminous trail surface.

### **Seventh Avenue Trail Corridor**

The Seventh Avenue Trail Corridor connects to the Mississippi River Regional Trail Corridor and extends all the way to Andover using sidewalks within City and County rights-of-way.

### **Brisbin Trail Corridor**

The Brisbin Trail Corridor also connects to the Mississippi River Regional Trail Corridor and provides an additional connection to the City of Coon Rapids.



Map 8-6: Existing and planned non-motorized facilities and RBTN

## SPECIAL PROJECT: WEST RUM RIVER CORRIDOR

The City of Anoka has engaged design and engineering firm Kimley-Horn in developing enhancements to the western shores of the Rum River. Some of the proposed work will take place within the CA-RTC (River Towns and Crossings) district, and will be developed in accordance with MnDNR guidelines, ordinances, and principles to ensure protection of the river environment. Suggested projects within the boundaries include redevelopment of the Shiloh House, a pedestrian bridge from Peninsula Point Park to Riverspointe, and a trail extension along the western shore.



*Proposed trail and transportation corridors within the MRCCA boundaries.*



*Proposed Woodbury House segment of the Mississippi River Trail (Rendering by Kimley-Horn)*

## TRANSPORTATION & PUBLIC UTILITIES

TH 169, or Ferry Street, is the major arterial that crosses the Mississippi River heading north into Anoka. This roadway is a key component of the regional transportation system and provides the only river crossing between Coon Rapids and Elk River. The Minnesota Department of Transportation improved this roadway in 2002 and is making further improvements to it north of the MRCCA boundary.

Other key roadways in the corridor function as neighborhood collector streets and residential streets. Key residential streets that parallel the Mississippi River include Benton Street and Oakwood Drive. Other key streets connect the river corridor to Anoka's Downtown. These streets primarily include 3<sup>rd</sup> and 5<sup>th</sup> Avenues. Anoka has no existing

Utilities within the corridor are generally located in street rights-of-way. A regional trunk sewer line crosses the Rum River at Peninsula Point Park. This trunk is illustrated on the Utility Locations map. Storm sewer outlets are typically located at



*Highway 169, Ferry Street, crossing north into Anoka next to the Kline Sanitarium.*

dead-end streets (as well as other locations) and are indicated on maps in the Water Resources section.

The City of Anoka's street reconstruction plan describes the reconstruction of the City's older streets. This reconstruction plan is in addition to normal maintenance. The City of Anoka Capital Improvements Program identifies projects scheduled for the next five years.

There are no electric power generation facilities existing or planned within the MRCCA, and there are no zoning districts within the MRCCA that would allow these types of facilities.

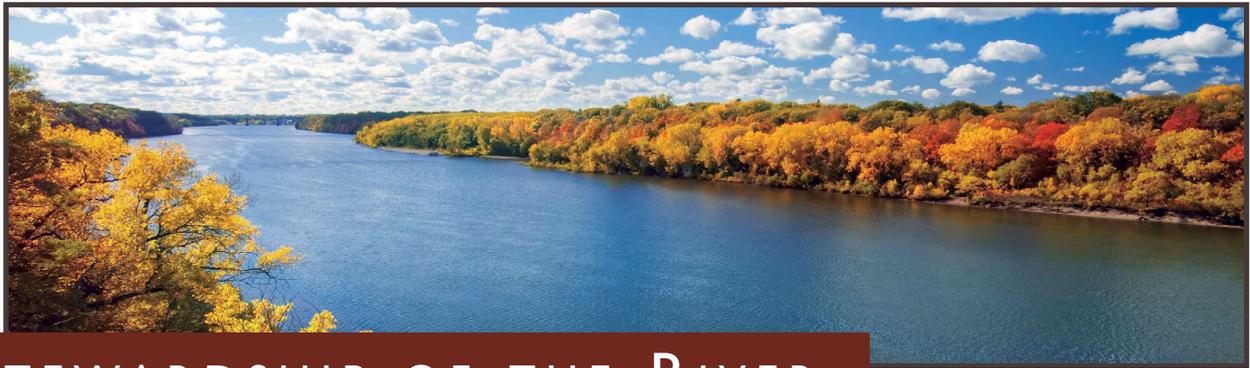
There are further no impacts of existing/planned essential and transmission services to Primary Conservation Areas (PCAs) and Public River Corridor Views (PRCVs).

### Existing and future planned public transportation:

Existing and future planned public transportation in the City of Anoka is mapped on Map 8-7. Currently Metro Transit bus route 766 crosses the Anoka-Champlin Mississippi Bridge via Hwy 169 in and out of Anoka. The bus route provides express bus service from Anoka to downtown Minneapolis on weekdays. There is no other future planned public transportation in the MRCCA.



Map 8-7: Existing and planned non-motorized facilities and RBTN



## STEWARDSHIP OF THE RIVER

*The purpose of MRCCA rules and guidelines is to preserve, protect, and enhance the Mississippi River Corridor so that future generations of Minnesotans can benefit from it. The Corridor consists of a variety of natural elements that each require careful attention and unique protection actions. In addition to these physical assets, the river creates significant visual scenes that frame our lives along the river. Stewardship of the river remains a priority for Anokans through the year 2040 and beyond.*

## PRIMARY CONSERVATION AREAS

Primary Conservation Areas (PCAs) are defined as key resources and features, including shore impact zones (SIZ), bluff impact zones (BIZ), floodplains, wetlands, gorges, areas of confluence with tributaries, natural drainage routes, unstable soils and bedrock, native plant communities, cultural and historic properties, significant existing natural vegetative stands, tree canopies and “other resources” identified by Anoka. Following are definitions of these resources. Maps of applicable PCAs are found at the end of this chapter.

### 1. Shore Impact Zones (SIZ):

“Shore impact zone” means land located between the ordinary high water level of public waters and a line parallel to it at a setback of 50 percent of the required structure setback or, for areas in agricultural use, 50 feet landward of the ordinary high water level.

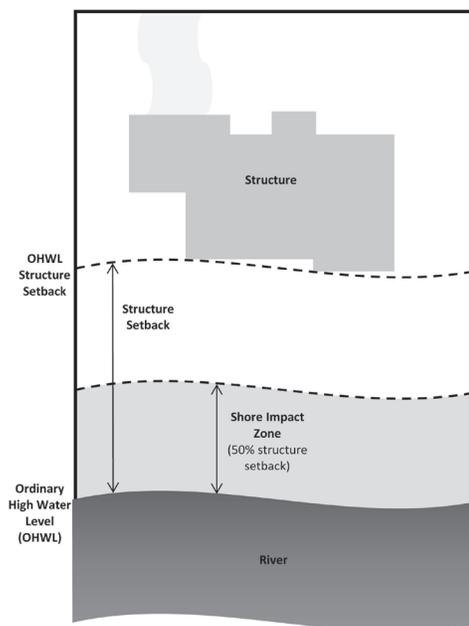


Figure 8-1: Diagram of a Shore Impact Zone.

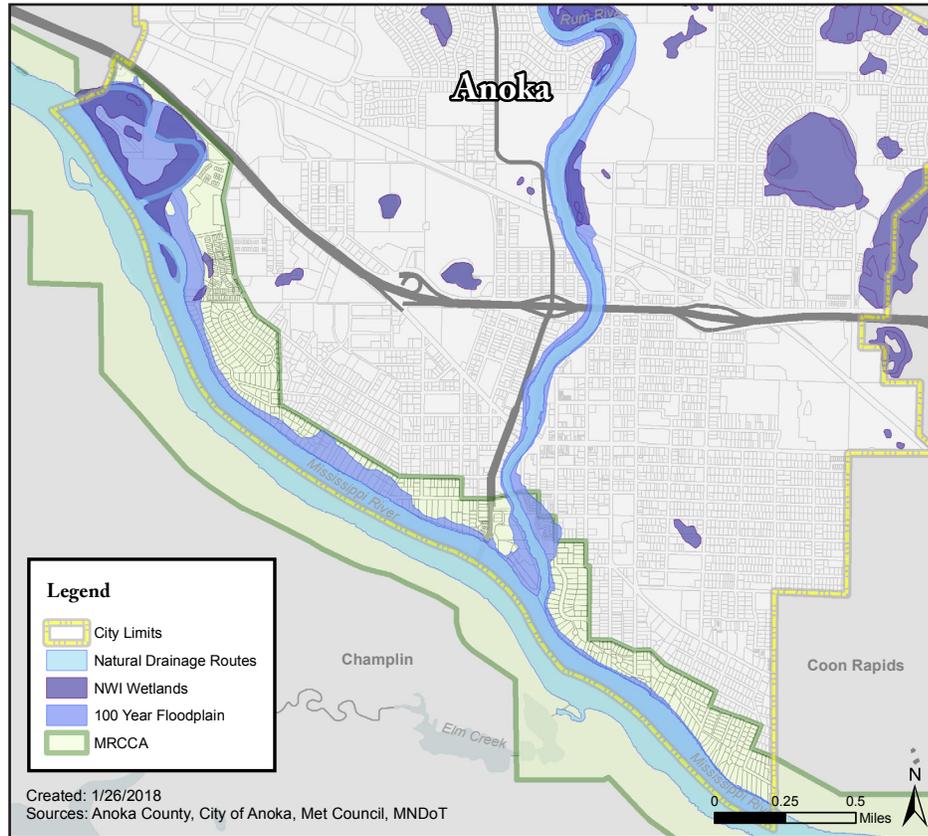
### 2. Wetlands, floodplains, and areas of confluence with key tributaries:

The State of Minnesota adopted the Flood Plain Management Act in 1969. The Act requires all local units of government to adopt, enforce, and administer a Flood Plain Ordinance. The Flood Plain Act was in response to growing concern over the financial and personal losses resulting from floods.

Flood plains of rivers originally formed naturally resulting from flood flows during excessive snowmelt or rainfall. Floods have always been a part of river ecosystems, but human settlement patterns have increasingly collided with and exacerbated these ecosystems. Over time, as more and more development occurred in or along the flood plain, flood heights and velocities increased and resulted in a tremendous increase in economic losses.

All people are affected by the problems associated with floods because clean up costs, flood control costs, and reconstruction of streets and public utilities are all paid with public funds. In order to stop the continued escalation of public costs related to flooding, the emphasis in flood plain management shifted from flood controls to regulatory controls. The regulatory approach establishes guidelines prohibiting development in the part of the floodplain most susceptible to flooding, while in the less susceptible parts a broader range of land use activities can be permitted. Anoka has an adopted Floodplain Ordinance that was approved by the Department of Natural Resources. The boundaries demarking the floodplain can be seen in both the Wetlands and Floodplains map included in this chapter.

## Wetlands &amp; Floodplains in the MRCCA



Map 8-8: Wetlands and floodplains in the MRCCA

Wetlands are low-lying areas that are normally covered with shallow or intermittent waters. These areas are shown in Map 8-8. Swamps, marshes, bogs, and other low lying areas are all wetlands and may occur as part of a river or as a free standing low area. Wetlands play an important role in our environment: they protect water quality by acting as a filter, providing storage for surface water runoff during rain events, recharging the water table, providing habitat for wildlife, and reducing soil erosion by dissipating the velocity of surface runoff. Kings Island offers the most significant wetland area in Anoka. This site should be protected from development. Two other wetlands of the shrub swamp and wooded swamp types are

located adjacent to the Mississippi River Community Park. These wetlands are located adjacent to townhomes that were developed in the early to mid-1990's.

Anoka contains the confluence of the Rum and Mississippi Rivers. The floodplain around this intersection expands over Peninsula Point Two Rivers Historical Park in the western promontory, and Akin Riverside Park along the Rum River's east bank. The Riverspointe residential development just east of Akin Park is also in the 100-year flood plain, though a flood in the 1960's prompted a decades-long City project to fill and raise

the land. This project mitigates flood risk for these properties. These areas are subject to the CA-RTC River Town Crossing district and the associated land use regulations.

3. Natural drainage routes:

A natural drainage route, also known as a watercourse, is a channel for water movement, such as creeks, streams or rivers. The only natural watercourses in the Critical Area Corridor are the Mississippi River and the Rum River. There are no other non-watercourse natural drainage routes in Anoka. These natural watercourses are an amenity in the community and provide desirable development opportunities as evidenced by the residential development along the Mississippi River and the location of City Hall along the Rum River banks. Through preservation of natural watercourses, and with proper management, it is possible to protect the quality and supply of water and ensure the continued enjoyment of Anoka’s natural watercourses. These natural drainage routes are shown on the “Wetlands & Floodplains in the MRCCA” map.

Preservation of natural watercourses is an essential part of any program that hopes to minimize public investment in storm sewers and improve the quality of stormwater runoff; however, the conservation efforts must extend beyond the rivers themselves, and consideration must be given to the entire watershed, including wetlands, lakes and groundwater resources. A comprehensive stormwater runoff plan is the most reasonable means for a community to achieve the best use of their existing water resources. The City of Anoka completed its most recent comprehensive stormwater management plan in August of 2015.

4. Bluff Impact Zones (BIZ):

Riverbank erosion is a serious problem in a few areas of the MRCCA, though less so in Anoka. Currently Anoka does not have any identified areas of special concern regarding erosion prevention, bank and slope stabilization or other areas needing special attention.

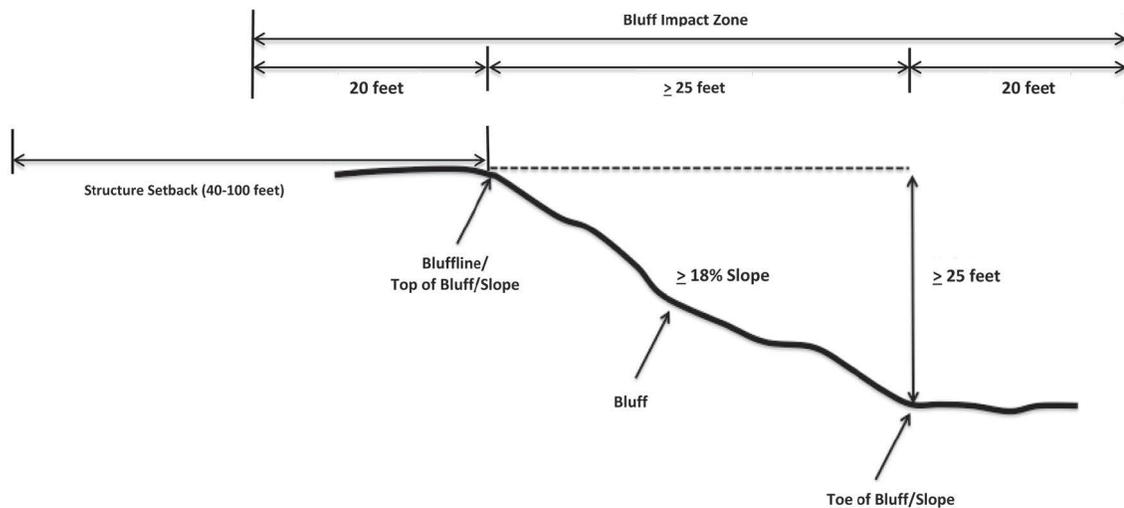
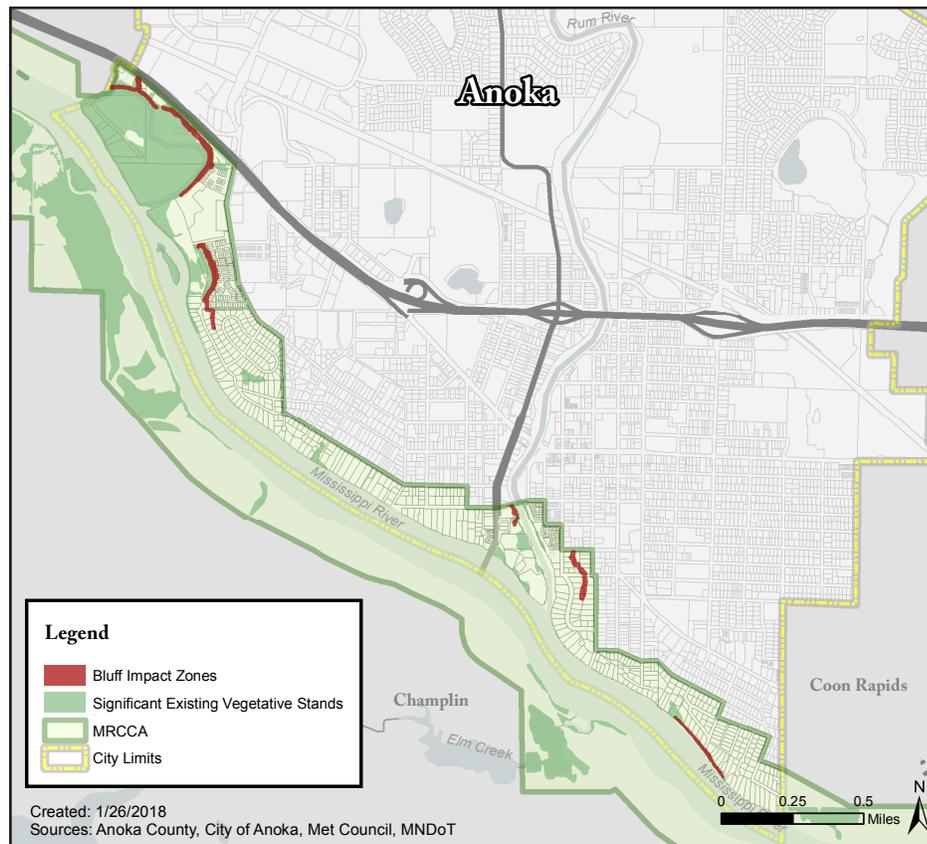


Figure 8-2: Diagram of a Bluff Impact Zone.

## Bluff Impact Zones &amp; Vegetative Stands in the MRCCA



Map 8-9: Bluff impact zones and significant existing vegetative stands in the MRCCA

Prone to natural instability, bluffs in the northern portion of the MRCCA have more glacial deposits - such as outwash, alluvium, colluviums, and terraces - than bedrock. Structural geologists have found that modifications to slopes for building foundations, stormwater management facilities, and road construction have contributed to major failure among natural habitats as well as built infrastructure. These failures impact human activity, but also the uniquely dense wildlife habitats found along bluffs and steep slopes.

Bluff Impact Zones in Anoka are shown on the “Bluff Impact Zones and Vegetative Stands in the MRCCA” map.

5. Significant existing vegetative stands:

Within the MRCCA, “vegetative stands” are comprised of various plants and large portions of tree canopies, serving ecological, scenic, and functional purposes. Map 8-9 shows significant existing vegetative stands in Anoka. These may contain some of the original native plant community elements but do not meet the standards to be classified as native plant communities.

6. Cultural and historic properties:

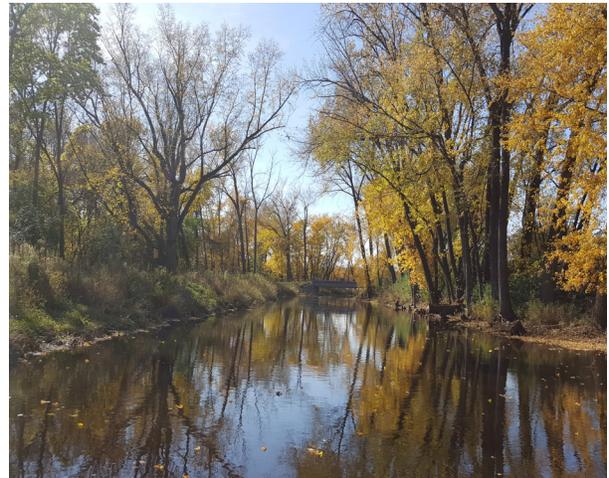
Three of Anoka’s prized National Registered Historic Places fall within the CA-RTC district boundary. The Woodbury House, Anoka-Champlin Mississippi River Bridge,

and the Kline Sanitorium (now Pierce Motel) are located between the Rum and Mississippi Rivers, just north and west of Peninsula Point Park (see Map 8-10). These features add to Anoka's charm and scenic experience in combination with the watercourses and shorelines. Entering Anoka on Highway 169/Ferry Street via the Mississippi River Bridge, commuters and visitors are welcomed into the heart of Anoka by the Kline Sanitarium and Woodbury House.



*The land area between the Woodbury House and Mississippi River is one of Anoka's bluff impact zones.*

Rice Street Beach has been commemorated with a placard describing its use as the first beach area in Anoka. In the 1930s, it was the first location offering swim lessons in town. Anoka continues seeking opportunities to balance development with preservation of local history. This includes maintaining out-of-the-way sites that can be enjoyed informally by residents or visitors.



*King's Island and its surroundings are Anoka's largest significant vegetative stand.*

#### 7. Unstable soils:

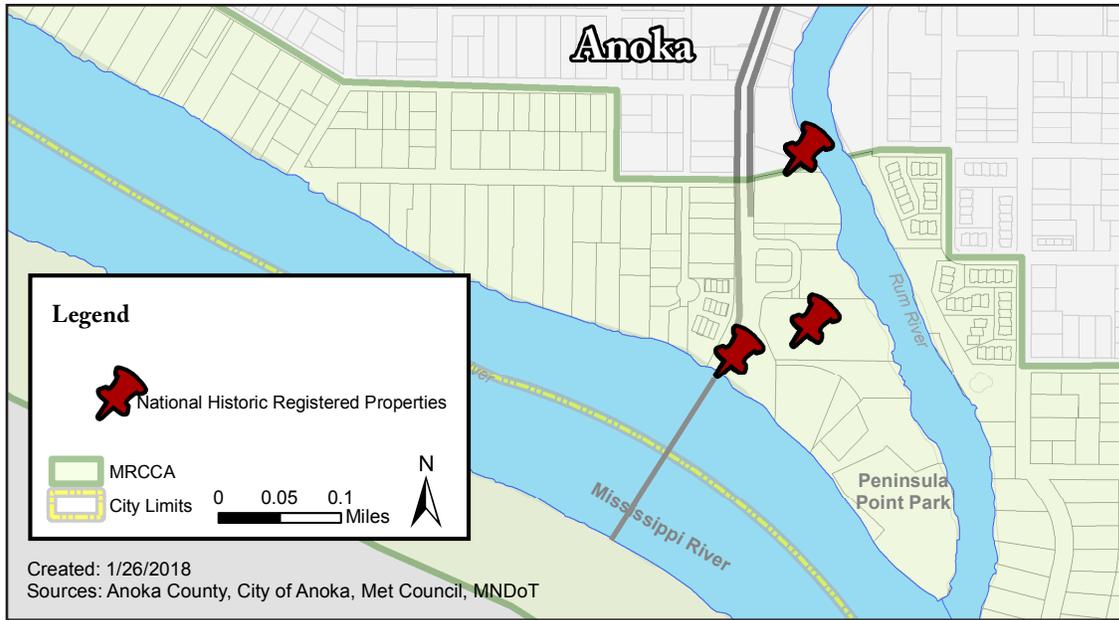
Soil limitations for urban development have been classified as slight, moderate, and severe. Slight means that the limitations, which exist, are minor and can be easily overcome. Moderate indicates that the soil conditions are not favorable for development but can be corrected with proper engineering and design. Severe indicates that soil conditions are not suitable for development and corrective measures would be physically and financially difficult or impractical. Given that most of the corridor in Anoka is developed, soil information should be analyzed for any redevelopment construction in the corridor.



*Rice Beach is a pleasant reminder of the Anoka community's long history on the Mississippi River banks.*

Typically, soils with severe limitations are those that are seasonally flooded, located in wetlands or have steep slopes. Unstable soils can be protected from development through the site plan review and building

## National Historic Registered Properties in the MRCCA



Map 8-10: National historic properties in the MRCCA



1. Woodbury House  
Built: 1857



2. Kline Sanitarium  
Built: 1902



3. Anoka-Champlin Mississippi River Bridge  
Built: 1929

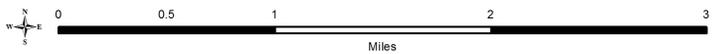
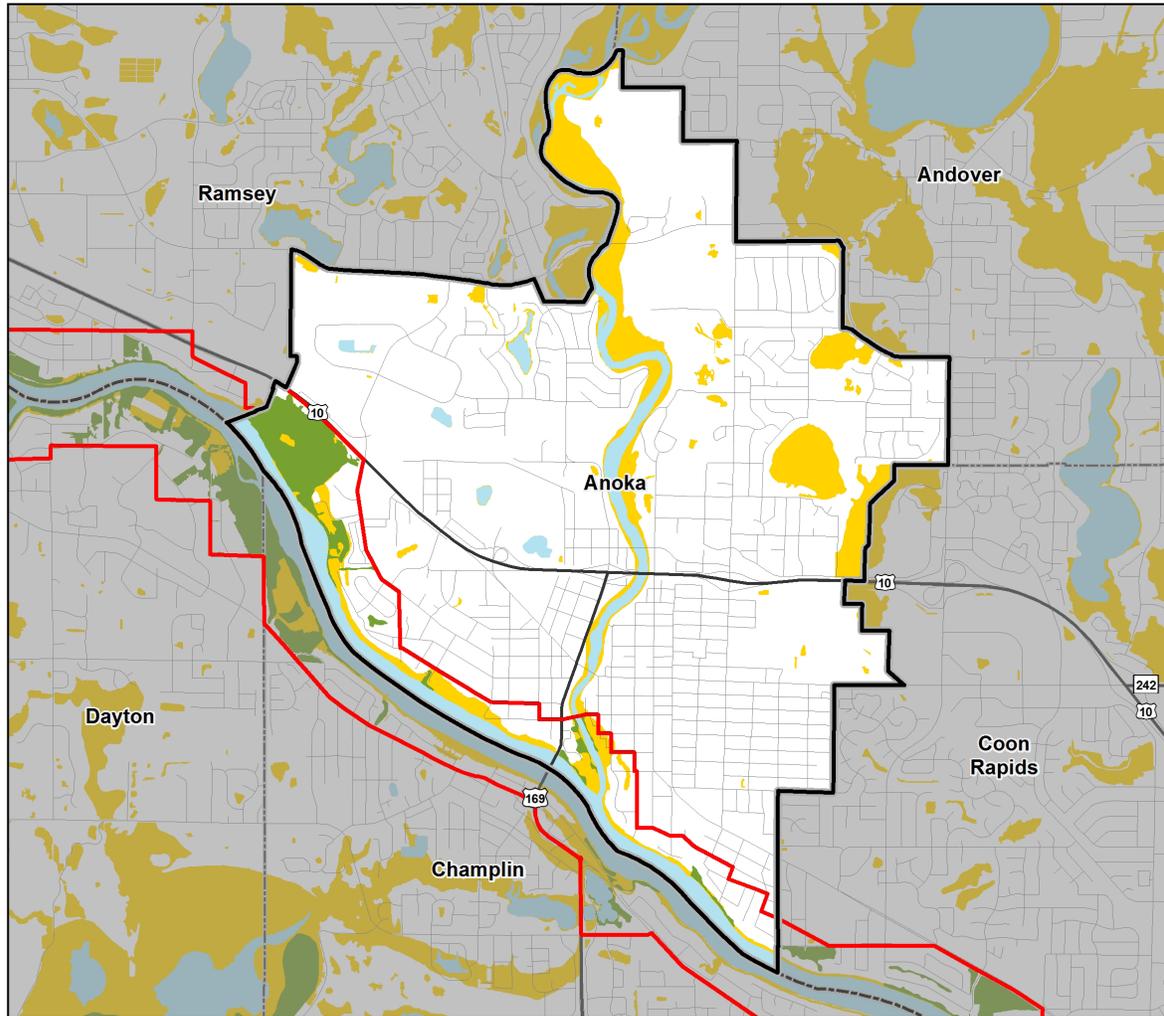
permit processes. The site planning process requires commercial, industrial and larger residential development projects to obtain site plan approval from the City Council prior to performing any grading or soil work. Additionally, development in the MRCCA requires a land disturbance permit for any development within the floodplain. The land disturbance permit looks to ensure appropriate vegetation is maintained and established during construction, and an erosion prevention plan is further reviewed and approved as part of that process.

Within the MRCCA, the City of Anoka has not identified specific areas that are concerns for erosion prevention, bank and slope stabilization, or other restoration activities.

### 8. Vegetation Restoration

Areas that are priorities for vegetation restoration are mapped in Map 8-11. The map shows applicable areas along the Mississippi River within the MRCCA highlighted in yellow. The areas highlighted in green area classified as DNR native plant communities and significant existing vegetative stands.

**Mississippi River Corridor Critical Area - Vegetation Restoration Priorities  
City of Anoka, Anoka County**



- MRCCA Boundary
- DNR Native Plant Communities & Significant Existing Vegetative Stands
- Vegetation Restoration Priorities (Bulff and shore impact zones, floodplains and wetlands not already covered by native plant communities and significant existing vegetative stands)
- County Boundaries
- City and Township Boundaries
- NCompass Street Centerlines

*Map 8-11: Vegetation Restoration Priority Areas*

## RIVER SCENES

The Mississippi River corridor contains some of the most iconic and cherished scenic vistas in Minnesota and is one of the reasons the corridor was designated a critical area. While the entire length of the river contribute valuable natural perspectives, Public River Corridor Views (PRCVs) are unique scenes that are deemed important by the local community, acting as public assets and anchors that deserve special recognition and protection. Anoka's river scenes support the health and economic vitality of the entire city. Through a process of public involvement and field research, the following views have been identified as important views in Anoka.

### Mississippi Community Park:

Mississippi Community Park is located at the southwest of the city along the Mississippi River. This view is from the park looking west toward the Mississippi River. Below is a photo and map of the view. The visual domain of this view is a combination of natural and riverine. The view includes the specific visual elements of vegetation, rocks and water. This view from the park is important to Anoka residents because it provides a scenic view of the Mississippi River from Anoka. The view could be negatively altered by haphazard urban development across the river or upstream resulting in damage to the river's ecosystem.



*View from Mississippi Community Park*



*View from Mississippi Community Park*

### Peninsula Point Park:

Peninsula Point Park is located at the south of the city along the Mississippi River just east of the Anoka-Champlin Mississippi River Bridge. This view is from the park looking west toward the Mississippi River and Anoka-Champlin Mississippi River Bridge. Below is a photo and map of the view. The visual domain of this view is a combination of suburban and riverine. The view includes the specific visual elements of water, vegetation, a bridge and buildings. The view from the park is important to Anoka residents because it showcases the Mississippi River and Anoka-Champlin Mississippi River Bridge which both played an important role in the city's history and development. The view could be negatively altered by haphazard urban development across the river or upstream resulting in damage to the river's ecosystem.



*View from Peninsula Point Park*



*View from Rice Street Beach*



*View from Peninsula Point Park*



*View from Rice Street Beach*

### Rice Street Beach:

Rice Street Beach is located at the south of the city along the Mississippi River west of the Anoka-Champlin Mississippi River Bridge. This view is from the park looking northwest toward the Mississippi River. Below is a photo and map of the view. The visual domain of this view is a combination of suburban and riverine. The view includes the specific visual elements of water, a bridge and buildings. The view from the park is important to Anoka residents because it showcases the Mississippi River and Anoka-Champlin Mississippi River Bridge which both play an important role in the city's history.

### Views toward bluffs:

There are no visible bluffs within Anoka viewable from the opposite shore or views of bluffs from Anoka.

### Other views:

The City of Anoka will continue to engage with residents to identify other views important to the city. There are no other important views mapped and identified at this time.



## MOVING FORWARD

*The decennial comprehensive plan is an opportunity to reflect on the last ten years of Anoka's development and chart an informed course for another twenty years. Moving forward, Anoka will pursue priorities and concerns voiced by the community, while meeting state goals and objectives for protection of the river corridor. Focusing on specific opportunities for preservation and enhancement will allow the community to take concrete steps toward preparing an even better city for the next generation.*

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## KEY COMMUNITY ISSUES

In 2017, Anoka's Community Development Department conducted an online survey of residents, issuing one new question per week. About 180 people completed the survey. Some key issues and opportunities identified by survey respondents, planning staff, and City Council include:



- Protection of the rivers, open space, and recreation areas;
- Expanding and enhancing the park and trails system;
- Preserving historic areas;
- Encouraging river-oriented restaurants and businesses;
- Enhancing access to and awareness of the rivers;
- Improving business and residential exteriors around the rivers;
- Constructing a pedestrian crossing from Akin Riverside Park to Peninsula Point Two Rivers Historic Park;
- Development of river-appropriate and modern amenities along the MRCCA;
- Education and communication about riverbank maintenance, shoreland improvements, and river accessibility;
- Utilization of boating traffic.

## OPPORTUNITIES

Many opportunities exist to achieve the state and federal goals and objectives for the Mississippi River Corridor Critical Area. These opportunities are consistent with the Community's vision and guiding principles as articulated in the background section of the Anoka Comprehensive Plan.

### 1. Sponsor educational programs.

There are numerous resources in the Twin Cities area that are available to help provide resources and training to communities and individual riverfront property owners who wish to implement shoreline restoration or preservation improvements. Anoka residents value education/training opportunities regarding landscaping using native species, urban forestry, and storm water management.

Additionally, the DNR and other state, local and regional permitting agencies have the resources to educate people on what types of reviews and approvals are required for various kinds of projects. These agencies also have technical staff that can offer suggestions and resolutions to problems associated with rivers. Public forums should be held on an annual basis to provide the general public with updates on legislative changes and new techniques to preserve the river corridor and private property within the Critical Area. Cooperation with other communities along the river would enhance this process.

### 2. Build a pedestrian bridge over the Rum River to connect to Peninsula Point Park.

A key guiding principle in Anoka's Community Plan is to improve connectivity. An existing pedestrian bridge is located approximately 1/3 of a mile to the north of Peninsula Point Park. This bridge is

at an inconvenient location to enhance connections to the park. Connecting the east side of the Rum River to Peninsula Point Park serves many purposes. It provides a better connection to an otherwise hidden gem in Anoka in Peninsula Point Park. It facilitates the Mississippi River Regional Trail Corridor connection within the Critical Area Boundaries and it completes the Rum River Trail Corridor connecting Peninsula Point Park with the northern limits of the City. Unique architecture and design should be a key component of this strategy to help blend the proposed bridge into the existing landscape and minimize the environmental impacts.

### 3. Maintain and build on the City's cultural resource inventory and historic interpretation along the river corridor.

The City of Anoka has an active concern for heritage preservation. The Anoka Heritage Preservation Commission strategically coordinates with the Anoka County Historical Society, Hennepin County Historical Society, and other local history organizations to prepare a cultural resource inventory. The HPC and Public Services Department continue to establish landmarks and public information installations to connect current Anokans with the past. Festivals and community events contribute to the cultural meaning of the river corridor in today's society.

### 4. Connect Anoka's community arts, recreation, and cultural events to the river corridor.



While the river corridor does not contribute to Anoka's formation and identity today as it did in centuries past, Anokans continue to weave it into daily and civic life through festivals, concerts, sports, and other modern activities.

A major element of Anoka's economic development plan is to emphasize events like the Riverfest & Craft Fair and Jam by the Dam, actualizing the Mississippi and Rum Rivers as assets that can contribute to livability in the city. Private entities will be encouraged to join with the City of Anoka in instigating and supporting live functions in the corridor.



Events in Anoka are founded on a local culture of activity and fun. The rivers provide space to fish, boat, and lounge. A cared-for river corridor will facilitate the recreational past-times of generations of Anokans.



# GOALS, POLICIES, & IMPLEMENTATION

## MISSISSIPPI RIVER CORRIDOR GOALS

The following goals are established for the Mississippi River Corridor. These goals emulate the Guiding Principles and Community Vision that are described in the first section of the Anoka Comprehensive Plan.

**GOAL MRC-1: TELL THE STORY AND CELEBRATE THE HISTORY OF THE MISSISSIPPI RIVER AND ITS IMPORTANCE TO THE CITY OF ANOKA.**

**GOAL MRC-2: PROTECT THE MISSISSIPPI RIVER CORRIDOR FROM NEGATIVE ENVIRONMENTAL AND VISUAL IMPACTS OF HUMAN DEVELOPMENT.**

**GOAL MRC-3: OPTIMIZE THE ECONOMIC BENEFITS OF RIVERFRONT DEVELOPMENT WITHOUT COMPROMISING THE INTENTIONS OF THE CRITICAL AREA CORRIDOR.**

**GOAL MRC-4: ESTABLISH COMMUNITY CONNECTIONS TO AND FROM THE CORRIDOR FOR ANOKA'S NEIGHBORHOODS AND DOWNTOWN.**

**GOAL MRC-5: SATISFY THE INTENTIONS OF THE CRITICAL AREA ACT AND OTHER REGIONAL RIVER CORRIDOR PLANNING AND REGULATORY INITIATIVES.**

## POLICIES AND IMPLEMENTATION

### General Policies

1. Develop policies that generally recognize the importance of the MRCCA and further its goals.

### General Implementation

#### Ordinance Updates (MRCCA Overlay)

- Amend MRCCA ordinance/overlay district for consistency with MRCCA rules
- Amend zoning map to reflect new districts
- Identify any areas where implementation flexibility may be pursued and action needed to support and justify it
- Update existing or develop new surface water use plan and ordinance (if community elects to regulate surface water use)

#### MRCCA Overlay Ordinance Administration

- Update application forms, site plan submittal requirements, and review procedures for consistency with MRCCA rules
- Develop MRCCA design guidelines
- Establish MRCCA vegetation and land alteration permit processes
- Develop visual analysis approach for CUPs/PUDs/variances
- Develop mitigation scoring system for evaluating proposed development
- Develop a system for reviewing, tracking, and monitoring open space set-aside and/

or dedicated as part of the subdivision/PUD process

- Identify areas/topics warranting implementation flexibility.

#### Education & Outreach

- Develop outreach and communication strategy to alert MRCCA property owners of new districts and zoning requirements
- Develop web materials (mapping applications, FAQs, handouts, and other materials) to help property owners identify when their property is in the MRCCA and what regulations apply
- Ensure that information on the MRCCA districts and zoning requirements is readily available to property owners to help them understand the requirements that might typically apply for project planning and permitting (e.g. height, setbacks).

#### Capital Improvements

- Identify specific capital improvements (trails, overlooks, public access, and other recreational facilities) within the MRCCA

#### Land Acquisition

- Identify specific land acquisitions within the MRCCA, if any.

#### Specific Planning Efforts, Projects, & Initiatives

- Conduct feasibility studies/research as needed to address issues in the MRCCA
- Coordinate with regional, state, and national park planning efforts within the MRCCA
- Conduct master planning or other planning efforts

- Identify key corridor projects and initiatives.

#### **Development & Land Use Policies**

1. Guide land use and development and redevelopment activities consistent with the management purpose of each district.
2. Recognize the Mississippi River as a “working river” that is important to the economy of the Twin Cities metropolitan area and the Midwest.
3. Minimize potential conflict of water surface uses authorized under Minn. Statute, Chapter 86B (MR 6110.3000 – 6110.3800)
4. Seek to balance commercial and recreational surface water uses. Acknowledge the importance of these uses and provide for their protection.
5. Minimize potential conflict of water-oriented uses with other land uses.
6. Incorporate consideration of surface water impacts into the review process for water-oriented uses.
7. Consider soil classification information when determining appropriate land uses and building designs.
8. Maintain existing public access points to the river to allow pedestrians to view the river and provide natural screening where appropriate to avoid conflicts with adjacent property owners and prevent encroachment.
9. Ensure that development of structures, roads, screening, landscaping, construction placement, maintenance, and stormwater runoff are compatible with the character and uses in the Corridor.
10. Require site plan review of development projects in the corridor, except for



development of a single-family house or duplex if permitted.

11. Require site plans to adequately assess and reasonably minimize adverse effects and maximize beneficial effects of proposed development. Site plan applications will include:
  - Description of activities undertaken to ensure consistency with the objectives of Minnesota Rules 6106.
  - Maps that specify topography and expected physical changes in the site as a result of the development
  - Description of measures that address adverse environmental effects
  - Drainage plans
  - Landscaping (including re-vegetation) and buffering plans

- Building elevations that indicate proposed exterior materials
  - Illustration of compliance with all zoning (setbacks, building heights, etc.) and subdivision requirements
  - Identification of opportunities for open space preservation and public viewing of the river corridor
12. Maintain a predominantly residential land use pattern in the critical area corridor in Anoka, with limited areas of commercial development.
  13. Encourage the use of Planned Unit Developments (PUDs) for larger developments to preserve natural features and allow for scenic vistas, trails and walkways.
  14. Require a topographic “certificate of survey” to accompany all requests for building permits for principal structures.
  15. Minimize impervious surface coverage and site alteration within the Critical Area Corridor, especially on riparian lots, through unique and sensitive site design.
  16. Promote reuse and rehabilitation of existing structures, allow for reconstruction of existing uses that are involuntarily destroyed in residential zoning districts, and place reasonable limits on the expansion of nonconformities that have the potential to adversely affect surrounding properties, the City as a whole and the character of the particular MRCCA district.
  17. Prohibit the reconstruction of non-conforming uses as regulated by Minnesota Statute 462.
  18. Require reasonable portions of appropriate riverfront access land or other lands in

interest to be dedicated as required by Minnesota Rules, part 6106.0010.

19. Minimize any adverse effects associated with water transportation facilities.
20. Consider appropriate uses of adjacent lands between the river and the road or utility during planning and design for reconstruction of roadways or utility corridors. Consideration should be given to scenic overlooks, pedestrian crossings and facilities, and public access to the riverfront during planning and design of transportation facilities.

**Development & Land Use Implementation**

- Update existing or adopt new MRCCA ordinance compliant with the goals and policies of the MRCCA plan. and with Minnesota Rules, part 6106.0070, Subp. 5 - Content of Ordinances
- Update zoning map with the new MRCCA districts
- Amend ordinance to provide for water-oriented/river-dependent uses.
- Incorporate consideration of surface water impacts into the review process for water-oriented uses.
- Consider establishing surface water regulations to limit wake generated erosion.

**Primary Conservation Areas Policies**

1. Protect PCAs and minimize impact to PCAs from public and private development and land use activities (landscape maintenance, river use, walking/hiking, etc.).
2. Support mitigation of impacts to PCAs through variances, CUPs, and other permits.

3. Prioritize restoration of removed vegetation in riparian areas during development.
4. Prioritize PCA types for protection through evaluation criteria when development sites contain multiple types of PCAs and the total area of PCAs exceed the required set aside percentages.
5. Support alternative design standards that protect the City’s identified PCAs, such as conservation design, transfer of development density, or other zoning and site design techniques that achieve better protections or restoration of primary conservation areas.
6. Prioritize use of permanent protection measures (such as public acquisition, conservation easement, deed restrictions, etc.) that protect each if the City’s identified primary conservation areas and address the type of development and local administrative capacity to ensure long-term protection.
7. Protect natural watercourses through easements or land dedications during the development plan review process and subdivision regulations.
8. Meet minimum standards established by the Minnesota Pollution Control Agency



regarding stormwater discharged into the Rum or Mississippi Rivers.

9. Minimize direct overland runoff and improve quality of runoff onto adjoining streets and watercourses.
10. Encourage the use of on-site infiltration techniques (such as rainwater gardens or drainage swales) for stormwater drainage and retention.
11. Do not disturb riverbank areas of natural watercourses except when making improvements to stabilize shorelines or riverbanks.
12. Use techniques that are supported by area hydrologists or the Anoka County Conservation Department (i.e. incorporating natural vegetation or other Best Management Practices) and are consistent with Minnesota Rules 6106.0010 for riverbank improvements or shoreline stabilization projects where appropriate.
13. Protect bluffs and slopes as regulated by Minnesota Rules 6106.0100.
14. Adopt regulatory controls to minimize the amount of time soil is left bare during construction and land alterations, and to assure necessary precautions to trap sediment.
15. Enforce City-adopted flood plain regulations.
16. Adopt subdivision and site plan regulations that require identification of existing trees, trees to be removed and proposed new plantings.
17. Preserve shoreland areas that are not suitable for urban development because of susceptibility to flooding, high ground water levels, or steep slopes.

### **Primary Conservation Areas Implementation**

- Ensure that information on the location of PCAs is readily available to property owners to understand how PCA-relevant ordinance requirements, such as vegetation management and land alteration permits, apply to their property for project planning and permitting.
- Specify procedures for processing applications with potential impacts to PCAs – what information must be submitted and how it will be evaluated.
- Specify procedures for evaluating variances and CUPs for impacts to PCAs as well as procedures/methods for determining appropriate mitigation.
- Specify how the City will communicate vegetation management and land alteration ordinance provisions to property owners (Web, print, maps, other)
- Develop administrative procedures for integrating DNR and local permitting of riprap, walls and other hard armoring.

### **Public River Corridor Views Policies**

1. Protect and minimize impacts to PRCVs from public and private development activities.
2. Protect and minimize impacts to PRCVs from vegetation management activities (landscape maintenance, river use, walking/hiking, etc.)
3. Protect PRCVs located within the community and identified by other communities (adjacent or across the river).
4. Consider and minimize obstruction of views of and from the river when permitting new development or redevelopment within the

corridor. Keep these views as natural as possible.

5. Enhance and maintain views to the river from public streets that dead-end at the river.
6. Balance the rights of private property owners with the interests of the general public when considering the building of any structures that may inhibit views to the river from adjacent property or public right-of-way

**Public River Corridor Views Implementation**

- Ensure that information on the location of PRCVs is readily available to property owners to understand how PRCV-relevant ordinance requirements apply to their property for project planning and permitting.
- Specify procedures for processing applications with potential impacts to PRCVs – what information must be submitted and how it will be evaluated.
- Specify procedures for evaluating variances and CUPs for impacts to PRCVs as well as procedures/ methods for determining appropriate mitigation.
- Specify how the City will communicate vegetation management and land alteration ordinance provisions to property owners (web, print, maps, other).
- Develop a visual analysis approach for evaluating CUPs for additional height in the RTC and UM districts and for PUDs and variances.
- Actively communicate with other communities to protect views other communities have identified in their plans that are valuable, and vice versa.



**Priorities for Restoration Policies**

1. Protect native and natural vegetation during the public and private development process. Priorities for restoration shall include stabilization of erodible soils and establishment of removed vegetation.
2. Seek opportunities to restore vegetation to protect and enhance PRCVs.
3. Seek opportunities to restore vegetation in restoration priority areas through the CUP, variance, and subdivision processes.
4. Sustaining and enhancing the ecological functions (habitat value) of vegetation is important for the MRCCA and the community.
5. Evaluate proposed public and private development sites for erosion prevention and bank and slope stabilization issues and require restoration as part of the development process.

**Priorities for Restoration Implementation**

- Develop and implement an education and outreach strategy to get the word out to property owners about restoration priorities identified in this plan and what it means to them if a restoration priority area exists on their property.
- Establish a vegetation permitting process that includes permit review procedures to ensure consideration of restoration priorities identified in this plan in permit issuance, as well as standard conditions requiring vegetation restoration for those priority areas.
- Establish site plan review procedures to ensure consideration of restoration priorities identified in the MRCCA plan in all development requests.
- Establish process for evaluating restoration priorities in CUP, variances, subdivision/PUD processes. The City will work to develop this process as it drafts the required elements of the updated MRCCA ordinance.
- In the MRCCA subdivision ordinance, address the following provisions:
  - a. For potential development sites that contain PCAs but no natural vegetation, identify vegetation assessment criteria to determine when vegetation restoration will be required. Criteria must include, but is not limited to:
    - i. Opportunity exists to connect significant existing vegetative stands or native plant communities on adjacent properties
    - ii. Site is visible from and could affect an identified Public River Corridor View (PRCV)

iii. Site contains areas with erosion, bank and slope instability, or other problems.

- b. For potential development sites that do NOT contain PCAs, require vegetation restoration where restoration priorities have been identified in this plan.

**Transportation, Public Facilities, & Recreational Space Policies**

1. Encourage creation, connection, and maintenance of open space, recreational facilities, including public access to the river.
2. Identify and encourage connection of CA-SR district land to existing and planned parks and trails.
3. Consider land dedication requirements be used to acquire land suitable for public river access.
4. Minimize impacts to PCAs and PRCVs from public transportation facilities, public utilities, and solar and wind generation facilities.
5. Discourage the use of individual septic treatment systems (ISTS) where public sewer service is available and ensure existing systems are in compliance with local and state laws. (See Utilities Locations map for suspected locations of ISTS within the corridor.)
6. Provide continuous trails within or near the Critical Area Corridor for pedestrian and bicycle use.
7. Link trails within the Critical Area to the citywide trail system.
8. Develop the design of new trails within the corridor with input from the adjacent

neighborhood as well as the greater community.

9. Design trails with bituminous surface (or other appropriate hard surface) and separate bicycle and pedestrian traffic where possible.
10. Do not locate trails in private yards between the house and the river in existing residential areas, unless all affected property owners solicit it.
11. Minimize river crossings and concentrate at existing crossings where possible.
12. Do not use the corridor as a convenient right-of-way.
13. Limit overhead electric transmission or other public utility lines to existing crossings, and use submarine cables where possible.
14. Design and construct new or modified transportation and utility facilities in a manner that compliments the planned land and water uses in the corridor. Reconstruct roads or utilities in a manner that they do not stimulate development that is incompatible with district guidance from Minnesota Rules 6106.0100.

**Transportation, Public Facilities, & Recreational Space Implementation**

- Include facilities in the capital improvement program for parks and open space facilities, if relevant.
- Develop a system for reviewing, tracking, and monitoring open space required as part of the subdivision process.
- Include transportation facilities in the capital improvement program, if relevant.
- Incorporate specific conditions into the conditional use permits to address impacts

of solar and wind generation facilities within the City.

- Incorporate specific protective measures for the design and placement of essential or transmissions services within local government jurisdiction.
  - a. For potential development sites that contain PCAs but no natural vegetation, identify vegetation assessment criteria to determine when vegetation restoration will be required. Criteria must include, but is not limited to:
    - i. Opportunity exists to connect significant existing vegetative stands or native plant communities on adjacent properties
    - ii. Site is visible from and could affect an identified Public River Corridor View (PRCV)
    - iii. Site contains areas with erosion, bank and slope instability, or other problems.
  - b. For potential development sites that do NOT contain PCAs, require vegetation restoration where restoration priorities have been identified in this plan.

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# 9. TRANSPORTATION

Introduction  
Existing Roadway  
Transportation Studies  
Roadway System Plan  
Transit Conditions & Plan  
Non-Motorized Transportation  
Freight  
Aviation  
Goals & Strategies



## INTRODUCTION & GOALS

The purpose of the City of Anoka's Transportation Plan is to provide guidance to the City and other entities in assessing and planning for transportation needs and implementing effective, integrated transportation facilities and programs through the 2040 planning timeframe. This Plan, which builds on and updates the City's 2030 Comprehensive Plan (2008), will provide input to the Metropolitan Council's 2040 Regional Transportation Plan. This chapter is consistent with regional requirements for transportation as captured in the Metropolitan Council's 2040 Local Planning Handbook.

In summary, this plan reflects the City of Anoka's plan to provide a transportation system that is safe, cost effective, convenient, and affords efficient means of moving both people and goods within and through the community and region. The Transportation Plan emphasizes enhancement, management, and maintenance of the existing roadway network and of multimodal transportation options.



## OVERVIEW

The City of Anoka is located in Anoka County, Minnesota, approximately 20 miles northwest of downtown Minneapolis (see Figure 9-1 – Regional Location Map). Anoka is just over seven square miles in area and is bordered by the Cities of Ramsey, Andover, Coon Rapids in Anoka County; and Dayton and Champlin in Hennepin County. The Mississippi River forms the City's southern border. Anoka is located entirely within the Metropolitan Urban Service Area.<sup>1</sup> Major highways through Anoka include US Highway 10 (US 10), an east/west principal arterial; and US Highway 169 (US 169), a north/south principal arterial. Both highways join in the western edge of the City and continue westward as US 10/169, connecting Anoka to Greater Minnesota. Minnesota State Highway 47 (MN 47)/Ferry Street is an A Minor Arterial that primarily provides a north-south connection north of US 10.

The Metropolitan Council identifies Anoka as a "Suburban" city in the 2040 Regional Development Guide, meaning the City saw most of its growth and development in the latter part of the 20th century and has developed in a largely auto-oriented manner. The City is largely built out with residences and a thriving business environment, all of which generates traffic.

Traffic within Anoka is affected by surrounding communities, especially those to the north and west. The cities of Ramsey and Andover have experienced rapid development as the metropolitan area has expanded. Growth of neighboring communities, increased employment in second and third ring

<sup>1</sup> The MUSA is the boundary of the Urban Service Areas (sewer service areas) within the seven-county metropolitan area of the Twin Cities of Minneapolis and Saint Paul.

**TABLE 9-1: EXISTING AND FORECAST (2040) DAILY TRAFFIC VOLUMES ON PRINCIPAL AND A MINOR ARTERIALS IN ANOKA**

Route	West/North Limit	East/South Limit	AADT	
			2012-2015	2040
US 10	West City Limit	Thurston Avenue	51,000	62,500
US 10	Thurston Avenue	Fair Oak Avenue	59,000	65,300
US 10	Fair Oak Avenue	Main Street	59,000	52,000
US 10	Main Street	Rum River	52,000	59,900
US 10	Rum River	7th Avenue	66,000	74,000
US 10	7th Avenue	East City Limit	72,000	81,000
US 169	US 10	Main Street	25,500	29,900
US 169	Main Street	Mississippi River	45,500	54,500
MN 47	Bunker lake Blvd	Pleasant Avenue	19,200	21,300
MN 47	Pleasant Avenue	US 10	19,200	21,300
7th Avenue (CSAH 7)	North City Limit	Bunker lake Blvd	14,500	17,200
7th Avenue (CSAH 7)	Bunker Lake Blvd	38th Avenue	14,200	19,600
7th Avenue (CSAH 7)	38th Avenue	Grant Avenue	17,600	22,900
7th Avenue (CSAH 7)	Grant Avenue	US 10	23,100	20,500
Main Street (CSAH 14)	US 10	US 169	16,000	19,300
Main Street (CSAH 14)	US 169	Second Avenue	23,300	26,000
Main Street (CSAH 14)	Second Avenue	5th Avenue	19,600	23,100
Main Street (CSAH 14)	5th Avenue	7th Avenue	15,700	17,300
Main Street (CSAH 14)	7th Avenue	East City Limit	12,800	14,500
5th Avenue (CSAH 1)	Main Street	Jefferson Street	8,400	7,100
5th Avenue (CSAH 1)	Jefferson Street	South Street	8,400	7,100
East River Road (CSAH 1)	South Street	7th Avenue	7,200	8,300
East River Road (CSAH 1)	7th Avenue	East City Limit	12,800	14,500
Round Lake Boulevard (CSAH 9)	Bunker Lake Blvd	Roosevelt Street	32,000	37,400
Round Lake Boulevard (CSAH 9)	Roosevelt Street	South City Limit	32,000	37,400
Bunker Lake Boulevard (CSAH 116)	West City Limit	Magnesium Street	6,300	13,400
Bunker Lake Boulevard (CSAH 116)	Magnesium Street	Thurston Avenue	6,300	13,400
Bunker Lake Boulevard (CSAH 116)	Thurston Avenue	Barium Street	12,800	18,100
Bunker Lake Boulevard (CSAH 116)	Barium Street	Saint Francis Boulevard	12,800	18,100
Bunker Lake Boulevard (CSAH 116)	Saint Francis Boulevard	Anoka High School	16,500	24,000
Bunker Lake Boulevard (CSAH 116)	Anoka High School	7th avenue	16,500	24,000
Bunker Lake Boulevard (CSAH 116)	7th Avenue	38th Avenue	11,500	17,300
Bunker Lake Boulevard (CSAH 116)	38th Avenue	Round Lake Boulevard	15,700	23,700
Thurston Avenue*	Bunker Lake Blvd	Lund Boulevard	6,900	7,300
Thurston Avenue*	Lund Boulevard	Anoka-Hennepin Technical College	9,800	9,600
Thurston Avenue*	Anoka-Hennepin Technical College	US 10	11,600	10,400

Source: Met Council, Anoka, Anoka County, MnDOT



suburbs of the Twin Cities, and the continued decentralization of population and employment in the metro area have contributed to increased traffic volumes in the City of Anoka. This growth is most apparent on major roadways that connect to the Twin Cities metro area as well as greater Minnesota, including US 10/169, and MN 47. Table 9-1 shows the growth that is anticipated to occur on Principal and A Minor Arterials, as measured in Average Annual Daily Traffic (AADT).

This section is organized into the following sections:

- Roadway Existing Conditions
- Roadway System Plan
- Transit Existing Conditions and System Plan
- Non-Motorized Existing Conditions and System Plan
- Freight Plan
- Aviation Plan
- Implementation Plan

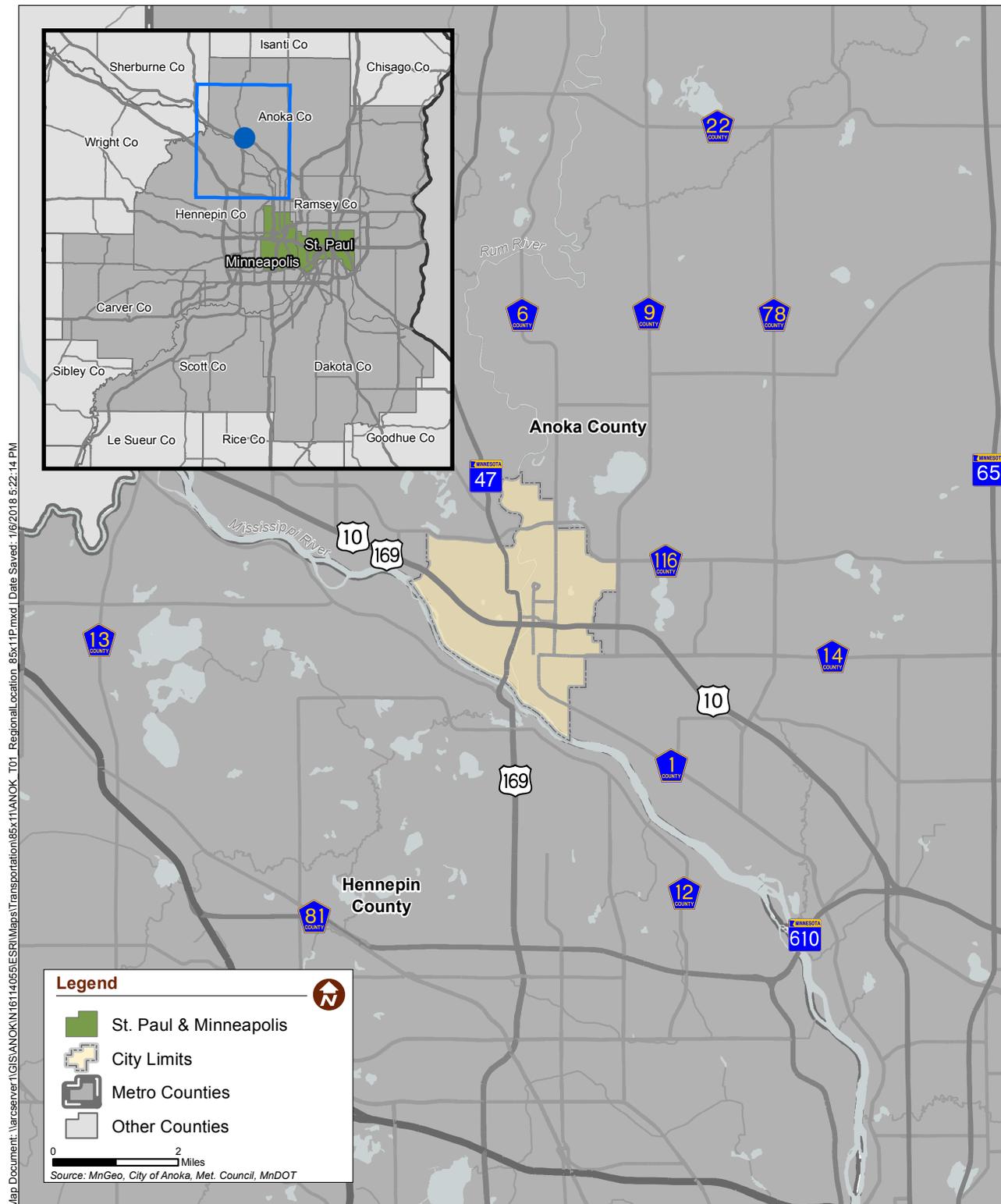
## PUBLIC OUTREACH SUMMARY

The City of Anoka values public input on plans as a key element in the decision-making process. To

reach a range of stakeholders and gain different perspectives, the City held one open house, hosted four workshops focusing on specific elements or areas of the City, three commission/committee meetings focusing on comprehensive plan goals and policies, two task force meetings (Downtown Trends and River Walk Planning), and developed a community survey to gather public input regarding the future goals, visions, and priorities for the future of the City.

The community survey was available online in July and August 2017. In the community survey, the majority of respondents (62%) said the completion of the Highway 10 Anoka Solution plan was the most important transportation goal for the City moving into 2040. The completion of the new MN 47 bridge crossing the railway line and improving and expanding the City’s sidewalk system were also marked as important goals. A number of respondents also commented on the need to resurface or reconstruct city streets. Complete results of this survey are provided online on the City’s website.





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Figure 9-1: Regional Location Map

## EXISTING ROADWAY

The existing roadway transportation system in the City of Anoka is shown in Figure 9-2. Rivers, wetlands, parks, cemeteries, and other environmental resources within the City have, in many cases, precluded roads from being built on a continuous alignment. The result is that the City has limited direct north-south or east-west continuous roadways. This section of the transportation plan focuses on the condition of the existing roadway network in Anoka, including existing traffic volumes, roadway capacity, and traffic safety.

### EXISTING TRAFFIC VOLUMES

Existing traffic volumes for roadways in the City of Anoka are shown in Figure 9-2. The existing volumes are based on information available from MnDOT, the Metropolitan Council, Anoka County, and the City of Anoka. Data provided is the most current available at the time this plan was developed (between 2012 and 2015).

### EXISTING TRAFFIC OPERATIONS

A planning level congestion analysis was performed for existing roadways based on the daily traffic and roadway capacity. Roadway traffic congestion and operations are categorized by Level of Service (LOS) letter grades of “A” through “F”. LOS A indicates the best traffic operation, with vehicles experiencing minimal delays. LOS F indicates that demand exceeds capacity and that drivers experience substantial delays and traffic congestion. The Metropolitan Council defines LOS D as the minimal acceptable LOS. Existing year traffic volumes (2012-2015) and congestion levels for roadways within the City are shown on Figure 9-2. Major highways that pass through the City of Anoka experience congestion, meaning the traffic volumes on these roads exceed the existing capacity.

Roads in the City that operate over capacity are shown in red on Figure 9-2 and are listed below:

- US 10 east of MN 47
- US 10/169 west Thurston Ave
- MN 47 north of US 10
- US 169 south of US 10

### EXISTING CRASH DATA

As reflected in this chapter’s Goals, developing and maintaining a transportation network that promotes user safety is the top goal of the City’s Transportation Plan. To determine potential safety problems in the City of Anoka, crash data was reviewed from 2013 to 2015. The total of all crashes that occurred in Anoka from 2013-2015 is shown on Figure 9-3.1. The highest frequencies of crashes in the city are along US 10 at intersections with these crossroads: Ferry St, 7th Ave (CSAH 7), and Thurston Ave.

Figure 9-3.2 shows incapacitating crashes that occurred in Anoka from 2013 to 2015; (there were no fatalities from 2013-2015 during this timeframe). Figure 9-3 also shows non-motorized crashes – including bicycles and pedestrians – that occurred from 2013-2015. Crashes involving non-motorized travelers were concentrated along Main St and MN 47/Hwy 169.

### JURISDICTIONAL CLASSIFICATION

Roadways in Anoka are under the jurisdiction of MnDOT, Anoka County, or the City of Anoka, as well as a small number of privately owned and maintained roads, as shown on Figure 9-4. This system includes roadways under the jurisdiction of MnDOT, Anoka County, and the City. Highway

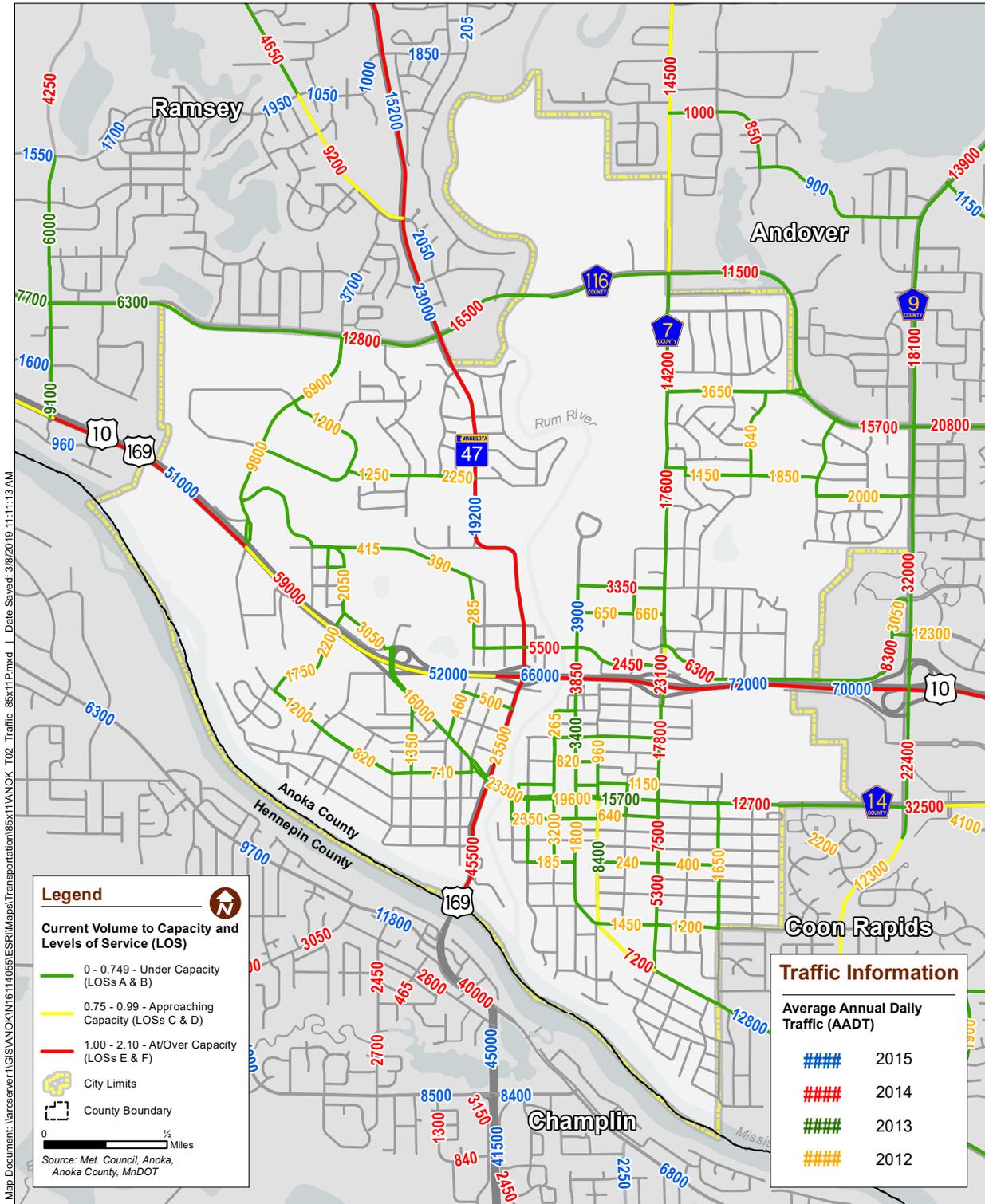


Figure 9-2: Existing Traffic Volumes Map

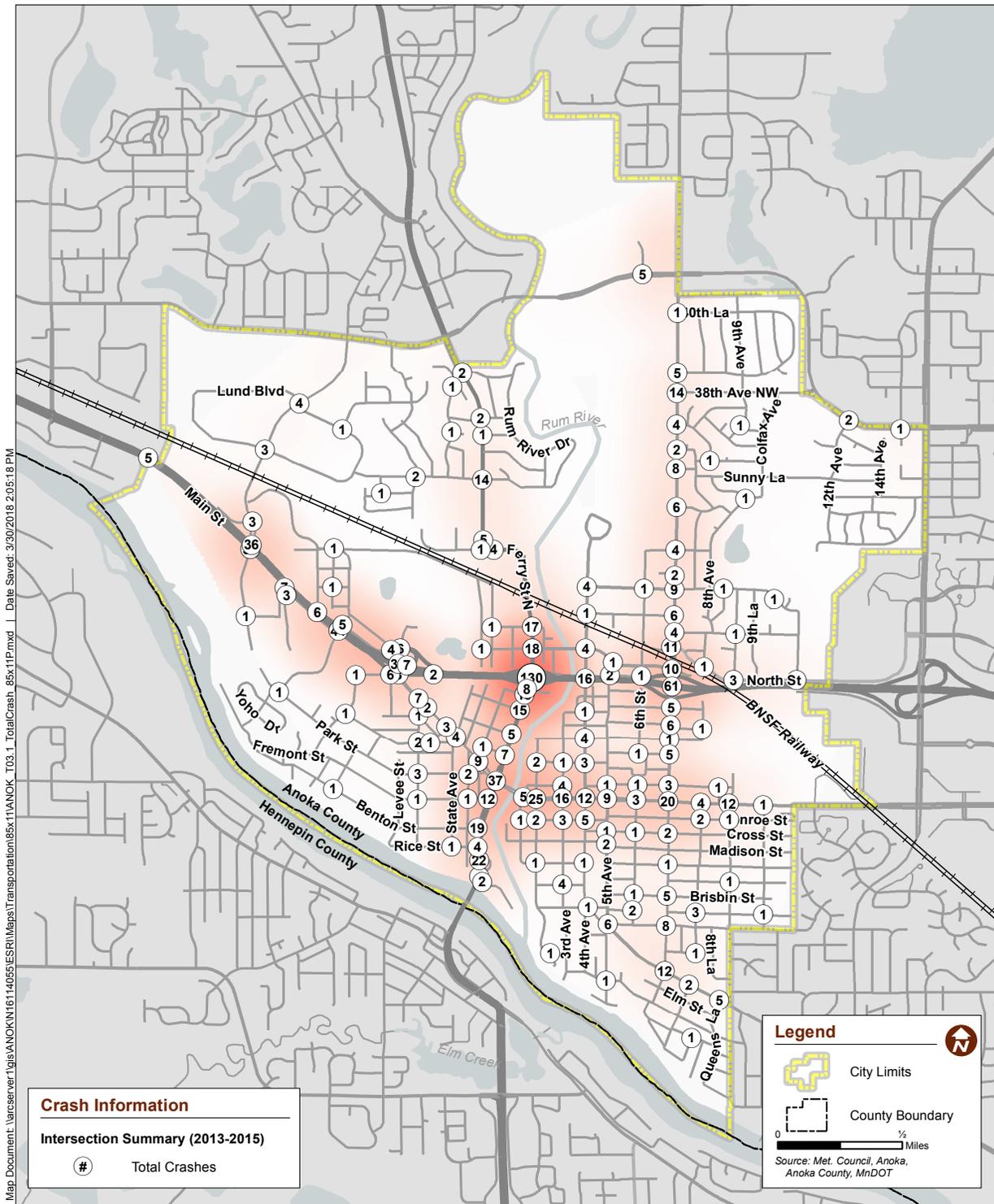
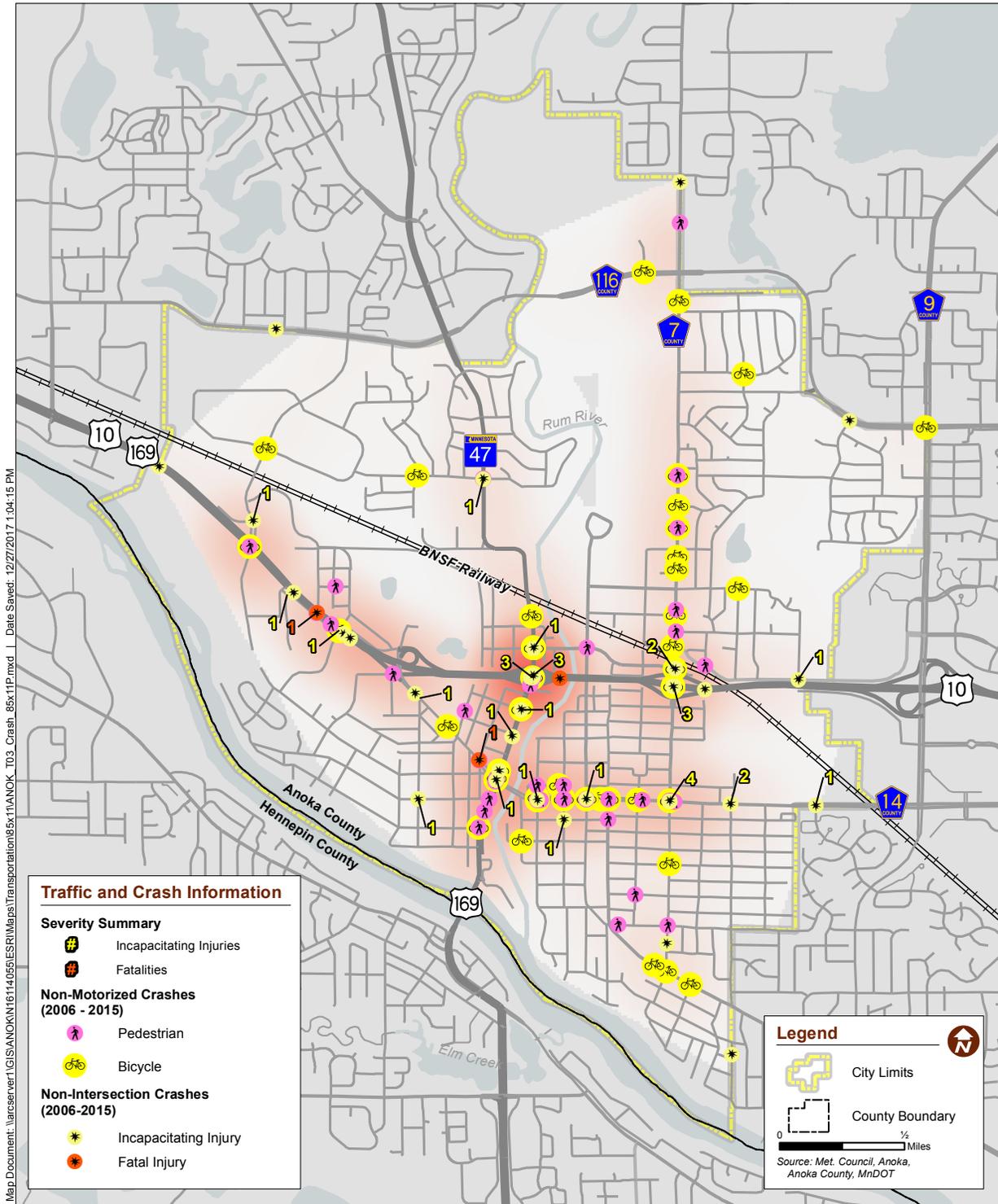


Figure 9-3.1: Functional Classification Map



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Figure 9-3.2: Crash Information Map

traffic service is provided by US Highways (US) 169 and 10, and MN 47, all of which are under MnDOT’s jurisdiction. Many miles of Anoka County highway system – including both County State Aid Highways (CSAHs) and County Roads (CRs) are also located in the City. Municipal State Aid Streets (MSAS) are under local entity jurisdiction.

Roadway jurisdiction is an important element in the Transportation Plan because it affects a number of organizational functions and obligations, including regulatory, maintenance, construction and financial. Roadway jurisdictions should match the function of the roadway with the organizational level that is best suited to handle the route’s function. Transfers in jurisdiction from one governmental unit to another should be pursued as appropriate opportunities arise and parties are in agreement.

## FUNCTIONAL CLASSIFICATION

Functional classification refers to how traffic is distributed on a roadway network - from neighborhood streets to collector roadways, then to minor arterials, and ultimately to principal arterials on the Metropolitan Highway System. Roads are categorized based on the degree to which they provide access to adjacent land uses and lower level roadways versus providing higher-speed mobility for “through” traffic. Within this approach, roads are located and designed to perform their designated function.

The current roadway functional classification map for the City of Anoka is shown on Figure 9-5. The roadway system consists of five functional roadway classifications:

- Principal arterial

- “A” minor arterial, including: reliever, expander, and connector, and augments<sup>1</sup>
- Major collector
- Minor collector
- Local street



The Metropolitan Council has authority over designation of arterial roadways. Local agencies may request that their roadways become arterials (or are downgraded from arterial to collector), but such designations or re-designations must be approved by the Metropolitan Council. The agency which has jurisdiction over a given roadway (e.g. Anoka County or the City of Anoka) has the authority to designate collector status.

### **Principal Arterials**

Principal arterials are the highest roadway classification and make up the Metropolitan Highway System. These roadways provide mobility for regional trips and are intended to connect regional business concentrations, including central business districts in Minneapolis and St. Paul. These roads also connect the Twin Cities with important locations outside the metropolitan area.

<sup>1</sup> These sub-categories relate to the Metropolitan Council’s allocation of federal funding roadway improvements, but do not translate into specific design characteristics or requirements.



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Figure 9-4: Existing Roadway Jurisdiction Map

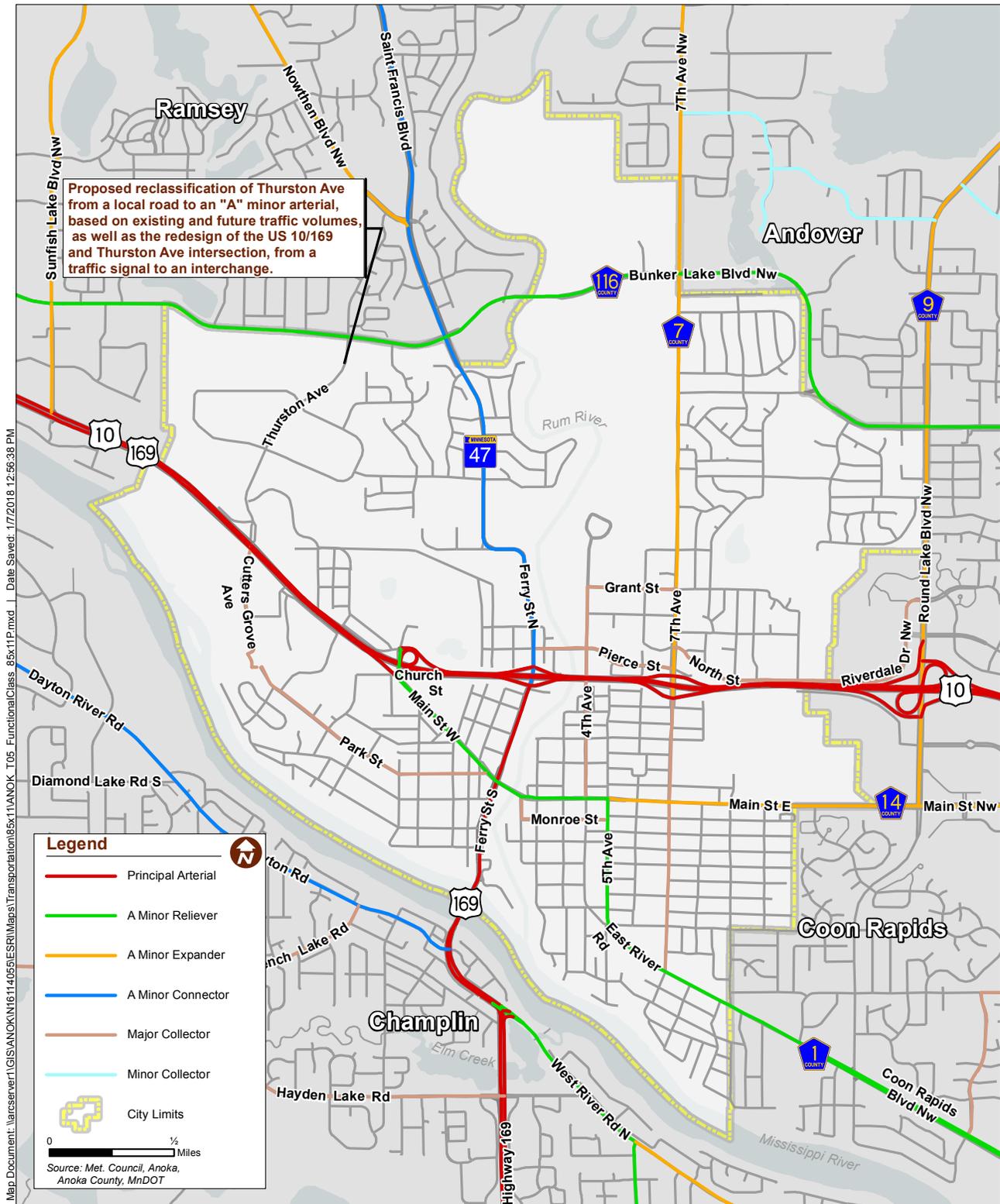


Figure 9-5: Functional Classification Map

Principal arterials are generally constructed as limited access freeways, but may also be multiple-lane divided highways. Principal arterials in Anoka are listed in Table 9-2 and are shown on Figure 9-5.

**TABLE 9-2. PRINCIPAL ARTERIAL ROADWAYS**

Roadway	Current Number Travel Lanes (total)	Divided/Undivided	Future Number of Travel Lanes*
US 10	4	Divided	4
US 169	4	Divided/Undivided**	4

*\*Refers to mainline lanes, not including auxiliary lanes*  
*\*\*US 169 Between Main Street and US 10 is undivided*

**“A” Minor Arterials**

These roads connect important locations in the City with access points of the metropolitan highway system and with important locations outside the City. These arterials are also intended to carry short to medium distance trips. While “A” minor arterial roadways provide more access than principal arterials, their primary function is to provide mobility, rather than access to lower level roadways or adjacent land uses. “A” minor arterial roadways in Anoka are identified in Table 9-3, and shown on Figure 9-5.

Ferry Street (MN 47) is anticipated to be reconstructed in the coming years, described more in the next section. The ultimately recommended concept for MN 47 is expected to address existing access and safety concerns. The number of travel lanes may also change.

**TABLE 9-3. “A” MINOR ARTERIAL ROADWAYS**

Roadway	From	To	Number Travel Lanes (total)	Future Number of Travel Lanes
Bunker Lake Blvd (CSAH 116)	Round Lake Blvd (CSAH 9)	Western City Limit	4	4
Main Street East (CSAH 14)/Main Street West	Eastern City Limit	US 10	4	4
Round Lake Blvd (CSAH 9)	Bunker Lake Blvd (CSAH 116)	Southern City Limit	6	6
7th Ave (CSAH 7)	Bunker Lake Blvd (CSAH 116)	US 10	4	4
Ferry Street (MN 47)	Bunker Lake Blvd (CSAH 116)	US 10	2	2
E. River Road (CSAH 1)	Eastern City Limit	Main Street East (CSAH 14)	4	4

**Major and Minor Collectors**

Collector roadways balance the mobility and land-use access functions discussed above. These roads serve trips that are entirely within the City and connect neighborhoods and smaller commercial areas to the arterial network. Minor collectors generally are shorter in length, with lower volumes and lower speeds than major collectors. There are currently no minor collector roadways designated in the City of Anoka, although Thurston Avenue is anticipated to become a minor collector at some point. Current major collector roadways in the City are identified in Table 9-4, below and shown on Figure 9-5. There are no plans to change the number of travel lanes for any of the major collector roadways in Anoka.

TABLE 9-4. MAJOR COLLECTOR ROADWAYS

Roadway	From	To	Number Travel Lanes (total)
Grant Street/4th Avenue (CSAH 31)	7th Ave (CSAH 7)	Main Street East	2
Pierce Street (CSAH 30)/ Pleasant Street	7th Ave (CSAH 7)	Ferry Street (MN 47)	2
North Street	Eastern City Limits	7th Ave (CSAH 7)	2
7th Ave (CSAH 7)	US 10	E. River Road (CSAH 1)	2
Monroe Street	5th Ave (CSAH 1)	1st Ave	2
1st Ave	Monroe Street	Main Street East	2
Park Street	Branch Ave	Dead End	2
Cutters Grove Ave	US 10/169	Dead End	2

## PROBLEM ISSUES AND LOCATIONS

Previous and ongoing studies and public input have confirmed that the locations listed below are problematic areas on the City's transportation network.

- US 10/169, including intersections at
  - Thurston Ave
  - Fairoak Ave
  - Main St
  - Existing South Frontage Road
- MN 47, including
  - Intersection with Bunker Lake Blvd (CSAH 116)
  - Intersections for the residential neighborhoods from Garfield Street to Bunker Lake Blvd (CSAH 116)
  - The at-grade railroad crossing

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## SUMMARY OF TRANSPORTATION STUDIES

A summary of transportation studies relevant to the City of Anoka’s roadway system is provided below.

### MNDOT AND METROPOLITAN COUNCIL STUDIES

- Highway 10 Access Planning Study (2014):

MnDOT and Anoka County, in cooperation with the Cities of Ramsey and Anoka, conducted the Hwy 10 Access Planning Study to examine and identify the appropriate levels, types, and locations of access to US 10 between the Anoka/Sherburne County line and the Rum River. As of completion of this transportation plan, the highway alignment is an expressway. Traffic signals on the highway cause major delays along the corridor. Based on traffic volumes and safety concerns along this stretch of US 10, project partners agreed a freeway is the proper vision for this corridor. This study recommended options which would provide many of the same benefits of a full freeway design, but at lower cost. US 10/169 improvements at Fair oak Ave and Thurston Ave emerged from the study as top regional priorities. More than 20 small projects were identified and prioritized to accomplish 90% of the safety and operational benefits of a freeway, at a much lower cost.

- MN 47 and BNSF Railroad Crossing Study (December 2016):

This study focused on MN 47 south of the Anoka County Fairgrounds to Martin St, including the at-grade MN 47/Ferry Street and BNSF Railway crossing. The study considered benefits and potential impacts of constructing a bridge over the railway or a

tunnel beneath the railroad tracks. The Study recommended constructing an overpass bridge over the railway. The City supports this project, as it addresses two top goals for the transportation system - safety and efficiency. It will also provide trails, resulting in improved non-motorized transportation between areas of the City. (For more information, see a project fact sheet in Appendix B as well as discussion of the MN 47 Corridor Study, led by the City, below).

- Metropolitan Council and MnDOT Principal Arterial Conversion Study (2017):

This study evaluated non-freeway principal arterials and prioritized locations for interchanges or other grade-separated treatments. The two signalized intersections in the City - Fair oak Ave and Thurston Ave - where ranked as high priority locations for grade-separated treatments in the study. A map from the Study is provided below; additional information regarding US 10/169 in the City is provided in Appendix A.

### ANOKA COUNTY PLANS AND STUDIES

- Anoka County Transportation Plan (2018):

Anoka County’s Transportation Plan identifies the transportation system needs and sets goals, priorities, and funding strategies to guide the County’s infrastructure investments. The plan also provides other public and private organizations to plan their activities in coordination with the County.

- Anoka County ADA Transition Plan (2018):

This Plan ensures the county complies to

the Americans with Disabilities Act (ADA) and provides facilities that are accessible to all individuals. The county’s goal is to ensure 80% of accessibility features meet ADA regulations within 20 years of Plan approval. To the extent practicable, identified projects will correspond with other reconstruction, construction, and upgrades projects. The City of Anoka supports these goals and will cooperate with the county on any projects taking place within the City’s jurisdiction.

### CITY OF ANOKA PLANS AND STUDIES

- Anoka Solution plan (2015-present):

The City of Anoka led study of US 10/169 within the city limits to refine the ideas presented in the Highway 10 Access Planning Study. The City adopted the Anoka Solution Plan for US 10/169 in 2015. MnDOT and Anoka County reviewed this concept and fully supported the refinements. A snapshot of the plan is shown here and included in Appendix C. Also see Section X.4.1 for discussion of the future roadway network. Construction of this project is planned for the early 2020s.

- MN 47 Corridor Study (2017-2018):

In 2017, the City undertook investigating the MN 47 corridor from the limit of the MnDOT study (which recommended grade-separation of MN 47 and the BNSF railway, described in Section X.3.3) The City’s study is to examine safety, mobility, and access concerns for the residential neighborhoods and commercial area along this segment of MN 47 to assure they are adequately identified and addressed. The study was not yet complete at the time this Transportation chapter was prepared, but is anticipated to be completed in 2019. Some specific issues to be reviewed in the study include:

- Access from MN 47 to the business area on the southwest corner of the intersection at Bunker Lake Blvd (CSAH 116)
- Appropriate configuration for each local street intersection along this segment of MN 47
- Consideration of the direct driveway accesses onto MN 47
- Consideration of pedestrians and non-motorized traffic along this segment



# ROADWAY SYSTEM PLAN

## ASSUMED 2040 ROADWAY NETWORK

The roadway network assumed for the 2040 analysis includes the existing network, plus projects that have been programmed and/or planned. The number of lanes on major roadways is shown on Figure 9-6. At this time, the city does not anticipate that the number of existing lanes on major roadways will change by 2040. The roadway projects that will enhance the existing network, and that are anticipated to be in place as part of the 2040 network, are identified and summarized below:

- Projects in Metropolitan Council’s Highway Current Revenue Scenario:

The Metropolitan Council’s 2040 Transportation Policy Plan (January 2015) includes pavement preservation on US 10 (from 7th Avenue (CSAH 7) to W Main Street/Greenhaven Road) and US 169 (from south of US 10 to the Rum River). These projects are planned for 2019-2024 and are shown in Appendix C for the Current Revenue Scenario Map.

- The US 10/169 Project, at Thurston Avenue/Cutterts Grove Avenue; Fairoak Avenue; and Main Street - based on the Anoka Solution Plan - is scheduled for construction in 2022 and 2023. Preliminary design of this project is being led by the City of Anoka, in close coordination with MnDOT. The project includes these elements:
  - **US 10/169 Improvements** - US 10/169 from the western Anoka city limits to Greenhaven Road/Main Street will be reconstructed, including grade separations and improvements to crossing locations and the local roadway network.

- **Thurston Avenue Improvements** - The traffic signal at US 10/169 and Thurston Avenue will be replaced with a full-access interchange. This will allow for more efficient traffic movement. An existing four-way stop, located less than 500 feet north of US 10/169 restricts vehicle flow and causes significant queuing numerous hours of the day. The Project will remove this four-way stop and shift the intersection 500 feet to the north. This change will improve intersection spacing and increase capacity.
- **Fairoak Ave Grade Separation** - The traffic signal at US 10 and Fairoak Ave will be removed and replaced by an underpass of the local street. This will minimize the barrier effect caused by the highway and better accommodate the local demands of vehicles, walkers, and bikers.
- **West Main Street Interchange Improvements** - Improvements to the existing interchange will provide necessary space for acceleration and deceleration. Improvements to roadway design will temper speeds of the thousands of vehicles that use West Main Street as a shortcut to get to US 169 every day.
- **West Main Street Extension** - A new frontage road on the south side of US 10 will link downtown Anoka to the City’s west side. The connection will remove pedestrian and bikers from the shoulder of US 10 and locate them onto a new sidewalk.

- **US 10/169 Access and Local Circulation Improvements** - All at-grade access to US 10/169 between Thurston Ave and West Main Street will be eliminated. Local access will be served with supporting roadways leading to interchanges at Main Street and Thurston Avenue.
- **MN 47/US 169 & US 10 Interchange** – As referenced X.3.1 MnDOT and Metropolitan Council Studies, in 2018, a MnDOT study recommended a SPUI to replace this diamond interchange. The ultimate interchange type and timing of replacement are currently unknown, but are expected to be in place by 2040.
- **US 10 Rum River Bridge** - In late 2018/early 2019, MnDOT will begin studying replacement of the US 10 bridge over the Rum River (Bridge 9700). As of completion of this plan, MnDOT was aiming for construction to begin in 2022.
- MN 47
  - **Railway Overpass** - This project will construct a bridge for MN 47/Ferry Street over the BNSF railway. This railway crossing experiences many crashes. Seventeen rear end crashes occurred within 150 feet of the crossing from 2010-2014.<sup>1</sup> This project will involve moving or removing driveway accesses and creating a cul-de-sac to disconnect Martin Street from Ferry Street. The project is currently (2017) in the preliminary design phase, and it is a high priority project statewide for highway-railway grade separation projects given the dangerous conditions at the intersection. Funding sources and a detailed schedule for this project are yet to be determined at the time this Transportation Chapter was prepared.
- Recommendations from the City study of the segment of MN 47 from the new railway overpass bridge to the north City limit are anticipated to be implemented by 2040. Although the exact scope of those improvements are not known at this time, they may include creating a left turn lane into the business center on the southwest corner of MN 47 and Bunker Lake Blvd (CSAH 116) intersection reconfiguration and/or control, and construction of non-motorized facilities.
- Green Haven Parkway, located on the north side of US 10/169, is being constructed in phases. Once completed, this new local street will provide an alternative option to US 10/169 for local east/west trips on the north side of the highway. This new local road will also improve accessibility and mobility in the vicinity of Anoka Enterprise Park (a business and industrial park that is home to over 70 businesses). All phases will include non-motorized transportation accommodations. Notable users in close proximity to Green Haven Parkway include Anoka Enterprise Park, Vista Outdoors (1,500 employees); and the Anoka Technical College (with 2,800 students and instructors).
  - **Phase I:** 0.45 miles of a Green Haven Parkway from Thurston Avenue to Garfield Street were constructed in 2017.
  - **Phase II** will extend from Phase I to the intersection of Fairoak Avenue and Jacob Lane.

<sup>1</sup> <http://www.dot.state.mn.us/metro/projects/hwy47rr-anoka/pdf/Hwy47-BNSF-Fact-Sheet.pdf>

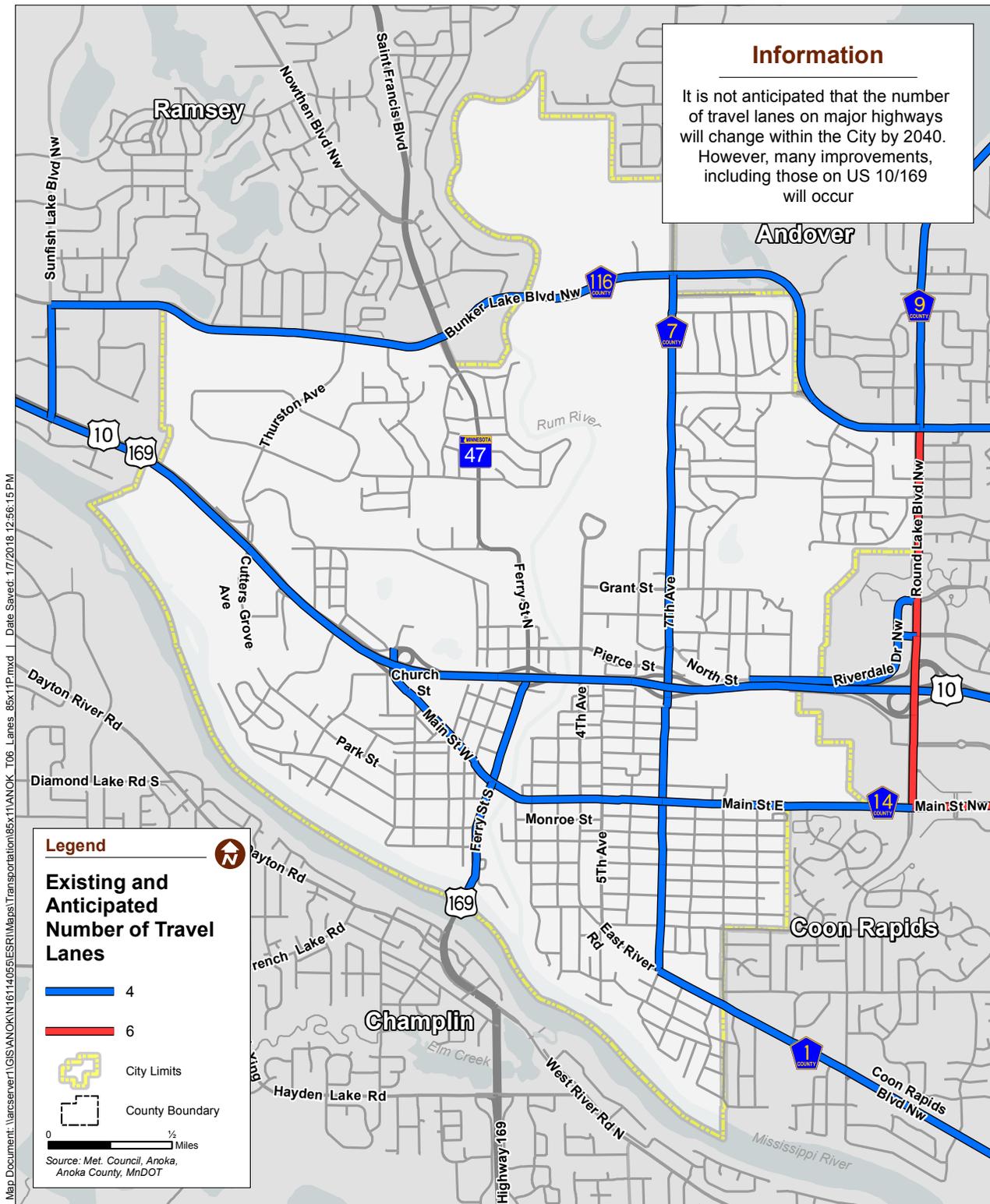


Figure 9-6: Existing and Anticipated Number of Travel Lanes Map

- **Phase III** will extend Green Haven Parkway west between Thurston Ave and the US 10 Service Rd. The Project will provide a more direct, continuous local frontage system to service Anoka Technical College, STEP, and businesses. This segment of Green Haven Parkway is being considered for inclusion in the US 10/169 Project being developed.



**Mini-roundabout during construction, Summer/Fall 2017**

- Riverdale Drive Extension:

This project will construct a new frontage road on the south side of US 10/169 beginning near the western limit of Anoka and extending into the City of Ramsey. This project will eliminate the last direct driveway connection to US 10/169 in Anoka. This project was identified in the US 10 Anoka Solution adopted by the City of Anoka. Development and construction of this project will need to be done in conjunction with the City of Ramsey.

- East Main Street (CSAH 14) from 7th Avenue (CSAH 7) to Wedgewood Drive

This project was constructed in the summer of 2017. Left turn lanes were added from 9th Avenue/Hoffman Way east to the city limits. The signal at 9th Avenue was reconstructed to provide left turn phasing and was coordinated with signals thru downtown Anoka. Curb and gutter and drainage structures were also replaced along this stretch of road.

- North Street

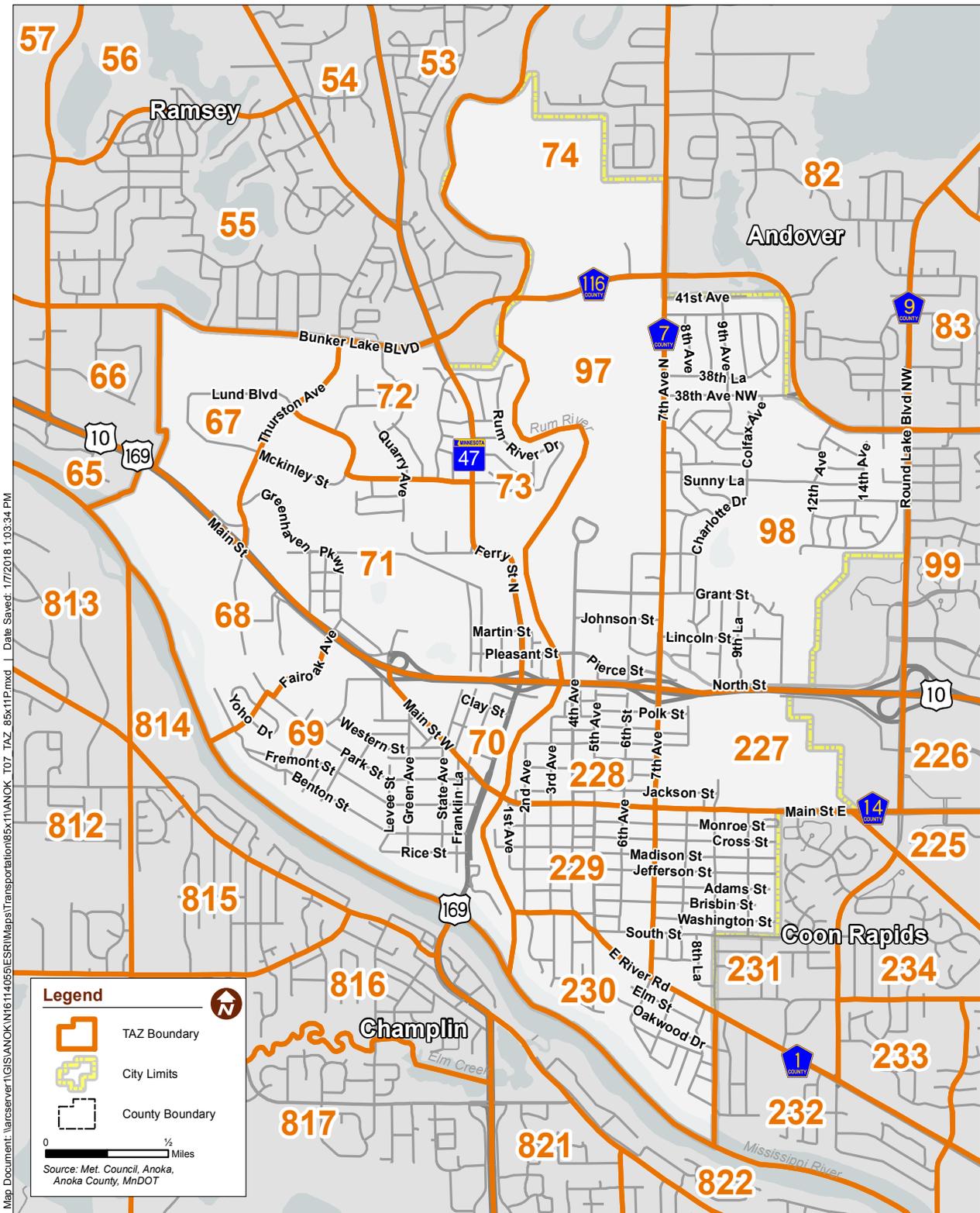
The Anoka County Highway Department turned North Street back to the cities of Anoka and Coon Rapids in May 2017, providing \$1,120,000 towards its rehabilitation. The proposed reconstruction of the street would include the replacement of the bituminous curb with concrete curb and gutters, as well

as the bituminous pavement and storm sewer from approximately 9th Avenue to the east city limits. Due to the potential of redevelopment of the area from 7th Avenue to 9th Avenue, this section of road will involve reconstructing the street surface, including the bituminous pavement, minor replacement of bituminous curb, and storm sewer reconstruction only as necessary. The City of Coon Rapids will participate in reconditioning the portion of North Street within their jurisdiction. North Street provides a local connection between Anoka and Coon Rapids, other than US 10.

- Major road projects completed since publication of the 2030 Transportation Plan include:

- 4th Avenue Roundabout - The five-legged intersection of 4th Avenue, Military Road, and Washington Street was converted from an all-way stop to a mini roundabout in 2017. This is the first five-legged roundabout in the State of Minnesota. This intersection design better facilitates traffic and creates more predictable traffic patterns.

- 4th Avenue (CSAH 31) Bridge Repair - During the summer of 2017, bridge repair work began on the 4th Avenue (CSAH 31) Bridge over Highway 10.



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Figure 9-7: Transportation Analysis Zones Map

TABLE 9-5: CITY OF ANOKA EXISTING AND FORECASTED POPULATION, HOUSEHOLD, AND EMPLOYMENT DATA BY TAZ

TAZ	POP2015	POP2020	POP2030	POP2040	HH2015	HH2020	HH2030	HH2040	EMP2010	EMP2015	EMP2020	EMP2030	EMP2040
67	0	0	0	0	0	0	0	0	1,586	1,704	1,822	1,814	1,805
68	1,654	1,721	1,817	1,931	763	791	804	824	221	302	382	493	580
69	2,230	2,305	2,431	2,568	970	1,005	1,019	1,039	313	448	582	737	857
70	540	573	578	583	236	244	241	240	277	390	502	498	496
71	1,016	1,005	1,032	1,071	385	402	411	425	999	1,024	1,049	1,240	1,427
72	847	782	790	802	309	321	323	326	363	348	332	335	337
73	505	484	488	495	191	198	199	201	35	50	65	64	63
74	27	32	41	53	10	11	15	20	0	11	22	41	58
97	1,144	1,560	2,228	2,778	427	563	868	1,136	1,082	1,049	1,015	1,018	1,001
98	4,070	3,901	3,898	3,874	1,616	1,652	1,659	1,672	459	442	425	407	384
227	140	147	159	170	57	60	65	70	2,657	2,796	2,934	2,897	2,866
228	1,229	1,406	1,581	1,735	423	476	563	642	3,344	3,208	3,072	3,065	3,020
229	1,619	1,775	1,836	1,908	855	888	910	940	1,033	1,015	997	995	974
230	894	877	900	923	422	437	444	453	183	179	175	175	171
231	2,006	2,130	2,222	2,307	817	851	880	912	289	358	426	422	360
TOTALS:	17,921	18,698	20,001	21,198	7,481	7,899	8,401	8,900	12,841	13,324	13,800	14,201	14,399

Source: Anoka County 2040 Traffic Forecasting Data

This project focused on repairing the bridge piers.

- Street Surface Improvement Program (SSIP): In 2009 the city began the SSIP for city streets showing accelerated deterioration in order to create longer term benefits than just with roadway maintenance. Since this program began, 12.8 miles of city streets have been resurfaced or 19% of the 69.1 miles of city streets.

## ASSUMED 2040 LAND USE AND TRANSPORTATION ANALYSIS ZONE INFORMATION

The Metropolitan Council provided the City with projections for population, household, and employment changes anticipated to occur through the year 2040. These figures are provided for years 2015 (based on actual data) and 2020, 2030, and 2040 (based on projections). The City then consulted with Anoka County to adjust those projections within each Transportation Analysis Zone (TAZ). The TAZs for the City of Anoka, as defined by the Metropolitan Council, are presented on Figure 9-7. The distribution of this socioeconomic data within each TAZ is provided in Table 9-5. This socioeconomic data, distributed into TAZs, was then used to project traffic levels on roadways within the City through 2040. The anticipated land use patterns discussed in Chapter X of this Comprehensive Plan were assumed for the 2040 transportation projections. The 2040 land use map for Anoka is presented on Figure 2-4 in that chapter.

## 2040 TRAFFIC PROJECTIONS AND CAPACITY DEFICIENCY ANALYSIS

Year 2040 traffic projections were made using a combination of methods and sources including the following:

- Historic trend analysis for volumes
- Assessment of anticipated local and regional development patterns and associated TAZ information
- Discussion and coordination with Anoka County Transportation staff
- Review of other studies and plans for consistency

The 2040 traffic projections are presented on Figure 9-8.

### **Future Capacity Deficiencies**

The capacity of a roadway is a measure of its ability to accommodate a certain volume of vehicles. Factors affecting capacity include roadway geometric conditions, including number of lanes, design standards, and traffic controls.

A planning-level analysis was performed to identify roadway segments where capacity problems are anticipated to occur by 2040. Projected 2040 traffic volumes and the assumed 2040 roadway network were used for this volume-to-capacity analysis. Traffic volumes used for the analysis were obtained from the 2040 projections, discussed under a

previous heading. Roadway capacities by facility type and configuration used in the analysis are shown on Table 9-6.

**TABLE 9-6: TYPICAL TRAFFIC CAPACITY BY ROADWAY TYPE/CONFIGURATION**

Facility Type	Functional Classification	Planning Level Capacity (ADT)
2-Lane Local/ Residential Road	Local Road	1,000
Urban 2-lane	Minor Collector	1,700
Urban 2-Lane Undivided	Major Collector, Minor Arterial,	11,000
Principal Arterial		
Urban 2-Lane Divided		16,000
Urban 3-Lane		22,000
Urban 4-Lane Undivided		22,000
Urban 4-Lane Divided		32,000
Urban 6-Lane Divided		49,000
4-Lane Rural Expressway	Minor Arterial, Principal Arterial	61,000
6-Lane Rural Expressway		91,000
4-Lane Urban Expressway		68,000
6-Lane Urban Expressway		102,000
4-Lane Urban Freeway	Principal Arterial	76,000
6-Lane Urban Freeway		114,000

*Source: Highway Capacity Manual 6th Edition Planning & Preliminary Engineering Applications Guide to the Highway Capacity Manual, Gravel Roads Construction and Maintenance Guide (LRRB), Metropolitan Council Regional Transportation Policy Plan, and FHWA Road Diet Information Guide*

Roadway segments where projected volumes exceed planning-level capacity are shown in Table 9-7.

**TABLE 9-7: PROJECTED 2040 ROADWAY SEGMENTS ANTICIPATED TO BE OVER CAPACITY**

Roadway Segment	Volume to Capacity Ratio
US 10 from Anoka/Ramsey City Limits to Hwy 169	1.29 to 1.75
US 10 from MN 47 West Ramps to Anoka/Coon Rapids City Limits	1.00 to 1.41
US 169 from Anoka/Champlin City Limits to Main St	1.78 to 2.41
US 169 from Main St to US 10	1.00 to 1.32
MN 47 from US 10 to Bunker Lake Blvd (CSAH 116)	1.29 to 1.75

As discussed in Section X.4 Roadway System Plan, the US 10/169 Project between the west city limit and Main Street is expected to be constructed in the early 2020s. This project is aimed to address existing and anticipated capacity issues on US 10/169.

There are not currently plans in place to address capacity issues on Hwy 169, though the Metropolitan Council’s 2040 Transportation Policy Plan (January 2015) includes pavement preservation on US 169 (from south of US 10 to the Rum River). As discussed in Section X.4, MnDOT is planning to grade separate MN 47 and the BNSF railway, and the City is studying the MN 47 corridor from the limit of the MnDOT study to the north City limit. The city is not considering adding lanes to MN 47, however, capacity could be improved through other improvements, including access modifications and changes to intersection configurations.

Some roadway segments are “approaching capacity,” defined as having a volume-to-capacity ratio of 0.85 – .99. These locations are listed in Table 9-8.

**TABLE 9-8. PROJECTED 2040 ROADWAY SEGMENTS APPROACHING CAPACITY**

Roadway Segment	Volume to Capacity Ratio
US 10 from Thurston Ave to MN 47 West Ramps	0.85 to 0.99

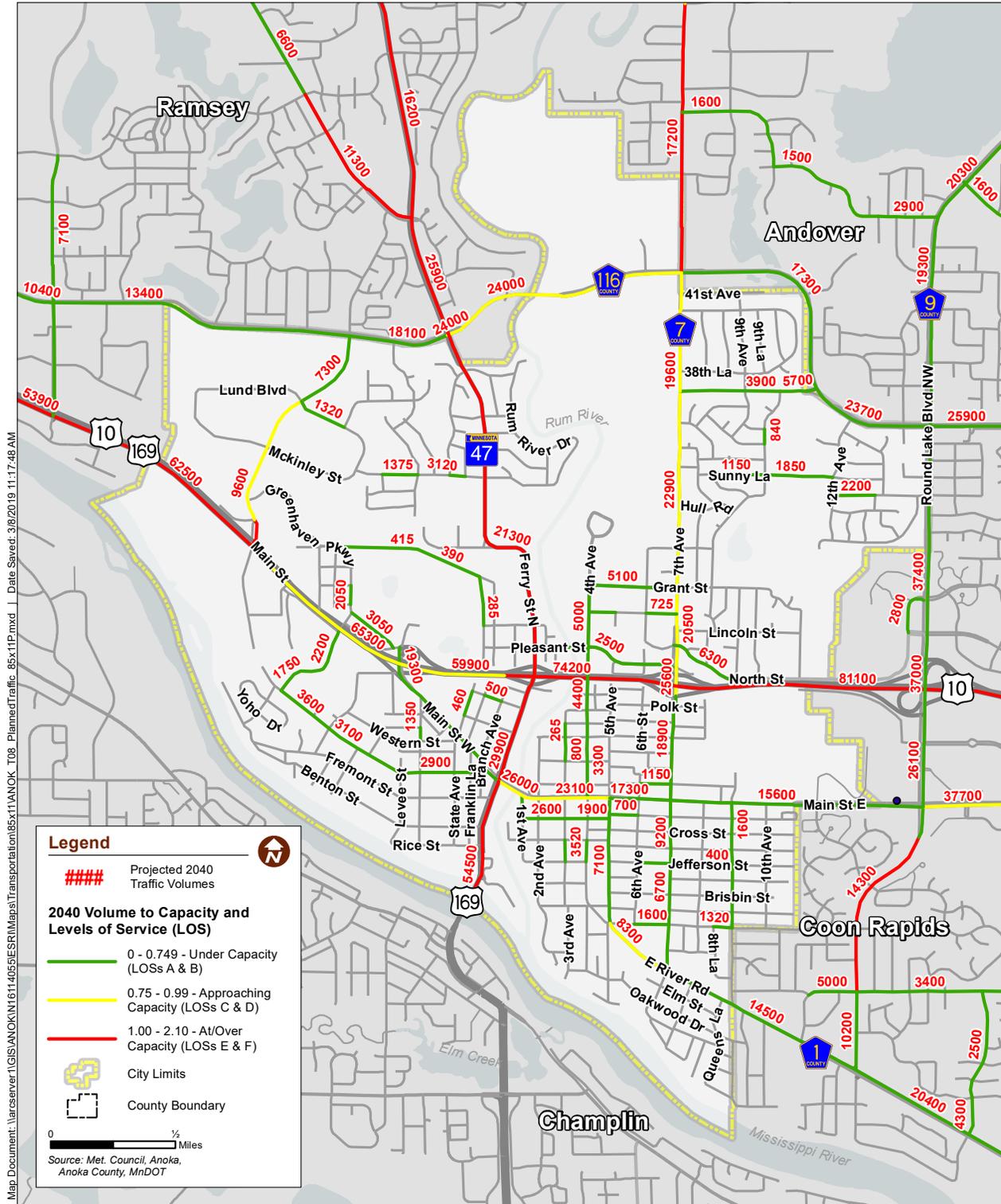


Figure 9-8: Projected 2040 Traffic Volumes Map

Thurston Ave from US 10 to McKinley St	0.85 to 1.19
Bunker Lake Blvd (CSAH 116) from 7th Ave (CSAH 7) to MN 47	0.85 to 0.99
7th Ave (CSAH 7) from US 10 to 38th Ave NW	0.79 to 0.99
Main St from 2nd Ave to 5th Ave	0.85 to 0.99

Capacity issues on US 10/169 and Thurston Ave will be addressed by the US 10/169 Project. Both Bunker Lake Blvd and 7th Ave are under the jurisdiction of Anoka County. The City will coordinate with the County on issues related to those roadways.

Phase II will extend from Phase I southeast to the intersection of Fairoak Avenue and Jacob Lane. Phase III will extend Green Haven Parkway west between Thurston Ave and the US 10 Service Rd. The Project will provide a more direct, continuous local frontage system connecting to Anoka Technical College, STEP, and businesses.

Additionally, the US 10/169 Project will improve the City of Anoka’s local road network continuity. Local access will be served with supporting roadways leading to interchanges at Main Street and Thurston Avenue. This includes the northern and southern frontage roads running parallel to US



*Highway 10, looking south from Fairoak Avenue*

Overall, the city will monitor these segments, along with other roadways on which capacity issues arise and determine appropriate responses.

**System Continuity**

While Anoka is well connected to regional transportation networks, there are gaps in the local network that will be addressed as part of larger road construction projects. A notable gap in local road continuity will be filled by Green Haven Parkway, located on the north side of US 10/169. This road is being constructed in phases. Once completed, this local street will provide an alternative option to US 10/169 for local east/west trips on the north side of the highway. The first phase of Green Haven Parkway was constructed in 2017, extending from Thurston Ave to Garfield St/Verndale Ave.

10/169. The northern frontage road will connect to Green Haven Parkway and extend westward to the Anoka/Ramsey city limits. The southern frontage road will connect Cutters Grove Avenue to Fairoak Avenue with access to Cutters Lane, Yellowstone Blvd, and the service road to businesses. Currently, Cutters Grove Avenue ends in a dead-end, meaning the only access in or out is the Thurston Ave/Cutters Grove Ave and US 10/169 intersection.

**Interchanges**

An interchange for US 10/169 at Thurston Avenue has been planned, see Appendix B, Anoka Solution. The US 10/169 and Thurston Ave interchange

is part of a larger project being developed by the City of Anoka, in conjunction with MnDOT and Anoka County, that will reconstruct US 10/169 from Greenhaven Road/Main St W to the Ramsey City limits. The interchange will maintain access to US 10/169 with the use of entrance/exit ramps. Additional improvements include lowering Thurston Avenue, creating turn lanes, and providing local and frontage street connections to the new interchange.

The interchange at US 10/169 and Thurston Ave emerged from years of coordinated planning efforts by the City of Anoka, Anoka County, the Metropolitan Council, and MnDOT to convert US 10/169 to a freeway by removing signalized intersections in the City of Anoka. Based upon traffic volumes and safety concerns, a freeway is the proper vision for the US 10/169 corridor. The corridor is commonly congested and has much higher than average crash (3x) and severity (4x) rates than comparable corridors.

The Thurston Avenue interchange is designated as Type B under the Types of Interchange Requests identified in Appendix F of the Metropolitan Council’s 2040 Transportation Policy Plan. Type B is defined as: New interchanges on a multi-lane highway with traffic signals. These requests are conversions of existing at-grade intersections to interchanges. These interchanges will often be part of a staged conversion of the multi-line highway with traffic signals to a freeway design, with the elimination of minor access points between the new interchanges resulting in more restricted access to a principal arterial, as opposed to providing access where none previously existed.

In August 2017, the joint MnDOT and Metropolitan Council Interchange Review Committee determined the proposed interchange at US 10 and Thurston Avenue is consistent with the Metropolitan Council’s Transportation Policy Plan.

Approval of this interchange request is included in Appendix E.

## SAFETY ANALYSIS

Public safety responsibility of the roadway system in the City of Anoka is shared by the City, Anoka County and MnDOT. Crash data for the three-year time period from January 1, 2013, through December 31, 2015 was analyzed to determine if there are locations in the city with safety issues. No fatal crashes were recorded within the City during this three- year period. Locations with the highest crash frequency are discussed below.

### US 10 Corridor Locations

- At MN 47 – Highway ramps, signal control, 4-lane undivided on MN 47
- At 7th Ave (CSAH 7) – Highway ramps, signal control, 4-lane divided on CSAH 7
- At Fair oak Ave – Signal control, 4-lane divided on US 10 – to be removed with future project
- At Main St W – Signal control, 4-lane divided on US 10
- At Cutters Grove Ave – Signal control, skewed intersection, 4-lane divided on US 10

As discussed in Section X.3.3, US 10 improvements within the City have been studied by MnDOT and the City. Recommended improvements are anticipated to be constructed in the early 2020s. The City will continue to remain involved in project development and coordination, in an effort to improve US 10 corridor safety and mobility.

### US 169 Corridor Locations

- At Main St – Signal control, 4-lane divided on US 169 and Main St, curved intersection
- At Fremont St – Side street stop, right-in/

right-out on Fremont St; 4-lane divided on US 169

- At Benton St – Side street stop; US 169 changes from 4-lane undivided to 4-lane divided
- At S Ferry Rd (Peninsula Point Two Rivers Park) – Signal control, at change from 4-lane divide to 4-lane undivided on US 169

US 169 shows a high number of rear end type crashes at the intersections of W Main St, Fremont St, Benton St, and S Ferry Rd. Pedestrian crashes have occurred at the intersections of W Main St, Fremont St and Benton St. Further investigation into potential pedestrian crossing facility improvements in coordination with other projects are recommended.

#### **Main St Corridor Locations**

- At 7th Ave (CSAH 7) – Signal control, 4-lane undivided on Main St, 3-lane undivided on 7th Ave
- At 9th Ave – Signal control, 4-lane undivided on Main St, curved intersection on southbound
- At Branch Ave to 4th Ave

The segment of Main St - from Branch Ave to 4th Ave - shows high crash frequency at intersections with Branch Ave, US 169, 2nd Ave, 3rd Ave, and 4th Ave. Six bicyclist and pedestrian crashes have occurred between Branch Ave and 4th Ave within the three-year period. A review of the bicycle and pedestrian facilities and travel patterns are recommended for this segment.

#### **N Ferry St & S Ferry St Corridor**

The segment of Ferry Street from Clay St to Martin St includes the Ferry St interchange with US 10. MnDOT began study of this interchange, including consideration of options to improve

safety and traffic operations. The City will continue to coordinate with MnDOT on additional study of this segment, including the interchange.

#### **MN 47 Corridor Locations**

- At McKinley St
- At Bunker Lake Blvd (CH 116)

In 2016, MnDOT studied a BNSF railroad overpass of Ferry St (see Section X.3.1). Then, as described in Section X.3.3, the City commenced study of MN 47 from just north of MnDOT's study area to the northern city limit. The City will continue to advance improvements of the recommended grade-separated overpass, as well as MN 47 concepts to the north.

#### **7th Ave (CSAH 7) Corridor Locations**

- At E River Rd – Signal control, skewed intersection, 4-lane divided on E River Rd, at change from City road to County road on 7th Ave
- At Pierce St – Side street stop, wide intersection, 4-lane divided on 7th Ave, about 150 feet from the intersection of 7th Ave and US 10 ramp
- At Buchanan St/North St – Signal control, curved legs on Buchanan St/North St, 4-lane divided on 7th Ave
- At 38th Ave NW – Signal control, curved east leg, 4-lane undivided on 7th Ave

These intersections should continue to be monitored to determine if crashes continue to be a concern at these locations and whether spot safety improvements should be considered.

#### **Non-Motorized Crashes**

Crashes involving pedestrians and bicyclists within the City of Anoka have generally been located within neighborhood streets or along the

urban sections of roadways. Locations with the highest non-motorized crash frequency that are recommended for future bicycle and pedestrian facilities review are detailed below.

- Main St from Branch Ave to 5th Ave
- Hwy 169 from Benton St to Main St
- Jackson St from 1st Ave to 3rd Ave
- MN 47 from Pleasant St to the railroad

**Future Study Recommendations**

The following intersection or segments are recommended for future study based on the crash frequency and patterns identified above include:

- Hwy 169 from S Ferry Rd (Peninsula Point Two Rivers Park) to Main St
- Main St from Branch Ave to 5th Ave
- Ferry St from Clay St to Martin St
- CH 7 from US 10 to Grant St
- CH 7 at 38th Ave NW
- CH 7 at E River Rd

**FUTURE JURISDICTIONAL CLASSIFICATION**

Anoka County and the City of Anoka are working to develop a plan for a series of jurisdictional transfers from the County to the City in the general vicinity of the commuter rail station. The proposed jurisdictional transfers include Pierce Street (CSAH 30) from 4th Avenue (CSAH 31) to 7th Avenue (CSAH 7), Grant Street (CSAH 31) from 4th Avenue to 7th Avenue, Pleasant Street from Ferry Street/MN 47 to 4th Avenue (CSAH 31), and 4th Avenue (CSAH 31/131) from Main Street East to its northern termini. All of these roads are contained within the City of Anoka and are used

primarily for circulation in the City. The transfer of jurisdiction will provide increased flexibility for the City as it redevelops the area around Anoka Station. The roads being considered for jurisdictional transfer were designated as County Roads because they provided the primary access to the Regional Treatment Facility. However, the primary access to the Regional Treatment Facility has been relocated to 7th Avenue. Prior to completing the jurisdictional transfer, consideration should be given to the future uses of Anoka County owned land along Grant Street and 4th Avenue (CSAH 31), to ensure that future land uses along these roads match the appropriate jurisdiction. Jurisdictional changes may also occur between MnDOT and Anoka County on roadways within the city. These include MN 47 north of US 10.

**FUTURE FUNCTIONAL CLASSIFICATION**

Re-designations of roadways involving the A-minor arterial functional classification (e.g. from collector to arterial, from arterial to collector, or changing designations within arterial) is under the authority of the Metropolitan Council. For collector roadways, the functional class designation is under the authority of the agency which owns the given road. The City of Anoka believes that the functional classification of Thurston Ave should be revised, as shown on Figure 9-5 and described in Table 9-9.

**TABLE 9-9: PROPOSED ROADWAY FUNCTIONAL CLASSIFICATION RE-DESIGNATIONS**

Roadway	Segment	Action/Comment
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Thurston Avenue	From Intersection with US 10/169 to Bunker Lake Boulevard (CSAH 116)	Conversion from local road to an "A" minor arterial. This is necessitated by the heavy traffic the road experiences due to providing access from US 10 to Anoka Enterprise Park and a residential neighborhood. Its role as a major roadway will be reinforced by the planned redesign of US 10/169. Reconstruction plans include constructing an interchange at Thurston Avenue, which will direct additional traffic to the road.
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Appropriate access control preserves the capacity on arterial and collector streets, and improves safety by separating local turning movements from higher-speed "through" traffic. Moreover, it concentrates higher volume traffic linkages at intersections controlled with traffic signals, roundabouts, or other measures.

Coordination with Anoka County and Metropolitan Council, including approval of a regional functional classification change request, will be required.

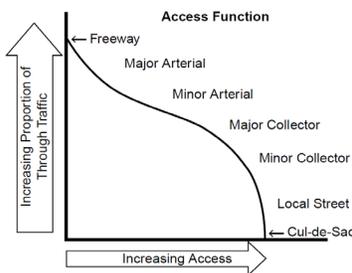
The density of accesses in developed communities like Anoka should be inversely proportional to the functionality of the roadway. A residential street should have more accesses than a Principal Arterial or an "A" Minor Arterial. Access management plans for arterial streets should consider the possibility of multiple properties sharing access, right-in/right-out access, frontage/backage roads, and appropriate spacing of access points.

### ACCESS MANAGEMENT

Access management refers to balancing the need for connections to local land uses (access) with the need for network-level movement (mobility) on the overall roadway system. By functional classification, this may be summarized as follows:

- Arterials generally have limited access in the form of driveways and low volume side streets because their role in the network is to support relatively long, high speed traffic movements
- Collectors allow a greater degree of access given their combined mobility/access function
- Local streets have relatively few limits on access because their primary function is to provide access to adjacent land uses

Generally, the City of Anoka applies access management guidelines included in MnDOT Access Management Manual (January 2, 2008) and Anoka Highway Department Access Spacing Guidelines, both located in Appendix F. Land use planning and subdivision regulation are the responsibility of the City of Anoka. In conjunction with local land planning, Anoka will require that new land development complies with MnDOT and County access management guidelines as applicable. The City will work with MnDOT and Anoka County to consolidate driveway and street access to collector and arterial roadways where applicable and feasible. Proper access management has the benefit of improved local safety conditions by limiting conflict points between local and through traffic on higher classification roadways.



### FUTURE RIGHT-OF-WAY PRESERVATION

Many of the projects planned in the City of Anoka will take place on roads under the state's jurisdiction. The City of Anoka will work with MnDOT, Anoka County, and property owners to preserve and acquire the right-of-way needed to complete planned road improvements.

Figure 9-9: A diagram portraying the relationship between access and mobility.

## TRANSIT CONDITIONS & PLAN

### TRANSIT MARKET AREA

Transit Market Areas are a tool used to guide transit planning decisions. They help ensure the types and levels of transit service provided, in particular fixed-route bus service, match the anticipated demand for a given community or area. The Metropolitan Council defines Transit Market Areas based on these primary factors:

- Density of population and jobs
- Interconnectedness of the local street system
- Number of autos owned by residents

In general, areas with high density of population and jobs, highly interconnected local streets, and relatively low auto ownership rates will have the greatest demand for transit services and facilities. The Metropolitan Council has categorized the City of Anoka as both Transit Market Area II and III. As identified in Appendix G of the Metropolitan Council's 2040 Transportation Policy Plan (TPP), the characteristics of these areas are as follows:

Transit Market Area II has high to moderately high population and employment densities and typically has a traditional street grid comparable to Market Area I. Much of Market Area II is also categorized as an Urban Center and it can support many of the same types of fixed-route transit as Market Area I, although usually at lower frequencies or shorter service spans.

Transit Market Area III has moderate density but tends to have a less traditional street grid that can limit the effectiveness of transit. It is typically Urban with large portions of Suburban and Suburban Edge communities. 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.

Also from Appendix G of the 2040 TPP (Gable G-2), the typical transit service within this Market Area consists of:

Transit Market Area II has a network structure similar to Market Area I with reduced levels of service. Limited stop services are appropriate in this Market Area to connect major destinations.

The Transit Market Area III network is primarily commuter express bus services. Suburban local routes provide basic coverage in the City. General dial-a-ride services complement fixed-route services.

### CURRENT AND PLANNED TRANSIT SERVICE AND FACILITIES

The City of Anoka is currently serviced by six fixed transit routes; one local route, four express bus routes, and one commuter rail line. The current and planned transit service and facilities in the City of Anoka are depicted on Figure 9-10 and summarized below:

#### **General Scheduled Local Bus Service**

There is one local regular route in Anoka, Route 805, which is provided by the Metropolitan Council. The route runs north/south connecting Anoka, Coon Rapids, and Blaine. Weekdays, Route 805 runs southbound to the Northtown Transit Center in Blaine from 6:00 am to 7:07 pm and runs northbound to Downtown Anoka from 6:00 am to 8:03 pm. On Saturday, the route runs an abbreviated route, traveling southbound to Northtown Transit

Center from 8:00 am to 5:52 pm and running northbound from 8:00 am to 6:48 pm.

**Peak Hour Commuter Bus Service**

Anoka is served by four Express Bus Routes, 766, 850, 852, and 887F.

- Route 766 runs north/south on US 169 through Champlin, connecting to I-94 and continuing southward into Downtown Minneapolis. This route runs southbound from Anoka from 9:30 am to 2:35 pm and runs northbound to Anoka from 8:34 am to 2:21 pm. Route 766 has additional service time starting/ending in Champlin. This route does not run on weekends or holidays.
- Route 850 runs east/west, beginning near US 10 and Thurston Avenue, then along East River Road (CSAH 1) and north/south on I-94, connecting Anoka to Downtown Minneapolis. This route runs southbound to Minneapolis from 4:50 am – 9:17 am and northbound to Anoka from 3:09 pm to 6:59 pm. This route does not run on weekends or holidays.
- Route 852 also runs east/west along East River Road (CSAH 1) and north/south on I-94, connecting Anoka to Downtown Minneapolis. This route runs southbound to Minneapolis from 8:00 am to 10:12 am and northbound to Anoka from 5:36 am to 10:45 pm. This route also runs on an abbreviated schedule on Saturdays, traveling southbound to Minneapolis from 7:14 am to 6:24 pm and traveling northbound from 8:25 am to 7:33 pm. There is an abbreviated southbound run from Anoka to Fridley on Saturday evening, leaving Anoka at 6:28 pm.
- Route 887F, operated by St. Cloud Metro Bus, runs north/south on US 10, connecting to I-94 and continuing southward into

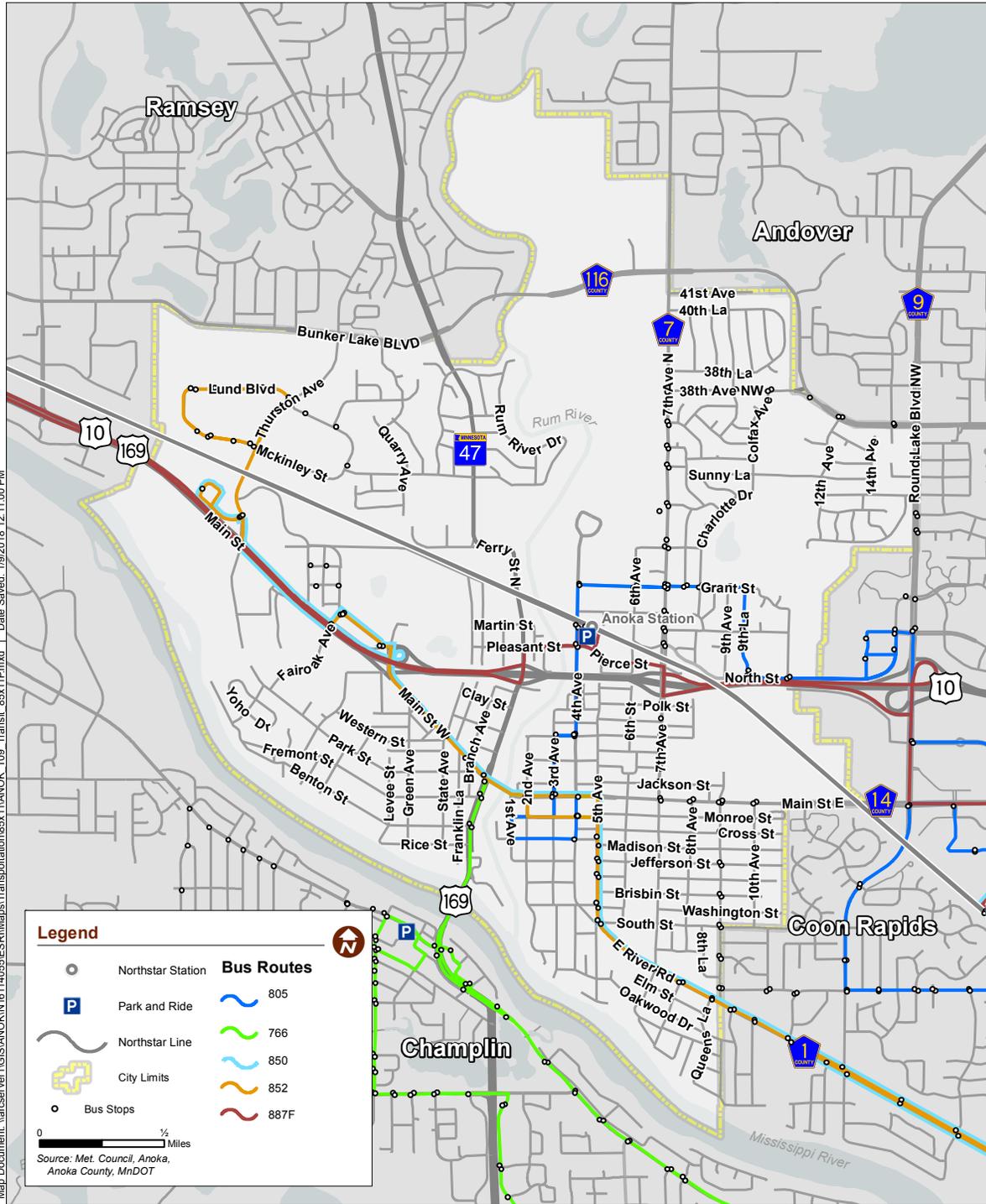
Downtown Minneapolis. This route only operates on Fridays, providing one limited stop northbound and one limited stop southbound trip between St. Cloud and Downtown Minneapolis. The southbound trip stops in Anoka at 11:55 am, and the northbound trip stops in the City at 1:35 pm. Other connections to St. Cloud can be made through the Northstar Commuter Rail and route 887, which connects Big Lake Park and Ride/Station to St. Cloud.

**Commuter Rail**

The Northstar Commuter Rail Line runs through Anoka, stopping at Anoka Station. This fixed rail route runs north/south from the City of Big Lake in Sherburne County to Downtown Minneapolis. Weekdays, this route runs southbound from 5:00am to 8:10am with an afternoon southbound trip leaving Big Lake at 5:03 pm and arriving in Downtown Minneapolis at 5:55pm. It travels northbound from 3:57 pm to 7:07 pm with a morning trip leaving Downtown Minneapolis at 6:16 am, arriving in Big Lake at 7:07 am. This routes also runs Saturday and Sunday at the following abbreviated schedule:

- Saturday AM southbound: 10:41 am  
Saturday PM southbound: 1:11 pm, 5:31 pm
- Saturday AM northbound: 11:57 am  
Saturday PM northbound: 4:27 pm, 7:27 pm
- Sunday AM southbound: 9:51 am S u n d a y  
PM southbound: 12:11 pm, 3:01pm
- Sunday AM northbound: 11:07 am  
Sunday PM northbound: 1:47 pm, 5:22 pm

The Northstar Commuter Rail Line also serves many Twins and Vikings home games. Schedules for dates and times are available on metrotransit.org.



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Figure 9-10: Existing and Planned Transit Infrastructure Map

**Transit Facilities**

Anoka has one transit station and one park and ride facility, both located at Anoka Station. This station primarily serves the Northstar Commuter Rail Line. Route 805 has bus stops along 4th Avenue (CSAH 31) and Pierce Street (CSAH 30), adjacent to Anoka Station. The Anoka Station is fully ADA compliant.

Anoka Station features one 181 space surface parking lot on the north side of the station and one three-level, 344 space parking ramp south of the station platform. Spaces on the third floor are available for overnight parking, though for no longer than seven consecutive days. The parking ramp can be accessed from

Pierce Street (CSAH 30) and the surface parking lot can be accessed from Johnson Street. There is an enclosed pedestrian bridge over the railway to connect the two parking facilities.

At the station platform, there is an enclosed waiting area with a ticket machine, on-demand heating system, and 12 bike lockers. This enclosure is open during the following hours:

- Monday-Friday: 4:45am – 8:15am; 4:45pm – 7:15pm
- Saturday: 10:00am – 8:00pm
- Sunday: 9:00am – 6:00pm

**Transit Advantages**

To help ensure the timeliness of routes and to prioritize transit, the City of Anoka supports transit advantages on US 10. Buses may drive in the shoulder lane on US 10.

**Dial-a-Ride Service**

Anoka is serviced by Transit Link, the dial-a-ride service provided through the Metropolitan Council at the County level. Transit Link provides metro-wide transit connections and access to qualifying rides, such as last mile service, connections between transit stations, or to and from areas not serviced by regular bus routes. Any member of the public may

reserve a qualifying ride. Upon reservation, each trip is assessed to ensure it does not overlap with regular route bus services. Starting and ending destinations must be more than ¼ mile from regular route transit in winter months (November – March) and more than ½ mile from regular route transit in summer

months (April- October). Transit Link Service does not operate on Thanksgiving Day, Christmas Day, and New Year’s Day.

Transit Link peak fares (6-9 a.m. and 3-6:30 p.m.) are \$4.50. Off-peak and holiday fares are \$3.50. A \$0.75 surcharge is assessed for trips longer than 15 miles.

Transit Link service offered through Anoka County serves all cities and townships in the County as well as the cities of Arden Hills, Falcon Heights, Lauderdale, Mounds View, New Brighton, Roseville, St. Anthony, and Shoreview in Ramsey County. Service is available Monday-Friday from 6:00am – 7:00pm. Transfers between Transfer Link and regular service routes take place at one of the following transit hubs: Anoka County Government Center, Northtown Transit Center, Columbia Heights Transit Center, Rosedale Transit Center, Little Canada Transit Center, or Foley Blvd. Park and Ride.



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Metro Mobility, administered by the Metropolitan Council, is a shared public transportation service for certified riders who are unable to use regular fixed-route buses due to a disability or health condition. Rides are provided for any purpose. Federal Americans with Disabilities Act (ADA) guidelines are used to determine eligibility for Metro Mobility Services. Individuals are generally eligible for Metro Mobility services if they are unable to get to regular fixed-route buses, are unable to navigate regular fixed-route bus systems once they are onboard, or are unable to board and exit the bus at some locations.

The Metro Mobility service area has three zones served by three trip providers, who are responsible for scheduling and coordinating trips. The City of Anoka is included in the Metro East Zone, which is served by First Transit East.

## CITY CONSIDERATIONS

Transit service available to city residents includes fixed route bus, commuter rail, and demand response. Although current service provides for travel within the City of Anoka, to downtown Minneapolis, and travel to suburbs to the east and south of Anoka, unmet transportation needs do exist. Travel demand between Anoka and communities to the north remains underserved. Existing service to these areas consists of limited dial-a-ride service and express transit service between the Ramsey Municipal Parking Facility and downtown Minneapolis during peak periods. Because these communities are outside the Transit Capital Levy District, they are not served by Metro Transit, which makes route planning more difficult.

Transit service to Champlin and other communities west and south of the Mississippi River in Hennepin County have limited service options traveling to or from Anoka, particularly during peak hour periods and weekends. Individuals traveling to these communities from the Anoka area must transfer

buses in downtown Minneapolis to reach their destination in a neighboring suburb, often resulting in long and inconvenient travel times.

## NON-MOTORIZED TRANSPORTATION

### PEDESTRIAN FACILITIES

It is very important that pedestrians be accommodated in the City's overall transportation network. The City of Anoka has a robust network of sidewalks and trails. The current sidewalk network provides pedestrians with access to most residential neighborhoods as well as commercial and institutional facilities within the City of Anoka, including, but not limited to, downtown, schools, and major employment areas, including businesses along Thurston Avenue. Current pedestrian facilities also provide access to existing fixed transit routes. Routes use streets in Anoka that have sidewalks on at least one side of the street.

### BICYCLE FACILITIES

There are three primary categories of bicycle facilities:

- Regional off-street trails – developed by metro counties
- Local off-street trails – developed by the municipality
- On-street bike lanes – developed by the county or municipality when funding or right-of-way constraints preclude off-street facilities

In addition, the Metropolitan Council has designated the Regional Bicycle Transportation Network (RBTN). This consists of prioritized alignments and corridors (search areas where alignments have not yet been established) that were adopted in the Council's 2040 Transportation Policy Plan. A Tier 1 corridor covers the southern and western portions of the City, and a Tier 2



corridor runs along the southernmost edge of the City, adjacent to the Mississippi River. This corridor would align and connect to the Rum River Regional Trail, an existing Tier 2 RBTN alignment trail. Existing and planned bicycle facilities are depicted on Figure 9-11; portions of the RBTN in Anoka are also shown on this figure.

#### ***Rum River Regional Trail***

The Rum River Regional Trail is a Tier 2 RBTN Alignment. The trail follows the Rum River and connects to the Central Anoka County Regional Trail at the northern edge of the City. The trail also connects to the Mississippi River Regional Trail, the North Anoka County Regional Trail, and the Sugar Hills Regional Trail. The Northstar Commuter Rail Line is accessible from the trail, and Route 805 is located less than 1/4 mile from the trail. Currently, about 10 miles of the Rum River Regional Trail have been constructed. Once the trail is fully completed, it will stretch 20 miles north/south across Anoka County, connecting the City of Anoka to Rum River Central Regional Park in the City of Ramsey and Rum River North County Park in the City of St. Francis.

### Central Anoka County Regional Trail

The Central Anoka County Regional Trail begins near the intersection of Bunker Lake Blvd (CSAH 116) and Hanson Boulevard in Coon Rapids and extends west to Cottonwood Park in Ramsey. This trail provides many opportunities, from exploring city and county parks to shopping along Bunker Lake Blvd (CSAH 116). Only 16 of the proposed 26 miles of trail have been constructed, as the trail is being constructed as Bunker Lake Blvd (CSAH 116) is repaired or reconstructed. It already provides access to other regional trails including the Rum River Regional Trail, East Anoka County Regional Trail, Bunker - Chain of Lakes Regional Trail, and Chain of Lake - Otter Lake Regional Trail. This trail will also connect with Washington County and Hugo trails. The trail also provides direct access to Anoka High School.

### Mississippi River Regional Trail

The Mississippi River Regional Trail is being developed in partnership with the National Park Service and Anoka County. The National Park Service is working with communities in the Twin Cities to develop a system of connected trails that parallel the Mississippi River. Within the City of Anoka, the portion of the Mississippi River Regional Trail utilizes the existing trails on Kings Island and the Rum River Regional Trail Bridge to cross the Rum River.

### West Rum River Trail

This proposed trail (see Figure 9-11) would run along the Rum River and parallel to US 169 (Ferry Street) from Main Street (in the north) to just north of the US 169 Mississippi River bridge crossing (south). This project would also connect to the existing Rum River Regional Trail.

## FACILITY IMPROVEMENTS

Despite the robust network of sidewalks in Anoka, gaps do exist in the network. In an

effort to increase pedestrian accessibility while remaining fiscally responsible, the City of Anoka will work to strategically fill gaps in the network within its city limits. Sidewalk improvements and connections will be considered for construction as roads are reconstructed or other maintenance and construction occurs. Existing and planned regional trails will also be considered in local sidewalk connections.

As part of the US 10/169 project, the following bicycle and pedestrian infrastructure improvements or additions will be implemented:

- The Fair oak Avenue underpass will include off-street facilities and provide a grade-separated crossing of US 10/169.



- Continuous walkways along the frontage road south of US 10/169 will connect new and existing pedestrian facilities along Fair oak Avenue to an existing walkway on West Main Street, establishing a connected route into the established downtown core business district.
- Continuous walkways along the frontage road north of US 10/169 will connect new and existing pedestrian facilities along Thurston Avenue and Green Haven Parkway.
- The south ramp terminal roundabout will provide safe and convenient pedestrian facilities that connect into the south frontage road trail and the trail on West Main Street

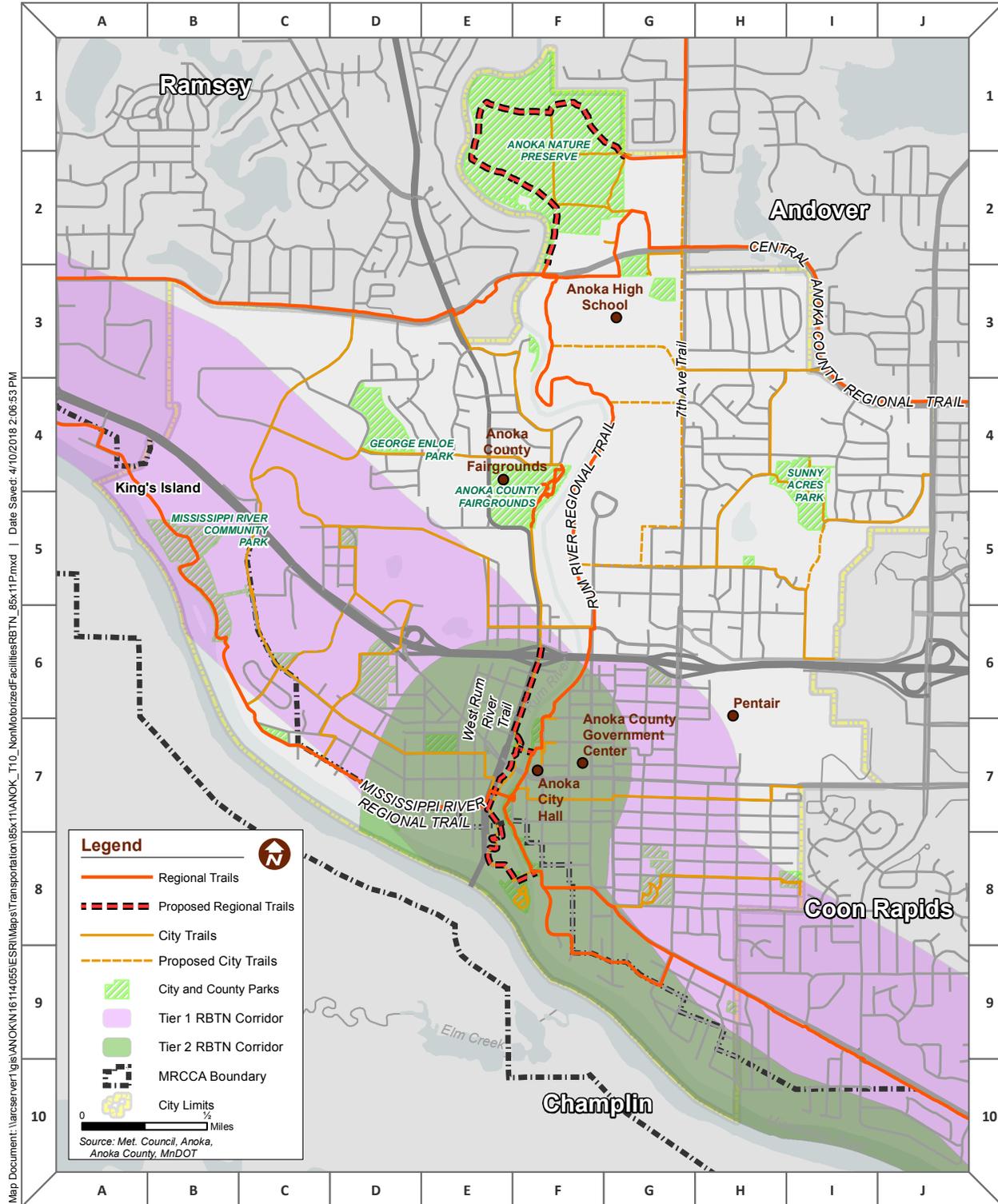


Figure 9-11: Existing and Planned Nonmotorized Facilities and RBTN Map

providing another grade-separated underpass of US 10/169.

- Elevating US 10/169, adding a center barrier and a perimeter fence alongside US 10/169 in the Project area will eliminate the ability for pedestrians to continue running across the highway at unmarked at-grade locations.

There are also plans to develop five local, non-motorized corridors within Anoka. These corridors are designed to enhance the mobility of the pedestrians and cyclists traveling in Anoka.

- W Main Street Trail Corridor – Will be an extension of the E Main Street Trail Corridor, continuing the corridor to US 10/169 and planned pedestrian facilities.
- Ferry Street Trail Corridor – Begins on the US 169 Bridge over the Mississippi River and travels northbound to the Anoka County Rum River South Park/ Fairgrounds before connecting with the Central Anoka County Regional Trail.
- 7th Avenue (CSAH 7) Trail Corridor – Begins at the Mississippi River Regional Trail and travels north along 7th Avenue until it connects with the Central Anoka County Regional Trail.
- North Street Trail Corridor – Begins at the east city limits on North Street and continues westbound through a number of city streets, eventually connecting to Thurston Avenue. Future considerations are being planned for incomplete segments of the trail.
- Green Haven Parkway – Pedestrian and bike facilities will be included along Green Haven Parkway to provide connection between the Anoka Enterprise Park, Green Haven Golf Course, and the new pedestrian and bike

system along Fair oak and West Main Street constructed with the US 10/169 project.

However, there are a number of physical challenges to creating a complete, connected network of sidewalks and bike trails in Anoka. The Rum River extends north-south through the center of town. Five bridges cross the river, including a bridge exclusive to non-motorized transportation. Routes to connect the eastern and western halves of the City will need to utilize one of these five crossings, as there are no additional bridges across the Rum River planned within city limits. This will be accommodated through both Main Street Trail Corridors and the existing Central Anoka Regional Trail.

Additionally, US 10/169 divides the north and south portions of the City. Six roads cross or intersect US 10/169. In the planned reconstruction of US 10/169, discussed in section X.4.1, safe, separated bicycle and pedestrian facilities will be constructed to better connect the northern and south halves of the City. This creates the opportunity to extend and connect non-motorized transportation routes. Lastly, the BNSF railway runs through the center of the Anoka parallel to US 10/169. There are five roads that cross the railroad tracks, three grade separated crossings and two at grade crossings. One existing at grade crossing, at Ferry Street/MN 47, will be reconstructed to a grade separated crossing (See section X.4.1). This reconstruction will include a separate trail crossing for bicyclists and pedestrians. While the intersection of the railway and 4th Avenue, adjacent to the Anoka Transit Station, is not grade separated, there is an elevated walkway across the railway at the station platform. The planned reconstruction of Ferry Street/MN 47 and the E Main Street Trail will accommodate safe bicycle and pedestrian crossings of the BNSF railway.

## FREIGHT

There are several freight corridors in Anoka, detailed in Figure 9-12 with HCAADT. There are a number of freight generating facilities in the City of Anoka, the most prominent site being Anoka Enterprise Park. Anoka Enterprise Park, located in the northwest corner of the City, is home to over 70 businesses that produce, distribute, and sell a variety of goods that are transported via freight trucks. Vista Outdoors, located just south of the Anoka Enterprise Park, is also a generator of truck traffic, with approximately 40 trucks per day from their facility. The main access to both Anoka Enterprise Park and Vista Outdoors is Thurston Avenue, which is accessed from US 10/169. There is a second, smaller industrial site in Anoka that generates freight traffic located on the eastern edge of the City. This area is home to Alliant Techsystems and Pentair Equipment Protection and is located south of US 10 and north of Main Street.

Trucks transport a variety of products including agricultural, commercial, and industrial goods, in addition to other raw materials. Most of the freight movement via trucking through the City of Anoka exists along US 10/169. US 10 and US 169 are important routes connecting the Minneapolis/St. Paul metropolitan area to St. Cloud and other northern communities. They provide access from rural elevators and farming communities to processors and shipping terminals.

In 2017, the Metropolitan Council commissioned the Regional Truck Highway Corridor Study, which assessed current conditions and future demands for trucks on regional highways. This study classified highways, arterials, and other roads into Tiers based on volume, truck percentage, proximity to industry cluster, and proximity to freight facility. Tier One corridors are main, high volume freight routes and the arterials that provide important “last mile” connections to freight destinations. Tier Two corridors are principal and minor arterials

with lower volumes, and Tier Three corridors are mainly minor arterials that connect freight traffic to industry or freight facilities not located near major truck routes.

In Anoka, the following roadways are part of the tiered classification system, shown in Figure 9-11.

- Tier One
  - US 10 from the eastern city limit to Main St W, which sees an average of 3,450 heavy commercial vehicles per day.
- Tier Two
  - US 10/169 from Main St W to the western city limit, which sees nearly 2,000 heavy commercial vehicles per day
  - US 169, from the southern city limit to US 10, which sees about 1,350 heavy commercial vehicles per day in Anoka
- Tier Three
  - MN 47 north of US 10, which sees about 390 heavy commercial vehicles per day
  - Main Street

US 10/169 is an important freight corridor designated as part of the National Truck Network as a High Priority Interregional Corridor. Today, the highway carries 3,300 heavy vehicles per day through the City. If truck percentages relative to total traffic remain consistent moving forward, we would expect 3,500 trucks per day in 2021 and 4,850 trucks per day in 2041 along this corridor.

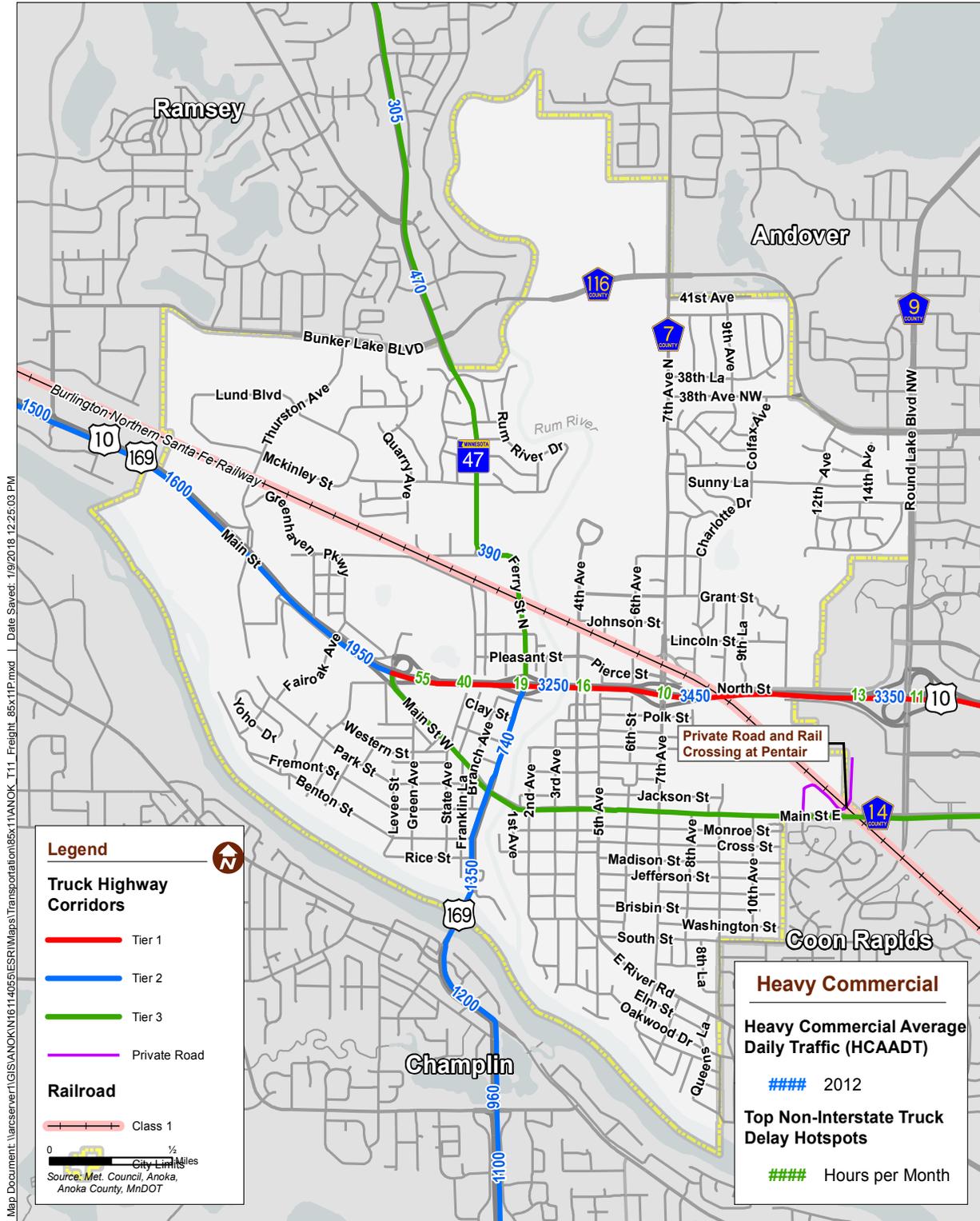


Figure 9-12: Freight, Rail, and Commercial Corridors Map

## FACILITY IMPROVEMENTS

As noted in Section X.3.1, US 10/169 will be undergoing major reconstruction to help alleviate congestion and improve overall mobility and access. These improvements will greatly benefit the movement of freight through the City.

Currently, US 10/169 transitions from a freeway to a signalized expressway in Anoka. US 10/169 is a freeway east of the signalized intersection at Fairoak Ave; west of Fairoak Avenue, the highway is a signalized expressway. The transition of the highway's facility type in Anoka contributes to



severe traffic back-ups, particularly in the westbound direction during peak hour traffic demand. These back-ups result in severe travel delays, particularly in the PM peak hour. US 10/169 traffic exceeds roadway capacity and causes significant changes in travel times for three hours in the afternoon peak period alone on normal days. This condition will substantially worsen if no improvements are made. Future increases in traffic volumes will greatly impact congestion in this corridor and make travel even more unreliable.

Further, the US 10/169 ramps at Main Street are substandard in design. To better serve the traffic needs of this vital corridor, the acceleration lane

will need to be lengthened to a standard length for northbound Main Street to westbound US 10/169, which will allow heavy vehicles to merge into traffic at appropriate speeds. The current acceleration length only allows standard vehicles to reach speeds of approximately 30 mph prior to merging, with heavy commercial vehicles traveling even slower. This large discrepancy in travel speed between vehicles on mainline (posted 60 mph) and vehicles entering the highway causes mainline vehicles to slow and creates a shockwave/queuing effect. Large speed discrepancies also have higher potential for crashes.

Removal of two traffic signals on US 10/169 – at Thurston Avenue and Fairoak Avenue – will also improve the efficiency and safety of moving freight along US 10/169, as well as overall access to freight facilities within the City of Anoka. Overall trip time reliability will be improved through reduced travel times as vehicles will no longer need to endure a signal at Thurston Avenue when accessing US 10/169.

## RAILWAY

One railroad passes through Anoka, running parallel with US 10, dividing the City in half from east to west. The railroad tracks are owned by the Burlington Northern Santa Fe Railroad. Approximately 40 to 80 trains utilize the tracks per day, serving as both the mainline between Chicago and Seattle and supporting the North Star Commuter Rail Line.

The line is equipped with Automatic Block Signals (ABS) normally used for single direction operation on each of the two tracks. Passenger train speeds between Coon Rapids and St. Cloud can exceed 75 miles an hour with the exception of some crossovers and some other restrictions. Roadway-railway crossings within the City, from east to west, are presented in Table T-10.

TABLE 9-10. ROADWAY CROSSINGS OF RAILWAY IN CITY OF ANOKA

Roadway	At Grade	Grade Separated
Main Street East (CSAH 14)		X
Private Road	X	
US 10/169		X
7th Ave (CSAH 7)		X
4th Ave (CSAH 31)	X	
N Ferry Street/ MN 47	X	
Thurston Ave		X

As noted in Section X.2.5, N Ferry Street/MN 47 will be reconstructed to create a grade separated crossing at the railroad. This project has not been funded or scheduled. This improvement will improve safety at the intersection, improve capacity for MN 47, and provide a safe crossing location for non-motorized transportation users.



*The intersection of the BNSF railroad and MN 47 next to the Rum River.*

## AVIATION

Anoka does not have an aviation facility within its boundaries, nor is it located in the area of influence of an airport or heliport. However, Minnesota Statute 360 requires all communities to protect the region's general airspace by controlling the height of structures. The City of Anoka's Zoning Ordinance requires a conditional use permit for structures over thirty-five feet in height unless the structure is a wireless telecommunications tower located on public property and less than one-hundred sixty-five (165) feet in height. Towers higher than one-hundred sixty-five (165) feet would require a variance from this provision. Consistent with the Aeronautics Rules and Regulations, Part 8800.1200, as amended, the City will notify the Commissioner of MnDOT at least thirty (30) days in advance of any application where the applicant proposes any construction or alteration of a structure that would exceed a height of two hundred (200) feet above ground level at the site, or any construction or alteration of greater height than the imaginary surface extending upward and outward at a slope of 100:1 from the nearest point of the nearest runway of a public airport.

There are no airports located within the City of Anoka. However, seaplanes are allowed to land on the Mississippi River. Even though seaplane landings are allowed on the Mississippi River, landings are infrequent and there are no facilities, or planned facilities, to accommodate the landings.

## GOALS & STRATEGIES

This goals for this 2040 Transportation Plan remain unchanged from the 2030 plan. Upon reviewing these goals and objectives, city staff and leadership determined that the goals and objectives remain relevant. Transportation related goals for this 2040 Plan are provided below.

### GOAL T-1

Develop and maintain a transportation network that promotes the safety of its users by:

- Maintaining infrastructure
- Reviewing geometric improvements annually
- Working with the Minnesota Department of Transportation (MnDOT) to evaluate and set appropriate speeds

### GOAL T-2

Ensure that the transportation network promotes the efficient movement of people and goods by:

- Establishing a 2040 proposed functional classification system
- Encouraging consistency between roadway jurisdiction, designation and functional classification
- Supporting efficient multi-modal movement including buses, commuter rail, bicycles, and pedestrians
- Managing access on arterial and collector roadways to preserve mobility and minimize through-traffic on neighboring routes

### GOAL T-3

Ensure that decisions regarding transportation system planning and system development are fully integrated with land use by:

- Reflecting the City's land use policies in the transportation system
- Coordinating with adjacent communities
- Identifying and preserving potential corridors for flexible use

### GOAL T-4

Promote a variety of transportation modes choices in the development of the City's transportation network by:

- Providing options for transit dependent persons
- Encourage provision of and opportunities for transportation services for handicapped and senior residents
- Encouraging the use of trails
- Promoting development of infrastructure for non-motorized transportation
- Preserving corridors for possible multi-modal transportation
- Encouraging the expansion of public transportation
- Promoting and incorporating transit-friendly infrastructure in system planning
- Coordinating with local and regional transit agencies

**GOAL T-5**

Maintain and develop the City of Anoka’s transportation system in a manner that is sensitive to the City’s cultural, historic and natural resources and neighborhoods by:

- Minimizing impacts on environmental and natural resources during improvements and maintenance of the system
- Using traffic-calming techniques when and where they are appropriate while preserving safety
- Considering traffic impacts on community livability and cultural, historic, and natural resources

**GOAL T-6**

Include public participation in the planning, construction and maintenance of the transportation system by:

- Engaging the community in planning and decision-making
- Providing the public with reasonable and understandable information
- Providing opportunities for transportation education

**GOAL T-7**

Build cooperation and coordination between jurisdictions:

- Coordinating transportation plans
- Interacting with state, county and local agencies

- Continuing participation in area transportation projects

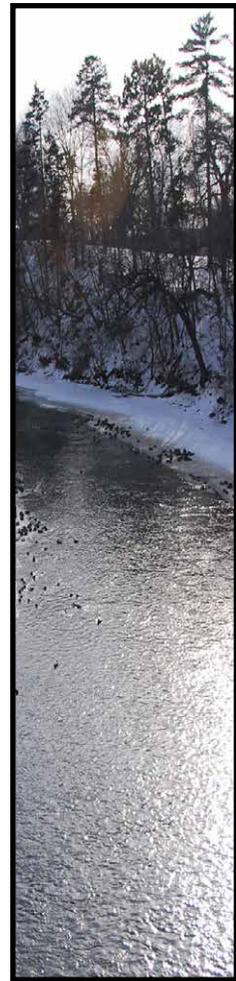
**GOAL T-8**

Establish a transportation system that provides for effective and efficient use of potential improvement funds by:

- Preserving, maintaining and managing the existing roadways system
- Constructing new links and developing staged improvements
- Encouraging joint-agency and public-private partnerships
- Minimizing maintenance of existing and construction of new routes in redevelopment areas
- Identify local transportation needs and ways to provide for these needs.

# 10. WATER RESOURCES

Introduction  
Sanitary Sewer System  
Surface Water  
Water Supply  
Goals & Policies  
Water Resources CIP



## INTRODUCTION

Water is an essential player in community life. Health, sanitation, environmental stewardship, and economic progress rely on high quality water and water systems. Together with regional governmental organizations, Anoka anticipates future community conditions and prepares its sanitary sewer system, water supply, and surface water management for decades of excellent service.

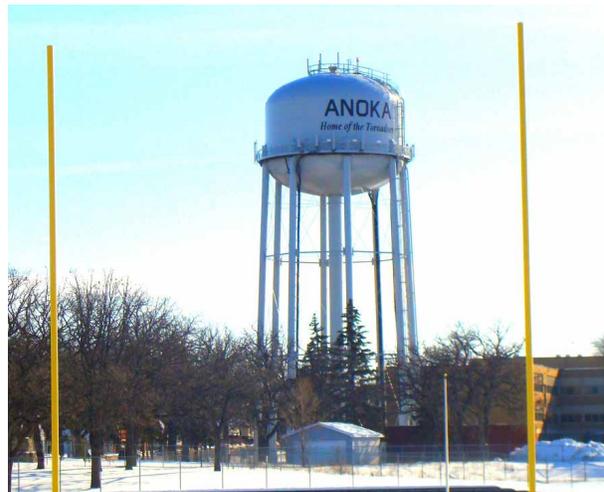
## SANITARY SEWER SYSTEM

This section contains a description of the existing wastewater collection system and an analysis of the local system to determine future estimated sanitary sewer flows. Population, employment, and household rejections are reported. Ordinances and policies regarding infiltration and inflow and illegal connections to the sanitary sewer system are summarized.

## METROPOLITAN COUNCIL SYSTEM CONNECTIONS

The City of Anoka is served by the Metropolitan Council Environmental Services (MCES) wastewater treatment and collection system. Anoka has five Metropolitan Council interceptors that collect wastewater for the City. Met Council interceptor numbers 8362-299, 7707, 7707A and 8751 serve the portion of Anoka located west of the Rum River while Interceptor number 7034 serves the northeast portion of Anoka. The interceptor locations and general services are illustrated on Exhibit 1 and are described below.

MCES Interceptor 8362-299 is a 30" diameter gravity main that starts at the northern boundary of Anoka at Thurston Avenue and County Road 116. MCES Meter M302 is located at this location and totals a portion of the sanitary sewer flow for the City



of Ramsey. Interceptor 8362-299 drains southerly for approximately 3,000 feet and terminates at its intersection with Interceptor 7707 at McKinley Street and Rainier Avenue.

Interceptor 7707 starts as a 30” diameter gravity main at McKinley Street and St. Francis Boulevard. As it drains west, it increases to a 42” main before its connection with Interceptor 8362-299. Interceptor 7707 continues west approximately 400 feet further where it intersects with Interceptor 7707A. The diameter of the main increases to 48” and drains south into MCES Lift Station L42. City of Anoka Sanitary Sewer District 1 drains to Lift Station L42. Interceptor 7707 changes to a forcemain from Lift Station L42 to its southern terminus near MCES Meter Station M301.

Interceptor 7707A is a 36” gravity main that enters Anoka at its western boundary with the City of Ramsey and drains east following alignment of McKinley Street where it intersects Interceptor 7707 at McKinley Street and Lund Boulevard.



Interceptor 7034 is located in the northeast portion of the City serving City of Anoka Sanitary Sewer District Number 5. This interceptor drains into the City of Anoka Lift Station Number AL08 located at 38th Avenue and 7th Avenue. The remaining portion of Anoka east for the Rum River drains into the City of Anoka Lift Station AL06 located east of the River Rum upstream from its confluence with the Mississippi River. City of Anoka Sanitary Sewer District No.’s 5-13 drain to Lift Station AL06.

Sanitary sewer flow from Lift Station AL06 drains southwest, under the Rum River, where it is joined

by a municipal main and by Interceptor 7707. City of Anoka Sanitary Sewer District No.’s 2-4 drain to this point. Sewer flow continues to the southwest for approximately 200 feet and terminates at MCES Lift Station L33 located east of the Mississippi River. MCES Meter M301 is also located at this location. From MCES Lift Station L33, the sanitary sewer flow is pumped to the Champlin-Anoka-Brooklyn Park Interceptor. In 2024, AL-08 will be replaced to a new location and AL-07 and AL-20 will be eliminated. A new gravity sewer will be siphoned under Rum River to be connected to MCES 805020/7707 at McKinley St NW and Saint Francis Blvd NW. Based on the report prepared in 2016, the flow is estimated to be 2000 gpm and likely be a 15-inch pipe. See Map 10-5.

## ANOKA MUNICIPAL SYSTEM

The City of Anoka sewer system consists of 67.67 miles of gravity and force main. The City operates 19 local sanitary sewer lift stations, which are monitored by the City’s SCADA system, in addition to two MCES lift stations.

The Anoka sanitary sewer system is illustrated in Map 10-1.

The estimated 2014 population of the City of Anoka was 17,586 according to the Metropolitan Council’s System Statement for Anoka. It is projected to rise to 18,700 by the year 2020, as shown in Table 10-1. In 2017, there were 5,168 connections to the sanitary sewer system (Table 10-2) with a residential sewer service population topping 16,540. Table 10-2 shows the forecasted allocations of population, household, and employers.

There are 37 known septic systems (19 residential and 18 commercial) currently in use within the City, located on Map 10-2. ISTS's will be removed as discussed on page 249, but the timing is unknown, so the same number of STSS's are carried forward for each decade until new numbers can be updated.

**Existing Sanitary System Flow Rates**

The 2010 total community sanitary sewer flow as measured by the Metropolitan Council was 1.7 million gallons per day, 620.5 million gallons for the year. The annual community flow is projected to be 642.4 million gallons in 2020 (1.76 MGD), 653.35 million gallons in 2030 (1.79 MGD), and 660.65 million gallons in 2040 (1.81 MGD). Sewer flow by lift station is listed in Table 10-5.

TABLE 10-1: POPULATION, EMPLOYMENT, & HOUSEHOLD FORECASTS, CITY OF ANOKA

	2010 (actual)	2020	2030	2040
Population	17,142	18,700	20,000	21,000
Employment	12,840	13,800	14,200	14,400
Households	7,060	7,900	8,400	8,900

TABLE 10-3: EXISTING AND PROJECTED SEWER THROUGH 2040, CITY OF ANOKA (SEWERED & UNSEWERED)

Year	Forecast Component	Population	Households	Employment
2020	Local SSTS	51	19	180
	MCES 7034	2389	975	850
	MCES 7707	5111	2206	2844
	MCES 7707A	92	41	1110
	MCES 8362-299	428	178	835
	MCES 8751	10629	4481	7981
2030	Local SSTS	51	19	180
	MCES 7034	2716	1127	882
	MCES 7707	5286	2201	3045
	MCES 7707A	100	41	1124
	MCES 8362-299	436	178	848
	MCES 8751	11411	4834	8121
2040	Local SSTS	51	19	180
	MCES 7034	2991	1263	908
	MCES 7707	5500	2223	3228
	MCES 7707A	109	43	1115
	MCES 8362-299	448	180	844
	MCES 8751	12102	5173	8124

TABLE 10-4: CAPACITY AND DESIGN FLOWS FOR EXISTING MCES SEWER CONNECTIONS GREATER THAN OR EQUAL TO 12" IN DIAMETER

	MCES Connection A	MCES Connection B	MCES Connection C	MCES Connection D	MCES Connection E
Diameter [in]	15	30	18	15	12
Capacity [MGD]	1.76	6.93	2.55	1.76	1.17
ADF 2020 [MGD]	0.18	1.02	0.04	0.04	0.01
PWWF 2020 [MGD]	0.72	4.07	0.14	0.14	0.06
ADF 2040 [MGD]	0.18	1.05	0.04	0.04	0.01
PWWF 2040 [MGD]	0.74	4.19	0.15	0.15	0.06

TABLE 10-5: ACTUAL & PROJECTED WASTEWATER FLOWS, CITY OF ANOKA (IN MILLIONS OF GALLONS)

	2010 (actual)	2020	2030	2040
Daily	1.70	1.76	1.79	1.81
Annually	620.5	642.4	653.35	660.65

The City of Anoka is fully developed and only minor land-use changes are anticipated as properties are redeveloped throughout the City. Sewer flow projections by sewer district are listed in Tables 10-7a, 10-7b, and 10-7c.

*\*Note: there are no public or privately owned wastewater treatment systems in Anoka other than the 37 septic systems.*

### High Flow Generators

High flow generators are those properties that produce more than 50,000 gallons per day of effluent or produce flows greater than 5% of the total flow produced by the City. The City of Anoka does not have any high flow generators.

### Intercommunity Flows

There are no inter-community sanitary sewer connections between Anoka and adjoining communities.

TABLE 10-6: LIFT STATION PUMP RATES, CITY OF ANOKA

Lift Station	Pump 1 (GPM)	Pump 2 (GPM)	Diameter (Feet)
AL1	291.91	327.89	7
AL4	161.2	154.17	6
AL5	112.74	113.65	6
AL6	310.34	334.17	6
AL7	93.4	101.74	4
AL8	454.55	471.84	6
AL9	168.4	172.9	5
AL10	199.73	170.31	6
AL11	125.26	N/A	4.5
AL12	143.37	N/A	4.5
AL13	77.37	72.31	6
AL14	108.53	N/A	4
AL15	?	N/A	?
AL16	?	?	?
AL17	161.32	161.32	6
AL18	175.02	152.07	8
AL19	125.81	N/A	4
AL20	281.68	331.63	6
AL22	?	?	?

TABLE 10-7a: PROJECTED TRUNK SEWER FLOWS, DISTRICT 1

Year	Residential Population	Residential Flow (MGY)	Employed Population	Employed Flow	Total Flow
2020	3,179	91.7	3,536	26.7	118.4
2030	3,400	93.2	3,640	27.2	120.4
2040	3,604	96.4	3,692	28.1	124.5

TABLE 10-7b: TRUNK SEWER FLOWS, DISTRICTS 2-4

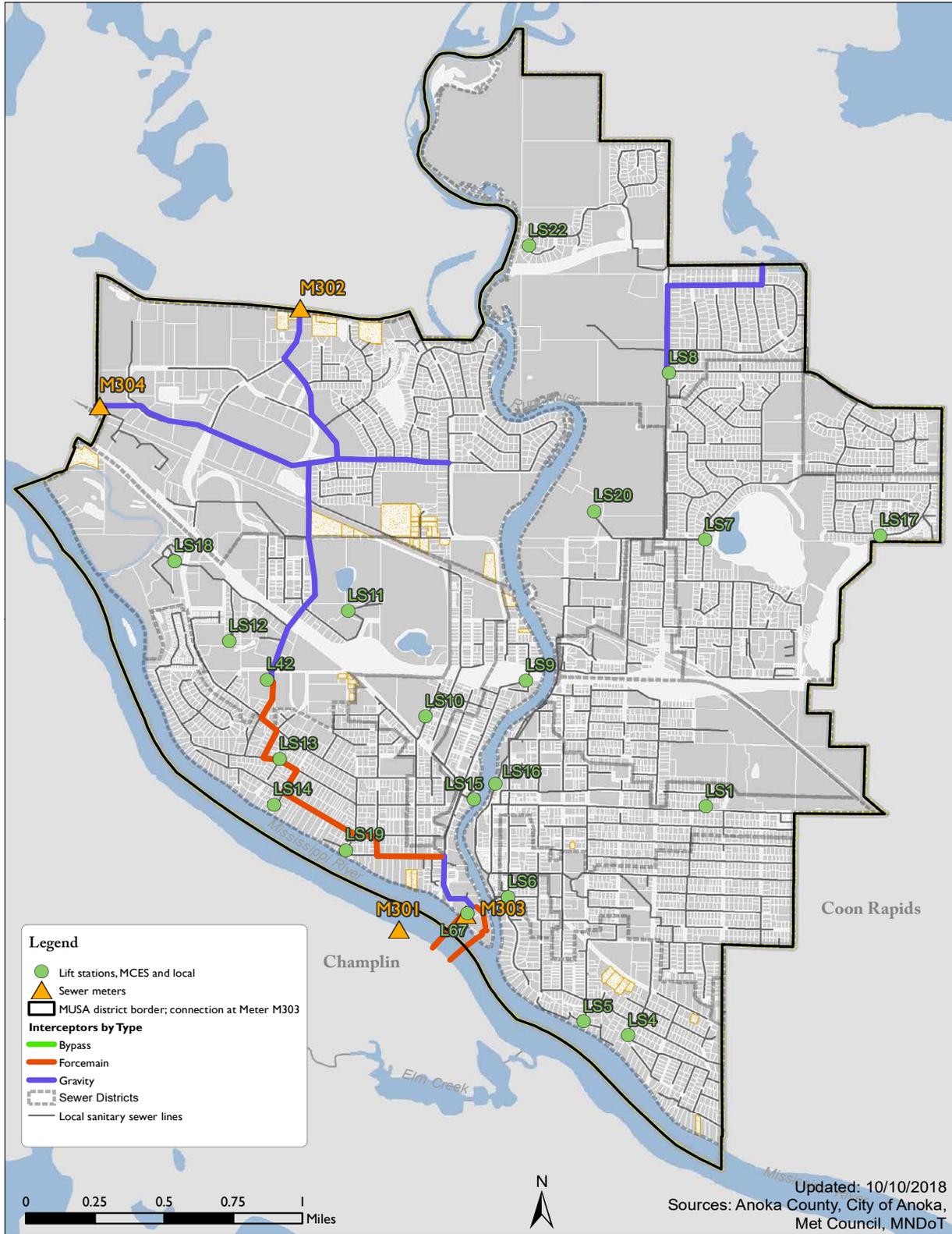
Year	Residential Population	Residential Flow (MGY)	Employed Population	Employed Flow	Total Flow
2020	3,740	107.9	1,904	14.4	122.2
2030	4,000	109.7	1,960	14.6	124.3
2040	4,240	113.4	1,988	15.1	128.5

TABLE 10-7c: TRUNK SEWER FLOWS, DISTRICTS 5-14

Year	Residential Population	Residential Flow (MGY)	Employed Population	Employed Flow	Total Flow
2020	11,781	339.7	8,160	61.6	401.4
2030	12,600	345.6	8,400	62.7	408.3
2040	13,356	357.2	8,520	64.8	422.0

Map 10-1: 2018 Sanitary Sewer System of Anoka

# 2018 Sanitary Sewer System - City of Anoka



## **Maintenance**

The Sewer and Water Division of the City of Anoka Public Works Department is responsible for all maintenance activities associated with the sanitary sewer system. Preventative maintenance is conducted by the department on a regular basis including:

- Rehabilitate & update lift stations
- Replacement of house services within the right of way during street reconstruction projects
- Rehabilitation of clay pipe mains during street reconstruction projects
- Sanitary sewer pipe repairs
- Replacement of manhole casting and rings
- Television reports
- Infiltration inspections
- Root treatment
- Sewer main cleaning on a rotating schedule

There are no major outstanding maintenance issues with the sanitary sewer system at this time.

## **Community Policies and Ordinances**

Usage and discharge into the sanitary sewer system is limited as prescribed in “Sewage and Waste Control Rules and Regulations” as published under State Law by Metropolitan Waste Control Commission. These rules prohibit the discharge of the following to the municipal sanitary sewer system.

1. No person shall discharge or cause to be discharged to any public sanitary sewer any storm water, surface water, ground water, roof runoff, subsurface drainage, unpolluted cooling water or unpolluted industrial process water.
2. No person shall construct, cause to be constructed, or operate any device that provides

a cross-connection between the sewer system and the water supply.

3. No person shall discharge or cause to be discharged any material or wastes into a manhole without authorized permission from the Anoka Sewer Department. No person, other than the Sewer Department personnel, shall open, remove or tamper with any manhole, lift station, or other sewage facility.
4. No person shall discharge or cause to be discharged any motor oil, grease, poisonous substances, corrosive waste, inflammable or explosive liquid, garbage, radioactive waste, any substance capable causing an obstruction to the flow of the sewers, or wastes with a high concentration of suspended or dissolved solids.

## **Inflow and Infiltration (I&I)**

I/I is the amount of clear water entering the collection system. Infiltration is the contribution of flow that is primarily attributable to high groundwater levels, while inflow is attributed to increased surface water amounts. I/I enters the sewer system through cracked or damaged pipe; leaky joints in pipe or manholes; and through other direct connections. It is important that I/I flows be kept to a minimum to maintain pipe capacity and preserve treatment plant capacity.

The efficiency of the sanitary sewer system can be diminished if the outside sources of water are permitted to enter the sewer network. This can happen as a result of sump pumps being illegally connected to the sanitary sewer (inflow) or through the infiltration of ground water into pipes that are damaged or not properly sealed. The volume of wastewater that must be treated can be unnecessarily large during periods of heavy precipitation. The consequences of this are obvious in that the treatment system must accommodate larger volumes of wastewater.

In 2005, MCES implemented a surcharge program to address communities with excessive I/I contributions to their municipal system. The MCES began the program due to the results from an evaluation of its interceptors and treatment capacity for long-term growth. They determined that the design capacity taken up by the addition of inflow and infiltration in its interceptors is a critical issue and substantially impacts future capital expenditures. MCES routinely monitors flows from each metro area community and compares peak flows during and after

TABLE 10-8A: MCES METER M303 DATA FOR CITY OF ANOKA IN MILLIONS OF GALLONS PER MONTH

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2014	48.3	43.5	49.2	48.5	55.8	59	56.1	53.1	50.4	50.6	46.8	48.6
2015	47.5	43.2	47.5	45.4	47.5	47.4	50.8	51.1	49.2	48.2	46.9	48.9
2016	49.3	46	48.7	50.6	55.7	50.8	51	54.3	53	53.9	50.1	52.2
2017	51.7	45.4	49.9	47.7	51.5	49.9	50.6	51.1	50.7	49.1	45.9	46.9
2018	48.9	42.8	47.7	48.3	49.8	48.3	48.8	48.2	46	48.1	47	43.9

TABLE 10-8B: ANOKA MONTHLY WASTEWATER FLOWS IN 2014-2018 (MILLIONS OF GALLONS)

Year	Average Flow [MGD]	Base Flow [MGD]	Peak Flow [MGD]	Annual I/I [%]	Peak Monthly I/I [%]	Annual Rainfall [in]
2014	1.67	1.55	1.97	7%	21%	36.09
2015	1.57	1.51	1.65	4%	8%	31.03
2016	1.68	1.57	1.80	7%	13%	39.21
2017	1.62	1.51	1.69	6%	10%	28.13
2018	1.56	1.42	1.61	9%	12%	24.69

Note: Based on MCES monthly meter data for Anoka from 2014 to 2018 using EPA guidance to calculate the estimated I/I.

rain events to dry weather flows. MCES has developed criteria to determine whether a community has an I/I problem. This criterion is based on comparing a peak hour factor to the I/I component of wet weather peaks.

TABLE 10-8C: HOUSE INVENTORY

House Inventory	
Year Built	Number of Houses
Pre 1970	3,398
Post 1970	4,128
<b>Total</b>	<b>7,526</b>

Using existing monthly data provided by MCES indicates that the average per capita wastewater discharge in 2018 was approximately 83 gpcd and the average during the winter months of January through March was 76 gpcd. This is significantly below the 120 gpcd threshold for I/I. Table 10-8b below provides average, base, and peak flows for the City of Anoka in millions of gallons per day for the 5 year range from 2014 to 2018.

Table 10-8c to the right identifies the housing inventory by year built and number of homes. Services installed prior to 1970 are likely clay and susceptible to I/I. 45% of houses in Anoka meet this criteria.

**Current and Future Measures to Mitigate I/I**

The City of Anoka aggressively pursues all discovered storm related or ground water discharges to the sanitary sewer system. The City prohibits storm roof and foundation drains to be connected to the sanitary sewer. The city’s website describes the cause and impact of I/I. Citizens are referred to visit the City’s website <https://www.anokaminnesota.com/284/Sanitary-Sewer-Information> to learn more about I/I. 2011-12 the City completed a water meter replacement project that was changed to a new system. During this process each property was also inspected for any illegal connections to the sanitary sewer (sumps and footing drains). If found, the property owner had a timeline of 30 days to disconnect. The contractor doing the meter replacement had only a few correction areas out of compliance.

**TABLE 10-8D: 2019-2023 STREET RENEWAL PROGRAM WITH ESTIMATE COSTS OF I&I REDUCTION**

2019 – 2023 Year	Length	Total Estimated Cost	Portion of Cost Towards I&I Reduction
2020	1.14	\$3,836,000	\$312,411
2021	1.02	\$3,229,000	\$312,296
2022	0.6	\$1,907,000	\$98,620
2023	1.64	\$4,140,000	\$365,083

The City of Anoka continues to monitor and inspect while jetting the integrity of the Sanitary Sewer infrastructure. Manholes are regularly inspected during the jetting procedure which is 3 year cycle plan (jet at least a 1/3 of the City each year). If any part of the sewer system is suspected of having I/I issues, such as a manhole with open pick-holes or failing manhole structures, it is repaired that same year. The city has also been proactive in street renewal projects for the past 19 years, which involves replacement of main sanitary sewer lines and the connections to it. Since this program has

been in place we are confident about low I/I issues. Table 10-8d shows the current schedule of street renewal projects with a cost partitioned for I/I reduction.

**Individual Septic Treatment Systems (ISTS)**

The City of Anoka has 37 known on-site septic treatment systems. They are regulated under Section 38-91 thru 38-99 of the City Code. The ordinance is administered by the Public Services Department and regulated by the Code Enforcement Division. Chapter 38 is attached in Appendix D.

Connection to the city sanitary service is required in the following circumstances when the cost of connection to the city sanitary service does not exceed 150% of the cost of installation of a new ISTS:

- When a residence is expanded to include new kitchen facilities, bathroom(s), and/or bedroom(s).
- When an ISTS is being replaced.
- When an ISTS is failing.
- When there is an immediate threat to health, safety and welfare from a failing ISTS.
- When a commercial property has a failing ISTS, unless connection is premature due to city plans or the need for a city project.
- There are no public or privately owned wastewater treatment systems that serve Anoka other than the identified 37 septic systems. There are presently no known non-conforming septic systems in Anoka. As they become known, they are addressed immediately.
- An SSTS compliance inspection is required for a new or replacement SSTS, when altering an existing structure to add to a bedroom, and when a parcel having an existing system undergoes development, subdivision or split.

**Design Criteria**

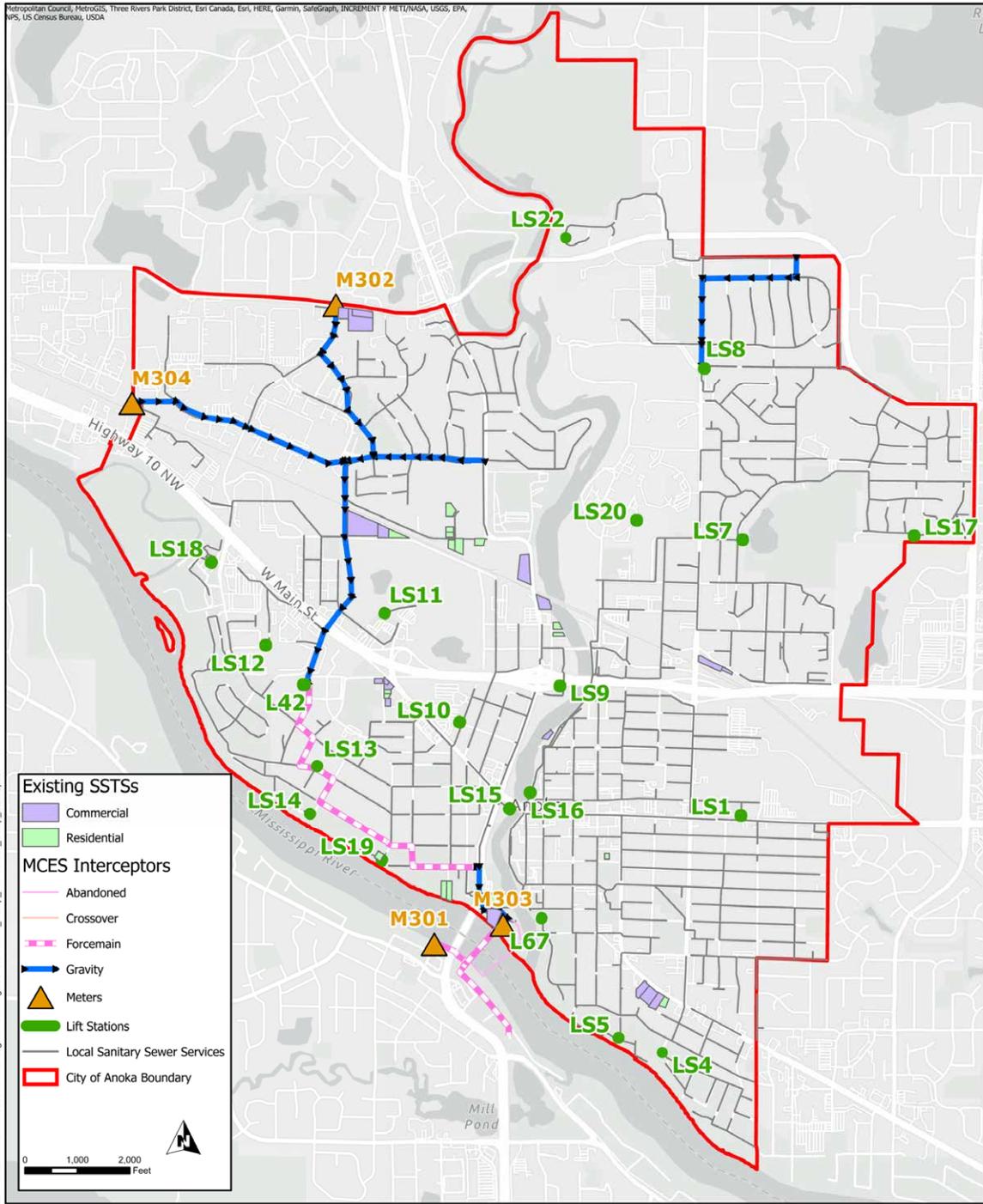
Sanitary sewer pipe sizes are based on Recommended Standards for Wastewater Facilities by the Great Lakes-Upper Mississippi River Board of State and Provincial Public Health and Environmental Managers (10 States Standards). Estimated average daily sanitary sewer flows are based on population and employment forecasts considering the proposed land uses. The ultimate estimated sanitary sewer pipe flow utilizes a factor of 3.8 for the ratio between peak hourly flow and average daily flow. Sanitary sewer pipe capacity is determined by assuming full-pipe flow, Manning’s “n” value of 0.013, and minimum pipe slopes as recommended in the 10 States Standards.

**Capital Improvements**

The City of Anoka utilizes a combination of special assessments, user revenues, connection fees and/or general funds to finance sanitary sewer system improvements. A copy of the Capital Improvements Plan is attached to this comprehensive plan.



MAP 10-2 SEPTIC PARCELS



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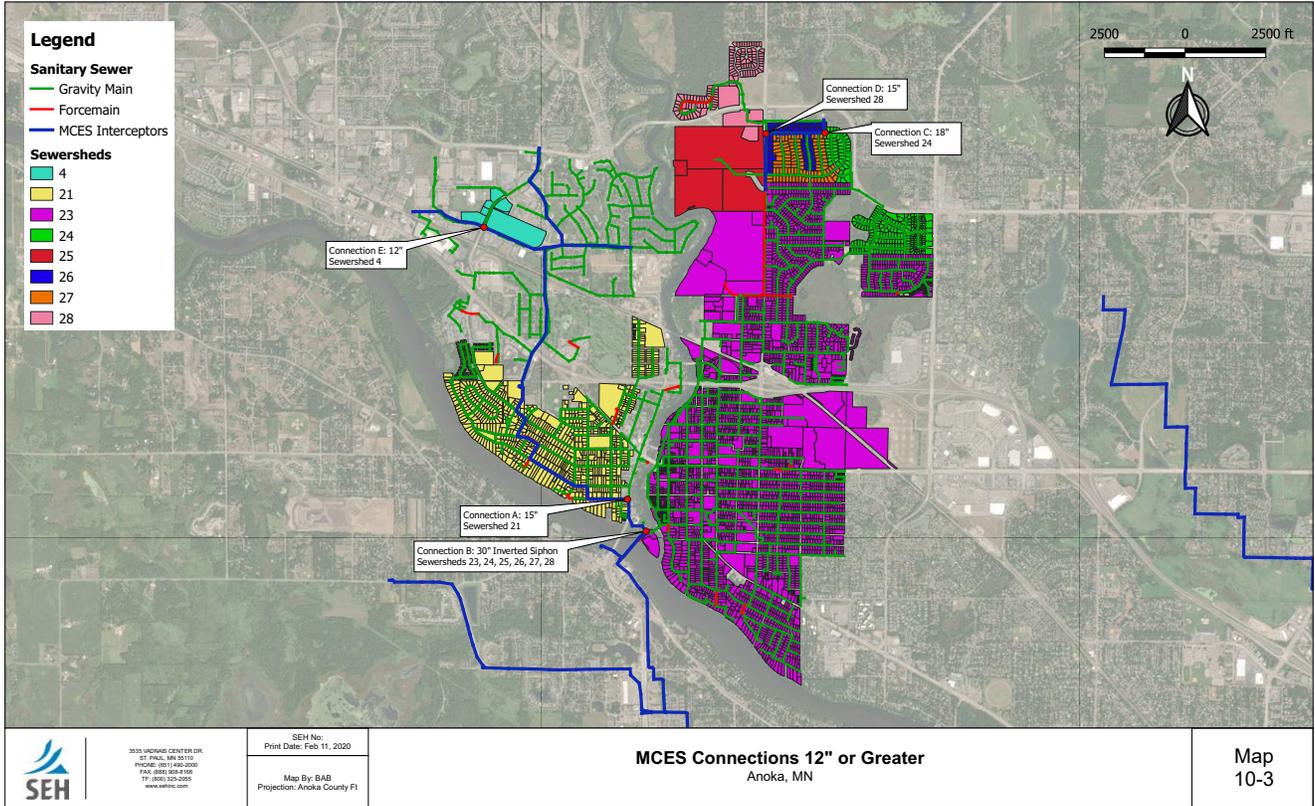
Project Number: ANOKA 153987  
 Print Date: 5/5/2021  
 Map by: rklbier  
 Projection:  
 Source:

City of Anoka - Sanitary Sewer System  
 Anoka, MN

FIGURE 1

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

MAP 10-3 CONNECTIONS GREATER THAN 12 INCHES



This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources based on the map area and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

## SURFACE WATER

Surface water in Anoka is a valuable resource as well as a major management challenge. In response to local surface water conditions, the City's Local Surface Water Management Plan (LSWMP) was prepared by Hakanson-Anderson in 2015. This plan is the City of Anoka's current operational guide for protecting, restoring, and conserving its surface water resources. It has been approved by the Lower Rum River Watershed Management Organization (LRRWMO) and fulfills the legal requirements of the Metropolitan Surface Water Rules. Appendix B contains a copy of the LSWMP, the City's MS4 Stormwater Pollution Prevention Plan (SWPPP - the current application for reauthorization for the General NPDES/SDS Permit), as well as Chapter 38 Article V of the City Code, which addresses grading and land disturbance.

The Local Surface Water Management Plan assists the City of Anoka in defining and implementing a comprehensive and environmentally sound system of surface water management. It is used as a tool to:

1. Plan for projects and other water management activities so as to correct existing problems and prevent foreseeable future problems from occurring.
2. Assist the city in considering water resource impacts resulting from variances to the city's long-range land use plan.
3. Enable the city to grow/redevelop in a systematic and orderly manner while protecting its vital water resources.



In order to accomplish these objectives, the plan considers an array of land uses within the city's legal boundary. When land uses change, this plan provides the means to (1) address the proposed changes; (2) determine the impact of the changes on the city's infrastructure, flooding, and natural resources; and (3) determine the actions needed within the proposed areas of land use change to prevent undesirable impacts. If the plan requires revision, plan amendments will follow the procedures as outline in Minnesota Statutes 103B.235.

### **Surface Water Goals**

The LSWMP includes fourteen goals followed by policies with which to attain them. These goals are:

1. Manage new development and re-development activities to prevent / reduce flooding and achieve non-degradation of surface waters.
2. Maintain existing runoff volume and rate characteristics unless mitigation measures are utilized to ensure no downstream impacts.
3. Provide flood protection for the 100-year return frequency event.
4. Manage activities within the city such that there is no net increase in sediment and nutrient loading.
5. Prevent sediment from entering the storm water conveyance systems and surface waters to the Maximum Extent Practicable.

6. Manage activities adjacent and tributary to wetlands to maintain their function and value.
7. Manage activities within the floodplain in accordance with the city's ordinance and state and federal regulations.
8. Manage activities within the shoreland districts to preserve the functions and values of the resource.
9. Protect and restore natural areas for recreation and wildlife habitat.
10. Manage surface water in a manner that prevents contamination in groundwater and promotes groundwater recharge.
11. Maintain the design capacity and treatment effectiveness of stormwater conveyances and BMP's through inspections and maintenance.
12. Educate the public about the impacts of stormwater discharges on receiving waters.
13. Eliminate or reduce illicit discharges into surface waters to the maximum extent practicable.
14. Continue to develop, implement and enforce a storm water pollution prevention program to reduce the discharge of pollutants to the Maximum Extent Practicable.

## SURFACE WATER CONDITIONS IN ANOKA

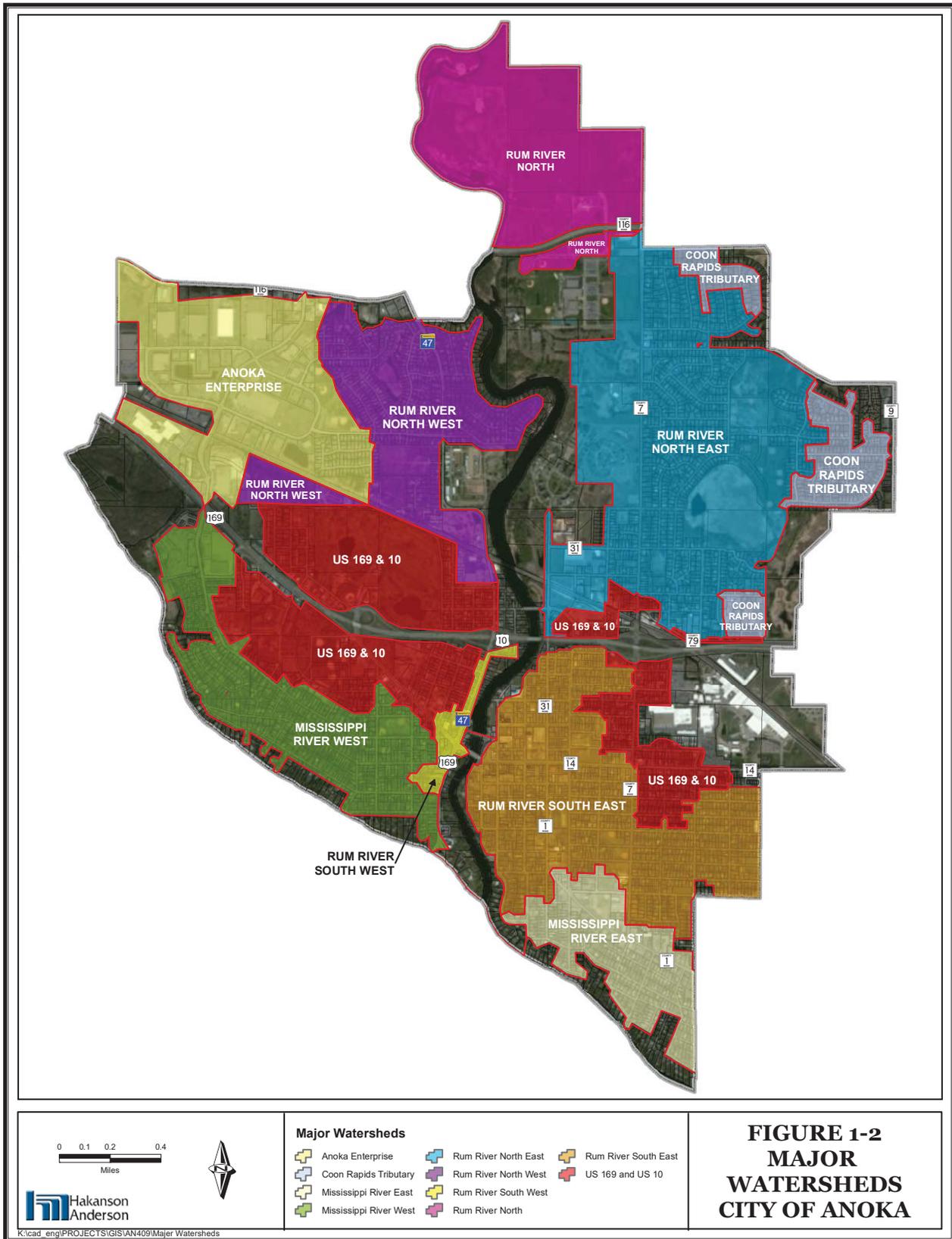
Anoka is primarily a sandplain that ranges from flat to moderately undulating. Additional features include sand dunes and upland till, as well as numerous lakes and marshes. As with the rest of

the Metropolitan area, Anoka's surface was shaped primarily by several ice advances into east-central Minnesota during the last (Wisconsin) glaciation. Anoka also contains a variety of Wetlands and two main Watercourses, the Rum and Mississippi Rivers. Both rivers are considered impaired waters, containing Mercury from coal-fired electric generation plants, as well as boilers, petroleum refining, cremation, and other contributors. This impairment affects only consumption of wildlife from the rivers.

All of the surface water in the City of Anoka eventually drains to the Mississippi River. The northwest corner and southernmost regions of the city are directly tributary to the Mississippi, which flows southeasterly. The downtown and remaining portions of the city are directly tributary to the Rum River, which joins the Mississippi at the southern



MAP 10-4: MAJOR WATERSHEDS IN THE CITY OF ANOKA



edge of the city. Based on drainage divides, ten major watersheds have been recognized within City borders.

Precipitation is a major factor in Anoka’s natural water cycles. The average annual precipitation in the Twin Cities Metropolitan Area between 1981 and 2010 is 30.61 inches, and the same 30-year average annual snowfall is 54.4 inches. As shown in Figure 10-1, average monthly precipitation was as low as 0.77 inches in February and 4.25 inches in June. Over the same time period, snowfall averaged down to 0.6 inches in October (not including those months without notable snowfall) and up to 12.2 inches in January.

**Land Use**

As a built-out community, the City of Anoka has not experienced notable land-use changes since the 2030 Comprehensive Plan published in 2008. Parks, Open Space, Water, and Undeveloped Land account for 28% of land in Anoka. The rest of land uses contain some mix of permeable and impermeable surface, which affects the absorption, runoff, and cleanliness of water in Anoka.

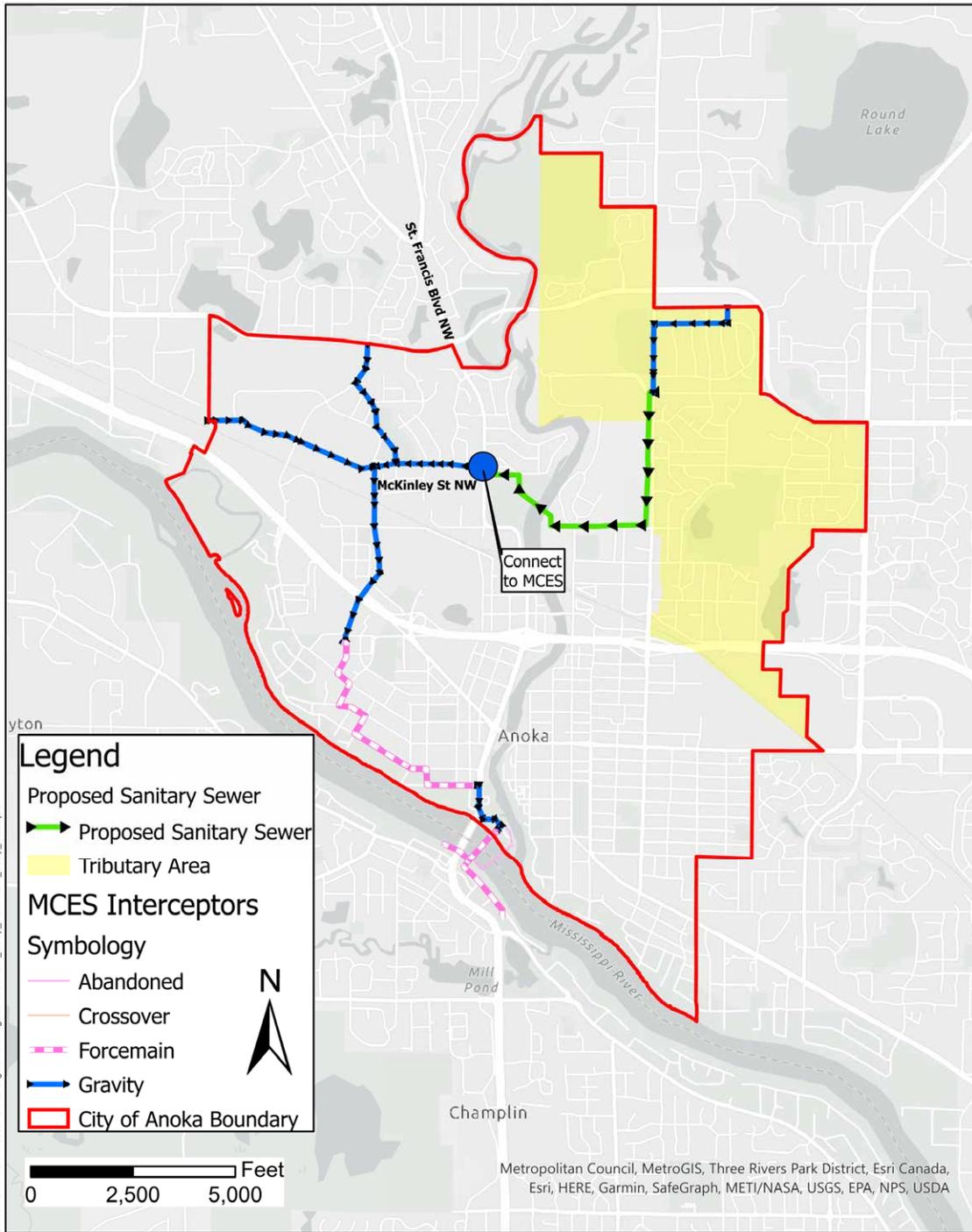
**Watersheds**

Map 10-2 shows the ten watersheds in Anoka. Generally the surface water drains toward the Rum River which runs north-south through the center of the city and converges with the Mississippi River at its southernmost point. Some water does flow directly into the Mississippi. The LSWMP identifies the volumes and rates of flow for the watersheds and watercourses.

FIGURE 10-4: AVERAGE DAILY PRECIPITATION IN MINNEAPOLIS-ST. PAUL METRO, 1981-2010 (INCHES)



MAP 10-5: LIFT STATION AL-08 REDIRECTION



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Project Number: ANOKA 153987  
Print Date: 5/5/2021  
Map by: kbiller  
Projection:  
Source:

LIFT STATION AL-08 REDIRECTION  
Anoka, MN

FIGURE 2

This map is neither a legally recorded map nor a survey map and is not intended to be used as one. This map is a compilation of records, information, and data gathered from various sources listed on this map and is to be used for reference purposes only. SEH does not warrant that the Geographic Information System (GIS) Data used to prepare this map are error free, and SEH does not represent that the GIS Data can be used for navigational, tracking, or any other purpose requiring exacting measurement of distance or direction or precision in the depiction of geographic features. The user of this map acknowledges that SEH shall not be liable for any damages which arise out of the user's access or use of data provided.

## WATER SUPPLY

The City’s Water Supply Plan, written in 2015 and updated in 2017, contains a supply system description and evaluation, including community growth, water requirements, system model development, system analysis, and recommendations for improvement. The full document is located in Appendix B. Below is a copy of its executive summary.

### EXECUTIVE SUMMARY

This report serves as support for the current capital improvement planning process being completed by the City of Anoka. The focus of the report is to analyze existing water utility facilities and to anticipate future system needs based on anticipated growth within the City. This report is a follow up to the previous Comprehensive Water Plan completed in 1999. Since the previous plan, the water system has realized expansion and rehabilitation of existing facilities. The City is also expecting growth and redevelopment in the next planning period. This Water System Comprehensive Plan served as a guiding plan for improvements required to continue to provide reliable water system service to customers.

The Anoka water system consists of infrastructure components that perform supply, treatment, storage, and distribution functions. This study evaluated system needs in each category to meet existing and projected water use. The existing facilities include:

- Eight (8) active groundwater wells.
- Five (5) Water Treatment Facilities.
- Three (3) elevated water storage tanks.
- Water system controls.
- A network of transmission and distribution water mains.

Water system facilities are designed by industry standards to meet maximum daily demands reliably.



Maximum daily water use on the Anoka water system has ranged from 4.5 to 5.8 million gallons per day (MGD) over the previous five years. The amount of water use varies with population and land use patterns, as well as with environmental factors such as precipitation and temperature. Often peak water use is driven by summer irrigation demand.

The population for Anoka in 2015 was approximately 17,243. New development and redevelopment is expected to drive the population to approximately 21,200 by 2040, with a resulting projected maximum daily water use of 6.55 MGD. This report includes recommendations for infrastructure improvements to reliably serve projected new development and corresponding increases in water demand.

Recommended improvements in this report include:

- Modify well and Water Plant operations strategy to comply with the 2017 Minnesota Department of Health Memorandum of Agreement. Revisit demand reduction strategies to meet existing average day and maximum demands.
- Water Treatment Plant 6/8 expansion.
- Update Treatment Plant 7 to improve operational and removal efficiencies.

- 
- Renovate Wells 1 and 2 and place back into full-time service.
  - Renovate Water Treatment Plant 1/2 and place back in full-time service.
  - Plan for one new water supply well to meet future water demands. Consider one additional back-up well for enhanced reliability.
  - Additional reserve water storage.
  - Water distribution system improvements.
  - Renovation or replacement of water system facilities as they age.



## GOALS & POLICIES

### GOAL WR-1

Manage new development and re-development activities to prevent / reduce flooding and achieve non-degradation of surface waters.

- WR-1.1: For new development projects with land disturbances greater than or equal to one acre, Anoka will amend its stormwater ordinance such that there is no net increase from pre-project conditions (on an average annual basis) of:
  1. Stormwater discharge volume, unless precluded by site limitations
  2. Stormwater discharges of Total Suspended Solids (TSS)
  3. Stormwater discharges of Total Phosphorous (TP)
- WR-1.2: For redevelopment projects with land disturbances greater than or equal to one acre, Anoka will amend its stormwater ordinance such that there is a net decrease from pre-project conditions (on an average annual basis) of:
  1. Stormwater discharge volume, unless precluded by site limitations
  2. Stormwater discharges of Total Suspended Solids (TSS)
  3. Stormwater discharges of Total Phosphorous (TP)
- WR-1.3: Per LRRWMO requirements, a volume equal to one inch of runoff from all impervious surfaces shall be infiltrated on-site. In cases of redevelopment, this volume

control requirement applies only if greater than 50% of the project area is disturbed.

- WR-1.4: For new development and redevelopment projects that disturb more than 10,000 square feet but less than one acre, Anoka will amend its stormwater ordinance such that:
  1. There is no net increase from pre-project conditions (on an average annual basis) of stormwater discharge volume, unless precluded by site limitations
  2. No net increase in peak runoff rates for the 2-year, 10-year, and 100 year return frequency storm events.
- WR-1.5: Promote ground water recharge in areas without site limitations.
- WR-1.6: Consistent with Minnesota Rules 7050.0180, no person may cause or allow a new or expanded discharge to the Rum River unless there is not a prudent and feasible alternative because of its classification as an Outstanding Resource Value Water. Determinations about discharges that may or may not impact the Rum River are made by the MPCA and shall be addressed through the MPCA's regulatory process.
- WR-1.7: Facilitate LRRWMO review of all projects requiring a LRRWMO permit.

### GOAL WR-2

Maintain existing runoff volume and rate characteristics unless mitigation measures are utilized to ensure no downstream impacts.

- WR-2.1: Implement volume reduction strategies for new impervious surfaces such

that the new surfaces cause no increase on an average annual basis of runoff volume.

### GOAL WR-3

Upgrade storm sewer to provide capacity for 10 year return frequency.

- WR-3.1: Replace storm sewer that does not provide capacity for the 10 year return frequency storm event as streets are re-constructed.
- WR-3.2: Anoka will consider retrofits on existing systems prior to discharging to a surface water in areas where no treatment currently exists.

### GOAL WR-4

Provide flood protection for the 100-year return frequency event.

- WR-4.1: The lowest floor elevation for all structures, including basements, must be at least 3 feet above the highest anticipated ground water table, 2 feet above the designated or designed 100-year flood elevation, or 1 foot above the emergency overflow, whichever is higher as per LRRWMO requirements.
- WR-4.2: Flood levels in landlocked basis shall be determined as per LRRWMO standards.
- WR-4.3: Promote the preservation and retention capacities of wetlands, streams, rivers, other conveyances and floodplain areas.
- WR-4.4: Provide a positive overflow for stormwater ponds and wetlands to the maximum extent practicable.

- WR-4.5: Trunk storm drainage systems that serve as the outlet for areas where flooding of structures or where significant flood damage is likely to occur will typically be designed to meet freeboard protection standards for the critical duration 1 percent chance flood. The design shall be based on a hydrograph method for appropriate rainfall and snowmelt events. The design shall be based on proposed ultimate land use. The design shall consider potential flood, wetland, and water quality impacts to upstream and downstream areas.

### GOAL WR-5

Manage activities within the city such that there is no net increase in sediment and nutrient loading.

- WR-5.1: Treatment of stormwater to NURP standards shall be required prior to discharging stormwater to a lake, stream, or wetland and prior to discharge from the site.
- WR-5.2: Facilities shall be designed to provide annual removal efficiencies of 60% of total phosphorous and 90% of total suspended solids.
- WR-5.3: Require skimmer structures to prevent floatable materials and debris from entering surface waters.
- WR-5.4: Continue to implement a city wide street sweeping program to capture the sediment prior to entering conveyance systems.
- WR-5.5: Implement an Erosion and Sediment Control inspections program to ensure that sites are controlling erosion and sediment to the Maximum Extent Practicable.
- WR-5.6: Cooperate with the LRRWMO in water quality monitoring, modeling and planning to protect water resources.

**GOAL WR-6**

Prevent sediment from entering the storm water conveyance systems and surface waters to the Maximum Extent Practicable.

- WR-6.1: Require development and redevelopment to implement construction site erosion and sediment control practices to minimize erosion and trap sediment.
- WR-6.2: Implement an Erosion and Sediment Control inspection program as required by the city’s MS4 permit.

**GOAL WR-7**

Manage activities adjacent and tributary to wetlands to maintain their function and value.

- WR-7.1: The city will require that a field wetland delineation and report detailing the findings of the delineation shall be submitted prior to development activities. Wetland delineations shall be conducted using methodology approved by the MN Wetland Conservation Act (1987 US Army Corps of Engineers Wetland Delineation Manual, along with any regional supplements, or other methodology approved by WCA in the future).
- WR-7.2: The city will continue to cooperate with the LRRWMO in administering the Wetland Conservation Act to ensure no net loss of functions and values.
- WR-7.3: Areas within 16.5 feet of a wetland boundary must be protected from land grading and other disturbances by a temporary wetland buffer during construction.
- WR-7.4: The city will require, through future development proposals, that a permanent upland wetland buffer 16.5 feet in width

from the wetland edge be provided. The buffer shall not be mowed or fertilized and the construction of structures, retaining walls, and septic systems shall be prohibited within the buffer, consistent with LRRWMO requirements.

- WR-7.5: The city will require the permanent wetland buffer to be within a drainage and utility easement.
- WR-7.6: A performance surety shall be collected to ensure the proper execution of wetland protection measures.
- WR-7.7: The city requires that stormwater runoff be pre-treated prior to discharge to wetlands for new development proposals. Stormwater discharge must comply with LRRWMO standards.
- WR-7.8: Consider retrofits in existing systems to provide pre-treatment prior to discharging to wetlands where no treatment currently exists for redevelopment projects.

**GOAL WR-8**

Manage activities within the floodplain in accordance with the city’s ordinance and state and federal regulations.

- WR-8.1: The city shall prohibit encroachment into the floodway that will reduce storage capacity unless the storage volume is mitigated.
- WR-8.2: The city shall manage the land use within the 100-year flood level as designated by this plan or the National Flood Insurance Program Flood Insurance Rate Maps (FIRM).



## GOAL WR-11

Manage surface water in a manner that prevents contamination in groundwater and promotes groundwater recharge.

- WR-11.1: The evaluation and control of development in groundwater recharge areas shall be protected from potential sources of contamination in accordance with Minnesota Statutes section 103H.001 and the city ordinances.
- WR-11.2: The disposal of any solid or liquid wastes shall be controlled as necessary to ensure that the underground waters of the watershed are maintained within the range of natural background quality.
- WR-11.3: Cooperate with the Anoka County Health Department in ensuring that abandoned wells are properly sealed according to the Minnesota Department of Health Well Code.

## GOAL WR-9

Manage activities within the shoreland districts to preserve the functions and values of the resource.

- WR-9.1: The city will manage activities within the shoreland overlay district in accordance with the city ordinances.

## GOAL WR-10

Protect and restore natural areas for recreation and wildlife habitat.

- WR-10.1: The city shall seek opportunities for integration of recreation open space and wildlife management facilities in conjunction with possible future water resource capital improvement projects.
- WR-10.2: The city shall encourage protection and/or preservation of wetlands and uplands that provide habitat for game fish spawning and wildlife, especially in the residential development areas.

## GOAL WR-12

Maintain the design capacity and treatment effectiveness of stormwater conveyances and BMP's through inspections and maintenance.

- WR-12.1: The city shall maintain public water quality structures, sedimentation ponds and regional detention basins.
- WR-12.2: Maintain, clean, and replace storm drainage systems as needed to preserve the initial design capacity.
- WR-12.3: For privately owned stormwater ponds, basins and treatment structures; require a maintenance agreement that is recorded against the property.

**GOAL WR-13**

Educate the public about the impacts of stormwater discharges on receiving waters.

- WR-13.1: Implement the public education and outreach strategies outlined in the city’s SWPPP.
- WR-13.2: Implement the public participation strategies outlined in the city’s SWPPP.

**GOAL WR-14**

Eliminate or reduce illicit discharges into surface waters to the maximum extent practicable.

- WR-14.1: Implement and enforce the illicit discharge detection and elimination strategies outlined in the city’s SWPPP.
- WR-14.2: Provide training opportunities to city employees to prevent or reduce pollutant runoff from municipal operations.

**GOAL WR-15**

Continue to develop, implement and enforce a storm water pollution prevention program to reduce the discharge of pollutants to the Maximum Extent Practicable.

- WR-15.1: Develop a program which meets or exceeds the requirements as stated in the MPCA’s General MS4 Permit.
- WR-15.2: Regional detention areas receiving runoff from more than one acre of surface area will comply with MS4 requirements.

**GOAL WR-16**

Manage wastewater safely, efficiently, and sustainably without introduction of inappropriate

substances, extraneous water, or unauthorized connections or devices.

- WR-16.1: Continue to reinvest in critical sanitary collection and conveyance infrastructure by rehabilitating the existing system.
- WR-16.2: Continue I/I identification and correction efforts for municipal sanitary conveyance systems and connecting private infrastructure.
- WR-16.3: Continue to reduce noncompliant Individual Sewage Treatment Systems (ISTS) and ensure maintenance of compliant systems.
- WR-16.4: Plan for adequate municipal conveyance infrastructure and support adequate metropolitan system capacity to serve more intensive redevelopment in appropriate locations.

**GOAL WR-17**

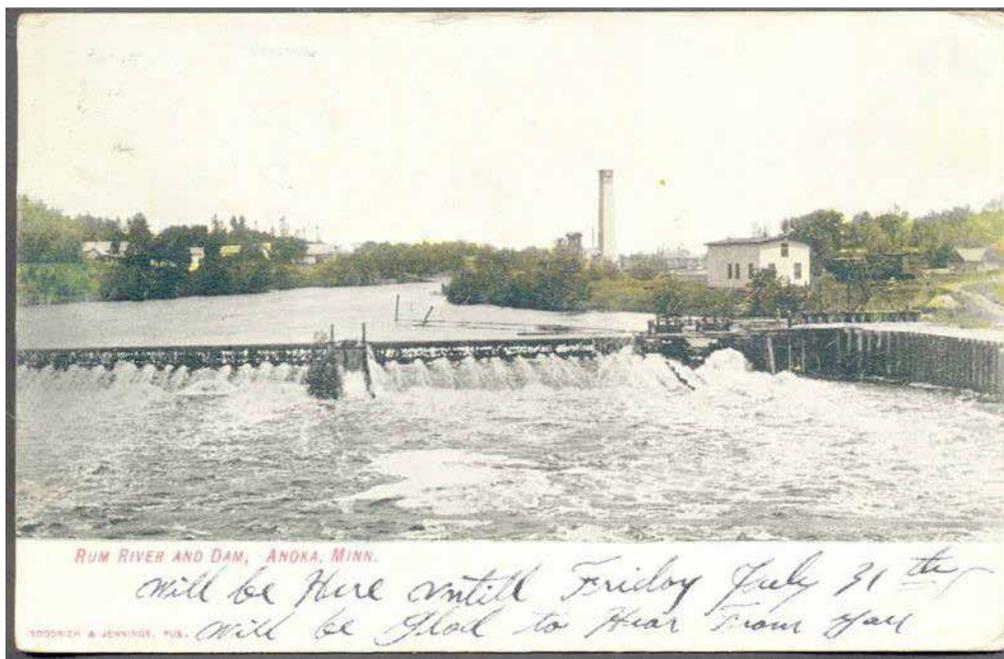
Ensure high quality, efficient, sustainable water supply services and practices.

- WR-17.1: Review and update Water Supply



Plan frequently and regularly to maintain best practices.

- WR-17.2: Continue education and conservation measures to increase efficiency and reduce water demand.
- WR-17.3: Maintain response readiness for emergencies related to water supply contamination or interruption, and for damage to treatment and distribution infrastructure.
- WR-17.4: Fund strategic capital projects outlined in the current Water Supply Plan for the City of Anoka.

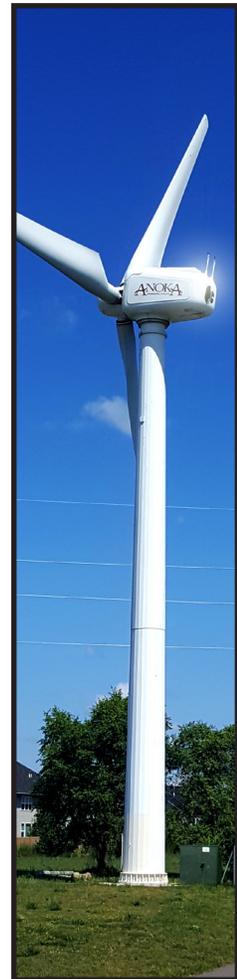


Postcard of the Rum River Dam, 1908

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# 11. ANOKA MUNICIPAL UTILITY

Introduction  
Mission  
Vision  
Values



## INTRODUCTION

Anoka Municipal Utility (AMU) is a community-owned, not-for-profit electric supplier serving the City of Anoka, as well as portions of the cities of Ramsey, Coon Rapids, Champlin, and Dayton. The citizens of Anoka chose to create AMU in 1909 to provide economical, reliable electric power and have local control over an essential service. In 1992, Anoka joined with other municipalities statewide to create the Minnesota Municipal Power Agency (MMPA).

AMU serves 10,650 residents, 1,400 commercial, and 15 industrial customers including several national accounts such as Pentair and Federal Premium Ammunition. Annual revenues top \$25 million and close to 10% of gross revenues are contributed to the City of Anoka operating funds, helping to keep property taxes low. Anoka also contains a wind turbine that is owned and operated by the MMPA as a part of their Hometown WindPower project. The turbine has the capacity to produce 160 kilowatts of energy per hour, enough to power approximately 107 residential homes.



*Anoka Municipal Utility*

## MISSION

Anoka Municipal Utility's mission is to power people's lives – our customers, our businesses, and our communities – with safe, clean, reliable electricity with the highest dedication to customer care and safety.

## VISION

Anoka Municipal Utility is vital to the community and strives to enhance its customers' quality of life, its businesses long term success, and to support the continued growth of its communities.

- Our employees are the heart of AMU. They will always act with professionalism and courtesy to all of our customers. We will ensure that we have the most highly trained, diverse, and safety conscious individuals in the electric industry. Through mentoring and training they will be empowered to make decisions resulting in quicker responses for our customers. Through diversification our employees will be responsible for multiple duties with enough commonality to help eliminate the need for additional resources.
- AMU is a City owned entity in a competitive environment and will provide the same or additional level of services available as our competitors. We will annually compare our rates, outage indexes, and programs available to national standards and modify as needed to give all of our customers a competitive advantage.
- AMU will constantly work to align their goals with those of the City to ensure continued success for all parties concerned.

- AMU will create and adopt a long-range plan that will provide guidance for the future of AMU. The long-range plan will contain projected system shortfalls, probable infrastructure inadequacies, system redundancy, predictable software upgrades, security concerns, power partners, and timelines for all.
- AMU will create new service rules that will help to give direction to our customers and contractors. It will include request for service contracts, customer contribution language, acceptable voltages allowed, and acceptable equipment allowed.

## VALUES

### Accountability

We take personal responsibility for our decisions, actions, and commitments. We hold our decision-makers accountable for their actions and help them with their policy-making through lobbying.

### Integrity

We do what's right regardless of who is watching and no matter what the cost.

### Financial Management

We conduct our activities in a fiscally responsible manner. We seek to be exemplary stewards of the public resources we manage.

### Mutual Aid

AMU Will seek opportunities to assist all entities as the need arises. We will work to build these alliances with our community and other communities and respond with professionalism, safety, and knowledge at the forefront.

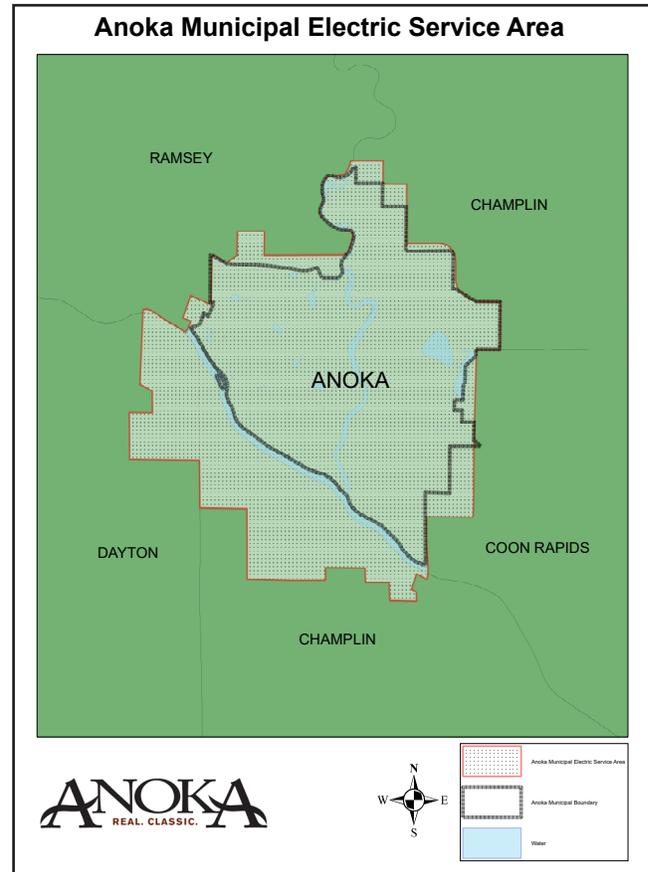


Figure 11-1: Anoka Municipal Utility Coverage Area

### Innovation

AMU will seek out opportunities that are on the leading edge of technology with eco-friendly solutions for our customers.

### Customer Service

Exceptional service will be the norm for AMU. We will build our public relations with each and every individual we meet.

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# 12. WASTE REDUCTION & RECYCLING

Introduction  
SCORE Programs  
Waste Reduction & Recycling Board  
Current Programs  
Goals



## INTRODUCTION

Recycling has become a widely adopted waste management practice in Minnesota. Statewide, businesses and organizations have many opportunities to recycle through public and private collection programs. However, before recycling even becomes necessary, people have many options for reducing their use of environmentally hazardous materials. Anoka participates in the state SCORE Program and offers opportunities for waste reduction, reuse, and recycling.

## SCORE PROGRAMS

In 1989, the Minnesota Governor’s Select Committee on Recycling and the Environment (SCORE) recommended new legislation and funding to support local communities in responsible waste disposal and mitigation operations. SCORE set ambitious goals for recycling and energy-generation, which have generally been met or exceeded across the state. Programs and reports include recommendations by the Pollution Control Agency in consultation with the Association of Minnesota Counties, Solid Waste Administrator’s Association, and Solid Waste Management Coordinating Board. The programs are administered by the counties and follow Minnesota’s “waste hierarchy” of priorities.

## WASTE REDUCTION & RECYCLING BOARD

The Anoka Waste Reduction & Recycling Board (WRRB) oversees the residential recycling program funded by the State SCORE program. The board serves in an advisory capacity to the City Council on residential recycling and waste reduction initiatives.

### Minnesota’s waste hierarchy

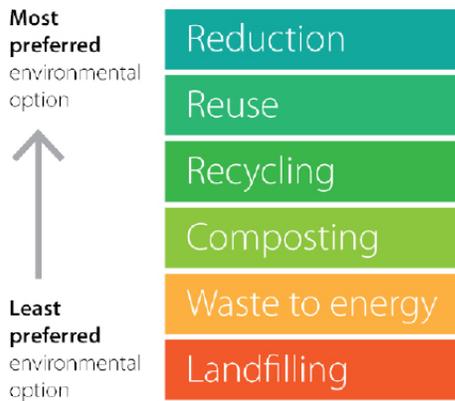


Figure 12-1: Minnesota’s waste hierarchy, from the MPCA’s 2016 SCORE Report Card

Specific duties include negotiating the residential curbside recycling contract assuring proper collection, handling, and disposal of recyclables, sponsoring recycling events and other recycling opportunities, and providing education, promotion, and resources to improve recycling and reuse opportunities habits in the reduction of residential waste.

## CURRENT PROGRAMS

### Fix-It Clinics

Several Cities within Anoka County have teamed up to provide Fix-It Clinics to the public. Volunteer fixers help to disassemble, troubleshoot, and repair small appliances, electronics, clothes, and other household items at no cost. This saves the community money on unnecessary purchases, preserves possessions with sentimental value, and reduces waste that would end up in a landfill.



### Spring Recycling

Anoka hosts an annual recycling collection day for large items that can be difficult or confusing to properly recycle. Anoka residents and small businesses can bring appliances, batteries, electronics, carpet, bicycles, tools, scrap metal, and other abnormal waste to a central location to avoid harmful methods of disposal. Donations to the Anoka High School Alpine Ski Team clothing drive fundraiser and MN Tool Library are also accepted. Mixed paper, envelopes, and file folders can be brought for shredding.

## GOALS

### CURRENT GOALS

- Host spring, fall, and special recycling events.
- Host Fix-it Clinics twice a year.

- Host two recycling educational presentations for school-aged children either at schools or special events.
- Improve/add recycling and reuse opportunities at city-sponsored events.
- Increase recycling opportunities at multi-family properties.
- Promote residential recycling through all applicable city communication tools, including the RAW newsletter.
- Meet once per month, or as needed, to discuss recycling opportunities and activities to help improve the quality of life within the city of Anoka.

### FUTURE GOALS

- Consideration of a permanent city-owned and operated recycling center.
- Encourage and increase recycling opportunities and procedures in city departments.
- Establish one or more organics/compostable programs in city-owned parks.



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# 13. IMPLEMENTATION

Introduction  
Community Strategies  
Official Controls  
Financial Resources & the  
Capital Improvement Plan  
Policies, Strategies, & Action  
Steps



## INTRODUCTION

The implementation chapter is intended to carry out the vision and guiding principles that have been the context for this comprehensive planning process. To be most affective, the plan must serve both long term and more immediate needs. This chapter is organized around a series of general strategies which are filled out through more specific action steps. Strategies are continuous and have no defined start or end point - they emphasize use of the plan as an everyday planning tool. Action steps are specific projects that have a defined start and end point and result in a tangible product or capital investment.

It is important to recognize this plan as a living and breathing document. The plan provides the flexibility to adapt to unforeseen changes which may include new development products in the market place, shifts in the regional, national or global economy, technological advances and political decisions that force us to rethink our vision from time to time. On a smaller scale, individual property owners' decisions and needs also force change. Small incremental changes must be carefully reviewed and evaluated according their role in achieving Anoka's vision and guiding principles.

Implementing the Comprehensive Plan is a collective effort between the Anoka City Council, the various boards and commissions that advise the Council, City Staff, and citizen volunteers.

The following sections highlight community strategies and action steps.

### VISION AND GUIDING PRINCIPLES:

The ideas embodied in Anoka's vision statement establish the overall goals for the implementation strategies and action steps.

1. Lasting Community Character
2. Civic Vitality
3. Sound Development
4. Environmental Resources
5. Strong Service

The guiding principles serve as a commission to Anokans, directing City-wide action toward maintaining, expanding, and inspiring the community.

- Invoke a sense of place
- Invest in the public realm
- Amplify the mix of uses
- Enhance connectivity
- Insure that buildings support broader city development goals
- Amplify existing strengths
- Sustain and strengthen heritage resources
- Promote the use of public spaces



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## COMMUNITY STRATEGIES

### ***Periodically Review and Understand Community Development Tools and Programs***

Many of the tools available to the City of Anoka for community planning and development are enabled by state laws such as: zoning and subdivision ordinances, infrastructure ordinances, ability to create or establish tax increment financing districts, to use tax abatement or other financing mechanisms, and environmental reviews. These are only a few of the important implementation tools available to the City.

A key strategy for Anoka is to regularly review state laws to stay abreast of changes that might favorably or adversely affect the City's ability to implement its plan. Updates from such organizations as the League of Minnesota Cities (LMC), Minnesota Chapter of the American Planning Association (MnAPA), Metro Cities or the Economic Development Association of Minnesota (EDAM) are vital to staying connected to state-wide opportunities and best practices.

### ***Conduct Regular Reviews of the Comprehensive Plan***

Anoka will continue to redevelop and change over the next 20 years. As this growth continues to occur, data will emerge through evaluation of development projects and planning analysis that will help with understanding the impacts on the community. The Comprehensive Plan should be reviewed on a regular basis (annual or biannually) to assess progress on attaining the community's goals and objectives and to continue a dialogue about the community's future. The review should focus on both the successes and failures of the Plan. The review should be informed by development projects, observations of change and technical analysis. GIS mapping should be maintained and annual adjustments to population, household and employment projections should be carefully

evaluated in collaboration with the Metropolitan Council.

### ***Establish a Set of Community Indicators to Measure Progress***

Community indicators are an effective measurement tool to assess how Anoka is progressing towards its goals and objectives identified throughout the plan. "In essence, indicators are measurements that reflect the interplay between social, environmental, and economic factors affecting a community's well-being (American Planning Association)." The City of Anoka should establish a series of indicators to evaluate the progress and success of this plan. This is a long term strategy that will provide the City of Anoka with a wealth of information to help guide future decision making.

The list of community indicators can be quite lengthy and exhaustive. This is why the process is as important as the product. What gets measured and how it gets measured must be a product of a community dialogue. The following list is a starting point of some possible indicators relevant to Anoka. This list is developed based on past community input and recent planning trends:

TABLE 13-1: COMMUNITY INDICATORS FOR MEASURING PROGRESS

Land Use Efficiency	density of new residential development
	ratio of commercial building square feet to gross land area of new construction
	total acres of new development absorbed on an annual basis
	total acres of projects zoned as a Planned Unit Development
Economic Development	number of existing businesses visited by City Staff or economic development agency
	number of new businesses developed in the community
	number of new jobs created (private vs. public)
	number of new start up businesses
	vacancy rates of commercial and industrial space
	unemployment rates
	valuation trends of commercial and industrial businesses
	size of local/regional labor force
	the ratio of jobs to the number of housing units
Housing	number of new affordable housing units developed
	number and value of permits pulled for housing maintenance (siding, roofing, mechanical, windows, etc...)
	number and value of permits pulled for new housing construction (by type--detached SF, attached MF, stacked MF)
	number and value of permits pulled for housing remodeling/expansions
	number of real estate transactions of owner occupied housing
	vacancy rates
	dollars invested in assisting with housing maintenance
Government Services	number of candidates filing for government offices
	number of complaints logged at city offices
	average timeliness of city resolution
	number of city employees per 1,000 residents
	number of police calls by type/area or location
	number of fire calls by type/area or location
	average response times of each call
	number of joint service agreements or public private partnerships
	satisfaction rating change over time
Environment and Energy Conservation	water quality of key lakes and the Mississippi River
	air quality measurements taken at key locations in the community
	number of new storm water treatment systems installed or volume of storm water treated
	acres of sensitive natural resources protected
	number of new buildings LEED certified
	number of vehicles in the city fleet that operate on alternative fuel sources (i.e. bio-diesel, solar, hybrid)
	volume of waste generated per capita
	percent of waste stream recycled per capita
carbon footprint measurement	

Transportation/Traffic/Mobility	lane miles of congested roadways (LOS E or F)
	number of traffic crashes by type
	number of lane miles of new roadways built (and dollar value)
	number of lane miles of streets reconstructed (and dollar value)
	traffic volumes on major streets
	number of pot-holes repaired or volume of fill on an annual basis
	volume of transit ridership from the City and destinations
	number of cars per household
	miles of paths constructed by type (sidewalk or multi-purpose trails)
	miles of bike lanes constructed
	household trip patterns (bike, walk, drive, transit)
percent of households within walking distance of key destinations	
Parks and Recreation	participation in active recreation programs
	dollar value of investments in existing parks
	hours spent on park maintenance
	number of new parks developed
	change in programming over time
Community Infrastructure	miles of new sanitary sewer pipes and number of lift stations
	volume of inflow and infiltration
	miles of new trunk water mains and number of new city wells
	volume of unaccounted for public water usage
	per capita useage of water by land use
	number of wells
volume of water treated	

## FINANCIAL RESOURCES & THE CAPITAL IMPROVEMENT PLAN

Implementation of the Comprehensive Plan requires a combination of public and private actions, many of which require public investment. While money is finite, there are a variety of financial resources available to implement the Comprehensive Plan.

The City's Capital Improvement Program (CIP) (available on the City's website) is a flexible plan based upon long-range planning and financial projections, which schedules the major public improvements that may be incurred by the City over the next five years. Flexibility of the CIP is established through annual review and assures that the program will become a continuing part of the budgetary process and that it will be consistent with changing demands as well as changing patterns in cost and financial resources. Funds are appropriated only for the first year of the program, which is then included in the annual budget.

The CIP serves as a tool for implementing certain aspects of the City's Comprehensive Plan; therefore, the program describes the overall objectives of City development, the relationship between projects with respect to timing and need, and the City's fiscal capabilities.

The CIP can help assure:

- A systematic approach to planning and initiating capital projects affording the opportunity to plan the location, timing and financing of needed public improvements.
- The development of a realistic program of capital spending within the City's projected fiscal capability to finance such projects, avoiding sharp change in the tax levy or bonded indebtedness.

- The coordination of public and private improvement projects permitting adequate time for design and engineering to eliminate duplication of effort and expense.
- The expenditure of public funds that are compatible with the City's adopted Comprehensive Plan.
- That the public is kept informed of the proposed future projects and expenditures
- That private investors are aware of the City's long-range development program so that they may guide their development in a way that is compatible with the City's program.
- Aid in achieving federal, state and/or county participation by providing the necessary planning and lead time for successful application for grants.

The CIP is one of several financial tools that may be used to implement specific initiatives. However, financial tools of today may become outdated and should be reviewed on a regular bases. City staff and decision makers will need to retain a current working knowledge of all the tools that can be used.

### PROGRAM DESCRIPTIONS

In order to effectively plan for and manage the projects contained in the CIP, it is necessary to group similar activities in "Program Categories." The City of Anoka's activities are divided into four program categories: Utilities, Transportation, Parks, Cemetery and Aquatics, and General Public Buildings.

### **Utilities Program**

Program Description: The Utilities Program includes the Municipal water, sanitary sewer, storm sewer and electric systems.

Program Goal: Provide reliable, efficient and safe utility service to all parts of the city with a minimum of adverse effects on the environment.

- **Municipal Water System**

The water system provides clean water in sufficient quantities at sufficient pressure reliably and safely to all parts of the City to satisfy the normal demands of the general public, while also storing sufficient reserve in case of fire emergency or power outages.

- **Municipal Sanitary Sewer System**

The sanitary sewer system promotes a healthful environment by collecting all sewage from existing and projected development in a sanitary and economic manner.

- **Storm Sewer System**

The storm sewer system manages and controls surface and ground water in order to protect the man-made and natural environment in a safe and efficient manner. This includes preventing flooding or damage to property from erosion.

- **Electric System**

The electric system provides safe and reliable access to electrical power for current and future customers of the electric utility through proper infrastructure and facilities.

### **Transportation Program**

Program Description: This includes streets, sidewalks, traffic signs and signals, vehicular parking facilities and street lighting.

Program Goal: Provide for the safe and efficient movement of people and goods throughout the city.

- **Streets**

The goal of the street program is to provide safe, convenient, economic public streets to best facilitate the movement of vehicular traffic.

- **Sidewalks**

Sidewalks provide a safe and convenient system of pedestrian access with recreational, personal, and social benefits.

- **Signs/Signals**

Street signs and signals provide an efficient and orderly system of street and traffic wayfinding to facilitate safe, convenient travel throughout the City.

- **Parking Facilities**

Parking facilities should provide adequate public parking spaces for employers, employees, customers, and visitors.

- **Street Lights**

Street lights promote safe and convenient vehicular and pedestrian travel on City streets, as well as safety for pedestrians and users of active transportation.

### **Parks, Cemetery, Aquatics and Golf**

Program Description: This includes community parks, neighborhood parks, open spaces, recreational structures, and facilities and cemetery infrastructure.

Program Goal: Provide facilities for safe, stimulating and comprehensive leisure time activities for Anoka citizens and provide final resting places for residents of Anoka.

- **Neighborhood Facilities**

Neighborhood services provide convenient walking access to park sites with optimum recreational serviceability consistent with the preservation and enhancement of pleasing aesthetic qualities.

- Community Facilities

Community facilities are sites that serve the entire City and community-wide needs.

- Cemetery Infrastructure

Cemetery plots, access, and maintenance should be sufficient to meet the demands of the residents of Anoka.

- Golf Course

The City's 18-hole golf course should be maintained and upgraded for the enjoyment of residents, businesses and customers that participate in the sport of golf.

## GENERAL PUBLIC BUILDINGS

**Program Description:** This includes civic buildings and facilities for public services such as police, fire, maintenance, and administrative functions.

**Program Goal:** Provide facilities for the effective and efficient operation of City government and community services.

- Administrative Offices

Administrative offices provide for the efficient and safe conduct of legislative and administrative functions of the City.

- Maintenance Facilities

Maintenance facilities should accommodate the efficient and safe maintenance of City vehicles, buildings, and equipment.

- Senior and Aquatic Center

These community facilities should meet the social, recreational and cultural needs of youth and senior citizens.

## SUMMARY OF IMPACT ON MAJOR FUNDING SOURCES

### ***Building Capital Improvement Fund***

The capital improvement fund is the primary source for building improvements for City owned buildings. There is also land held for resale in this fund that is in the Commuter Rail Transit Village which was purchased in 2004 with Building improvement funds. The property is listed for sale. The proposed source of revenue for this fund is an annual transfer from Electric. Another source could be an annual transfer from the Sewer fund.

Completing identified projects will pay dividends with lower maintenance costs for deteriorated buildings, less operating costs with fewer buildings, freeing up tax exempt property for resale and expanding shared services with other cities.

At the end of 2016, this fund has a negative fund balance because of internal lending for projects. The negative fund balance will be eliminated with the sale of the property in the CRTV and transfers from Electric, eliminating the loan.

### ***Cemetery Fund***

The cemetery fund is the primary source for cemetery improvements and maintenance. The sources of revenue for this fund include cemetery fees and perpetual care fees.

At the end of 2016, this fund has approximately \$460,000 in available fund balance. It is projected that the fund will use fund balance for capital improvements but revenues will continue to cover annual maintenance for the cemetery's.

**Electric Fund**

The electric fund has unrestricted net assets of \$14 million at the end of 2016. About \$5 million of this is outstanding loans to other funds for redevelopment and land acquisitions. Another \$3 million is current outstanding receivables. The electric fund will transfer \$600,000 in 2017 to the Street Renewal fund for the additional street renewal project and \$425,000 to the Capital Improvement fund for improving property. Electric also transfers \$400,000 to the general fund to support general fund operations. In 2017 and 2018 Electric will lend \$2.6 million to TIF districts for redevelopment and improvements in those districts.

It is anticipated that approximately \$1.7 million will be spent on electric infrastructure improvements in 2017. Another \$2.5 million is expected to be spent in 2018. Net income after transfers in 2016 was \$700,000. Net income after transfers for 2017 is projected to be \$1.1 million. It is projected that the Electric fund will continue to use cash for lending purposes through 2020, at which time the cash balance will be about \$5 million.

Strategic rate adjustments will help pay for necessary infrastructure improvements along with covering operating costs and transfers.

Electric will continue to lend funds internally to pay for infrastructure or other improvements. These internal loans are beneficial for the entire city as they allow financing without the high cost of debt issuance. Internal financing also benefits the electric fund because the earnings on an internal loan are at a higher rate of return than is currently achievable thru investments. The loans are typically 10 to 20 years in length.

**General Fund Reserves/Current Revenues**

General fund reserves continue to be at a healthy balance of 43% of current operating expenditures. This is slightly above the recommended level of reserves in the general fund of between 25 - 40%.

The council budgeted to use (\$189,550) of its' fund balance in 2017. General fund capital items will need to be included in the overall budget process and levy decisions.

Included in this document are several items for early consideration. If all of the capital items proposed are approved, the city may need to increase the levy 6.3% or \$420,000 for capital spending. This is in addition to the approximately \$100,000 additional levy needed for increased operating costs and using approximately \$50,000 of reserves for a transfer to garage for equipment.

**Golf Fund**

Golf is currently an enterprise fund for the City of Anoka. Only golf operating revenues and expenses are recorded in the enterprise funds. All clubhouse activity has been transferred to the general fund under the Event Center department.

In 2017, there is a proposed development along the golf course which will encompass part of the existing golf course property. The course will receive its share of the sale of the property which will provide a source for some course improvements and equipment purchases.

It is very difficult to project future revenue stability for the course because it is subject to weather conditions. Looking historically, the golf course operations show net losses for the last four years.



If historic trends continue, the golf enterprise fund will need support from another source to cover operations and capital.

### **Park Capital Improvements Fund**

The park capital improvement fund sources are derived from a multitude of sources. Historically the primary source of funding is from transfers from other funds including liquor store and general fund. Recently the water fund is also making transfers to the park capital improvement fund. Grants and other outside sources will be helpful in providing funding sources for desired park projects.

Over the last 5 years the city has invested over \$2.8 million in a variety of park improvement projects. That is equivalent to \$560,000 a year on park improvements. In 2017, improvements include the Enloe courts and playground improvements and improvements to the park trail way system. As a result of transfers from the general fund, the park capital fund will have over \$500,000 available fund balance by the end of 2017. There is a county grant for \$340,000 that is receivable in 2021 for funding of the Mississippi park trail. Planned park capital improvement projects for the near future will be smaller for a few years as a result of funding source limitations.

### **Sanitary Sewer Fund**

In 2014, the city increased the sanitary sewer rates to pay for current and future infrastructure and operating needs. Staff is recommending that the sanitary sewer rates be adjusted every year into the future to meet the rising costs of disposal and operations and also the future infrastructure costs.

In 2021, staff is anticipating a need to expand the sewer capacity in the northwest quadrant of the city. The lift station is projected to cost about \$5,000,000. It will be necessary to issue revenue bonds to help pay for the additional capacity.

As a result of all the street improvement projects

and the purchase of the vactor truck in 2016, the sewer fund is projected to need short term funding until rates can be raised enough to cover the capital and operating expenses.

### **Storm Sewer Fund**

Maintenance and infrastructure costs of the city's storm water systems continue to increase into the future. The city issued storm water utility bonds in 2016 to assist with cash flow for the many storm water projects in 2016 and 2017. An internal loan from Electric will be necessary to complete the storm water projects in 2018. Staff is recommending increases in the storm water utility fee for the next four years to provide funds to cover infrastructure, debt and operating costs. In addition to the annual storm water improvements in the streets, several parks needed to have drainage issues addressed.

### **Street Renewal Fund**

The city's Street Renewal fund has been put to very good use over the past several years. Investments in street projects total over \$18.8 million in the last 5 years, excluding utilities. This has been accomplished with transfers into the fund of \$7.5 million in the last 5 years. The city continues to invest in its' street renewal program with an anticipated additional \$14.3 million invested over the next 5 years in street renewal projects excluding the water, sewer and storm water infrastructure investments. This can only be accomplished with additional transfers into the fund or with a bond issue. Necessary transfers or a bond issue will need to total \$5 million.

The City Council is committed to improving street conditions throughout the city at an aggressive pace. Street Surface Improvement Projects (SSIP) extend the life of the existing street while improving the look and drivability of the road. SSIP projects will add an additional \$3,500,000 in expenses over the next five years.

The street renewal fund continues to generate revenues from a franchise fee and property

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assessments. The last increase in the property assessment rate occurred in 2017. Staff is recommending increasing and continuing the franchise fee which sunsets in December 2019. Staff is also recommending that City Council consider assessing for a portion of the SSIP projects to offset the costs associated with extending the life of the road.

### **Tax Increment Fund**

The city currently has four tax increment districts established for redevelopment. The HRA has three tax increment districts established for redevelopment.

The Enterprise Park TIF district continues to support the extinguishment of the existing debt in the Historic Rum River District (HRRD) with funds available from internal lending. This support is expected to last until 2033 with support diminishing as the years go by.

The HRRD will exist until 2032 at which time there should be enough funding for the final debt service payment in 2033 of \$564,435. This fund may need a general tax levy in 2026 through 2032 to help support the debt service payment requirements. The reason for a levy requirement in the future is a lack of development. Planned or proposed development did not occur in a timely manner nor in the planned value.

The Commuter Rail Transit Village (CRTV) will utilize TIF revenues to pay for the internal financing from the Electric fund for the Anoka Station ramp, and other redevelopment projects. Further development in the CRTV will require internal lending to accomplish goals of purchasing blighted properties, provide for cleanup of properties or improve infrastructure. This district could exist until 2038.

The South Ferry District will utilize TIF revenues to redevelop and pay back internal loans used to

purchase and clean up properties in this district. The goals of the City Council and its' constituents is to beautify the gateway to the city. This district could exist until 2034.

The Greens of Anoka District will utilize TIF revenues to implement the Greens of Anoka plan. There are existing future revenues available for a commitment of redevelopment in this area. This district could exist until 2039.

The oldest HRA TIF district funds can be utilized city wide on scattered site redevelopment or to assist in a particular redevelopment project area. This TIF district will be decertified on December 31, 2017, however the Central Business TIF district will continue to payback a loan for fire suppression improvements, thereby extending the district existence. The newest HRA district will support redevelopment one block off of Main Street. This district could exist until 2042.

### **Water Fund**

The water fund has some major capital improvement projects within the next few years to improve water distribution and storage. Water utility rates were increased in 2016 to help offset rising operating and infrastructure needs. The next rate increase is projected to be in 2019. This will be needed to pay debt service on bonds to be issued to pay for necessary Well rehabilitations. The projected cost is about \$5.5 million.

The 2001 revenue bond was paid off in 2017. The final payment of this bond improves cash flow temporarily. Along with the well projects, infrastructure improvements are using available funds at a very rapid pace. Water rates overall, continue to be very competitive with other municipal utilities.

## OFFICIAL CONTROLS

Anoka's City Code, which contains its Zoning regulations, is the official regulatory tool to implement the Comprehensive Plan. The Comprehensive Plan provides the "nexus" to the specific laws in the City's ordinances and allows implementation of ideas that help the City reach the goals that are outlined throughout the plan. The City's existing zoning map is provided in Figure 11-2. According to Minnesota Statutes 473.865, Subd. 3, communities have nine months from the adoption of their comprehensive plan by the City Council to bring their local controls into alignment with the comprehensive plan. Anoka is already revising several of its residential zoning districts and will publish the new map once approved by City Council. Minor changes to the zoning code and zoning map districts will be required following adoption of the comprehensive plan. Specific areas of focus are addressed below:

- Rental housing management

Official controls and City policy will be instrumental in directing Anoka's housing stock toward a healthy, sustainable, equitable balance of owner-occupied and rental housing.

- Access management

Functionality of major road corridors can be greatly enhanced by the ability to regulate access onto roadways. Development of an access management ordinance strengthens the City's ability to implement and enforce access management strategies.

- Zoning map amendments

A limited number of areas with the community will be affected by the changes in land use guidance. These areas will need to be rezoned accordingly through the rezoning process

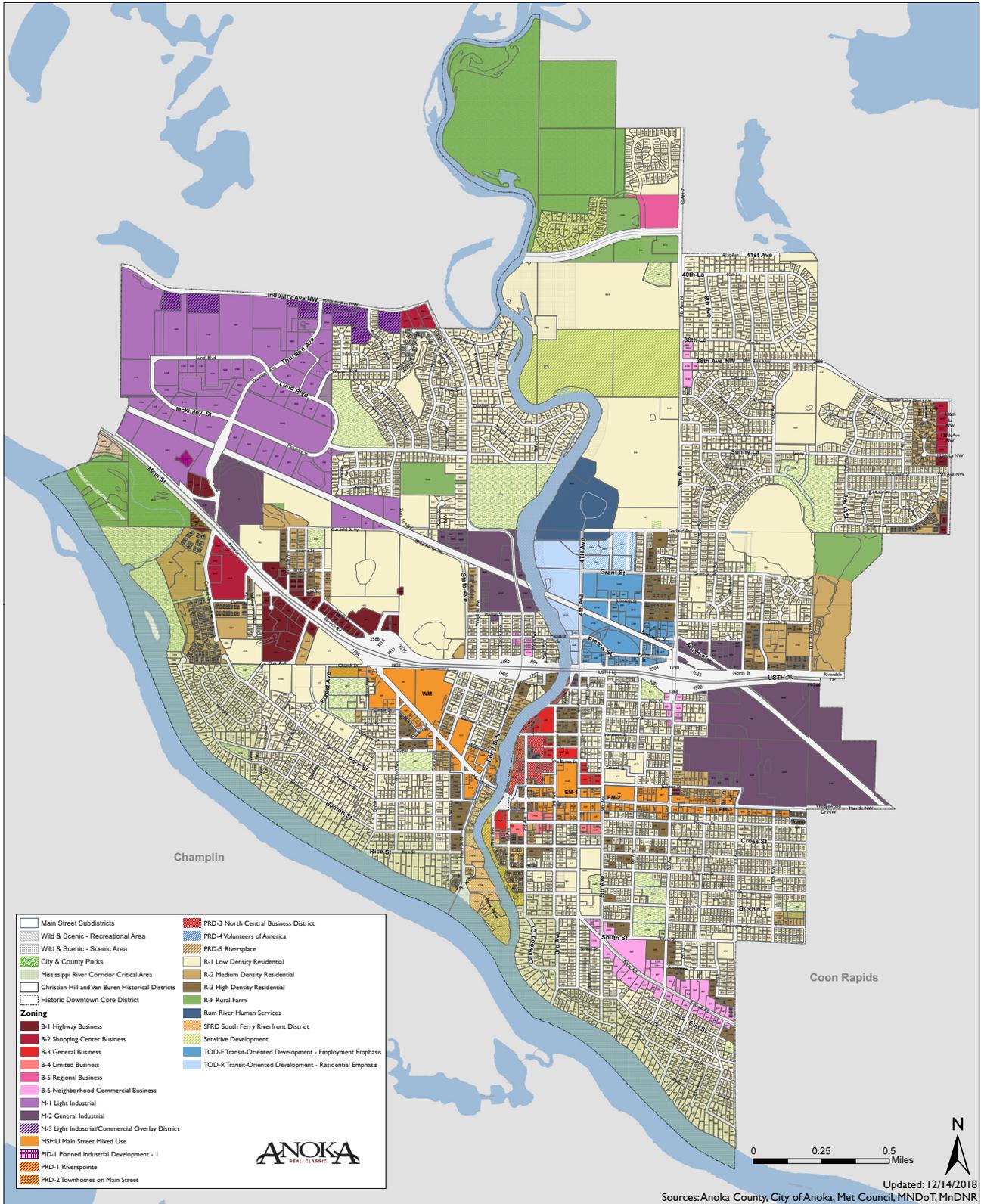
which requires a public hearing. Additionally, simultaneous with the production of this plan, residential zoning categories are being revised to better facilitate Anoka's Future Land Use plans.

- MRCCA ordinance

Amend existing Mississippi River Corridor Critical Area ordinance / overlay district for consistency with the goals and policies of the MRCCA plan and with Minnesota rules, part 6106.0070, Subp. 5 – Contents of Ordinances.

The entire comprehensive plan will be evaluated to ensure the official controls are aligned with one another. If changes to the official controls are needed, the City will proceed with the appropriate process required by state law.

# City of Anoka Zoning Map (Official)



Map 13-1: Zoning in the City of Anoka

## SPECIAL TOPICS

### ***Transportation (Right-of-Way Preservation)***

The transportation plan has identified a series of roadway improvements that are needed to meet local and regional needs over the next 20 years. Implementing these improvements could be one of the most challenging efforts as each one will have an infrastructure cost associated to them. The recommended improvements at this time do not have a funding source associated with them. However, it is important to continue to plan for these improvements as infrastructure and land costs continue to rise. This in turn enhances the importance of right-of-way preservation.

The City's strategy for preserving right-of-way (ROW) for long term transportation projects is to work collaboratively with property owners to ensure that development projects take into consideration both short and long term transportation needs. This may require the City taking a more proactive planning role, engaging regional agencies (Anoka County and MnDOT) and affected land owners in more detailed master planning and system planning efforts. The City will continue to work with the County, Minnesota Department of Transportation and the Metropolitan Council to determine the appropriate planning and funding mechanisms for constructing roadway improvements.

### ***Housing***

The housing chapter has identified a series of action steps that need to take place in order to meet local and regional housing needs. From those action steps, the City will need to continue to explore ways to stabilize Anoka's housing stock and balance owner-occupied housing with rental. The City will work to reduce the barriers to home-ownership, simultaneously working to address issues with rental housing such as non-compliant land-lords and the quality of rental units. As of the consideration of this plan, the City is already amending the City

Code to enact a rental license density cap and a ban on new multi-family rental development.

### ***Economic Development***

The City's economic development strategy includes a continued partnership with the business community through participation in local and regional organizations coupled with innovation in the retail experience. The significance that community development has on a city's ability to foster a strong economic development climate suggests that economic development cannot be solely focused on business recruitment and retention. Instead, a strong economic development program must include an integrated planning environment that focuses on improving Anoka's overall quality of life, attracting a diverse and ample labor force and providing the services and amenities that businesses, employers and employees look for when deciding to locate in a community. Anoka has tremendous assets to promote a strong economic climate including a diversity of housing types, quality park and recreation system, connections to regional transportation systems, the Mississippi and Rum Rivers and natural resource areas nearby, proximity to an International Airport and proximity to the Twin Cities.

### ***Public facilities***

The age and continued redevelopment of the City of Anoka brings unavoidable challenges to government services through changing requirements for building permits, community development resources, streets, utilities, stormwater, police and fire protection, park and recreation programming and general administrative responsibilities. Such demands require the City to renew the facilities and equipment that keep these services efficient and effective. These include administration (City Hall), park and recreation facilities, police, fire, and public works. Facility and equipment improvements are projected in the Capital Improvement Plan.

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## POLICIES, STRATEGIES, & ACTION STEPS

This implementation plan presents a number of policies, strategies, and action steps that together have the potential to positively shape growth and change in the City. Since resources are usually limited, it is unrealistic to assume that the City can undertake all of them simultaneously. Therefore, it will be necessary to focus on those that have the greatest potential to accomplish stated goals or those that respond to issues or problems that have been identified within the comprehensive plan.

In order to measure the progress of each action step an implementation matrix has been developed and can be seen in Table 13-2. This tool will allow the City to track each action with associated priority level. The Implementation Matrix - especially the Action Steps - serves as the “to-do list” for the City. As the City and its advisory boards develop annual goals in goal setting workshops, they should consult the to-do list as a starting point. As a number of action steps are completed, the plan should be updated to refresh the action steps and, using the community indicators, establish new action steps.

The action steps highlighted in the following table are developed based on the goals and policies identified in the plan and the broader community strategies identified within the Implementation Chapter.

**Table 13-2 Implementation Matrix**

Topic	Initiative	Policy, Strategy, or Action Step?	Timeframe (Ongoing, Short-term, Mid-term, or Long-term)
<b>Land Use</b>	Goal LU-1: Consider physical development within a community-wide framework which recognizes the unique aspects of the City’s setting and ensures top quality design of new construction and development.		
	Promote the application of urban design considerations which define and enhance the City’s unique character.	Policy	Ongoing
	Support programs and activities that foster community spirit and identity.	Policy	Ongoing
	Improve the image and appearance of existing commercial and industrial areas, with particular emphasis on the appearance of buildings, signage, and landscaping.	Strategy	Ongoing
	Ensure that commercial, industrial, and residential sites and buildings are adequately maintained, and that corrective maintenance is undertaken as required.	Policy	Ongoing
	Goal LU-2: Encourage a land use balance within the City to promote the efficient provision of City services, the generation of revenues to cover the cost of those services, and a mix of employment and housing opportunities.		
	Ensure that public properties are maintained in a timely manner.	Policy	Ongoing
	Improve and upgrade older public utility and infrastructure facilities through a program of scheduled improvements.	Strategy	Ongoing
	Continue to expand and continue to diversify the economic base.	Strategy	Ongoing
	Encourage the provision of life cycle housing.	Policy	Ongoing
	Goal LU-3: Assure that the City’s land development regulations provide for efficiency, compatibility, compliance, variety, flexibility, and innovations.		
	Grant zoning changes only when it can be demonstrated that rezoning will result in a community or neighborhood benefit that outweighs any potential adverse impact upon surrounding properties.	Policy	Ongoing
	Incorporate performance standards, where appropriate, into land development regulations and criteria.	Policy	Ongoing

<b>Land Use</b>	Periodically review City ordinances and development regulations and amend, if necessary.	Policy	Ongoing
	Goal LU-4: Protect and maintain the stability and diversity of the City's neighborhoods.		
	Involve affected neighborhoods and property owners in proposed land use, development, and capital construction projects.	Policy	Ongoing
	Recognize and support the unique physical character and development patterns of neighborhoods.	Policy	Ongoing
	Ensure zoning changes in neighborhoods are compatible with the scale and physical character of the neighborhood.	Strategy	Ongoing
	Encourage discussion between developers, the neighborhood, and the City, where appropriate, as part of the process of determining land use changes in neighborhoods.	Policy	Ongoing
	When reviewing master plans and rezoning requests, consider the impact on nearby neighborhoods, including neighborhood integrity, change in traffic volumes and patterns, changes in surface drainage, the effect of lighting and noise levels, and other changes that produce a clearly undesirable effect.	Policy	Ongoing
	Goal LU-5: Promote, reinforce and maintain the Central Business District as the heart of the City and as a center for business, government, culture, arts, and special community events.		
	Preserve, maintain, and enhance the historic character of the Central Business District as an important and irreplaceable community asset.	Policy	Ongoing
	Invite pedestrian activity, exhibit visual and physical quality in design to attract visitors and residents, and support economic vitality.	Policy	Ongoing
	Promote easy access to the Central Business District from all parts of the City.	Strategy	Ongoing
	Strengthen the circulation and parking system in the Central Business District to provide safe and convenient vehicular travel that complements and enhances pedestrian movement.	Strategy	Ongoing
	Encourage rehabilitation of buildings that are in disrepair.	Strategy	Ongoing
	Further link and utilize the riverfront in and near the Central Business District.	Strategy	Ongoing

<b>Land Use</b>	Continue landscaping, beautification, and maintenance efforts in the public areas of the Central Business District.	Strategy	Ongoing
	Goal LU-6: Develop the Commuter Rail Transit Village		
	Consider economic development, housing needs, and other land use needs in the city when developing the plans and determining future land use of these areas.	Policy	Ongoing
	Provide a compatible mix of land uses that support and complement transit oriented development near the station area.	Policy	Ongoing
	Concentrate a mix of complementary, well integrated land uses within walking distance of the transit station.	Policy	Ongoing
	Provide uses of a density and configuration that will capitalize on the presence of commuter rail service.	Policy	Ongoing
	Encourage a mix of commercial/office/light industrial uses that will create new jobs, generate tax revenue, attract new residents, and provide new amenities.	Policy	Ongoing
	Encourage development of higher-density housing options.	Policy	Ongoing
	Encourage and provide access to the riverfront.	Policy	Ongoing
	Incorporate standards for security (CPTED).	Policy	Ongoing
	Use urban design to enhance the community identity of the station area and make the area attractive, safe and convenient.	Policy	Ongoing
	Develop a marketing strategy to enhance the use of the Northstar light rail that will bring value to City property.	Strategy	Mid-term
	Goal LU-7: Evaluate future use of City-owned lands.		
	Periodically update the City Council on City owned land that is under-utilized and could be used for future economic development where appropriate.	Policy	Ongoing
	Consider the citywide benefit of selling/developing City owned land.	Policy	Ongoing
	Goal LU-8: Set responsible protections around Anoka's renewable solar energy resources in order to enable Anoka residents and employees to maximize solar energy.		
	Incorporate solar energy technology into existing and new residential, industrial, and commercial development;	Strategy	Long-term
	Increase energy resilience of critical public facilities such as police, fire, and emergency and hazard response centers;	Policy	Ongoing

<b>Land Use</b>	Incorporate specific conditions into the conditional use permits to address impacts of solar and wind generation facilities within the City.	Strategy	Ongoing
	Amend Zoning Ordinance to exempt solar energy systems from applicable coverage and setback provisions;	Action Step	Short-term
	Review City Code and future development plans for opportunities to implement requirements and incentives encouraging the use of solar technology;	Action Step	Short-term
	Engage in regulatory and financing best practices and solar energy programs such as the Department of Energy’s SolSmart program and PACE financing.	Policy	Ongoing
<b>Housing &amp; Community</b>	(Additional discussion of strategies, resources, and tools can be found in Chapter 4. “Housing”)		
	Goal H-1: Enhance the quality and value of the existing single family and multifamily housing units in the City of Anoka.		
	Continue to provide home renovation programs.	Strategy	
	a. Encourage participation in the CHORE program, paint-up/fix-up programs such as the Metro Paint-A-Thon Program and the Community Fix-up Fund.	Strategy	Ongoing
	b. Continue to hold clean-up/pick-up days for appliances and furniture and the annual home improvement show.	Strategy	Ongoing
	c. Continue to offer HRA home renovation loans and rebates.	Strategy	Ongoing
	d. Continue to provide access to Construction Management Advice and education residents on the benefit of this service for renovation projects.	Strategy	Ongoing
	Support the removal of blighted housing in residential areas to increase home and neighborhood value.	Strategy	Ongoing
	a. Continue the Scattered Site Replacement Program.	Implementation	Ongoing
	b. Promote volunteer programs and partnerships to facilitate exterior renovations to prevent deferred maintenance of homes.	Strategy	Ongoing
	c. Continue to enforce the zoning ordinance that limits the number of vehicles that may be parked on a residential property.	Strategy	Ongoing

<b>Housing &amp; Community</b>	Encourage homeowners and developers to incorporate energy efficiency and sustainability in home renovation and new construction.	Strategy	Ongoing
	a. Educate residents on energy rebates available through utility companies.	Strategy	Ongoing
	b. Provide access to resources for improvements to homes that use green building techniques.	Strategy	Long-term
	c. Evaluate the potential for providing specific rebate or loan programs for home renovations utilizing green building methods.	Strategy	Short-term
	d. Explore regulations to stabilize and enhance the value of single-family neighborhoods.	Strategy	Mid-term
	Goal H-2: Sustain quality living conditions for all residents through the enforcement of ownership and rental housing maintenance codes and housing programs.		
	Encourage the continued and timely enforcement of all maintenance codes.	Strategy	Ongoing
	a. Provide education to residents regarding maintenance expectations.	Strategy	Ongoing
	b. Continue the City “PACE” program for proactive identification of code violations.	Strategy	Ongoing
	Encourage code compliance of homes prior to resale.	Strategy	Ongoing
	a. Explore the costs and benefits of establishing a truth-in-housing or point-of-sale program in the City.	Strategy	Mid-term
	Continue to monitor and inspect rental properties.	Strategy	Ongoing
	a. Increase communication with landlords on current codes and good rental practices.	Strategy	Ongoing
	Promote rehabilitation of rental properties.	Strategy	Ongoing
	a. Create a rental rehabilitation program with a focus on older rental properties through the City.	Action Step	Mid-term
	Monitor properties in foreclosure.	Strategy	Ongoing
	a. Create a foreclosure plan with a focus on housing maintenance and a process to encourage resale of homes.	Action Step	Mid-term
	Goal H-3: Encourage and promote the expansion, redevelopment and renovation of older, smaller homes.		
	Promote design ideas associated with smaller home renovation.	Strategy	Ongoing

<b>Housing &amp; Community</b>	a. Explore options to provide architectural assistance and ideas to residents and builders.	Strategy	Mid-term
	b. Provide design and renovation information to assist in historic home renovation.	Strategy	Ongoing
	Promote use of city, county and state renovation loan programs such as the fix-up funds for home renovation.	Strategy	Ongoing
	Evaluate lot combinations where small, non-conforming homes exist for replacement with move-up and higher value housing.	Strategy	Ongoing
	Goal H-4: Promote home ownership of all housing types and values.		
	Provide workforce housing options in the City that are targeted to first-time home-buyers and young families.	Strategy	Ongoing
	a. Promote the value of quality affordable homes near established city services and schools.	Strategy	Ongoing
	b. Promote community benefits including parks, trails, recreational opportunities, small community downtown and good schools.	Strategy	Ongoing
	Create a plan to link new jobs to existing and new housing in the City.	Action Step	Mid-term
	Identify opportunities to develop higher valued housing for move-up housing that allows people to live and work in the City.	Strategy	Short-term
	a. Encourage development of owner-occupied condos and housing co-ops.	Strategy	Ongoing
	Promote increases of density allowances for housing projects that provide community benefits.	Strategy	Ongoing
	Goal H-5: Promote opportunities for older residents to remain living in the City.		
	Explore methods for older adults to age in place and/or transition to alternate housing.	Strategy	Ongoing
	a. Support the transition of seniors leaving existing homes and selling to new young buyers.	Strategy	Ongoing
	b. Identify resources and services available for home maintenance and renovation that assist older adults in maintaining their homes so that they can age in place.	Action Step	Short-term
	c. Explore opportunities to develop cooperative homes for older adults with shared centralized services.	Action Step	Short-term

<b>Housing &amp; Community</b>	Goal H-6: Identify opportunities to incorporate affordable housing in development and redevelopment that achieves the Metropolitan Council Livable Communities goals.		
	Continue to designate and guide land uses that encourage a more affordable price for new housing units in the City.	Strategy	Ongoing
	Endorse new homeownership opportunities for those with incomes at or below 80 percent of the area median incomes such as Habitat for Humanity and land trust housing.	Strategy	Ongoing
<b>Economic Development</b>	Goal ED-1: Maintain and enhance a positive community identity in the marketplace via branding and advertising.		
	Continue to utilize Anoka's brand/logo and tagline.	Policy	Ongoing
	Continue to advertise this identity via various relevant media, including social media platforms.	Policy	Ongoing
	Update city website regularly to meet and exceed standards for accessibility, usability, and attractiveness.	Strategy	Ongoing
	Goal ED-2: Promote a strong business climate within the City.		
	Maintain strong cooperative relationships among the City, Anoka Chamber, Anoka Business & Landowners, Anoka-Ramsey Technical College, and private businesses.	Policy	Ongoing
	Promote a healthy balance among various economic sectors including industry, retail, services and government.	Policy	Ongoing
	Promote small business development through provision of business assistance.	Policy	Ongoing
	Promote the retention and expansion of existing businesses.	Policy	Ongoing
	Promote the unique business niche that Anoka offers within the region and the State.	Policy	Ongoing
	Promote Anoka as a tourist destination.	Policy	Ongoing
	Promote safety efforts, creating a positive perception of downtown.	Policy	Ongoing
	Promote the unique "shoppertainment" experience.	Policy	Ongoing
	Goal ED-3: Expand the retail sector by attracting specific and targeted retail businesses.		
Attract specific desired retailers including a grocery store and fine dining restaurant.	Policy	Ongoing	

<b>Economic Development</b>	Attract retailers that fill gaps in the local mix.	Policy	Ongoing
	Attract businesses that offer certain quality of life experiences.	Policy	Ongoing
	Maximize occupancy of retail space.	Policy	Ongoing
	Increase the number of retail businesses and retail employment.	Policy	Ongoing
	Goal ED-4: Create and implement a strategic business plan to guide investments in future developments.		
	Develop a list of priority projects.	Action Step	Short-term
	Create a list of uses of funds for these projects.	Action Step	Short-term
	Create a list of sources of funds for these projects.	Action Step	Short-term
	Match sources and uses of funds over a 10 to 20 year period.	Action Step	Short-term
	Establish a decision-making process to implement the plan.	Action Step	Short-term
	Create a Financial Management Plan including the roles of the Ongoing Fund, Enterprise Fund, Tax increment districts, tax abatement, grants and other sources.	Action Step	Mid-term
	Use existing Tax Increment Districts	Policy	Ongoing
	Use the Tax Abatement financing according to policy where appropriate	Policy	Ongoing
	Issue HRA Commercial Rehabilitation Loans	Policy	Ongoing
	Issue HRA Commercial Rehabilitation Grants (Fire Suppression)	Policy	Ongoing
	Issue HRA Housing Rehabilitation Loans	Policy	Ongoing
	Establish a Capital Asset Reinvestment Plan	Action Step	Mid-term
	Seek grants for other agencies	Policy	Ongoing
	Goal ED-5: Provide infrastructure and streetscape improvements necessary to carry out economic development activities and support private investments.		
	Provide necessary public improvement according to Capital Improvement Program.	Policy	Ongoing
	Provide a multi-modal transportation system. (See Transportation Section)	Policy	Ongoing
	Promote development of communication and utility networks.	Policy	Ongoing
	Promote provision of life-cycle housing. (See Housing Section)	Policy	Ongoing
	Provide public and recreational facilities that support economic development.	Policy	Ongoing
Promote investments at important gateways	Policy	Ongoing	

<b>Economic Development</b>	Recognize the importance of major destinations in Anoka	Policy	Ongoing
	Capitalize upon investment/development opportunities at important intersections.	Policy	Ongoing
	Guide and promote development along the commercial corridors.	Policy	Ongoing
	Guide and promote developments along cultural corridors.	Policy	Ongoing
	Invest in sites and neighborhoods ready for growth based upon market conditions	Policy	Ongoing
	Promote development and investment in the neighborhoods.	Policy	Ongoing
	Goal ED-6: Diversify and expand the tax base through balanced land use and business diversification.		
	Promote development of vacant land with uses that achieve city goals and complement existing uses.	Policy	Ongoing
	Redevelop vacant or blighted properties for uses that meet city goals and complement existing uses.	Policy	Ongoing
	Rehabilitate deteriorated properties to enhance value and use.	Policy	Ongoing
	Use redevelopment to create land use balance within the city.	Policy	Ongoing
	Attract and establish a riverboat and entertainment component to the Rum and Mississippi Rivers.	Strategy	Mid-term
	Goal ED-7: Expand employment opportunities within the City.		
	Promote a diversified and balanced economic base which supports a variety of jobs.	Policy	Ongoing
	Retain existing companies and support their growth and expansion.	Policy	Ongoing
	Foster a mix of jobs that result in ladder wages among jobs within the City.	Policy	Ongoing
	Promote or encourage programs that match people and jobs.	Policy	Ongoing
	Promote programs that provide labor training to enhance upward mobility.	Policy	Ongoing
	Goal ED-8: Foster and support development of community leaders through engaging citizens in community decision-making.		
	Create ways for citizens to participate in public decision-making.	Policy	Ongoing

<b>Economic Development</b>	Recruit citizens to serve on advisory boards.	Policy	Ongoing
	Hold appreciation and recognition events for advisory board members.	Policy	Ongoing
	Recognize value of leadership from non-resident stakeholders.	Policy	Ongoing
	Promote citizen-initiated projects.	Policy	Ongoing
<b>Heritage Preservation</b>	Goal HP-1: Preserve the distinctive historic character and identity of Anoka as a small town.		
	Consider heritage preservation goals as part of land use planning, rezoning, and redevelopment.	Policy	Ongoing
	Monitor zoning of areas to protect historically significant structures.	Strategy	Ongoing
	Work in partnership with the Anoka County Historical Society.	Policy	Ongoing
	Goal HP-2: Preserve the identity of the historic neighborhoods in the City.		
	Promote historically sensitive rehabilitation and infill redevelopment of compatible architectural styles in residential neighborhoods.	Strategy	Ongoing
	Goal HP-3: Recognize the unique character of the downtown area and preserve the historic “Main Street” image of the Central Business District and residential neighborhoods.		
	Promote historically sensitive rehabilitation and infill redevelopment of compatible architectural styles in the Central Business District and residential neighborhoods.	Strategy	Ongoing
	Goal HP-4: Preserve and protect the historic aspects of the community.		
	Encourage expansion of the Commercial Rehab Revolving Loan Fund.	Strategy	Ongoing
	Encourage the use of the Revolving Loan Fund for housing rehabilitation.	Strategy	Ongoing
	Promote architectural guidelines for funded projects which emphasize historically significant rehabilitation.	Strategy	Ongoing
	Goal HP-5: Encourage and promote preservation of local history relating to businesses, civic, social and religious organizations and resident individuals and families.		
	Identify and honor Anokans who have made significant contributions to the community.	Strategy	Short-term / Ongoing
	Goal HP-6: Research and interpret local history to residents, visitors, and tourists.		
Continue the development of the Rum River Heritage Trail on the east bank of the Rum River.	Strategy	Long-term	
Research and create heritage walks in the Central Business District and other appropriate locations.	Action Step	Long-term	

<b>Heritage Preservation</b>	Continue to promote the location and maintenance of historical markers or plaques on appropriate historic resources, along trails, and in City parks to interpret local history.	Strategy	Ongoing
	Encourage tours or events which interpret local history.	Strategy	Ongoing
	Goal HP-7: Maintain and update official controls and administration of heritage preservation in the City.		
	Review and strengthen the Historic Preservation ordinance.	Action Step	Short-term
	Review proposed Heritage Preservation districts and sites.	Action Step	Short-term
	Review and update design guidelines for existing and proposed Heritage Preservation districts and sites.	Action Step	Short-term
	Update the inventory of historical aspects of the community.	Action Step	Short-term
<b>Parks, Recreation, &amp; Open Space</b>	Goal PRO-1: Invest in Anoka's existing park properties to improve functionality, increase recreational opportunities with upgraded and/or highly maintained amenities, and anticipate and embrace innovative and trending recreational activities		
	Stay current in regional and national recreation trends.	Strategy	Ongoing
	Foster partnerships with neighboring communities to increase service capability.	Strategy	Ongoing
	Coordinate with school district to share implementation costs for updated facilities/amenities used for physical education curriculum and afterschool athletics.	Strategy	Ongoing
	Project 1.1: Revitalization of George Green Park	Action Step	Ongoing
	Project 1.2: Refurbishment of Rudy Johnson Park	Action Step	Short-term
	Project 1.3: Renewal of John Ward Park	Action Step	Long-term
	Project 1.4: Creation of Disc Golf Course within City park system	Action Step	Long-term
	Project 1.5: Construct restroom facility at Anoka Nature Preserve trailhead	Action Step	Short-term
	Goal PRO-2: Improve connectivity, accessibility, and interaction with the Rum River and Mississippi River natural environment while preserving and improving the natural character/beauty		
	Preserve the natural landscape features to ensure environmental protection while simultaneously providing access for public use and enjoyment.	Policy	Ongoing
	Provide a diversified open space system that preserves and enhances significant environmental resources and features to preserve habitat and protect water resources.	Strategy	Ongoing

<b>Parks, Recreation, &amp; Open Space Environmental Resources</b>	Create river access points, interpretive areas and overlooks.	Strategy	Ongoing
	Project 2.1: Continue to implement Anoka Nature Preserve management plan	Action Step	Ongoing
	Project 2.2: Complete construction of Riverfront Park	Action Step	Long-term
	Project 2.3: Develop Anoka Station Park	Action Step	Short-term
	Project 2.4: West Rum River Trail & River Walk	Action Step	Long-term
	Goal PRO-3: Provide a system of accessible multi-use trails and corridors that offer pedestrians access to significant environmental features, public facilities, neighborhoods and business districts.		
	Link neighborhoods to community facilities like parks, special use areas, the riverfront, downtown and other unique or special destinations.	Strategy	Ongoing
	Promote links to the Regional Trail System and neighboring communities.	Strategy	Ongoing
	Provide adequate funding to maintain existing and build new trails.	Strategy	Ongoing
	Implement the Safe Routes to Parks within neighborhoods	Action Step	Ongoing
	Project 3.1: Construction of the 4th Avenue Rail Crossing for Rum River Trail	Action Step	Short-term
	Project 3.2: Regional Trail connection to 7th Avenue through the Anoka Nature Preserve	Action Step	Short-term
	Project 3.3: Construct 11th Avenue Trail Connection	Action Step	Short-term
	Project 3.4: Construct trail on west side of 7th Avenue from Garfield Street to Castle Field Boulevard	Action Step	Short-term
	Project 3.5: Construct trail on west side of 7th Avenue from Bunker Lake Boulevard to norther City limits	Action Step	Short-term
	Goal PRO-4: Continue collaboration with Anoka Hennepin Schools regarding shared recreational programming and playfield usage.		
	Continue with and expand the implementation of community service projects within the parks and trails.	Strategy	Ongoing
	Promote the Adopt-a-Park program.	Strategy	Ongoing
	Goal ER-1: Conserve Anoka's natural environment, ecology, and heritage through planning, regulation, and cooperation.		
	Review and update the Environmental Protection section of the City Code for consistency with Statute requirements and other agency environmental protection policies.	Action Step	Short-term

<b>Parks, Recreation, &amp; Open Space</b>	Protect natural watercourses to minimize public investment in storm sewers and improve the quality of stormwater runoff.	Strategy	Ongoing
	Identify and protect wetlands of one acre or more in size.	Strategy	Ongoing
	Periodically review the flood plain regulations to assure protection from flooding.	Strategy	Ongoing
	Development shall not be allowed in areas identified as having severe soil limitations unless corrective measures are taken.	Policy	Ongoing
	Private sewer systems shall not be allowed in areas identified as having severe soil limitations.	Policy	Ongoing
	Conserve concentrated woodland areas as well as all established trees through clearance limits and replacement mandates.	Policy	Ongoing
	Recognize and avoid, where possible, significant natural features in the placement of infrastructure, in areas of development or redevelopment.	Policy	Ongoing
	Continue to support efforts for community education and awareness of air quality issues.	Strategy	Ongoing
	Consider the effect of soil disturbance and grading on air quality and soil erosion in review of development plans.	Policy	Ongoing
	Enhance community awareness about the importance of the urban forest and the positive impact trees and shrubs have on the environment.	Strategy	Ongoing
	Promote public and private tree planting, replacement, and preservation programs to sustain the urban forest.	Strategy	Ongoing
	Make conservation and efficient utilization of all energy sources a high priority in the City's operation and development of facilities.	Policy	Ongoing
<b>MRCCA</b>	Goal MRC-1: Tell the story and celebrate the history of the Mississippi River and its importance to the City of Anoka.		
	Goal MRC-2: Protect the Mississippi River Corridor from negative environmental and visual impacts of human development.		
	Goal MRC-3: Optimize the economic benefits of riverfront development without compromising the intentions of the Critical Area Corridor.		
	Goal MRC-4: Establish community connections to and from the corridor for Anoka's neighborhoods and downtown.		

<b>MRCCA</b>	Goal MRC-5: Satisfy the intentions of the Critical Area Act and other regional river corridor planning and regulatory initiatives.		
	Develop policies that Ongoingly recognize the importance of the MRCCA and further its goals.	Strategy	Ongoing
	Amend MRCCA ordinance/overlay district for consistency with MRCCA rules	Action Step	Short-term
	Amend zoning map to reflect new districts	Action Step	Short-term
	Update application forms, site plan submittal requirements, and review procedures for consistency with MRCCA rules	Policy	Ongoing
	Develop MRCCA design guidelines	Strategy	Mid-term
	Establish MRCCA vegetation and land alteration permit processes	Action Step	Mid-term
	Develop visual analysis approach for CUPs/PUDs/ variances	Action Step	Mid-term
	Develop mitigation scoring system for evaluating proposed development	Action Step	Mid-term
	Develop a system for reviewing, tracking, and monitoring open space set-aside and/or dedicated as part of the subdivision/PUD process	Action Step	Mid-term
	Identify areas/topics warranting implementation flexibility.	Action Step	Short-term
	Develop outreach and communication strategy to alert MRCCA property owners of new districts and zoning requirements	Action Step	Short-term
	Develop web materials (mapping applications, FAQs, handouts, and other materials) to help property owners identify when their property is in the MRCCA and what regulations apply	Action Step	Short-term
	Ensure that information on the MRCCA districts and zoning requirements is readily available to property owners to help them understand the requirements that might typically apply for project planning and permitting (e.g. height, setbacks).	Action Step	Short-term
	Identify specific capital improvements (trails, overlooks, public access, and other recreational facilities) within the MRCCA	Action Step	Short-term
Identify specific land acquisitions within the MRCCA, if any.	Action Step	Ongoing	

<b>MRCCA</b>	Conduct feasibility studies/research as needed to address issues in the MRCCA	Strategy	Ongoing
	Coordinate with regional, state, and national park planning efforts within the MRCCA	Policy	Ongoing
	Conduct master planning or other planning efforts	Strategy	Ongoing
	Identify key corridor projects and initiatives.	Action Step	Short-term
	Guide land use and development and redevelopment activities consistent with the management purpose of each district.	Policy	Ongoing
	Recognize the Mississippi River as a “working river” that is important to the economy of the Twin Cities metropolitan area and the Midwest.	Policy	Ongoing
	Minimize potential conflict of water surface uses authorized under Minn. Statute, Chapter 86B (MR 6110.3000 – 6110.3800)	Policy	Ongoing
	Seek to balance commercial and recreational surface water uses. Acknowledge the importance of these uses and provide for their protection.	Policy	Ongoing
	Minimize potential conflict of water-oriented uses with other land uses.	Policy	Ongoing
	Incorporate consideration of surface water impacts into the review process for water-oriented uses.	Policy	Ongoing
	Consider soil classification information when determining appropriate land uses and building designs.	Policy	Ongoing
	Maintain existing public access points to the river to allow pedestrians to view the river, and provide natural screening where appropriate to avoid conflicts with adjacent property owners and prevent encroachment.	Policy	Ongoing
	Ensure that development of structures, roads, screening, landscaping, construction placement, maintenance, and stormwater runoff are compatible with the character and uses in the Corridor.	Policy	Ongoing
	Require site plan review of development projects in the corridor, except for development of a single-family house or duplex if permitted.	Policy	Ongoing
	Require site plans to adequately assess and reasonably minimize adverse effects and maximize beneficial effects of proposed development.	Policy	Ongoing
	Maintain a predominantly residential land use pattern in the critical area corridor in Anoka, with limited areas of commercial development.	Policy	Ongoing

<b>MRCCA</b>	Encourage the use of Planned Unit Developments (PUDs) for larger developments to preserve natural features and allow for scenic vistas, trails and walkways.	Policy	Ongoing
	Require a topographic “certificate of survey” to accompany all requests for building permits for principal structures.	Strategy	Ongoing
	Minimize impervious surface coverage and site alteration within the Critical Area Corridor, especially on riparian lots, through unique and sensitive site design.	Policy	Ongoing
	Promote reuse and rehabilitation of existing structures, allow for reconstruction of existing uses that are involuntarily destroyed in residential zoning districts, and place reasonable limits on the expansion of nonconformities that have the potential to adversely affect surrounding properties, the City as a whole, and the character of the particular MRCCA district.	Policy	Ongoing
	Prohibit the reconstruction of non-conforming uses as regulated by Minnesota Statute 462.	Policy	Ongoing
	Require reasonable portions of appropriate riverfront access land or other lands in interest to be dedicated as required by Minnesota Rules. part 6106.0010.	Policy	Ongoing
	Minimize any adverse effects associated with water transportation facilities.	Policy	Ongoing
	Consider appropriate uses of adjacent lands between the river and the road or utility during planning and design for reconstruction of roadways or utility corridors.	Policy	Ongoing
	Update existing or adopt new MRCCA ordinance compliant with the goals and policies of the MRCCA plan and with Minnesota Rules, part 6106.0070, Subp. 5 - Content of Ordinances	Action Step	Short-term
	Amend ordinance to provide for water-oriented/river-dependent uses.	Action Step	Mid-term
	Incorporate consideration of surface water impacts into the review process for water-oriented uses.	Action Step	Mid-term
	Consider establishing surface water regulations to limit wake generated erosion.	Strategy	Mid-term
	Protect PCAs (be specific) and minimize impact to PCAs from public and private development and land use activities (landscape maintenance, river use, walking/hiking, etc.).	Policy	Ongoing
Support mitigation of impacts to PCAs through variances, CUPs, and other permits.	Policy	Ongoing	

<b>MRCCA</b>	Prioritize restoration of removed vegetation of Native Plant Communities and natural vegetation in riparian areas.	Policy	Ongoing
	Prioritize PCA types for protection through evaluation criteria when development sites contain multiple types of PCAs and the total area of PCAs exceed the required set aside percentages.	Policy	Ongoing
	Support alternative design standards that protect the City’s identified PCAs, such as conservation design, transfer of development density, or other zoning and site design techniques that achieve better protections or restoration of primary conservation areas.	Policy	Ongoing
	Prioritize use of permanent protection measures (such as public acquisition, conservation easement, deed restrictions, etc.) that protect each City’s identified resource base and address the type of development and local administrative capacity to ensure long-term protection.	Policy	Ongoing
	Protect natural watercourses through easements or land dedications during the development plan review process and subdivision regulations.	Policy	Ongoing
	Meet minimum standards established by the Minnesota Pollution Control Agency regarding stormwater discharged into the Rum or Mississippi Rivers.	Policy	Ongoing
	Minimize direct overland runoff and improve quality of runoff onto adjoining streets and watercourses.	Policy	Ongoing
	Encourage the use of on-site infiltration techniques (such as rainwater gardens or drainage swales) for stormwater drainage and retention.	Policy	Ongoing
	Avoid riverbank areas of natural watercourses except when making improvements to stabilize shorelines or riverbanks.	Policy	Ongoing
	Use techniques that are supported by area hydrologists or the Anoka County Conservation Department (i.e. incorporating natural vegetation or other Best Management Practices) and are consistent with Minnesota Rules 6106.0010 for riverbank improvements or shoreline stabilization projects where appropriate.	Policy	Ongoing
Protect bluffs and slopes as regulated by Minnesota Rules 6106.0100.	Policy	Ongoing	

<b>MRCCA</b>	Adopt regulatory controls to minimize the amount of time soil is left bare during construction and land alterations, and to assure necessary precautions to trap sediment.	Action Step	Mid-term
	Enforce City-adopted flood plain regulations.	Policy	Ongoing
	Adopt subdivision and site plan regulations that require identification of existing trees, trees to be removed and proposed new plantings.	Action Step	Mid-term
	Preserve shoreland areas that are not suitable for urban development because of susceptibility to flooding, high ground water levels, or steep slopes.	Policy	Ongoing
	Ensure that information on the location of PCAs is readily available to property owners to understand how PCA-relevant ordinance requirements, such as vegetation management and land alteration permits, apply to their property for project planning and permitting.	Action Step	Short-term
	Specify procedures for processing applications with potential impacts to PCAs – what information must be submitted and how it will be evaluated.	Action Step	Short-term
	Specify procedures for evaluating variances and CUPs for impacts to PCAs as well as procedures/methods for determining appropriate mitigation.	Action Step	Short-term
	Specify how the City will communicate vegetation management and land alteration ordinance provisions to property owners (Web, print, maps, other)	Action Step	Short-term
	Develop administrative procedures for integrating DNR and local permitting of riprap, walls and other hard armoring.	Action Step	Mid-term
	Protect and minimize impacts to PRCVs from public and private development activities.	Policy	Ongoing
	Protect and minimize impacts to PRCVs from vegetation management activities (landscape maintenance, river use, walking/hiking, etc.)	Policy	Ongoing
	Protect PRCVs located within the community and identified by other communities (adjacent or across the river.	Policy	Ongoing
	Consider and minimize obstruction of views of and from the river when permitting new development or redevelopment within the corridor.	Policy	Ongoing

<b>MRCCA</b>	Enhance and maintain views to the river from public streets that dead-end at the river.	Strategy	Long-term
	Balance the rights of private property owners with the interests of the Ongoing public when considering the building of any structures that may inhibit views to the river from adjacent property or public right-of-way	Policy	Ongoing
	Ensure that information on the location of PRCVs is readily available to property owners to understand how PRCV-relevant ordinance requirements apply to their property for project planning and permitting.	Action Step	Short-term
	Specify procedures for processing applications with potential impacts to PRCVs – what information must be submitted and how it will be evaluated.	Action Step	Short-term
	Specify procedures for evaluating variances and CUPs for impacts to PRCVs as well as procedures/ methods for determining appropriate mitigation.	Action Step	Short-term
	Specify how the City will communicate vegetation management and land alteration ordinance provisions to property owners (web, print, maps, other).	Action Step	Short-term
	Develop a visual analysis approach for evaluating CUPs for additional height in the RTC and UM districts and for PUDs and variances.	Action Step	Short-term
	Actively communicate with other communities to protect views other communities have identified in their plans that are valuable, and vice versa.	Policy	Ongoing
	Protect native and natural vegetation during the development process but require its restoration if any is removed by development.	Policy	Ongoing
	Seek opportunities to restore vegetation to protect and enhance PRCVs.	Action Step	Long-term
	Seek opportunities to restore vegetation in restoration priority areas through the CUP, variance, and subdivision processes.	Action Step	Long-term
	Evaluate proposed development sites for erosion prevention and bank and slope stabilization issues and require restoration as part of the development process.	Policy	Ongoing
	Develop and implement an education and outreach strategy to get the word out to property owners about restoration priorities identified in this plan and what it means to them if a restoration priority area exists on their property.	Action Step	Mid-term

<b>MRCCA</b>	Establish a vegetation permitting process that includes permit review procedures to ensure consideration of restoration priorities identified in this plan in permit issuance, as well as standard conditions requiring vegetation restoration for those priority areas.	Action Step	Short-term
	Establish site plan review procedures to ensure consideration of restoration priorities identified in the MRCCA plan in all development requests.	Action Step	Mid-term
	Establish process for evaluating restoration priorities identified in this plan in CUP and variances processes.	Action Step	Mid-term
	In the MRCCA subdivision ordinance, address the provisions regarding assessment criteria for development approval	Action Step	Short-term
	Encourage creation, connection, and maintenance of open space, recreational facilities, including public access to the river.	Policy	Ongoing
	Identify and encourage connection of CA-SR district land to existing and planned parks and trails.	Policy	Ongoing
	Consider land dedication requirements be used to acquire land suitable for public river access.	Action Step	Long-term
	Minimize impacts to PCAs and PRCVs from public transportation facilities and public utilities.	Policy	Ongoing
	Discourage the use of individual septic treatment systems (ISTS) where public sewer service is available and ensure existing systems are in compliance with local and state laws.	Policy	Ongoing
	Provide continuous trails within or near the Critical Area Corridor for pedestrian and bicycle use.	Policy	Ongoing
	Link trails within the Critical Area to the citywide trail system.	Strategy	Ongoing
	Develop the design of new trails within the corridor with input from the adjacent neighborhood as well as the greater community.	Policy	Ongoing
	Design trails with bituminous surface (or other appropriate hard surface) and separate bicycle and pedestrian traffic where possible.	Policy	Ongoing
	Do not locate trails in private yards between the house and the river in existing residential areas, unless all affected property owners solicit it.	Policy	Ongoing
	Minimize river crossings and concentrate at existing crossings where possible.	Policy	Ongoing

<b>MRCCA</b>	Do not use the corridor as a convenient right-of-way.	Policy	Ongoing
	Limit overhead electric transmission or other public utility lines to existing crossings, and use submarine cables where possible.	Policy	Ongoing
	Design and construct new or modified transportation and utility facilities in a manner that compliments the planned land and water uses in the corridor. Reconstruct roads or utilities in a manner that they do not stimulate development that is incompatible with district guidance from Minnesota Rules 6106.0100.	Policy	Ongoing
<b>Transportation</b>	Goal T-1: Develop and maintain a transportation network that promotes the safety of its users by:		
	• Maintaining infrastructure	Strategy	Ongoing
	• Reviewing geometric improvements annually	Strategy	Ongoing
	• Working with the Minnesota Department of Transportation (MnDOT) to evaluate and set appropriate speeds	Strategy	Ongoing
	Goal T-2: Strive to ensure that the transportation network promotes the efficient movement of people and goods by:		
	• Establishing a 2040 proposed functional classification system	Action Step	Long-term
	• Encouraging consistency between roadway jurisdiction, designation and functional classification	Policy	Ongoing
	• Supporting efficient multi-modal movement including buses, commuter rail, bicycles, and pedestrians	Policy	Ongoing
	• Managing access on arterial and collector roadways to preserve mobility and minimize through-traffic on neighboring routes	Policy	Ongoing
	Goal T-3: Ensure that decisions regarding transportation system planning and system development are fully integrated with land use by:		
	• Reflecting the City's land use policies in the transportation system	Policy	Ongoing
	• Coordinating with adjacent communities	Policy	Ongoing
	• Identifying and preserving potential corridors for flexible use	Strategy	Ongoing
	Goal T-4: Promote a variety of transportation modes choices in the development of the City's transportation network by:		
• Providing options for transit dependent persons	Strategy	Long-term	

<b>Transportation</b>	<ul style="list-style-type: none"> <li>Encourage provision of and opportunities for transportation services for handicapped and senior residents</li> </ul>	Strategy	Ongoing
	<ul style="list-style-type: none"> <li>Encouraging the use of trails</li> </ul>	Strategy	Ongoing
	<ul style="list-style-type: none"> <li>Promoting development of infrastructure for non-motorized transportation</li> </ul>	Strategy	Long-term
	<ul style="list-style-type: none"> <li>Preserving corridors for possible multi-modal transportation</li> </ul>	Strategy	Long-term
	<ul style="list-style-type: none"> <li>Encouraging the expansion of public transportation</li> </ul>	Strategy	Ongoing
	<ul style="list-style-type: none"> <li>Promoting and incorporating transit-friendly infrastructure in system planning</li> </ul>	Strategy	Long-term
	<ul style="list-style-type: none"> <li>Coordinating with local and regional transit agencies</li> </ul>	Policy	Ongoing
	Goal T-5: The City of Anoka’s transportation system will be maintained and developed in a manner that is sensitive to the City’s cultural, historic and natural resources and neighborhoods by:		
	<ul style="list-style-type: none"> <li>Minimizing impacts on environmental and natural resources during improvements and maintenance of the system</li> </ul>	Policy	Ongoing
	<ul style="list-style-type: none"> <li>Using traffic-calming techniques when and where they are appropriate while preserving safety</li> </ul>	Policy	Ongoing
	<ul style="list-style-type: none"> <li>Considering traffic impacts on community livability and cultural, historic, and natural resources</li> </ul>	Policy	Ongoing
	Goal T-6: Include public participation in the planning, construction and maintenance of the transportation system by:		
	<ul style="list-style-type: none"> <li>Engaging the community in planning and decision-making</li> </ul>	Strategy	Ongoing
	<ul style="list-style-type: none"> <li>Providing the public with reasonable and understandable information</li> </ul>	Strategy	Ongoing
	<ul style="list-style-type: none"> <li>Providing opportunities for transportation education</li> </ul>	Strategy	Ongoing
	Goal T-7: Build cooperation and coordination between jurisdictions:		
	<ul style="list-style-type: none"> <li>Coordinating transportation plans</li> </ul>	Policy	Ongoing
	<ul style="list-style-type: none"> <li>Interacting with state, county and local agencies</li> </ul>	Policy	Ongoing
	<ul style="list-style-type: none"> <li>Continuing participation in area transportation projects</li> </ul>	Policy	Ongoing
	Goal T-8: Establish a transportation system that provides for effective and efficient use of potential improvement funds by:		

<b>Transportation</b>	<ul style="list-style-type: none"> <li>Preserving, maintaining and managing the existing roadways system</li> </ul>	Policy	Ongoing
	<ul style="list-style-type: none"> <li>Constructing new links and developing staged improvements</li> </ul>	Policy	Ongoing
	<ul style="list-style-type: none"> <li>Encouraging joint-agency and public-private partnerships</li> </ul>	Policy	Ongoing
	<ul style="list-style-type: none"> <li>Minimizing maintenance of existing and construction of new routes in redevelopment areas</li> </ul>	Policy	Ongoing
	<ul style="list-style-type: none"> <li>Identify local transportation needs and ways to provide for these needs.</li> </ul>	Policy	Ongoing
<b>Water Resources</b>	Goal WR-1: Manage new development and re-development activities to prevent / reduce flooding and achieve non-degradation of surface waters.		
	For new development projects with land disturbances greater than or equal to one acre, Anoka will amend its stormwater ordinance such that there is no net increase from pre-project conditions.	Policy	Ongoing
	For redevelopment projects with land disturbances greater than or equal to one acre, Anoka will amend its stormwater ordinance such that there is a net decrease from pre-project conditions.	Policy	Ongoing
	Per LRRWMO requirements, a volume equal to one inch of runoff from all impervious surfaces shall be infiltrated on-site. In cases of redevelopment, this volume control requirement applies only if greater than 50% of the project area is disturbed.	Policy	Ongoing
	For new development and redevelopment projects that disturb more than 10,000 square feet but less than one acre, Anoka will amend its stormwater ordinance to limit increases in stormwater runoff.	Policy	Ongoing
	Promote ground water recharge in areas without site limitations.	Policy	Ongoing
	Consistent with Minnesota Rules 7050.0180, no person may cause or allow a new or expanded discharge to the Rum River unless there is not a prudent and feasible alternative because of its classification as an Outstanding Resource Value Water.	Policy	Ongoing
	Facilitate LRRWMO review of all projects requiring a LRRWMO permit.	Policy	Ongoing
	Goal WR-2: Maintain existing runoff volume and rate characteristics unless mitigation measures are utilized to ensure no downstream impacts.		

<b>Water Resources</b>			
	Goal WR-3: Upgrade storm sewer to provide capacity for 10 year return frequency.		
	Implement volume reduction strategies for new impervious surfaces such that the new surfaces cause no increase on an average annual basis of runoff volume.	Policy	Ongoing
	Replace storm sewer that does not provide capacity for the 10 year return frequency storm event as streets are re-constructed.	Policy	Ongoing
	Consider retrofits on existing systems prior to discharging to a surface water in areas where no treatment currently exists.	Policy	Ongoing
	Goal WR-4: Provide flood protection for the 100-year return frequency event.		
	The lowest floor elevation for all structures, including basements, must be at least 3 feet above the highest anticipated ground water table, 2 feet above the designated or designed 100-year flood elevation, or 1 foot above the emergency overflow, whichever is higher as per LRRWMO requirements.	Policy	Ongoing
	Flood levels in landlocked basis shall be determined as per LRRWMO standards.	Policy	Ongoing
	Promote the preservation and retention capacities of wetlands, streams, rivers, other conveyances and floodplain areas.	Strategy	Ongoing
	Provide a positive overflow for stormwater ponds and wetlands to the maximum extent practicable.	Strategy	Ongoing
	Trunk storm drainage systems that serve as the outlet for areas where flooding of structures or where significant flood damage is likely to occur will typically be designed to meet freeboard protection standards for the critical duration 1 percent chance flood. The design shall be based on a hydrograph method for appropriate rainfall and snowmelt events. The design shall be based on proposed ultimate land use. The design shall consider potential flood, wetland, and water quality impacts to upstream and downstream areas.	Policy	Ongoing
	Goal WR-5: Manage activities within the city such that there is no net increase in sediment and nutrient loading.		
	Treatment of stormwater to NURP standards shall be required prior to discharging stormwater to a lake, stream, or wetland and prior to discharge from the site.	Policy	Ongoing

<b>Water Resources</b>	Facilities shall be designed to provide annual removal efficiencies of 60% of total phosphorous and 90% of total suspended solids.	Policy	Ongoing
	Require skimmer structures to prevent floatable materials and debris from entering surface waters.	Policy	Ongoing
	Continue to implement a city wide street sweeping program to capture the sediment prior to entering conveyance systems.	Policy	Ongoing
	Implement an Erosion and Sediment Control inspections program to ensure that sites are controlling erosion and sediment to the Maximum Extent Practicable.	Strategy	Ongoing
	Cooperate with the LRRWMO in water quality monitoring, modeling and planning to protect water resources.	Policy	Ongoing

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# APPENDICES

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# APPENDIX A:

Anoka 2018-2022 Capital Improvements  
Plan

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# City of Anoka

## Capital Improvement Plan 2018-2022



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# CITY OF ANOKA, MINNESOTA

## CAPITAL IMPROVEMENT PLAN

2018 - 2022

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## **INTRODUCTION AND PURPOSE**

The Capital Improvement Plan (CIP) is a flexible plan based upon long-range planning and financial projections, which schedules the major public improvements that may be incurred by the City over the next five years. Flexibility of the CIP is established through annual review and revision, if necessary. The annual review assures that the program will become a continuing part of the budgetary process and that it will be consistent with changing demands as well as changing patterns in cost and financial resources. Funds are appropriated only for the first year of the program, which is then included in the annual budget.

The CIP serves as a tool for implementing certain aspects of the City's comprehensive plan, therefore, the program describes the overall objectives of City development, the relationship between projects with respect to timing and need, and the City's fiscal capabilities.

The CIP can help assure:

A systematic approach to planning and initiating capital projects affording the opportunity to plan the location, timing and financing of needed public improvements;

The development of a realistic program of capital spending within the City's projected fiscal capability to finance such projects, avoiding sharp change in the tax levy;

The coordination of public and private improvement projects permitting adequate time for design and engineering to eliminate duplication of effort and expense;

The expenditure of public funds that are compatible with the City's adopted Comprehensive Plan;

That the public is kept informed of the proposed future projects and expenditures;

That private investors are aware of the City's long-range development program so that they may guide their development in a way that is compatible with the City's program;

Aid in achieving federal, state and/or county participation by providing the necessary planning and lead time for successful application for grants.

## **PROGRAM DESCRIPTIONS**

In order to effectively plan for and manage the projects contained in a CIP, it is necessary to group similar activities in "Program Categories". The City of Anoka's activities are divided into five program categories which are; 1) Utilities, 2) Transportation, 3) Parks, Cemetery and Aquatics, 4) General Public Buildings, 5) Community Development. The City also includes an outline of proposed expenditures for unscheduled projects. Program categories are explained in the following sections.

### **UTILITIES PROGRAM**

Program Description: The Utilities Program includes the municipal water, sanitary sewer, storm sewer and electric systems.

Program goal: Provide reliable, efficient and safe utility service to all parts of the city with a minimum of adverse effects on the environment.

#### **Municipal Water System**

- A. The goal of the water system is to provide water in sufficient quantities at sufficient pressure, with a high degree of reliability and safety to all parts of the City so as to satisfy the normal demands of the general public for water while at the same time providing sufficient reserves in case of fire emergency or power outages.
- B. Water quality shall meet the purity standards of the Minnesota Department of Health.

- C. Any hydrant on the system shall, under maximum condition, deliver no less than 500 gallons per minute with a residential pressure of 20 pounds per square inch.
- D. The system shall be looped to provide maximum reliability.
- E. The supply and storage system shall be designed and maintained to have maximum reliability.

### Municipal Sanitary Sewer System

- A. The goal of the sanitary sewer system is to promote a healthful environment by collecting all sewage from existing and projected development in a sanitary and economic manner.
- B. Provide sewer lines of adequate size and grade to collect and transmit all discharge sewage.
- C. Prevent sewage from overflowing into the natural environment.
- D. Prevent sewage back-ups.
- E. Encourage and promote connection of all generators of sewage to the municipal system.
- F. Meet the effluent and infiltration standards of the Metropolitan Waste Control Commission.

### Storm Sewer System

- A. Manage and control surface and ground water in order to protect the man-made and natural environment in a safe and efficient manner.
- B. Prevent flooding.
- C. Prevent damage to property due to erosion.
- D. Meet water quality standards established by the controlling regulatory law or authority.

### Electric System

- A. Provide safe and reliable access to electrical power for current and future customers of the electric utility through proper infrastructure and facilities.
- B. Purchase electric power through its membership in the Minnesota Municipal Power Association.
- C. Manage electric power distribution to prevent brown outs and electric shortages.

## **TRANSPORTATION PROGRAM**

Program Description: This includes streets, sidewalks, traffic signs and signals, vehicular parking facilities and street lighting.

Program goal: Provide for the safe and efficient movement of people and goods throughout the city.

### **Streets**

- A. The goal of the street program is to provide safe, convenient, economic public streets to best facilitate the movement of vehicular traffic.
- B. Streets should be constructed with permanent surfaces, concrete curb and gutter, and with ancillary storm drainage, to standards established by the City.
- C. Streets should be of a size and load capacity consistent with their functional classifications.
- D. Timely major repair to preserve the basic capital investment in streets.

### **Sidewalks**

- A. To provide a safe and convenient pedestrian system with incidental recreational benefits.

### **Signs/Signals**

- A. To provide an efficient and orderly system of street and traffic signing so as to promote safe, convenient travel throughout the City.
- B. Signs and signals should be installed in conformity with the Minnesota Manual on Uniform Traffic Control Devices.
- C. Periodic surveys and studies should be made to document the effectiveness of City signing patterns.

### **Parking Facilities**

- A. To provide such supporting facilities as will promote maximum use of public parking spaces by employers, employees, customers and visitors.

- B. Provide and maintain parking facilities for present and anticipated needs of the City of Anoka.

### Street Lights

- A. Provide a system of street lighting within the City that will promote safe and convenient vehicular and pedestrian travel on City streets.
- B. Provide lighting at each street intersection within the city.
- C. Provide mid-block street lighting in conformance with the City's street lighting policy, in order to provide equitable cost efficient lighting.
- D. To continually update the system so as to provide energy and cost efficient lighting.

## **PARKS, CEMETERY, AQUATICS AND GOLF**

Program Description: This includes community parks, neighborhood parks, open spaces, recreational structures and facilities and cemetery infrastructure.

Program goal: Provide facilities for the safe, stimulating and comprehensive leisure time activities for Anoka citizens and provide final resting places for residents of Anoka.

### Neighborhood Facilities

- A. To provide convenient walking access to park sites and to develop such sites to provide optimum recreational serviceability consistent with the preservation and enhancement of pleasing aesthetic qualities.
- B. Acquire property or use rights on those neighborhoods that need convenient walking access to park facilities.
- C. Develop neighborhood park facilities to meet the needs of various user groups.
- D. Preserve and maintain existing structures and facilities in order to retain current service and safety levels.
- E. Preserve and enhance the aesthetic qualities of neighborhood parks.

### Community facilities

- A. Provide park sites which serve the entire City and to provide facilities that serve community-wide needs.
- B. Acquire or maintain sites that have valuable and unique natural characteristics to preserve irreplaceable community resources.
- C. Preserve properties that have valuable historic-cultural qualities.
- D. Preserve and maintain existing structures and facilities in order to retain current service and safety levels.
- E. Construct or acquire structures and facilities necessary to meet the changing needs of the community.

### Cemetery Infrastructure

- A. Provide cemetery plots sufficient to meet the demands of the residents of Anoka.
- B. Ensure safe access to the cemetery year round.
- C. Preserve and maintain current cemetery infrastructure and beauty.

### Golf Course

- A. Provide 18-hole golf course for the enjoyment of residents, businesses and customers that participate in the sport of golf.
- B. Maintain and upgrade current facilities to provide a high quality golfing and community event and banquet facility.
- C. Maintain and improve current 18-hole golf course to provide customers with a quality golfing experience.

## **GENERAL PUBLIC BUILDINGS**

Program Description: This includes buildings for governmental operations including administrative, public safety, public works, utilities and community programs.

Program goal: Provide facilities for efficient and effective operations of the city goals and objectives for Anoka residents, businesses and property owners.

### Administrative Offices

- A. Provide facilities for the efficient and safe conduct of legislative and administrative functions of the City.
- B. Maintain current facilities in a state of good repair so as to maximize cost effectiveness and avoid costly repair.
- C. Upgrade facilities as necessary to provide for the efficient, safe and effective provision of City services.

### Maintenance Facilities

- A. Provide facilities for the efficient and safe conduct of City maintenance functions.
- B. Maintain current facilities in a state of good repair so as to maximize cost effectiveness and avoid costly repair.
- C. Upgrade facilities as necessary to provide for the efficient, safe and effective provision of City services.
- D. Provide public services with adequate storage space for equipment to ensure longevity and maximum use of equipment.

### Public Safety Facilities

- A. Provide facilities for the efficient and safe conduct of City public safety functions.
- B. Maintain current facilities in a state of good repair so as to maximize cost effectiveness and avoid costly repair.
- C. Upgrade facilities as necessary to provide for the efficient, safe and effective provision of City services.
- D. Provide police and fire station for storage of police and fire equipment and for training and meetings of police and fire fighters to ensure prompt and efficient protection of life and property.

### Senior and Aquatic Center

- A. Provide community facilities which meet the social, recreational and cultural needs of youth and senior citizens.
- B. Maintain current facilities in a state of good repair so as to maximize cost effectiveness and avoid costly repair.

- C. Upgrade facilities as necessary to provide for the efficient, safe and effective provision of City services.

## **COMMUNITY DEVELOPMENT**

Program Description: This includes development and redevelopment throughout the city.

Program goal: Develop and redevelop properties to provide employment opportunities, improve housing, improve transportation and eliminate blight.

### **Commuter Rail Transit Village**

- A. Provide parking facilities for travelers on the North Star train.
- B. Add tax exempt properties to tax roles.
- C. Redevelop and eliminate blighted properties.

### **Enterprise Park**

- A. Funding source for repayment of outstanding debt from development and redevelopment throughout the city.

### **Greens of Anoka**

- A. Convert city owned land to private development.
- B. Redevelop and eliminate blighted properties.
- C. Provide alternative road for pass thru traffic off from highway 10.

### Historic Rum River

- A. Redevelop downtown to provide higher density housing.
- B. Provide public parking to service the downtown businesses.
- C. Provide additional employment opportunities downtown.

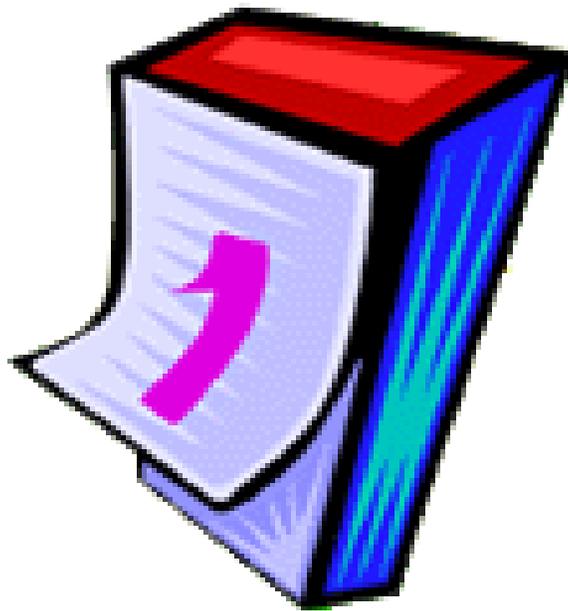
### South Ferry

- A. Upgrade public infrastructure.
- B. Enhance gateway to the city through redevelopment.
- C. Redefine land use for this high traffic area.
- D. Facilitate building rehabilitation.

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# FIVE YEAR SUMMARY

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City of Anoka, Minnesota  
*Capital Improvement Plan*  
**2018 thru 2022**

**PROJECTS BY YEAR**

<b>Project Name</b>	<b>Department</b>	<b>Project #</b>	<b>Priority</b>	<b>Project Cost</b>
<b>2018</b>				
Boat Slide Replacement	Aquatic Center	AC16-03	n/a	70,000
Lobby Remodel	Aquatic Center	AC17-01	n/a	25,000
Signage	Cemetery	CEM17-02	3	30,000
Commuter Rail Transit Village	Community Development	CD-10-01	3	500,000
Rebuild Distribution Lines	Electric Utility	EU14-03	n/a	500,000
Construct circuits from Garfield Substation	Electric Utility	EU15-03	n/a	550,000
Champlin Mississippi Crossing	Electric Utility	EU15-04	n/a	1,000,000
CRTV Development	Engineering	EN-09-02	3	150,000
2018 Street Renewal	Engineering	EN-15-09	3	1,688,000
Green Haven Parkway Phase II	Engineering	EN-16-05	2	1,000,000
Fairoak Avenue Signal Removal Project	Engineering	EN-16-07	2	360,000
TH-47 Anoka Solution	Engineering	EN-18-01	3	120,000
Entrance Monument - E Main St	Engineering	EN18-02	4	5,000
North Street Reconstruction	Engineering	EN18-03	2	1,476,000
Greenhaven - Repaint Clubhouse Exterior	Greenhaven Golf Course	BM-GH-004	5	70,000
Cart Path	Greenhaven Golf Course	GC14-21	4	23,400
Outdoor Ceremony Site	Greenhaven Golf Course	GC17-03	5	30,000
Install Glass Doors on Grille	Greenhaven Golf Course	GC17-09	4	4,000
Install Grand Wood Doors to Entrance	Greenhaven Golf Course	GC17-10	5	8,000
East Store Expansion	Liquor Stores	LQ18-01	3	2,000,000
Riverfront Park - HRRD Construction	Parks and Recreation	PR06-26	3	140,000
Anoka Station Parks and Greenspaces	Parks and Recreation	PR06-48	4	50,000
Emerald Ash Borer, Removal of Trees	Parks and Recreation	PR09-23	1	100,000
Playground Rehab/Repair	Parks and Recreation	PR15-01	3	25,000
West Rum River Trail	Parks and Recreation	PR15-06	3	80,000
Mississippi Park Planter Beds & Sign	Parks and Recreation	PR17 - 07	n/a	35,000
Trail System Repairs	Parks and Recreation	PR17-04	n/a	55,000
Rudy Johnson Park	Parks and Recreation	PR17-08	n/a	35,000
Sunny Acres Tennis Courts	Parks and Recreation	PR18-02	3	50,000
PD Parking Expansion	Police	PD18-01	2	50,000
Southeast Trunk Storm Sewer Improvements	Storm Utility	SW-16-01	3	125,000
Main Street Bridge Repair/Maintenance	Streets	ST 15-04	3	161,600
Sign Blanket Replacement	Streets	ST 15-05	3	117,000
Sidewalk Extensions	Streets	ST 20-01	3	20,000
Well Inspection and Repair	Water Utility	WU-008	3	50,000
7th Av Watermain Lining	Water Utility	WU-027	3	61,000
<b>Total for 2018</b>				<b>10,764,000</b>
<b>2019</b>				
Rebuild Distribution Lines	Electric Utility	EU14-03	n/a	800,000
Construct circuits from Garfield Substation	Electric Utility	EU15-03	n/a	550,000
CRTV Development	Engineering	EN-09-02	3	150,000
2019 Street Renewal	Engineering	EN-15-03	3	1,853,640
Rum River Dam Modification Project	Engineering	EN-16-02	2	200,000

<b>Project Name</b>	<b>Department</b>	<b>Project #</b>	<b>Priority</b>	<b>Project Cost</b>
Green Haven Parkway Phase II	Engineering	EN-16-05	2	1,000,000
Fairoak Avenue Signal Removal Project	Engineering	EN-16-07	2	500,000
CSAH 7 / 43rd Avenue Intersection	Engineering	EN-17-02	3	550,000
TH-47 Anoka Solution	Engineering	EN-18-01	3	80,000
Entrance Monument - E Main St	Engineering	EN18-02	4	30,000
New Partitions in Banquet Rooms	Greenhaven Golf Course	GC14-02	5	49,000
Anoka Nature Preserve Park Development	Parks and Recreation	PR06-41	3	200,000
Emerald Ash Borer, Removal of Trees	Parks and Recreation	PR09-23	1	100,000
Rum River Trail Connection-4th Ave. & Pleasant St.	Parks and Recreation	PR10-01	3	191,300
Playground Rehab/Repair	Parks and Recreation	PR15-01	3	25,000
Trail System Repairs	Parks and Recreation	PR17-04	n/a	40,000
Rudy Johnson Park	Parks and Recreation	PR17-08	n/a	175,000
Mississippi Park Shoreline Restoration	Parks and Recreation	PR18-05	n/a	50,000
John Ward Bathroom Reconstruction	Parks and Recreation	PR20 - 01	3	250,000
Southeast Trunk Storm Sewer Improvements	Storm Utility	SW-16-01	3	55,000
Trunk Storm Sewer Improvements	Storm Utility	SW-16-02	3	250,000
Sign Blanket Replacement	Streets	ST 15-05	3	117,000
Sidewalk Extentions	Streets	ST 20-01	3	5,000
Water Treatment Plant # 3 Exterior Repairs	Water Utility	WU-003	3	80,000
Expansion of Water Treatment Plant 6 & 8	Water Utility	WU-024	2	1,000,000
7th Av Watermain Lining	Water Utility	WU-027	3	304,000
<b>Total for 2019</b>				<b>8,604,940</b>

## 2020

New ADA Wheel-Chair Lift @ City Hall	Buildings	BM-CH-018	2	30,000
Walker Parking Ramp - Joint Caulking	Buildings	BM-MB-012	3	25,000
Public Services - Exterior Painting	Buildings	BM-PW-002	2	65,000
Public Works - Fire Alarms	Buildings	BM-PW-004	4	35,000
Re-Roof Public Services Building	Buildings	BM-PW-012	2	190,000
City Hall-Main Building Reroofing	Buildings	PWBM-CH-011	3	270,000
Decorative Fence	Cemetery	CEM17-03	5	25,000
Bunker/Thurston Redevelopment	Community Development	CD-08-2	4	25,000
NCBD phase III	Community Development	CD-08-3	3	25,000
Rebuild Distribution Lines	Electric Utility	EU14-03	n/a	400,000
Rum River Dam Gate Maintenance	Engineering	EN-09-04	n/a	158,000
Rum River Dam Modification Project	Engineering	EN-16-02	2	6,120,000
Green Haven Parkway Phase II	Engineering	EN-16-05	2	500,000
Fairoak Avenue Signal Removal Project	Engineering	EN-16-07	2	7,840,000
2020 Street Renewal	Engineering	EN-16-10	3	1,746,720
2nd Avenue - Building Site #2 parking Lot	Parking	BM-009	4	54,000
Anoka Nature Preserve Park Development	Parks and Recreation	PR06-41	3	45,000
Reconstruction of Park Buildings Johnson/Sorenson	Parks and Recreation	PR06-44	5	250,000
Anoka Station Parks and Greenspaces	Parks and Recreation	PR06-48	4	150,000
Emerald Ash Borer, Removal of Trees	Parks and Recreation	PR09-23	1	100,000
Sunny Acres Park Improvement Project	Parks and Recreation	PR12-03	3	200,000
7th Avenue Trailway	Parks and Recreation	PR15-05	4	15,000
West Rum River Trail	Parks and Recreation	PR15-06	3	100,000
Rum River Trail - Riverbank Stabilization	Parks and Recreation	PR16 - 01	3	150,000
Trail System Repairs	Parks and Recreation	PR17-04	n/a	40,000
8 1/2 Av Lift Station	Sanitary Utility	SW-016	n/a	150,000
Trunk Storm Sewer Improvements	Storm Utility	SW-16-02	3	100,000
Sign Blanket Replacement	Streets	ST 15-05	3	40,000
Sidewalk Extentions	Streets	ST 20-01	3	31,400
Well Inspection and Repair	Water Utility	WU-008	3	50,000
Expansion of Water Treatment Plant 6 & 8	Water Utility	WU-024	2	4,521,000

<b>Project Name</b>	<b>Department</b>	<b>Project #</b>	<b>Priority</b>	<b>Project Cost</b>
<b>Total for 2020</b>				23,451,120
<b>2021</b>				
Decorative Fence	Cemetery	CEM17-03	5	125,000
2021 SRP - Swede Town	Engineering	EN-16-04	3	1,775,000
Fairoak Avenue Signal Removal Project	Engineering	EN-16-07	2	31,400,000
South Frontage Road Phase I	Engineering	EN-16-08	2	100,000
West store relocation	Liquor Stores	LQ18-02	3	2,500,000
2nd Avenue - Building Site #2 parking Lot	Parking	BM-009	4	306,800
Riverfront Park - HRRD Construction	Parks and Recreation	PR06-26	3	1,806,000
Anoka Nature Preserve Park Development	Parks and Recreation	PR06-41	3	260,000
Emerald Ash Borer, Removal of Trees	Parks and Recreation	PR09-23	1	100,000
John Ward Park Drainage Enhancement Project	Parks and Recreation	PR12-01	4	160,000
RRSN Trailway Connections	Parks and Recreation	PR15-04	3	80,000
7th Avenue Trailway	Parks and Recreation	PR15-05	4	200,000
West Rum River Trail	Parks and Recreation	PR15-06	3	560,000
Sign Blanket Replacement	Streets	ST 15-05	3	40,000
<b>Total for 2021</b>				39,412,800
<b>2022</b>				
City Hall - Tuck point exterior walls	Buildings	BM-CH-011	3	75,000
Safety Center - Masonry Cleaning	Buildings	BM-PD-001	4	25,000
2022 Street Renewal	Engineering	EN-15-06	3	1,892,075
South Frontage Road Phase I	Engineering	EN-16-08	2	250,000
TH-47 Anoka Solution	Engineering	EN-18-01	3	25,000,000
Utility Expansion/Extension @ TH-47 & BNSF	Engineering	EN-19-01	2	199,000
Riverfront Park - HRRD Construction	Parks and Recreation	PR06-26	3	1,890,000
Anoka Enterprise Park Trail connection	Parks and Recreation	PR14-01	n/a	50,000
Kings Island Improvements - Phase II	Parks and Recreation	PR14-04	4	10,000
West Rum River Trail	Parks and Recreation	PR15-06	3	560,000
Power Gate System # 1	Public Works	MP-065	2	20,000
Industrial Blvd Sewer Extension	Sanitary Utility	SW-014	3	60,000
Rum River Pedestrian Bridge Coating Project	Streets	ST 15-06	4	200,000
Well Inspection and Repair	Water Utility	WU-008	3	50,000
Reconditioning of Water Tower 2 (Industrial Park)	Water Utility	WU-036	3	1,200,000
<b>Total for 2022</b>				31,481,075
<b>GRAND TOTAL</b>				113,713,935

City of Anoka, Minnesota  
*Capital Improvement Plan*  
 2018 thru 2022

**PROJECTS BY FUNDING SOURCE**

Source	Project #	Priority	2018	2019	2020	2021	2022	Total
<b>Capital Improvement fund</b>								
City Hall - Tuck point exterior walls	BM-CH-011	3					75,000	75,000
Greenhaven - Repaint Clubhouse Exterior	BM-GH-004	5	70,000					70,000
Public Services - Exterior Painting	BM-PW-002	2			65,000			65,000
New Partitions in Banquet Rooms	GC14-02	5		49,000				49,000
Outdoor Ceremony Site	GC17-03	5	30,000					30,000
Install Grand Wood Doors to Entrance	GC17-10	5	8,000					8,000
Power Gate System # 1	MP-065	2					20,000	20,000
Riverfront Park - HRRD Construction	PR06-26	3				100,000		100,000
Reconstruction of Park Buildings Johnson/Sorenson	PR06-44	5			250,000			250,000
John Ward Bathroom Reconstruction	PR20 - 01	3		250,000				250,000
City Hall-Main Building Reroofing	PWBM-CH-011	3			270,000			270,000
<b>Capital Improvement fund Total</b>			<b>108,000</b>	<b>299,000</b>	<b>585,000</b>	<b>100,000</b>	<b>95,000</b>	<b>1,187,000</b>
<b>Cemetary fund</b>								
Signage	CEM17-02	3	30,000					30,000
Decorative Fence	CEM17-03	5			25,000	125,000		150,000
<b>Cemetary fund Total</b>			<b>30,000</b>		<b>25,000</b>	<b>125,000</b>		<b>180,000</b>
<b>Electric</b>								
Re-Roof Public Services Building	BM-PW-012	2			190,000			190,000
2019 Street Renewal	EN-15-03	3		173,935				173,935
2022 Street Renewal	EN-15-06	3					315,345	315,345
2018 Street Renewal	EN-15-09	3	238,030					238,030
2021 SRP - Swede Town	EN-16-04	3				244,545		244,545
2020 Street Renewal	EN-16-10	3			291,120			291,120
North Street Reconstruction	EN18-03	2	246,000					246,000
Rebuild Distribution Lines	EU14-03	n/a	500,000	800,000	400,000			1,700,000
Construct circuits from Garfield Substation	EU15-03	n/a	550,000	550,000				1,100,000
Champlin Mississippi Crossing	EU15-04	n/a	1,000,000					1,000,000
<b>Electric Total</b>			<b>2,534,030</b>	<b>1,523,935</b>	<b>881,120</b>	<b>244,545</b>	<b>315,345</b>	<b>5,498,975</b>
<b>General Fund</b>								
Boat Slide Replacement	AC16-03	n/a	70,000					70,000
Lobby Remodel	AC17-01	n/a	25,000					25,000
2nd Avenue - Building Site #2 parking Lot	BM-009	4			54,000	306,800		360,800
New ADA Wheel-Chair Lift @ City Hall	BM-CH-018	2			30,000			30,000
Safety Center - Masonry Cleaning	BM-PD-001	4					25,000	25,000
Public Works - Fire Alarms	BM-PW-004	4			35,000			35,000
Entrance Monument - E Main St	EN18-02	4	5,000	30,000				35,000
Install Glass Doors on Grille	GC17-09	4	4,000					4,000

Source	Project #	Priority	2018	2019	2020	2021	2022	Total
PD Parking Expansion	PD18-01	2	50,000					50,000
Emerald Ash Borer, Removal of Trees	PR09-23	1	100,000	100,000	100,000	100,000		400,000
Playground Rehab/Repair	PR15-01	3	25,000	25,000				50,000
Rum River Trail - Riverbank Stabilization	PR16 - 01	3			30,000			30,000
Mississippi Park Planter Beds & Sign	PR17 - 07	n/a	35,000					35,000
Trail System Repairs	PR17-04	n/a	55,000	40,000	40,000			135,000
Sign Blanket Replacement	ST 15-05	3	117,000	117,000	40,000	40,000		314,000
Sidewalk Extentions	ST 20-01	3	20,000	5,000	31,400			56,400
<b>General Fund Total</b>			<b>506,000</b>	<b>317,000</b>	<b>360,400</b>	<b>446,800</b>	<b>25,000</b>	<b>1,655,200</b>
<b>General Obligation Bonds</b>								
Riverfront Park - HRRD Construction	PR06-26	3				1,706,000	1,507,000	3,213,000
Anoka Nature Preserve Park Development	PR06-41	3				260,000		260,000
<b>General Obligation Bonds Total</b>						<b>1,966,000</b>	<b>1,507,000</b>	<b>3,473,000</b>
<b>Golf Fund</b>								
Cart Path	GC14-21	4	23,400					23,400
<b>Golf Fund Total</b>			<b>23,400</b>					<b>23,400</b>
<b>Grants</b>								
Fairoak Avenue Signal Removal Project	EN-16-07	2			7,050,000	31,400,000		38,450,000
TH-47 Anoka Solution	EN-18-01	3					25,000,000	25,000,000
Riverfront Park - HRRD Construction	PR06-26	3					233,000	233,000
Anoka Nature Preserve Park Development	PR06-41	3		20,000				20,000
Rum River Trail Connection-4th Ave. & Pleasant St.	PR10-01	3		100,000				100,000
West Rum River Trail	PR15-06	3				500,000	500,000	1,000,000
Rum River Trail - Riverbank Stabilization	PR16 - 01	3			120,000			120,000
<b>Grants Total</b>			<b>100,000</b>	<b>7,190,000</b>	<b>31,900,000</b>	<b>25,733,000</b>		<b>64,923,000</b>
<b>Municipal State Aid</b>								
2019 Street Renewal	EN-15-03	3		810,000				810,000
2018 Street Renewal	EN-15-09	3	261,300					261,300
2021 SRP - Swede Town	EN-16-04	3				306,200		306,200
<b>Municipal State Aid Total</b>			<b>261,300</b>	<b>810,000</b>		<b>306,200</b>		<b>1,377,500</b>
<b>Outside Sources</b>								
Rum River Dam Modification Project	EN-16-02	2		200,000	6,120,000			6,320,000
CSAH 7 / 43rd Avenue Intersection	EN-17-02	3		550,000				550,000
North Street Reconstruction	EN18-03	2	1,120,000					1,120,000
Riverfront Park - HRRD Construction	PR06-26	3					150,000	150,000
Anoka Nature Preserve Park Development	PR06-41	3		100,000				100,000
<b>Outside Sources Total</b>			<b>1,120,000</b>	<b>850,000</b>	<b>6,120,000</b>		<b>150,000</b>	<b>8,240,000</b>
<b>Park Capital Improvement fund</b>								
Anoka Station Parks and Greenspaces	PR06-48	4	50,000					50,000
Sunny Acres Park Improvement Project	PR12-03	3			200,000			200,000

Source	Project #	Priority	2018	2019	2020	2021	2022	Total
Anoka Enterprise Park Trail connection	PR14-01	n/a					50,000	50,000
Kings Island Improvements - Phase II	PR14-04	4					10,000	10,000
7th Avenue Trailway	PR15-05	4			15,000	200,000		215,000
West Rum River Trail	PR15-06	3	80,000		100,000	60,000	60,000	300,000
Rudy Johnson Park	PR17-08	n/a	35,000	175,000				210,000
Sunny Acres Tennis Courts	PR18-02	3	50,000					50,000
Mississippi Park Shoreline Restoration	PR18-05	n/a		50,000				50,000
<b>Park Capital Improvement fund Total</b>			<b>215,000</b>	<b>225,000</b>	<b>315,000</b>	<b>260,000</b>	<b>120,000</b>	<b>1,135,000</b>
<b>Park Dedication fund</b>								
Anoka Nature Preserve Park Development	PR06-41	3		100,000	25,000			125,000
Anoka Station Parks and Greenspaces	PR06-48	4			150,000			150,000
Rum River Trail Connection-4th Ave. & Pleasant St.	PR10-01	3		91,300				91,300
RRSN Trailway Connections	PR15-04	3				80,000		80,000
<b>Park Dedication fund Total</b>				<b>191,300</b>	<b>175,000</b>	<b>80,000</b>		<b>446,300</b>
<b>Parking fund</b>								
Walker Parking Ramp - Joint Caulking	BM-MB-012	3			25,000			25,000
<b>Parking fund Total</b>					<b>25,000</b>			<b>25,000</b>
<b>Revenue Bonds</b>								
East Store Expansion	LQ18-01	3	2,000,000					2,000,000
West store relocation	LQ18-02	3				2,500,000		2,500,000
<b>Revenue Bonds Total</b>			<b>2,000,000</b>			<b>2,500,000</b>		<b>4,500,000</b>
<b>Sanitary Sewer Fund</b>								
2019 Street Renewal	EN-15-03	3		181,200				181,200
2022 Street Renewal	EN-15-06	3					234,780	234,780
2018 Street Renewal	EN-15-09	3	208,170					208,170
2021 SRP - Swede Town	EN-16-04	3				158,925		158,925
2020 Street Renewal	EN-16-10	3			144,100			144,100
North Street Reconstruction	EN18-03	2	29,000					29,000
Utility Expansion/Extension @ TH-47 & BNSF	EN-19-01	2					124,000	124,000
Industrial Blvd Sewer Extension	SW-014	3					60,000	60,000
8 1/2 Av Lift Station	SW-016	n/a			150,000			150,000
<b>Sanitary Sewer Fund Total</b>			<b>237,170</b>	<b>181,200</b>	<b>294,100</b>	<b>158,925</b>	<b>418,780</b>	<b>1,290,175</b>
<b>Special Assessments</b>								
2019 Street Renewal	EN-15-03	3		386,175				386,175
2022 Street Renewal	EN-15-06	3					394,180	394,180
2018 Street Renewal	EN-15-09	3	351,665					351,665
2021 SRP - Swede Town	EN-16-04	3				369,475		369,475
2020 Street Renewal	EN-16-10	3			363,900			363,900
<b>Special Assessments Total</b>			<b>351,665</b>	<b>386,175</b>	<b>363,900</b>	<b>369,475</b>	<b>394,180</b>	<b>1,865,395</b>
<b>Stormwater Utility Fund</b>								

Source	Project #	Priority	2018	2019	2020	2021	2022	Total
Rum River Dam Gate Maintenance	EN-09-04	n/a			158,000			158,000
2019 Street Renewal	EN-15-03	3		9,650				9,650
2022 Street Renewal	EN-15-06	3					364,200	364,200
2018 Street Renewal	EN-15-09	3	294,390					294,390
2021 SRP - Swede Town	EN-16-04	3				348,365		348,365
2020 Street Renewal	EN-16-10	3			322,140			322,140
John Ward Park Drainage Enhancement Project	PR12-01	4				160,000		160,000
Southeast Trunk Storm Sewer Improvements	SW-16-01	3	125,000	55,000				180,000
Trunk Storm Sewer Improvements	SW-16-02	3		250,000	100,000			350,000
<b>Stormwater Utility Fund Total</b>			<b>419,390</b>	<b>314,650</b>	<b>580,140</b>	<b>508,365</b>	<b>364,200</b>	<b>2,186,745</b>

### Street Renewal Fund

2019 Street Renewal	EN-15-03	3		0				0
2022 Street Renewal	EN-15-06	3					293,425	293,425
2018 Street Renewal	EN-15-09	3	77,180					77,180
2021 SRP - Swede Town	EN-16-04	3				77,975		77,975
Fairoak Avenue Signal Removal Project	EN-16-07	2	360,000	500,000	790,000			1,650,000
South Frontage Road Phase I	EN-16-08	2				100,000	250,000	350,000
2020 Street Renewal	EN-16-10	3			343,945			343,945
TH-47 Anoka Solution	EN-18-01	3	120,000	80,000				200,000
Riverfront Park - HRRD Construction	PR06-26	3	140,000					140,000
Main Street Bridge Repair/Maintenance	ST 15-04	3	161,600					161,600
Rum River Pedestrian Bridge Coating Project	ST 15-06	4					200,000	200,000
<b>Street Renewal Fund Total</b>			<b>858,780</b>	<b>580,000</b>	<b>1,133,945</b>	<b>177,975</b>	<b>743,425</b>	<b>3,494,125</b>

### Tax Increment Funds

Bunker/Thurston Redevelopment	CD-08-2	4			25,000			25,000
NCBD phase III	CD-08-3	3			25,000			25,000
Commuter Rail Transit Village	CD-10-01	3	500,000					500,000
CRTV Development	EN-09-02	3	150,000	150,000				300,000
Green Haven Parkway Phase II	EN-16-05	2	1,000,000	1,000,000	500,000			2,500,000
<b>Tax Increment Funds Total</b>			<b>1,650,000</b>	<b>1,150,000</b>	<b>550,000</b>			<b>3,350,000</b>

### Water Fund

2019 Street Renewal	EN-15-03	3		292,680				292,680
2022 Street Renewal	EN-15-06	3					290,145	290,145
2018 Street Renewal	EN-15-09	3	257,265					257,265
2021 SRP - Swede Town	EN-16-04	3				269,515		269,515
2020 Street Renewal	EN-16-10	3			281,515			281,515
North Street Reconstruction	EN18-03	2	81,000					81,000
Utility Expansion/Extension @ TH-47 & BNSF	EN-19-01	2					75,000	75,000
Water Treatment Plant # 3 Exterior Repairs	WU-003	3		80,000				80,000
Well Inspection and Repair	WU-008	3	50,000		50,000		50,000	150,000
Expansion of Water Treatment Plant 6 & 8	WU-024	2		1,000,000	4,521,000			5,521,000
7th Av Watermain Lining	WU-027	3	61,000	304,000				365,000
Reconditioning of Water Tower 2 (Industrial Park)	WU-036	3					1,200,000	1,200,000
<b>Water Fund Total</b>			<b>449,265</b>	<b>1,676,680</b>	<b>4,852,515</b>	<b>269,515</b>	<b>1,615,145</b>	<b>8,863,120</b>



# PROPOSED EXPENDITURES FOR FUTURE PROJECTS

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City of Anoka, Minnesota  
*Capital Improvement Plan*  
**2023 thru 2027**

**PROJECTS BY CATEGORY**

Category	Project #	Priority	2023	2024	2025	2026	2027	Total
<b>General Public Buildings</b>								
City Hall - Exterior Reseal	BM-CH-001	3				45,000		45,000
Public Service & Electric Building Relocation	BM-PW-011	5	7,000,000	7,000,000				14,000,000
Senior Center - Cold Roof	BM-SC-001	3	40,000					40,000
Expand & Improve Deck on NW of Clubhouse	GC17-01	5			54,000			54,000
Expand & Improve Patio Overlooking on East Side	GC17-02	5			68,000			68,000
Fitness Facility in Lower Level	GC17-07	5			80,000			80,000
Move Golf Shop to Allow Bigger Grille	GC17-08	5			100,000			100,000
Grand Upper Entrance	GC17-15	5			706,733			706,733
City Hall Rehabilitation Project	PWBM-PW-010	3	1,330,000					1,330,000
<b>General Public Buildings Total</b>			<b>8,370,000</b>	<b>7,000,000</b>	<b>1,008,733</b>	<b>45,000</b>		<b>16,423,733</b>
<b>Parks and Recreation Facilities</b>								
Riverfront Park - HRRD Construction	PR06-26	3	870,000		624,000			1,494,000
Rum River Pedestrian Bridge - repaint	PR06-31	3	150,000					150,000
Seal Coating Park Trails	PR06-35	3		125,000				125,000
Anoka Enterprise Park Trail connection	PR14-01	n/a	50,000					50,000
Kings Island Improvements - Phase II	PR14-04	4	160,000	150,000				310,000
West Rum River Trail	PR15-06	3	1,200,000					1,200,000
Brom Canoe Rest	PR17-06	n/a	30,000					30,000
Peninsula Point Park Pedestrian Bridge	ST 15-02	3	750,000	5,250,000				6,000,000
<b>Parks and Recreation Facilities Total</b>			<b>3,210,000</b>	<b>5,525,000</b>	<b>624,000</b>			<b>9,359,000</b>
<b>Public Utilities Facilities</b>								
Reed Av Utility Improvements	EN-15-05	n/a	115,000	607,400				722,400
Garfield Street Infrastructure Project	EN-15-08	n/a		230,000	1,426,000			1,656,000
SRP - Highland Park Neighborhood	EN-16-06	3			3,301,200			3,301,200
Plant Exterior Repairs at Wells 4&5	WU-004	3	40,000					40,000
Well Inspection and Repair	WU-008	3		50,000		50,000		100,000
Install backwash Tanks 3, 4, 5, 6, 8	WU-020	5		600,000	600,000	600,000		1,800,000
<b>Public Utilities Facilities Total</b>			<b>155,000</b>	<b>1,487,400</b>	<b>5,327,200</b>	<b>650,000</b>		<b>7,619,600</b>
<b>Streets and Roads</b>								
Green Haven Parkway Phase III	EN-16-11	3	20,000	725,000	2,900,000			3,645,000
<b>Streets and Roads Total</b>			<b>20,000</b>	<b>725,000</b>	<b>2,900,000</b>			<b>3,645,000</b>
<b>Transportation Facilities</b>								
HRRD Parking Facility - add 4th parking level	BM-008	n/a	500,000	2,800,000				3,300,000
Port of Anoka Modification	EN-13-05	n/a		35,000				35,000
East River Road Improvement Project	EN-15-04	4	600,000					600,000
Green Haven Parkway Phase II	EN-16-05	2	575,000	2,875,000				3,450,000
South Frontage Road Phase I	EN-16-08	2	1,750,000					1,750,000
Street Surface Improvement Project (SSIP)	ST 12-01	2		1,500,000				1,500,000

Category	Project #	Priority	2023	2024	2025	2026	2027	Total
<b>Transportation Facilities Total</b>			<b>3,425,000</b>	<b>7,210,000</b>				<b>10,635,000</b>
<b>Unassigned</b>								
Simulators in 3rd Floor	GC17-04	5			135,000			135,000
Fat Tire Biking Trails & Rentals	GC17-11	5			5,000			5,000
Construct Broomball Rinks	GC17-12	5			15,000			15,000
Winterize Patios for Event Viewing	GC17-13	5			30,000			30,000
4 Sheet Curling Rink	GC17-14	5			101,000			101,000
Tracked Skid Steer	MP-068	2			60,000			60,000
Zero Turn Mower 72"	PR06-18	3				12,000		12,000
New Elevated 1.5 Million Gal. Water Tower	WU-029	3	3,750,000					3,750,000
New Trunk Water Main Phase 1	WU-030	3		1,421,000				1,421,000
New Anoka Well 9	WU-032	3			1,900,000			1,900,000
<b>Unassigned Total</b>			<b>3,750,000</b>	<b>1,421,000</b>	<b>2,246,000</b>	<b>12,000</b>		<b>7,429,000</b>
<b>Utility Infrastructure</b>								
North St Utility Extensions	EN-18-04	4	90,000					90,000
<b>Utility Infrastructure Total</b>			<b>90,000</b>					<b>90,000</b>
<b>GRAND TOTAL</b>			<b>19,020,000</b>	<b>23,368,400</b>	<b>12,105,933</b>	<b>707,000</b>		<b>55,201,333</b>

# IMPACTS OF PROJECTS ON FUNDING SOURCES

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## **SUMMARY OF IMPACTS ON FUNDING SOURCES**

### GENERAL FUND RESERVES/CURRENT REVENUES

General fund reserves continue to be at a healthy balance of 43% of current operating expenditures. This is slightly above the recommended level of reserves in the general fund of between 25 - 40%. The council budgeted to use (\$189,550) of its' fund balance in 2017. General fund capital items will need to be included in the overall budget process and levy decisions.

Included in this document are several items for early consideration. If all of the capital items proposed are approved, the city may need to increase the levy 6.3% or \$420,000 for capital spending. This is in addition to the approximately \$100,000 additional levy needed for increased operating costs and using approximately \$50,000 of reserves for a transfer to garage for equipment.

Specific items included for 2018 are:

- Boat slide at Aquatic Center
- Remodel lobby at Aquatic Center
- Entrance monument- east main
- Glass doors for Greenhaven Grille
- Parking expansion for police
- Emerald ash borer tree removal
- Playground rehab
- Planter beds at Mississippi park
- Trail system repairs
- Sign replacement
- Sidewalk extentions
- Police radio's

## General Fund Budget

	2017 PROJECTED	2017 BUDGET	2018 BUDGET	2019 BUDGET	2020 BUDGET
Levy increase			7.80%	1.50%	5.43%
<b>Current Revenues</b>					
CURRENT PROPERTY TAX	\$ 6,613,994	\$ 6,647,230	\$ 7,165,715	\$ 7,273,200	\$ 7,668,225
FRANCHISE FEES	947,674	976,000	966,000	966,000	966,000
LICENSE, PERMITS	480,160	403,550	425,500	415,500	405,500
INTERGOVERNMENTAL REVENUE	2,178,839	2,178,445	2,276,720	2,268,520	2,268,520
CHARGES FOR CURRENT SERVICES	1,213,249	1,035,900	1,086,550	1,093,150	1,083,050
FINES & FORFEITURES	56,664	70,750	61,500	55,000	50,000
INVESTMENT EARNINGS	43,380	45,000	50,000	55,500	60,500
OTHER REVENUES	91,150	91,150	88,650	91,150	91,150
COMMUNITY CENTER REVENUE	110,100	110,100	109,300	93,100	93,565
TRANSFERS IN	400,000	400,000	500,000	500,000	500,000
<b>TOTAL REVENUES</b>	<u>12,135,209</u>	<u>11,958,125</u>	<u>12,729,935</u>	<u>12,811,120</u>	<u>13,186,510</u>
<b>Current Expenses</b>					
SALARIES AND EMPLOYEE BENEFITS	7,373,445	7,087,965	7,443,120	7,521,020	7,716,485
MATERIALS AND SUPPLIES	179,987	297,300	296,550	302,480	308,530
PROFESSIONAL SERVICES	1,313,344	1,345,575	1,483,050	1,505,295	1,527,875
MAINTENANCE	1,605,826	1,699,845	1,665,245	1,735,225	1,806,255
FIRE CONTRACT	624,487	624,490	655,715	668,840	685,560
CAPITAL OUTLAY	322,500	357,500	419,000	240,000	360,400
SPECIAL USES	105,000	155,000	155,000	156,000	156,000
<b>TOTAL EXPENDITURES</b>	<u>11,524,589</u>	<u>11,567,675</u>	<u>12,117,680</u>	<u>12,128,860</u>	<u>12,561,105</u>
<b>Other Financing Uses</b>					
DEBT FUNDS	580,000	580,000	610,000	605,000	575,000
EQUIPMENT FUND			50,000	75,000	50,000
<b>TOTAL FINANCING USES</b>	<u>580,000</u>	<u>580,000</u>	<u>660,000</u>	<u>680,000</u>	<u>625,000</u>
<b>TOTAL EXPENDITURES &amp; USES</b>	<u>12,104,589</u>	<u>12,147,675</u>	<u>12,777,680</u>	<u>12,808,860</u>	<u>13,186,105</u>
CHANGE IN FUND BALANCE	30,620	(189,550)	(47,745)	2,260	405
Total Fund Balance	4,601,458	4,381,288	4,553,713	4,555,973	4,556,378
<b>% unreserved fund balance to expenditures</b>	<b>41.08%</b>	<b>39.08%</b>	<b>38.93%</b>	<b>38.32%</b>	<b>37.35%</b>

## **IMPACTS ON FUNDING SOURCES**

### **BUILDING CAPITAL IMPROVEMENT FUND**

The capital improvement fund is the primary source for building improvements for City owned buildings. There is also land held for resale in this fund that is in the Commuter Rail Transit Village which was purchased in 2004 with Building improvement funds. The property is listed for sale. The proposed source of revenue for this fund is an annual transfer from Electric. Another source could be an annual transfer from the Sewer fund.

Completing identified projects will pay dividends with lower maintenance costs for deteriorated buildings, less operating costs with fewer buildings, freeing up tax exempt property for resale and expanding shared services with other cities.

At the end of 2016, this fund has a negative fund balance because of internal lending for projects. The negative fund balance will be eliminated with the sale of the property in the CRTV and transfers from Electric, eliminating the loan.

2018 requests are:

Repaint Clubhouse Exterior  
Outdoor ceremony site at Greenhaven  
Grand Wood Doors for Greenhaven entrance

**CAPITAL IMPROVEMENT FUND**

	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
Working Capital Beg Yr	(445,724)	35,442	255,051	230,011	11,905
<b>CASH</b>	16,837	221,935	241,544	216,504	(1,602)

**SOURCES**

Interest	168	3,329		4,330	(36)
Miscellaneous	20,000				
<b>Land Sales</b>			<b>300,000</b>	<b>238,284</b>	<b>678,000</b>
Grant for Demo					
<b>Transfers In Electric</b>	425,000	100,000	100,000	100,000	100,000
<b>Transfers In Sewer</b>		30,000	30,000	30,000	30,000
Transfers In General Fund					
Total Sources	<u>445,168</u>	<u>133,329</u>	<u>430,000</u>	<u>372,614</u>	<u>807,964</u>

**USES**

Buildings	5,070	5,720	5,720	5,720	5,720
Land/loss on sale					
police/city hall				270,000	75,000
Upgrade All Elevators					
John Ward Bathroom Recstr.			250,000		
Reconstruct Park Bldgs.				250,000	
Repair Pre-Cast Capt @ Parape					
public services building imprvr				65,000	20,000
Greenhaven bathrooms	137,900				
Greenhaven carpet	65,000				
Greenhaven partitions			49,000		
Greenhaven video	32,100				
Greenhaven - paint exterior		70,000			
Greenhaven - outdoor ceremony		30,000			
Greenhaven - Wood doors		8,000			
Maintenance facility/pound					
New Public services bldg					
New Phone system					
Fire Apparatus Floor					
internal loan payback			150,320		350,748
Total Uses	<u>240,070</u>	<u>113,720</u>	<u>455,040</u>	<u>590,720</u>	<u>451,468</u>

**Net Source/(Use)**                      205,098                      19,609                      (25,040)                      (218,106)                      356,496

Working Capital Year End                      (240,626)                      55,051                      230,011                      11,905                      368,401

**Working Capital Balance 12/31/2022                      \$361,554**

## **IMPACTS ON FUNDING SOURCES**

### CEMETERY FUND

The cemetery fund is the primary source for cemetery improvements and maintenance. The sources of revenue for this fund include cemetery fees and perpetual care fees. The maximum amount allowed for this fund is \$XXXXXX, which is based on \$xxx per acre per Minnesota Statute. There is also a minimum amount required per Minnesota Statute and that is \$xxxxx

At the end of 2016, this fund has approximately \$460,000 in available fund balance. It is projected that the fund will use fund balance for capital improvements but revenues will continue to cover annual maintenance for the cemetery's.

2018 request is:

Signage

**PERPETUAL CARE FUND**

	2017	2018	2019	2020	2021
Cash balance	455,096	423,814	407,429	422,271	413,619
Working Capital Begin Year	459,666	428,384	411,999	426,841	418,189

**REVENUES**

Perpetual care charges	18,205	18,012	18,583	19,022	18,917
Cemetery Fees	62,838	58,682	60,054	60,490	61,121
Interest earnings	6,826	7,417	8,149	9,501	10,340
Miscellaneous	480	480	480	480	480
Transfers in					
Total Revenues	<u>88,350</u>	<u>84,590</u>	<u>87,266</u>	<u>89,492</u>	<u>90,858</u>

**EXPENDITURES**

Personal Services	71,745	48,180	49,143	50,126	51,129
Supplies	1,734	2,005	2,092	1,799	2,003
Professional Services	7,285	6,727	6,255	6,478	7,020
Maintenance	13,869	14,063	14,933	14,742	15,122
Improvements	25,000	30,000		25,000	125,000
Total Expenditures	<u>119,632</u>	<u>100,975</u>	<u>72,424</u>	<u>98,145</u>	<u>200,274</u>

<b>Source/(Use)</b>	(31,282)	(16,385)	14,842	(8,653)	(109,415)
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Working Capital Ending Balanc	428,384	411,999	426,841	418,189	308,773
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28 acres times \$25,000 \$700,000 maximum allowed	<b>Working Capital Balance 12/31/2022</b>	<b>320,779</b>
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## **SUMMARY OF IMPACTS ON FUNDING SOURCES**

### ELECTRIC FUND

The electric fund has unrestricted net assets of \$14 million at the end of 2016. About \$5 million of this is outstanding loans to other funds for redevelopment and land acquisitions. Another \$3 million is current outstanding receivables. The electric fund will transfer \$600,000 in 2017 to the Street Renewal fund for the additional street renewal project and \$425,000 to the Capital Improvement fund for improving property. Electric also transfers \$400,000 to the general fund to support general fund operations. In 2017 and 2018 Electric will lend \$2.6 million to TIF districts for redevelopment and improvements in those districts.

It is anticipated that approximately \$1.7 million will be spent on electric infrastructure improvements in 2017. Another \$2.5 million is expected to be spent in 2018. Net income after transfers in 2016 was \$700,000. Net income after transfers for 2017 is projected to be \$1.1 million. It is projected that the Electric fund will continue to use cash for lending purposes through 2020, at which time the cash balance will be about \$5 million.

Strategic rate adjustments will help pay for necessary infrastructure improvements along with covering operating costs and transfers.

Electric will continue to lend funds internally to pay for infrastructure or other improvements. These internal loans are beneficial for the entire city as they allow financing without the high cost of debt issuance. Internal financing also benefits the electric fund because the earnings on an internal loan are at a higher rate of return than is currently achievable thru investments. The loans are typically 10 to 20 years in length.



## **IMPACTS ON FUNDING SOURCES**

### GOLF

Golf is currently an enterprise fund for the City of Anoka. Only golf operating revenues and expenses are recorded in the enterprise funds. All clubhouse activity has been transferred to the general fund under the Event Center department.

In 2017, there is a proposed development along the golf course which will encompass part of the existing golf course property. The course will receive its share of the sale of the property which will provide a source for some course improvements and equipment purchases.

It is very difficult to project future revenue stability for the course because it is subject to weather conditions. Looking historically, the golf course operations show net losses for the last four years. If historic trends continue, the golf enterprise fund will need support from another source to cover operations and capital.

2018 improvements include a new cart path for one hole.



## **SUMMARY OF IMPACTS ON FUNDING SOURCES**

### PARK CAPITAL IMPROVEMENT FUND

The park capital improvement fund sources are derived from a multitude of sources. Historically the primary source of funding is from transfers from other funds including liquor store and general fund. Recently the water fund is also making transfers to the park capital improvement fund. Grants and other outside sources will be helpful in providing funding sources for desired park projects.

Over the last 5 years the city has invested over \$2.8 million in a variety of park improvement projects. That is equivalent to \$560,000 a year on park improvements. In 2017, improvements include the Enloe courts and playground improvements and improvements to the park trail way system. As a result of transfers from the general fund, the park capital fund will have over \$500,000 available fund balance by the end of 2017. There is a county grant for \$340,000 that is receivable in 2021 for funding of the Mississippi park trail. Planned park capital improvement projects for the near future will be smaller for a few years as a result of funding source limitations.

2018 projects include:

- Anoka station park
- West rum river trail planning
- Rudy Johnson park planning
- Sunny Acres tennis courts

**PARK CAPITAL IMPRV**

	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
Working Capital Beg Yr	563,075	628,807	496,547	408,764	153,297
<b><u>Sources</u></b>					
Interest	8,446	11,004	9,931	9,197	3,832
Intergovernmental					379,000
Intergovernmental					176,000
Intergovernmental					130,000
Property Sales	83,716	83,716	83,716	83,716	55,976
Transfer in Water	100,000	40,000	40,000	40,000	40,000
Transfer in	60,000	60,000	60,000	60,000	60,000
Total Sources	<u>252,162</u>	<u>194,720</u>	<u>193,647</u>	<u>192,913</u>	<u>844,808</u>
<b><u>Uses</u></b>					
C.I.P. Projects	6,430	1,980	6,430	1,980	1,980
Station Park (CRTV)					
River Front Park		20,000	0	100,000	
hwy 10 trail					220,000
river bridge painting					150,000
Sunny acres		50,000		200,000	
kings island channel restor.		10,000			
trailways - bikes	40,000	40,000	45,000		46,400
mississippi park		40,000	50,000		
Trail garfield to castle field				15,000	200,000
nature preserve		50,000			
Entrance monument 7th ave.	50,000				
Enloe Courts/playground	75,000				
Canoe Rest	15,000				
Rudy Johnson park		35,000	175,000		
West River Rum trail		80,000	0	100,000	60,000
Sidewalk extentions			5,000	31,400	
Total Uses	<u>186,430</u>	<u>326,980</u>	<u>281,430</u>	<u>448,380</u>	<u>678,380</u>
Net Source/(Use)	<u>65,732</u>	<u>(132,260)</u>	<u>(87,783)</u>	<u>(255,467)</u>	<u>166,428</u>
Working Capital Year End	<u><u>628,807</u></u>	<u><u>496,547</u></u>	<u><u>408,764</u></u>	<u><u>153,297</u></u>	<u><u>319,725</u></u>

Working Capital Balance 12/31/2022

\$206,537

## **SUMMARY OF IMPACTS ON FUNDING SOURCES**

### SANITARY SEWER FUND

In 2014, the city increased the sanitary sewer rates to pay for current and future infrastructure and operating needs. Staff is recommending that the sanitary sewer rates be adjusted every year into the future to meet the rising costs of disposal and operations and also the future infrastructure costs.

In 2021, staff is anticipating a need to expand the sewer capacity in the northwest quadrant of the city. The lift station is projected to cost about \$5,000,000. It will be necessary to issue revenue bonds to help pay for the additional capacity.

As a result of all the street improvement projects and the purchase of the vector truck in 2016, the sewer fund is projected to need short term funding until rates can be raised enough to cover the capital and operating expenses.

**SEWER FUND**

	<b>8.50%</b> <u>2017</u>	<b>9.70%</b> <u>2018</u>	<b>7.80%</b> <u>2019</u>	<b>6.30%</b> <u>2020</u>	<b>5.90%</b> <u>2021</u>
Working Capital Beginning Year	611,848	165,584	196,508	232,785	493,506
Cash Beginning Balance	427,437	1,172	32,096	68,374	329,095

**SOURCES**

Charges for services	<b>2,237,945</b>	<b>2,416,031</b>	<b>2,573,126</b>	<b>2,709,907</b>	<b>2,846,073</b>
Other	37,400	55,000	33,000	27,500	22,000
Interest	6,412	18	481	1,538	8,227
Transfer In	<b>60,000</b>				
<b>Bond Issuance</b>					<b>5,140,000</b>
Total Sources	<u>2,341,756</u>	<u>2,471,049</u>	<u>2,606,607</u>	<u>2,738,945</u>	<u>8,016,300</u>

**USES**

Personal Services	389,247	393,139	397,071	401,041	405,052
Supplies	23,886	21,411	21,920	20,950	20,650
Professional Services	98,340	94,541	93,086	95,376	147,021
Maintenance	82,296	64,142	62,261	69,720	71,970
Disposal Charges	1,425,477	1,491,132	1,543,322	1,597,338	1,653,245
Other Expense/interest					44,975
<b>Transfer Out</b>		<b>30,000</b>	90,000	30,000	30,000
Capital Outlay	25,000		60,000		
Capital Improvements	743,775	345,760	302,670	263,800	<b>5,128,625</b>
Bond Principal					
Total Uses	<u>2,788,021</u>	<u>2,440,125</u>	<u>2,570,329</u>	<u>2,478,224</u>	<u>7,501,538</u>
Change in available funds	(446,265)	30,924	36,278	260,721	514,763
Other changes					(250,000)
Working Capital Ending Year	165,584	196,508	232,785	493,506	758,268

Working Capital balance 12/31/2022

438,593

Rate History

2010 - \$3.06/1,000 gals or \$2.29/100 cu ft  
 2014 - \$3.28/1,000 gals or \$2.45/100 cu ft  
 2017 - \$3.56/1,000 gals or \$2.66/100 cu ft  
**2018 - \$3.90/1,000 gals or \$2.92/100 cu ft**

## **SUMMARY OF IMPACTS ON FUNDING SOURCES**

### **STORM SEWER FUND**

Maintenance and infrastructure costs of the city's storm water systems continue to increase into the future. The city issued storm water utility bonds in 2016 to assist with cash flow for the many storm water projects in 2016 and 2017. An internal loan from Electric will be necessary to complete the storm water projects in 2018. Staff is recommending increases in the storm water utility fee for the next four years to provide funds to cover infrastructure, debt and operating costs. In addition to the annual storm water improvements in the streets, several parks needed to have drainage issues addressed.

**STORM WATER FUND**

	<i>14.00%</i>	<i>11.43%</i>	<i>10.26%</i>	<i>9.30%</i>	<i>8.51%</i>
	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
Working Capital Beg. Year	1,103,301	370,232	878,878	600,905	443,557
CASH	834,046	<b>100,977</b>	609,623	331,650	174,302
<b>SOURCES</b>					
Charges for services	<b>552,039</b>	<b>615,130</b>	<b>678,220</b>	<b>741,310</b>	<b>804,400</b>
Interest	11,033	4,628	13,183	10,516	8,871
<b>Bond Issue</b>					
Internal loan		<b>1,000,000</b>			
Total Sources	563,072	1,619,758	691,403	751,826	813,271
<b>USES</b>					
Operation Expense	114,825	172,122	120,564	123,578	126,668
Street Renewal Program	255,000	255,000	255,000	255,000	310,000
Bonnell Park storm sewer					
River Outfall repair		<b>95,000</b>			
North Street ponding	115,000				
Turnbacks		119,000			
John Ward Park drainage					167,500
Brisbin Park	<b>55,000</b>	<b>180,000</b>			
Extra Street Renewal Projects	630,095	39,390	79,912	<b>67,145</b>	<b>35,365</b>
Trunk Storm water imprv			250,000	100,000	
Other Projects		125,000	55,000	158,000	
Intererst Expense-2016	41,221	40,600	38,900	37,200	35,500
Principal-2016	85,000	85,000	85,000	85,000	85,000
Intererst Expense-2018			35,000	33,250	31,500
Electric Loan-2018			50,000	50,000	50,000
Total Uses	1,296,141	1,111,112	969,376	909,173	841,533
Change in available funds	(733,069)	508,646	(277,973)	(157,347)	(28,261)
Working Capital Ending Year	370,232	878,878	600,905	443,557	415,296

<p><u>Rate History (per month)</u>          2003 \$1.75 per month          2008 \$2.25 per month          2009 \$2.45 per month          2010 \$2.65 per month          2013 \$2.95 per month          2016 \$3.07 per month          2017 \$3.50 per month  <b>2018 \$3.90 per month</b></p>	<p><b>Working Capital Balance 12/31/2022</b></p>	<p><b>\$ 354,321</b></p>
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## SUMMARY OF IMPACTS ON FUNDING SOURCES

### STREET RENEWAL FUND

The city's Street Renewal fund has been put to very good use over the past several years. Investments **in street projects** total over **\$18.8 million in the last 5 years**, excluding utilities. This has been accomplished with **transfers into** the fund of **\$7.5 million in the last 5 years**. The city continues to invest in its' street renewal program with an anticipated **additional \$14.3 million invested over the next 5 years** in street renewal projects excluding the water, sewer and storm water infrastructure investments. This can only be accomplished with additional transfers into the fund or with a bond issue. Necessary transfers or a bond issue will need to total \$5 million.

The City Council is committed to improving street conditions throughout the city at an aggressive pace. Street Surface Improvement Projects (SSIP) extend the life of the existing street while improving the look and drivability of the road. SSIP projects will add an additional \$3,500,000 in expenses over the next five years.

The street renewal fund continues to generate revenues from a franchise fee and property assessments. The last increase in the property assessment rate occurred in 2017. Staff is recommending increasing and continuing the franchise fee which sunsets in December 2019. Staff is also recommending that City Council consider assessing for a portion of the SSIP projects to offset the costs associated with extending the life of the road.

**STREET RENEWAL FUND**

	2.80% increase 2017	2.50% increase 2018	2.50% increase 2019	<b>10.00%</b> <b>2020</b>	2.50% increase 2021
Working Capital Beg Yr	860,696	621,086	44,662	75,372	68,324

Sources

**Bond Issue**

Special Assessment Revenues	809,143	848,622	819,837	790,333	785,091
Franchise fees	345,558	345,558	345,558	<b>371,475</b>	371,475
Intergovernmental	<b>1,490,000</b>	261,300	810,000		
Permits	12,875	5,856	5,856	5,856	5,856
Interest	4,303	9,316	782	1,507	1,537
Micellaneous	<b>434,400</b>				
<b>Transfers In</b>	<b>600,000</b>	<b>1,500,000</b>	<b>400,000</b>	<b>1,350,000</b>	<b>1,000,000</b>
Total Sources	3,696,279	2,970,652	2,382,033	2,519,171	2,163,960

Uses

Street Projects	65,970	65,970	50,970	50,970	50,970
2020 SRP				1,460,000	
2019 SRP			1,545,000		
2018 SRP		1,407,000			
2017 SRP	<b>1,742,444</b>				
2016 SRP	190,000				
SSIP		850,000	871,250	893,031	915,357
2017 Christian Hill	<b>3,525,563</b>				
Swede Town - 2021					1,550,000
So. Frontage Rd					100,000
CSAH 14/9th Ave.	640,000	45,000			
Bridge repair	56,700	161,600			
Sandberg wall	190				
<b>Fairoak Underpass</b>	<b>164,598</b>	<b>500,000</b>	<b>500,000</b>	<b>790,400</b>	
North Street	50,000	1,180,000			
Trunk hwy 47		120,000	80,000		
Water	(870,705)	(292,345)	(233,315)	(232,237)	(216,875)
Sewer	(743,775)	(195,760)	(127,670)	(113,800)	(128,625)
Storm Water	(885,095)	(294,390)	(334,912)	(322,145)	(345,365)
Total Uses	3,935,889	3,547,075	2,351,323	2,526,219	1,925,462

Net Source/(Use)	<b>(239,610)</b>	<b>(576,423)</b>	30,710	<b>(7,048)</b>	238,497
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Working Capital Year End	621,086	44,662	75,372	68,324	306,822
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Working Capital Balance 12/31/2022					\$53,427
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## **SUMMARY OF IMPACTS ON FUNDING SOURCES**

### WATER FUND

The water fund has some major capital improvement projects within the next few years to improve water distribution and storage. Water utility rates were increased in 2016 to help offset rising operating and infrastructure needs. The next rate increase is projected to be in 2019. This will be needed to pay debt service on bonds to be issued to pay for necessary Well rehabilitations. The projected cost is about \$5.5 million.

The 2001 revenue bond was paid off in 2017. The final payment of this bond improves cash flow temporarily. Along with the well projects, infrastructure improvements are using available funds at a very rapid pace. Water rates overall, continue to be very competitive with other municipal utilities.

2018 projects include:

2018 street renewal  
North street reconstruction  
Well inspection and repair  
7<sup>th</sup> Ave. watermain lining

**WATER FUND**

**basic rate**  
**9.50%**

**9.30%**

	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>	<u>2021</u>
Working Capital Beginning Year	1,789,738	1,323,152	1,482,059	1,325,552	1,883,393
Cash Beginning Balance	1,896,230	1,204,644	1,363,551	1,207,044	1,914,885

**SOURCES**

Operating Revenues	1,699,119	1,690,624	<b>1,875,163</b>	1,866,163	<b>1,976,125</b>
Other	187,178 #	205,000 #	170,000	175,000 #	165,000
Interest	28,443	21,081	27,271	27,158	47,872
Transfer In			<b>60,000</b>		
Miscellaneous	3,357				
Bond Issuance				<b>5,500,000</b>	
Total Sources	<u>1,918,098</u>	<u>1,916,705</u>	<u>2,132,434</u>	<u>7,568,321</u>	<u>2,188,997</u>

**USES**

Personal Services	403,630	413,721	417,858	428,304	432,587
Supplies	109,748	124,028	127,312	127,471	124,624
Professional Services	336,691	311,872	316,496	324,581	379,308
Maintenance	36,694	40,832	43,960	41,762	41,433
Interest				48,125	192,500
Transfer Out	<b>100,000</b>	40,000	40,000	40,000	40,000
Capital Outlay	35,000	40,000	110,000	97,000	125,000
Capital Improvements	1,362,921	787,345	1,233,315	<b>5,753,237</b>	1,216,875
Principal Bond payment	225,000				150,000
Total Uses	<u>2,609,684</u>	<u>1,757,797</u>	<u>2,288,941</u>	<u>6,860,480</u>	<u>2,702,327</u>
Change in available funds	(691,586)	158,907	(156,507)	707,841	(513,330)
Other changes	225,000	0	0	(150,000)	0
Working Capital Ending Year	1,323,152	1,482,059	1,325,552	1,883,393	1,370,063

**Working Capital Balance 12/31/2022 \$ 355,221**

Rate History

1999 - \$.92/1,000 gals. or \$.69/100 cu ft  
 2008 - \$1.36/1,000 gals or \$1.02/100 cu  
 2009 - \$1.50/1,000 gals or \$1.12/100 cu  
 2011 - \$1.64/1,000 gals or \$1.22/100 cu  
 2015 - \$1.79/1,000 gals or \$1.34/100 cu  
**2016 - \$1.97/1,000 gals or \$1.47/100 cu**

## **SUMMARY OF IMPACTS ON FUNDING SOURCES**

### TAX INCREMENT FUNDS

The city currently has four tax increment districts established for redevelopment. The HRA has three tax increment districts established for redevelopment.

The Enterprise Park TIF district continues to support the extinguishment of the existing debt in the Historic Rum River District (HRRD) with funds available from internal lending. This support is expected to last until 2033 with support diminishing as the years go by.

The HRRD will exist until 2032 at which time there should be enough funding for the final debt service payment in 2033 of \$564,435. This fund may need a general tax levy in 2026 through 2032 to help support the debt service payment requirements. The reason for a levy requirement in the future is a lack of development. Planned or proposed development did not occur in a timely manner nor in the planned value.

The Commuter Rail Transit Village (CRTV) will utilize TIF revenues to pay for the internal financing from the Electric fund for the Anoka Station ramp, and other redevelopment projects. Further development in the CRTV will require internal lending to accomplish goals of purchasing blighted properties, provide for cleanup of properties or improve infrastructure. This district could exist until 2038.

The South Ferry District will utilize TIF revenues to redevelop and pay back internal loans used to purchase and clean up properties in this district. The goals of the City Council and its' constituents is to beautify the gateway to the city. This district could exist until 2034.

The Greens of Anoka District will utilize TIF revenues to implement the Greens of Anoka plan. There are existing future revenues available for a commitment of redevelopment in this area. This district could exist until 2039.

The oldest HRA TIF district funds can be utilized city wide on scattered site redevelopment or to assist in a particular redevelopment project area. This TIF district will be decertified on December 31, 2017, however the Central Business TIF district will continue to payback a loan for fire suppression improvements, thereby extending the district existence. The newest HRA district will support redevelopment one block off of Main Street. This district could exist until 2042.

# PROJECT DESCRIPTIONS

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2018

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# Capital Improvement Plan

2018 *thru* 2022

Department Aquatic Center

## City of Anoka, Minnesota

Contact

Project # **AC16-03**  
 Project Name **Boat Slide Replacement**

Type Improvement

Useful Life 15 years

Category Parks and Recreation Facilities

Priority n/a

Status Active

Update flag

### Description

Replace boat slide (2003 installation) with an interactive water activity for children (42" and smaller) 4 years and under.  
 Aquatic play products are more expensive than playgrounds, Item has been reentered in 2018 with increased budget amount. (No purchase to be made in 2017 as originally requested for \$35,000.)

### Justification

Vinyl coating is fading and starting to degrade at the water level.

Prior	Expenditures	2018	2019	2020	2021	2022	Total
0	Construction/Maintenance	70,000					70,000
<b>Total</b>	<b>Total</b>	<b>70,000</b>					<b>70,000</b>

Prior	Funding Sources	2018	2019	2020	2021	2022	Total
0	General Fund	70,000					70,000
<b>Total</b>	<b>Total</b>	<b>70,000</b>					<b>70,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Aquatic Center  
**Contact** Public Services Director  
**Type** Unassigned  
**Useful Life**  
**Category** Parks and Recreation Facilities  
**Priority** n/a  
**Status** Active

**Project #** AC17-01  
**Project Name** Lobby Remodel

Update flag

### Description

Aquatic Center built in 1998. Remodel front lobby area to better serve clientele and provide better access to locker room entrances, family restroom facilities, and functionality of the service desk.

### Justification

Access to lockerrooms by the public is difficult due to people congestion in the lobby oaying admission or purchasing passes. For individuals requiring family lockerroom use, they must walk behind the desk into the staff area.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance	25,000					25,000
<b>Total</b>	<b>25,000</b>					<b>25,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
General Fund	25,000					25,000
<b>Total</b>	<b>25,000</b>					<b>25,000</b>

### Budget Impact/Other

**Capital Improvement Plan**  
**City of Anoka, Minnesota**

2018 *thru* 2022

**Department** Cemetery  
**Contact**  
**Type** Improvement  
**Useful Life** 25 years  
**Category** Unassigned  
**Priority** 3 Important  
**Status** Active

**Project #** CEM17-02  
**Project Name** Signage

Update flag

**Description**

Replace existing lot/block signage and install street signage to improve peoples ability to locate their loved ones in Forest Hill Cemetery

**Justification**

The section/block/lot signage is only visible from one side of the cemetery blocks when facing north. It is difficult to navigate the cemetery and find love ones. Streets are named on the section maps but there are no street name blades within the cemetery. Costs include posts and manufacturing of new signs for all sections and street names/intersections

<b>Expenditures</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Equip/Vehicles/Furnishings	30,000					30,000
<b>Total</b>	<b>30,000</b>					<b>30,000</b>

<b>Funding Sources</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Cemetary fund	30,000					30,000
<b>Total</b>	<b>30,000</b>					<b>30,000</b>

**Budget Impact/Other**

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Community Development  
**Contact** Community Development Man  
**Type** Redevelopment  
**Useful Life** 50 years  
**Category** Community Development Acti  
**Priority** 3 Important  
**Status** Active

**Project #** CD-10-01  
**Project Name** Commuter Rail Transit Village

Update flag

### Description

Aquire, demo and prepare properties for redevelopment in CRTV.  
 Dehn, 2820 5th - 2017  
 Spartz, 2804 5th - 2016  
 Schmidt, 521 Johnson - 2018  
 Hanson, 517 Johnson - 2018  
 Matros 505 Johnson - 2018

### Justification

To prepare a block next to the northstar station for redevelopment and secure perimeter of lakeland tool property.

Prior	Expenditures	2018	2019	2020	2021	2022	Total
3,720,000	Land Acquisition	500,000					500,000
<b>Total</b>	<b>Total</b>	<b>500,000</b>					<b>500,000</b>

Prior	Funding Sources	2018	2019	2020	2021	2022	Total
3,720,000	Tax Increment Funds	500,000					500,000
<b>Total</b>	<b>Total</b>	<b>500,000</b>					<b>500,000</b>

### Budget Impact/Other

new development would generate tax increment to pay for infrastructure including the ramp.

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Electric Utility  
**Contact** Electric Director  
**Type** Equipment  
**Useful Life**  
**Category** Public Utilities Facilities  
**Priority** n/a  
**Status** Active

**Project #** EU14-03  
**Project Name** Rebuild Distribution Lines

Update flag

**Description**  
 Rebuild secondary UG wires Roosevelt Street  
 Rebuild secondary UG wires Sunny Way Court  
 Rebuild secondary UG wires Sunny Lane, 11th to 15th Ave  
 Rebuild secondary UG wires Cleveland St., 12th to 16th Ave  
 Rebuild secondary UG wires E. McKinley St., 12th to 15th Ave  
 Rebuild secondary UG wires 4th - 7th & Jackson to Hwy 10  
 Rebuild secondary UG wires 5th - 7th & Monroe to So. St.  
 Rebuild secondary UG wires N. of W. Rv Rd - Pribble to Henn. LD  
 Rebuild secondary UG wires Carway Rd to Hwy 169 - Trussel-Dean  
 Rebuild secondary UG wires Carway Rd to Hwy 169 - Miss. Rv - Dean

**Justification**  
 end of life, 40 yrs old and having outages

Prior	Expenditures	2018	2019	2020	2021	2022	Total
2,000,000	Construction/Maintenance	500,000	800,000	400,000			1,700,000
<b>Total</b>	<b>Total</b>	<b>500,000</b>	<b>800,000</b>	<b>400,000</b>			<b>1,700,000</b>

Prior	Funding Sources	2018	2019	2020	2021	2022	Total
2,000,000	Electric	500,000	800,000	400,000			1,700,000
<b>Total</b>	<b>Total</b>	<b>500,000</b>	<b>800,000</b>	<b>400,000</b>			<b>1,700,000</b>

**Budget Impact/Other**

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Electric Utility  
**Contact** Electric Director  
**Type** New  
**Useful Life** 50 years  
**Category** Public Utilities Facilities  
**Priority** n/a  
**Status** Active

**Project #** EU15-03  
**Project Name** Construct circuits from Garfield Substation

Update flag

### Description

Construct circuits out of the new Garfield substation.

### Justification

2014: underground circuits 401, 402 & 403, from substation to 7th avenue - \$400,000  
 104 north & south underground circuits from garfield to GRE circuits - \$420,000  
 circuit #122 south from Garfield station - \$230,000  
 circuit #104/122 south from Garfield - \$320,000  
 corciot #122 north from Garfield - \$670,000  
 construct new circuit from Garfield \$1,430,000  
 Construct two new circuits each year.

Prior	Expenditures	2018	2019	2020	2021	2022	Total
1,920,000	Construction/Maintenance	550,000	550,000				1,100,000
<b>Total</b>	<b>Total</b>	<b>550,000</b>	<b>550,000</b>				<b>1,100,000</b>

Prior	Funding Sources	2018	2019	2020	2021	2022	Total
1,920,000	Electric	550,000	550,000				1,100,000
<b>Total</b>	<b>Total</b>	<b>550,000</b>	<b>550,000</b>				<b>1,100,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Electric Utility  
**Contact** Electric Director  
**Type** Improvement  
**Useful Life**  
**Category** Public Utilities Facilities  
**Priority** n/a  
**Status** Active

**Project #** EU15-04  
**Project Name** Champlin Mississippi Crossing

Update flag

### Description

Relocate existing underground and overhead wires

### Justification

Expenditures	2018	2019	2020	2021	2022	Total
Redevelopment	1,000,000					1,000,000
<b>Total</b>	<b>1,000,000</b>					<b>1,000,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Electric	1,000,000					1,000,000
<b>Total</b>	<b>1,000,000</b>					<b>1,000,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Engineering  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 25 years  
**Category** Transportation Facilities  
**Priority** 3 Important  
**Status** Active

**Project #** EN-09-02  
**Project Name** CRTV Development

Update flag

### Description

Ongoing funding for the construction of improvements such as streets, water, sewer, storm sewer, lighting, traffic control (signal) and signage associated with the development of the Commuter Rail Transit Village.

### Justification

Even though it is well accepted that private developers would bear the bulk of costs associated with the growth of the CRTV, it is prudent that the City have available funding for the advancement of the project in accordance with master planning.

Items that may be included in this category are upsizing of infrastructure, additional lighting for public spaces, traffic signalization, etc. Example: constructing 5th Avenue from Garfield Street to Grant Street in 2015.

Prior	Expenditures	2018	2019	2020	2021	2022	Total
200,000	Construction/Maintenance	150,000	150,000				300,000
<b>Total</b>	<b>Total</b>	<b>150,000</b>	<b>150,000</b>				<b>300,000</b>

Prior	Funding Sources	2018	2019	2020	2021	2022	Total
200,000	Tax Increment Funds	150,000	150,000				300,000
<b>Total</b>	<b>Total</b>	<b>150,000</b>	<b>150,000</b>				<b>300,000</b>

### Budget Impact/Other

**Capital Improvement Plan**  
**City of Anoka, Minnesota**

2018 *thru* 2022

**Department** Engineering  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 30 years  
**Category** Transportation Facilities  
**Priority** 3 Important  
**Status** Active

**Project #** EN-15-09  
**Project Name** 2018 Street Renewal

Update flag

**Description**

Complete reconstruction of the following City streets:

Washington Street (Seventh Ave to Ninth Ave)  
 South Street (Fifth Ave to E. City limits)  
 Eighth Avenue (Brisbin St to South St)

Total Length = 5,650 LF

Project anticipates trunk storm replacement along on Eighth from South to Brisbin. This cost is in the Southeast Trunk Storm Sewer CIP.

**Justification**

Streets and underground utilities are in poor condition and are in need of reconstruction

Trunk storm sewer is budgeted under the south west area overall plan that will need to be installed with the 2018 SRP project.

<b>Expenditures</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Planning/Design/Engineering	241,730					241,730
Construction/Maintenance	1,446,270					1,446,270
<b>Total</b>	<b>1,688,000</b>					<b>1,688,000</b>

<b>Funding Sources</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Electric	238,030					238,030
Municipal State Aid	261,300					261,300
Sanitary Sewer Fund	208,170					208,170
Special Assessments	351,665					351,665
Stormwater Utility Fund	294,390					294,390
Street Renewal Fund	77,180					77,180
Water Fund	257,265					257,265
<b>Total</b>	<b>1,688,000</b>					<b>1,688,000</b>

**Budget Impact/Other**

Includes 5% for construction cost increase

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Engineering  
**Contact** Public Works Director  
**Type** New  
**Useful Life** 25 years  
**Category** Transportation Facilities  
**Priority** 2 Very Important  
**Status** Active

**Project #** EN-16-05  
**Project Name** Green Haven Parkway Phase II

Update flag

### Description

Phase II of the Green Haven Parkway from Thurston Avenue to West Main Street backage road as shown in the Greens of Anoka Study and the Highway 10 Access Planning Study. Two lane section with 12' wide multi-modal trail way.  
 Phase II construction will be from Garfield Street to Main Street  
 Proposed 2020 Construction

### Justification

This roadway will act as the north frontage road for Trunk Highway 10, taking local trips off of the Trunk Highway and will act as a "reliever" during the reconstruction of Highway 10.  
 Phase II Benefits:  
 - Provides a new connection between Verndale Avenue and Fair oak Avenue  
 - Closes Verndale Avenue access on Highway 10  
 - Provides bike and pedestrian accommodations

Expenditures	2018	2019	2020	2021	2022	Total	Future
Land Acquisition	1,000,000	1,000,000	500,000			2,500,000	3,450,000
<b>Total</b>	<b>1,000,000</b>	<b>1,000,000</b>	<b>500,000</b>			<b>2,500,000</b>	<b>Total</b>

Funding Sources	2018	2019	2020	2021	2022	Total	Future
Tax Increment Funds	1,000,000	1,000,000	500,000			2,500,000	3,450,000
<b>Total</b>	<b>1,000,000</b>	<b>1,000,000</b>	<b>500,000</b>			<b>2,500,000</b>	<b>Total</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Engineering  
**Contact** Public Works Director  
**Type** New  
**Useful Life** 25 years  
**Category** Transportation Facilities  
**Priority** 2 Very Important  
**Status** Active

**Project #** EN-16-07  
**Project Name** Fairoak Avenue Signal Removal Project

Update flag

### Description

Part of the overall Highway 10 Access Planning Study. Project will close the Fairoak access to Highway 10 and Highway 10 will be elevated up to maintain the neighborhood connection at Fairoak Avenue.

This project will be a combined project with South Frontage Road Phase II project.

Proposed 2021 Construction

### Justification

The project will reduce crashes and improve mobility issues and will provide high benefit measures that incrementally improves safety and operations for all users of the Highway 10 corridor. The frontage road will act as the south frontage road for Trunk Highway 10, providing continuous local connection from Cutters Grove to West Main Street.

#### Project Benefits

- The Fairoak intersection currently causes the most delay/safety issues in the region
- Removes the signal at the root of many of the problems in this segment of Highway 10
- Closes the Fairoak access on Highway 10
- Provides local street underpass and community connectivity
- Safe bike/pedestrian crossing of Highway 10
- Provide a new local connection between Fairoak and Main Street to the south of Highway 10
- Reconfigures the Main Street interchange intersections to roundabouts
- Ties Highway 10 commercial properties to Downtown Anoka

<b>Expenditures</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Planning/Design/Engineering	360,000	500,000	6,040,000			6,900,000
Land Acquisition			1,800,000			1,800,000
Construction/Maintenance				31,400,000		31,400,000
<b>Total</b>	<b>360,000</b>	<b>500,000</b>	<b>7,840,000</b>	<b>31,400,000</b>		<b>40,100,000</b>

<b>Funding Sources</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Grants			7,050,000	31,400,000		38,450,000
Street Renewal Fund	360,000	500,000	790,000			1,650,000
<b>Total</b>	<b>360,000</b>	<b>500,000</b>	<b>7,840,000</b>	<b>31,400,000</b>		<b>40,100,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Engineering  
**Contact** Public Works Director  
**Type** Improvement  
**Useful Life**  
**Category** Streets and Roads  
**Priority** 3 Important  
**Status** Active

**Project #** EN-18-01  
**Project Name** TH-47 Anoka Solution

Update flag

### Description

Develop Anoka's plan for TH-47 from BNSF railroad crossing to Bunker Lake Boulevard.  
 Plan will include the solution for traffic mobilization and safety for the Mineral Pond and Brom & Dunham Oaks Neighborhoods.  
 Project will include a left turn lane on TH-47 for the business on the southwest quadrant of Bunker Lake Boulevard and TH-47.

### Justification

Mndot has studied the railroad crossing on Ferry Street and is proposing to construction an overpass at the BNSF rail road crossing on TH-47. This will affect the traffic patterns north of the tracks from the reconstruction of this at grade crossing.

Expenditures	2018	2019	2020	2021	2022	Total
Planning/Design/Engineering	120,000	80,000				200,000
Construction/Maintenance					25,000,000	25,000,000
<b>Total</b>	<b>120,000</b>	<b>80,000</b>			<b>25,000,000</b>	<b>25,200,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Grants					25,000,000	25,000,000
Street Renewal Fund	120,000	80,000				200,000
<b>Total</b>	<b>120,000</b>	<b>80,000</b>			<b>25,000,000</b>	<b>25,200,000</b>

### Budget Impact/Other

\$12,000 per month (80 professional service hours) for 12 months  
 Construction cost will be developed during the preliminary design in 2018

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Engineering  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 30 years  
**Category** Transportation Facilities  
**Priority** 4 Less Important  
**Status** Active

**Project #** EN18-02  
**Project Name** Entrance Monument - E Main St

Update flag

### Description

Install an entrance monument for people entering into the City on Main Street from the east.  
 Entrance monument will be similar to the monument installed at the west end of West Main Street.

### Justification

No entrance monument exists at this location and East Main Street was reconditioned in 2017 from Round Lake Blvd to 7th Avenue.

Expenditures	2018	2019	2020	2021	2022	Total
Planning/Design/Engineering	5,000					5,000
Construction/Maintenance		30,000				30,000
<b>Total</b>	<b>5,000</b>	<b>30,000</b>				<b>35,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
General Fund	5,000	30,000				35,000
<b>Total</b>	<b>5,000</b>	<b>30,000</b>				<b>35,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

**Department** Engineering  
**Contact** Public Works Director  
**Type** Improvement  
**Useful Life**  
**Category** Streets and Roads  
**Priority** 2 Very Important  
**Status** Active

## City of Anoka, Minnesota

**Project #** EN18-03  
**Project Name** North Street Reconstruction

Update flag

### Description

Restruction of North Street from CSAH 7 to eastern city limits including curb & gutter.  
 Replace existing watermain from CSAH 7 to Buchanan St.  
 Install sanitary sewer and watermain from Buchanan Street to 8th Avenue.  
 Install storm sewer along the coordior and discharge into the regional storm pond at 11th Avenue.(2017 construction)

### Justification

On May 15, 2017 Anoka County turned back North Street to the city. This street was desinged at a Municipal State Aid route in the City of Anoka.  
 There currently no watermain or sanitary sewer between Buchanan Street and 8th Avenue to service the parcels located on the south side of North Street.  
 This will be a joint project with the City of Coon Rapids

<b>Expenditures</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Planning/Design/Engineering	55,000					55,000
Construction/Maintenance	1,421,000					1,421,000
<b>Total</b>	<b>1,476,000</b>					<b>1,476,000</b>

<b>Funding Sources</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Electric	246,000					246,000
Outside Sources	1,120,000					1,120,000
Sanitary Sewer Fund	29,000					29,000
Water Fund	81,000					81,000
<b>Total</b>	<b>1,476,000</b>					<b>1,476,000</b>

### Budget Impact/Other

Anoka County provided a lump sum payment of \$1,120,000 for the reconstruction of North Street.

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Greenhaven Golf Course

**Contact** Public Services Director

**Type** Improvement

**Useful Life** 12 years

**Category** General Public Buildings

**Priority** 5 Future Consideration

**Status** Active

**Project #** BM-GH-004

**Project Name** Greenhaven - Repaint Clubhouse Exterior

Update flag

### Description

Prep, seal and paint the building's exterior.

### Justification

The exterior of the building has significant staining due to spray irrigation drift. The existing paint coat also shows extensive weathering and fading.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance	70,000					70,000
<b>Total</b>	<b>70,000</b>					<b>70,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Capital Improvement fund	70,000					70,000
<b>Total</b>	<b>70,000</b>					<b>70,000</b>

### Budget Impact/Other

**Capital Improvement Plan**  
**City of Anoka, Minnesota**

2018 *thru* 2022

**Department** Greenhaven Golf Course

**Contact** Golf Course Manager

**Type** Improvement

**Useful Life** 25 years

**Category** Parks and Recreation Facilities

**Priority** 4 Less Important

**Status** Active

**Project #** GC14-21

**Project Name** Cart Path

Update flag

**Description**

Cart Path Expansion and Repairs

**Justification**

2800 LF #1 green to #5 tee  
 200 LF # 5 green  
 80 LF #6 tee 280 LF # 6 green  
 150 LF #7 tee  
 750 LF #7 green to #9 tee  
 170 LF #10 tee  
 30 LF # 11 tee  
 280 LF #7 green to #9 tee  
 170 LF #13 tee  
 1050 LF #13tee to #15 tee  
 170 LF #16 tee  
 220 LF ##16 green  
 650 LF #17 tee to green  
 150 LF #18 green

Paths have been broken up and deteriorated over the past several years. Many areas also show extreme ware due to the increasing number of carts used today.

<b>Prior</b>	<b>Expenditures</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
37,600	Construction/Maintenance	23,400					23,400
<b>Total</b>	<b>Total</b>	<b>23,400</b>					<b>23,400</b>

<b>Prior</b>	<b>Funding Sources</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
37,600	Golf Fund	23,400					23,400
<b>Total</b>	<b>Total</b>	<b>23,400</b>					<b>23,400</b>

**Budget Impact/Other**

# Capital Improvement Plan

2018 *thru* 2022

Department Greenhaven Golf Course

## City of Anoka, Minnesota

Contact

**Project #** GC17-03  
**Project Name** Outdoor Ceremony Site

**Type** New

**Useful Life** 15 yrs

**Category** Unassigned

**Priority** 5 Future Consideration

**Status** Active

Update flag

### Description

Construct an outdoor ceremony site for weddings and wedding pictures. A permanent ceremony site with pergola, wired for sound and lighting, landscaped with perennial and annual flowering plants and shrubs will allow Green Haven to compete with other nearby wedding facilities with outdoor weddings.

### Justification

The existing caterer is losing several wedding a year to facilities that have outdoor wedding sites. Couples are getting married less in churches and are searching for that one stop shop where they can have a wedding and a reception without their guests leaving the property. Although they do outdoor weddings they feel they could generate several more per year with a permanent wedding site with beautiful landscaping for pictures and the ceremony.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance	30,000					30,000
<b>Total</b>	<b>30,000</b>					<b>30,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Capital Improvement fund	30,000					30,000
<b>Total</b>	<b>30,000</b>					<b>30,000</b>

### Budget Impact/Other

\$25,000 to \$30,000 that will be reimbursed by the caterer. The agreement would be the city will receive \$500 per outdoor wedding until the initial investment is recouped and then \$100 per outdoor wedding to pay for maintenance and upkeep.

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Greenhaven Golf Course

**Contact** Golf Course Manager

**Type** Improvement

**Useful Life**

**Category** General Public Buildings

**Priority** 4 Less Important

**Status** Active

**Project #** GC17-09

**Project Name** Install Glass Doors on Grille

Update flag

### Description

Install glass doors on the grille doors so the customers could see that the grille is open for business and we could better control the noise from the bar.

### Justification

This would allow some separation from the golfers and banquet guests.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance	4,000					4,000
<b>Total</b>	<b>4,000</b>					<b>4,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
General Fund	4,000					4,000
<b>Total</b>	<b>4,000</b>					<b>4,000</b>

### Budget Impact/Other

\$4,000

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Greenhaven Golf Course

**Contact** Golf Course Manager

**Type** Improvement

**Useful Life**

**Category** General Public Buildings

**Priority** 5 Future Consideration

**Status** Active

**Project #** GC17-10

**Project Name** Install Grand Wood Doors to Entrance

Update flag

### Description

The current doors on the main level entrance are metal and glass. We could add beautiful wood & glass doors to make a more impressive entrance.

### Justification

By adding a grand set of wood doors we would accomplish a goal of making the upper main entrance much more grand. The current doors, although fine, do not make a statement of grandeur.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance	8,000					8,000
<b>Total</b>	<b>8,000</b>					<b>8,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Capital Improvement fund	8,000					8,000
<b>Total</b>	<b>8,000</b>					<b>8,000</b>

### Budget Impact/Other

\$8,000

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Liquor Stores  
**Contact** Liquor Store Manager  
**Type** Improvement  
**Useful Life** 40 years  
**Category** General Public Buildings  
**Priority** 3 Important  
**Status** Active

**Project #** LQ18-01  
**Project Name** East Store Expansion

Update flag

### Description

This is to expand the East Liquor Store

### Justification

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance	2,000,000					2,000,000
<b>Total</b>	<b>2,000,000</b>					<b>2,000,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Revenue Bonds	2,000,000					2,000,000
<b>Total</b>	<b>2,000,000</b>					<b>2,000,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

**Department** Parks and Recreation

## City of Anoka, Minnesota

**Contact** Public Works Director

**Project #** PR06-26

**Type** Improvement

**Project Name** Riverfront Park - HRRD Construction

**Useful Life**

**Category** Parks and Recreation Facilities

**Update flag** x

**Priority** 3 Important

**Status** Active

### Description

Develop the area north of City Hall into a park. Elements of this park will include a trailway connection through the park, plaza for civic gatherings, grand entrance / staircase, an amphitheater for City events, Memorial Court, historical interpretation area, fountains, open passive space, dockage, and with restrooms.

Park Dedication fees: estimated 191 units @ \$2543/unit = \$485,000.

#### Approximate Timeline Improvements

South entrance staircase in 2012 as part of the East Main Project

Trail and associated amenities, overall grading, and North Dockage in 2013

north end trail connection through the mill ruin area in 2014

Grand stair case/s, weir Plaza, City Hall Terrace, Memorial Court, Mill Ruin Area in 2015

Building Site / Second Avenue amenities, Amphitheater and pavilion structure in 2016

Veteran's Memorial / Military Tribute in 2020/2021

### Justification

Construction of Riverfront Park is part of the Master Plan for the North Central Business District and incorporates the Riverfront Park Plaza, cultural center and major historic elements throughout the river promenade and historic Rum River regional park.

Hwy 10 Anoka Solution impacts Vet Memorial in current location. Beginning planning in 2017 and design new memorial in 2018 with construction in 2020 ahead of hwy 10 project.

Prior	Expenditures	2018	2019	2020	2021	2022	Total	Future
1,539,275	Planning/Design/Engineering	140,000			341,000	140,000	621,000	1,494,000
	Construction/Maintenance				1,465,000	1,750,000	3,215,000	
<b>Total</b>	<b>Total</b>	<b>140,000</b>			<b>1,806,000</b>	<b>1,890,000</b>	<b>3,836,000</b>	<b>Total</b>

Prior	Funding Sources	2018	2019	2020	2021	2022	Total	Future
1,539,275	Capital Improvement fund				100,000		100,000	1,494,000
	General Obligation Bonds				1,706,000	1,507,000	3,213,000	
	Grants					233,000	233,000	
	Outside Sources					150,000	150,000	
	Street Renewal Fund	140,000					140,000	
<b>Total</b>	<b>Total</b>	<b>140,000</b>			<b>1,806,000</b>	<b>1,890,000</b>	<b>3,836,000</b>	<b>Total</b>

### Budget Impact/Other

annual maintenance of park area

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Parks and Recreation  
**Contact** Public Services Director  
**Type** New  
**Useful Life** 30 years  
**Category** Parks and Recreation Facilities  
**Priority** 4 Less Important  
**Status** Active

**Project #** PR06-48  
**Project Name** Anoka Station Parks and Greenspaces

Update flag x

### Description

Designs, development and construction of park areas and public green spaces. Possible trail connection from Transit Village to downtown. Complete Rum River Trail -make connection between 4th Avenue Rum River bridge and Anoka Station regional pond. Assumes: 670 new residential units and Park Dedication fees of \$2543/unit = \$1,700,000. Assume: Development will occur evenly over a 10 year period starting in 2012.

### Justification

Park improvement needed for commuter rail transit village  
 Project phasing will be required. Grant funding may be available for certain phases.

Prior	Expenditures	2018	2019	2020	2021	2022	Total	Future
200,000	Planning/Design/Engineering	50,000					50,000	150,000
	Construction/Maintenance			150,000			150,000	
<b>Total</b>							<b>200,000</b>	<b>Total</b>
	<b>Total</b>	<b>50,000</b>		<b>150,000</b>				

Prior	Funding Sources	2018	2019	2020	2021	2022	Total	Future
200,000	Park Capital Improvement fund	50,000					50,000	150,000
	Park Dedication fund			150,000			150,000	
<b>Total</b>							<b>200,000</b>	<b>Total</b>
	<b>Total</b>	<b>50,000</b>		<b>150,000</b>				

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Parks and Recreation  
**Contact** Public Services Director  
**Type** New  
**Useful Life** Unassigned  
**Category** Parks and Recreation Facilities  
**Priority** 1 Urgent  
**Status** Active

**Project #** PR09-23  
**Project Name** Emerald Ash Borer, Removal of Trees

Update flag x

### Description

Removal of diseased trees. And perhaps some reforestation

### Justification

It will be a requirement to remove and properly dispose of diseased ash trees within the city.  
 Does not include a re-forestation plan

Expenditures	2018	2019	2020	2021	2022	Total
Redevelopment	100,000	100,000	100,000	100,000		400,000
<b>Total</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>		<b>400,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
General Fund	100,000	100,000	100,000	100,000		400,000
<b>Total</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>	<b>100,000</b>		<b>400,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

**Department** Parks and Recreation

## City of Anoka, Minnesota

**Contact** Public Services Director

**Project #** PR15-01

**Type** Improvement

**Project Name** Playground Rehab/Repair

**Useful Life** 25 years

**Category** Parks and Recreation Facilities

Update flag

**Priority** 3 Important

**Status** Active

### Description

Replacement of timber framing with concrete curbing and replacement of fall surfacing. Enloe has pea rock and Rudy Johnso has sand - both which are substandard. Timbers at Highland park & King park are rotting which is safety hazard.

Replacing pearock & Sand with industry standard -engineered wood fiber

Rudy Johnson 2019

King Park 2018

### Justification

properly maintained fall surfacing for plagrounds is essential for limiting liability incase of injury

Prior	Expenditures	2018	2019	2020	2021	2022	Total
45,000	Construction/Maintenance	25,000	25,000				50,000
<b>Total</b>	<b>Total</b>	<b>25,000</b>	<b>25,000</b>				<b>50,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
General Fund	25,000	25,000				50,000
<b>Total</b>	<b>25,000</b>	<b>25,000</b>				<b>50,000</b>

### Budget Impact/Other

Engineered wood fiber requires annual top dressing to maintain appropriate fall surface. Woodtimber edging is less expensive to install but deteriorates and requires replacement every 7-10 years, concrete will not need to be replaced once installed.

Prior	Budget Items	2018	2019	2020	2021	2022	Total
60,000	Maintenance	20,000					20,000
<b>Total</b>	<b>Total</b>	<b>20,000</b>					<b>20,000</b>

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Parks and Recreation  
**Contact** Public Services Director  
**Type** New  
**Useful Life** 30 years  
**Category** Parks and Recreation Facilities  
**Priority** 3 Important  
**Status** Active

**Project #** PR15-06  
**Project Name** West Rum River Trail

Update flag

**Description**  
 Construct a trailway on the west side of the Rum River from the Dam south to Two Rivers Peninsula Point Park  
 2016 - Complete Survey / Develop Concept Plan  
 2017 - Comprehensive Planning / Refine Master Plan  
 2018 - Finalize Master Plan, create phasing plan & grant applications  
 2019 - Phase I Construction: Woodbury House Area  
 2020 - Phase II Construction: Stone House to Woodbury House  
 2021 - Phase III Construction: Dam to Stone House

**Justification**  
 To develop the "River Walk Loop" around the Rum River

Prior	Expenditures	2018	2019	2020	2021	2022	Total	Future
75,000	Planning/Design/Engineering	80,000		100,000			180,000	1,200,000
	Construction/Maintenance				560,000	560,000	1,120,000	
<b>Total</b>	<b>Total</b>	<b>80,000</b>		<b>100,000</b>	<b>560,000</b>	<b>560,000</b>	<b>1,300,000</b>	<b>Total</b>

Prior	Funding Sources	2018	2019	2020	2021	2022	Total	Future
75,000	Grants				500,000	500,000	1,000,000	1,200,000
	Park Capital Improvement fund	80,000		100,000	60,000	60,000	300,000	
<b>Total</b>	<b>Total</b>	<b>80,000</b>		<b>100,000</b>	<b>560,000</b>	<b>560,000</b>	<b>1,300,000</b>	<b>Total</b>

**Budget Impact/Other**

# Capital Improvement Plan

2018 *thru* 2022

Department Parks and Recreation

## City of Anoka, Minnesota

Contact

**Project #** PR17 - 07  
**Project Name** Mississippi Park Planter Beds & Sign

**Type** Improvement

**Useful Life**

**Category** Unassigned

**Priority** n/a

**Status** Active

Update flag

### Description

Planter beds constructed of 8x8 timbers in patio/shelter area and entrance areas

### Justification

Constructed pre-1990, were not replaced when the boardwalk was replaced in 2005. Rotting timbers are dangerous and could cause injury and nesting areas for honets/wasps. Replace with anchor block.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance	35,000					35,000
<b>Total</b>	<b>35,000</b>					<b>35,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
General Fund	35,000					35,000
<b>Total</b>	<b>35,000</b>					<b>35,000</b>

### Budget Impact/Other

**Capital Improvement Plan**  
**City of Anoka, Minnesota**

2018 *thru* 2022

**Department** Parks and Recreation  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life**  
**Category** Parks and Recreation Facilities  
**Priority** n/a  
**Status** Active

**Project #** PR17-04  
**Project Name** Trail System Repairs

Update flag

**Description**  
 Fog Seal and/or overlay sections of bituminous trails

**Justification**  
 fog sealing extends life of bituminous overlay may be required on some sections of trail where bituminous is failing  
 City has several miles of bituminous trails, this will be an on going project. Some segments may need to be patched, overlaid, or replaced along with fog sealing project.

Prior	Expenditures	2018	2019	2020	2021	2022	Total
40,000	Construction/Maintenance	55,000	40,000	40,000			135,000
<b>Total</b>	<b>Total</b>	<b>55,000</b>	<b>40,000</b>	<b>40,000</b>			<b>135,000</b>

Prior	Funding Sources	2018	2019	2020	2021	2022	Total
40,000	General Fund	55,000	40,000	40,000			135,000
<b>Total</b>	<b>Total</b>	<b>55,000</b>	<b>40,000</b>	<b>40,000</b>			<b>135,000</b>

**Budget Impact/Other**

**Capital Improvement Plan**  
**City of Anoka, Minnesota**

2018 *thru* 2022

**Department** Parks and Recreation  
**Contact** Park Director  
**Type** Improvement  
**Useful Life**  
**Category** Parks and Recreation Facilities  
**Priority** n/a  
**Status** Active

**Project #** PR17-08  
**Project Name** Rudy Johnson Park

Update flag

**Description**

Redesign and reconstruction of Rudy Johnson Park - playground, playfield, skating rink reconfiguration

**Justification**

Neighborhood needs have changed. District #11 is requesting removal of playground at Washington MS campus. Study, meet with neighborhood, and redesign park & facility amenities including possible relocation of hockey skating rink, installing irrigation in playfield, replacement of playground, construct parking lot.

<b>Expenditures</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Planning/Design/Engineering	35,000					35,000
Construction/Maintenance		175,000				175,000
<b>Total</b>	<b>35,000</b>	<b>175,000</b>				<b>210,000</b>

<b>Funding Sources</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Park Capital Improvement fund	35,000	175,000				210,000
<b>Total</b>	<b>35,000</b>	<b>175,000</b>				<b>210,000</b>

**Budget Impact/Other**

# Capital Improvement Plan

2018 *thru* 2022

**Department** Parks and Recreation  
**Contact** Public Services Director

## City of Anoka, Minnesota

**Type** Improvement  
**Useful Life** 20 years  
**Category** Parks and Recreation Facilities  
**Priority** 3 Important  
**Status** Active

**Project #** PR18-02  
**Project Name** Sunny Acres Tennis Courts

Update flag

### Description

Crack Fill and Repair, Repaint Sunny Acres Tennis courts

### Justification

Large full depth cracks are occurring at all paving joints. Cracks are large enough to catch shoes and cause injuries.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance	50,000					50,000
<b>Total</b>	<b>50,000</b>					<b>50,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Park Capital Improvement fund	50,000					50,000
<b>Total</b>	<b>50,000</b>					<b>50,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Police  
**Contact**  
**Type** Improvement  
**Useful Life** 25 years  
**Category** General Public Buildings  
**Priority** 2 Very Important  
**Status** Active

**Project #** PD18-01  
**Project Name** PD Parking Expansion

Update flag

### Description

Add 15 parking spaces to the lower Police Department Parking Lot. Include associated storm water runoff upgrades.

### Justification

Police Parking is too small to handle the increased number of employees added to Police. i.e. part-time security and full-time positions.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance	50,000					50,000
<b>Total</b>	<b>50,000</b>					<b>50,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
General Fund	50,000					50,000
<b>Total</b>	<b>50,000</b>					<b>50,000</b>

### Budget Impact/Other

Budget Items	2018	2019	2020	2021	2022	Total
Maintenance	50,000					50,000
<b>Total</b>	<b>50,000</b>					<b>50,000</b>

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Storm Utility  
**Contact** Public Services Director  
**Type** Redevelopment  
**Useful Life** 30 years  
**Category** Public Utilities Facilities  
**Priority** 3 Important  
**Status** Active

**Project #** SW-16-01  
**Project Name** Southeast Trunk Storm Sewer Improvements

Update flag

**Description**

2017 Brisbin Park Storm Sewer  
 Install outlet storm pipe into Brishin Park for storm water relief during large rain events. The 100-year flood elevation in the park is proposed to increase 4 inches, however with the outlet the stormwater will drain out faster than it does now since there currently is no outlet. The westerly half of the park would need to be regraded to accommodate the new stormwater outlet.

2018 Trunk Storm Sewer  
 The 42" RCP will be extended down 8th Avenue to complete the underground trunk infrastructure on the southeast trunk system for a cost of \$125,000. This work will result in the City being able to fill in the existing storm water pond at 8th Avenue and South Street from material generated on SRP project. This work is estimated to be \$55,000

**Justification**

By constructing these trunk storm sewer improvements, the 100 year flood elevation at the low area at Cross and Madison would be approximately 3 inches lower than current conditions.

Prior	Expenditures	2018	2019	2020	2021	2022	Total
50,000	Redevelopment	125,000	55,000				180,000
<b>Total</b>	<b>Total</b>	<b>125,000</b>	<b>55,000</b>				<b>180,000</b>

Prior	Funding Sources	2018	2019	2020	2021	2022	Total
50,000	Stormwater Utility Fund	125,000	55,000				180,000
<b>Total</b>	<b>Total</b>	<b>125,000</b>	<b>55,000</b>				<b>180,000</b>

**Budget Impact/Other**

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Streets  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life**  
**Category** Transportation Facilities  
**Priority** 3 Important  
**Status** Active

**Project #** ST 15-04  
**Project Name** Main Street Bridge Repair/Maintenance

Update flag x

### Description

The 2014 bridge inspection for Br # 5875 (Main Street) recommended the following repairs:

- Multiple minor spalls identified on the corners of the arches.
- The joint between the floorbeam and abutment still spalling.
- There is a void in the SE corner of the W approach panel.
- 3'x5" spall in sidewalk W of SW expansion joint (Trip hazard).
- The sidewalk has settled by the NW expansion joint (Trip hazard).
- The expansion joints are full of dirt and areas have separated.
- Severe deterioration of NW, NE, SW end posts at railing connection.
- Spalling and delamination of the bottom edge of deck.
- 14' of overlay delamination (5' missing) near E end of EB median.

### Justification

As the bridge ages, additional maintenance will need to be complete to extend the bridges life.

Prior	Expenditures	2018	2019	2020	2021	2022	Total
56,500	Construction/Maintenance	161,600					161,600
<b>Total</b>	<b>Total</b>	<b>161,600</b>					<b>161,600</b>

Prior	Funding Sources	2018	2019	2020	2021	2022	Total
56,500	Street Renewal Fund	161,600					161,600
<b>Total</b>	<b>Total</b>	<b>161,600</b>					<b>161,600</b>

### Budget Impact/Other

In 2016, 5% was added to \$207,000 budget for inflation.

# Capital Improvement Plan

2018 *thru* 2022

**Department** Streets  
**Contact** Public Services Director  
**Type** Unassigned  
**Useful Life** 11 years  
**Category** Transportation Facilities  
**Priority** 3 Important  
**Status** Active

## City of Anoka, Minnesota

**Project #** ST 15-05  
**Project Name** Sign Blanket Replacement

Update flag

### Description

Replacing all the signs outside of the expected life for the sign in the entire city. The city will be divided into four quadrants and expects to complete the sign blanket replacement by 2020. This will follow our Traffic Sign Maintenance Policy.

In January of 2088 the FHWA enacted new laws for agencies to develop a sign maintenance program . In June 2014 they required agencies to implement their sign management methods for regulatory and warning signs to meet the minimum level of retro-reflectivity as indicated in the MN MUTCD.

### Justification

In May of 2012, the FHWA announced a proposal eliminating many of the burdensome regulations related to street signs. The final ruling of these regulations was published in the Federal Register and the effective date was June 13, 2012. This update now required state and local agencies to implement and continued use of a sign assessment or management method that is designed to maintain regulatory and warning sign retro-reflectivity at or above the established minimum levels.

Estimated 4,000 signs with a total value of \$932,000.  
 50% of signs will need to be replaced in 4 years for an estimated cost of \$117,000 per year.  
 Estimated cost after is \$40,000 to continue to replace signs based on a 11 year life.

Prior	Expenditures	2018	2019	2020	2021	2022	Total
234,000	Construction/Maintenance	117,000	117,000	40,000	40,000		314,000
<b>Total</b>	<b>Total</b>	<b>117,000</b>	<b>117,000</b>	<b>40,000</b>	<b>40,000</b>		<b>314,000</b>

Prior	Funding Sources	2018	2019	2020	2021	2022	Total
234,000	General Fund	117,000	117,000	40,000	40,000		314,000
<b>Total</b>	<b>Total</b>	<b>117,000</b>	<b>117,000</b>	<b>40,000</b>	<b>40,000</b>		<b>314,000</b>

### Budget Impact/Other

**Capital Improvement Plan**  
**City of Anoka, Minnesota**

2018 thru 2022

**Department** Streets  
**Contact**  
**Type** Improvement  
**Useful Life** 30 years  
**Category** Transportation Facilities  
**Priority** 3 Important  
**Status** Active

**Project #** ST 20-01  
**Project Name** Sidewalk Extentions

Update flag

**Description**

Construct a sidewalk on the west side of 7th Avenue from Garfield Street to Johnson Street in 2018 to finish connection. The relocation of Comcast's cable from the GRE project is required for this sidewalk. Originally part of the Garfield Substation Area Improvement Project completed in 2015.

Construct a sidewalk on the north side of Garfield Street from 5th Avenue to 7th Avenue. This would be a 5' wide concrete sidewalk that would be located directly behind the curb.

**Justification**

There is a strong pedestrian movement along this section of 7th Avenue as evidenced by the wear in the grass along the west side.

This improvement will provide a safer route for pedestrians wanting to make this connection. It will also tie into the planned trailway on the westside of 7th Avenue from Garfield Street north to the northerly city limits and connecting into the Rum River Regional Trailway.

5th Avenue to 7th Avenue - 790 feet  
 Johnson Street to Grant Street - 493 feet  
 Grant Street to Randal Drive - 282 feet  
 Randal Drive to Garfield Street - 491 feet  
 TOTAL 2,056 FEET

1,266 feet @ \$25 per foot = \$31,650  
 15% contingency = \$4,750  
 TOTAL PROJECT COST \$36,400

Expenditures	2018	2019	2020	2021	2022	Total
Planning/Design/Engineering		5,000				5,000
Construction/Maintenance	20,000		31,400			51,400
<b>Total</b>	<b>20,000</b>	<b>5,000</b>	<b>31,400</b>			<b>56,400</b>

Funding Sources	2018	2019	2020	2021	2022	Total
General Fund	20,000	5,000	31,400			56,400
<b>Total</b>	<b>20,000</b>	<b>5,000</b>	<b>31,400</b>			<b>56,400</b>

**Budget Impact/Other**

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Water Utility  
**Contact** Public Works Director  
**Type** Improvement  
**Useful Life**  
**Category** Public Utilities Facilities  
**Priority** 3 Important  
**Status** Active

**Project #** WU-008  
**Project Name** Well Inspection and Repair

Update flag

### Description

Pull well, inspect and perform repairs need to:  
 Well #4 &5 2018  
 Well #7 2020  
 Well #3 2022

### Justification

Periodic well and pump inspections are part of a comprehensive water system. We have a scheduled rotation in which we pull, inspect and repair all of our wells over a six year period. This regular maintenance has proven valuable in keeping our water distribution performing at a highly effective level.

Prior	Expenditures	2018	2019	2020	2021	2022	Total	Future
180,000	Construction/Maintenance	50,000		50,000		50,000	150,000	200,000
<b>Total</b>	<b>Total</b>	<b>50,000</b>		<b>50,000</b>		<b>50,000</b>	<b>150,000</b>	<b>Total</b>

Prior	Funding Sources	2018	2019	2020	2021	2022	Total	Future
180,000	Water Fund	50,000		50,000		50,000	150,000	200,000
<b>Total</b>	<b>Total</b>	<b>50,000</b>		<b>50,000</b>		<b>50,000</b>	<b>150,000</b>	<b>Total</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Water Utility  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 15 years  
**Category** Public Utilities Facilities  
**Priority** 3 Important  
**Status** Active

**Project #** WU-027  
**Project Name** 7th Av Watermain Lining

Update flag

### Description

Reline the existing watermain under CSAH 7 from North Street to Grant Street.

### Justification

There has been 3 watermain breaks in the past year on this section of pipe.  
 1500' watermain @ \$120 LF  
 5 valves @ \$600 each  
 2 Hydrants @ \$1,200 each  
 15 Services @ \$ 1,000 each  
 12 Connect to WM @ \$1,000 each  
 Temp water @ \$7,500  
 Traffic control @ \$20,000  
 Street patching @ \$10,000  
 Mobilization @ \$27,000  
 20% Contingency @ \$60,800

Expenditures	2018	2019	2020	2021	2022	Total
Planning/Design/Engineering	61,000					61,000
Construction/Maintenance		304,000				304,000
<b>Total</b>	<b>61,000</b>	<b>304,000</b>				<b>365,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Water Fund	61,000	304,000				365,000
<b>Total</b>	<b>61,000</b>	<b>304,000</b>				<b>365,000</b>

### Budget Impact/Other

2019

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**Capital Improvement Plan**  
**City of Anoka, Minnesota**

2018 *thru* 2022

**Department** Engineering  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 30 years  
**Category** Transportation Facilities  
**Priority** 3 Important  
**Status** Active

**Project #** EN-15-03  
**Project Name** 2019 Street Renewal

Update flag

**Description**  
 Complete reconstruction of the following City streets:  
 6th Avenue (South to Jefferson)  
 Brisbin Street (5th to 7th)  
 Washington Street (5th to 6th)  
 Total Length = 3,510 LF  
 Resurface of Adams Street (5th to 6th)

**Justification**  
 Streets and underground utilities are in poor condition and are in need of reconstruction  
 MSA funds pay for street, storm & electric costs

<b>Expenditures</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Planning/Design/Engineering		265,470				265,470
Construction/Maintenance		1,588,170				1,588,170
<b>Total</b>		<b>1,853,640</b>				<b>1,853,640</b>

<b>Funding Sources</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Electric		173,935				173,935
Municipal State Aid		810,000				810,000
Sanitary Sewer Fund		181,200				181,200
Special Assessments		386,175				386,175
Stormwater Utility Fund		9,650				9,650
Street Renewal Fund		0				0
Water Fund		292,680				292,680
<b>Total</b>		<b>1,853,640</b>				<b>1,853,640</b>

**Budget Impact/Other**  
 Includes 5% for construction cost increase

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Engineering  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 30 years  
**Category** Public Utilities Facilities  
**Priority** 2 Very Important  
**Status** Active

**Project #** EN-16-02  
**Project Name** Rum River Dam Modification Project

Update flag

### Description

Modify the dam to make it resistant to the migration of invasive aquatic species such as the Asian Carp. This may include changing the operations / configuration of the gate, mechanical flash boards (pool elevation control), maintenance platform across the dam.

The modification may include developing the capability of producing hydroelectric power from the dam.

### Justification

To serve as redundant system to the Coon Rapids Dam on the Mississippi River and to protect the fisheries of the Milacs Lake basin.

Legislative bonding initiative.

Prior	Expenditures	2018	2019	2020	2021	2022	Total
260,000	Planning/Design/Engineering		200,000				200,000
	Construction/Maintenance			6,120,000			6,120,000
<b>Total</b>	<b>Total</b>		<b>200,000</b>	<b>6,120,000</b>			<b>6,320,000</b>

Prior	Funding Sources	2018	2019	2020	2021	2022	Total
260,000	Outside Sources		200,000	6,120,000			6,320,000
<b>Total</b>	<b>Total</b>		<b>200,000</b>	<b>6,120,000</b>			<b>6,320,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

**Department** Engineering  
**Contact** Public Services Director  
**Type** New  
**Useful Life** 30 years  
**Category** Transportation Facilities  
**Priority** 3 Important  
**Status** Active

## City of Anoka, Minnesota

**Project #** EN-17-02  
**Project Name** CSAH 7 / 43rd Avenue Intersection

Update flag

### Description

Construct a signalized intersection at CSAH 7 (7th Avenue) and 43rd Avenue. Note: the east leg of this intersection which is located in Andover will be called 143rd Avenue.

There is a trailway planned along the westside of 7th Avenue from the north city limits to CSAH 116 that should be build with this intersection project. The trail segment north of this intersection maybe funded with City funds. The segment south of this intersection should be funded by the developer of the commercial property.

### Justification

To accommodate development in the NW quadrant of CSAH 116 and CSAH 7.  
 To allow pedestrian movement along CSAH 7

Prior	Expenditures	2018	2019	2020	2021	2022	Total
7,500	Construction/Maintenance		550,000				550,000
<b>Total</b>	<b>Total</b>		<b>550,000</b>				<b>550,000</b>

Prior	Funding Sources	2018	2019	2020	2021	2022	Total
7,500	Outside Sources		550,000				550,000
<b>Total</b>	<b>Total</b>		<b>550,000</b>				<b>550,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Greenhaven Golf Course

**Contact** Golf Course Manager

**Type** Improvement

**Useful Life** 20 years

**Category** General Public Buildings

**Priority** 5 Future Consideration

**Status** Active

**Project #** GC14-02  
**Project Name** New Partitions in Banquet Rooms

Update flag

### Description

The partitions that allow us to divide the banquet rooms into smaller rooms are showing signs of wear and damage. We would replace them with newer versions that would do essentially the same thing.

### Justification

The ability to tailor the size of the rooms to fit the size of the group is essential to multiple events on any given day. The partitions are showing wear and have some damage and would be replaced with newer versions that are easier to maneuver.

<b>Expenditures</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Construction/Maintenance		49,000				49,000
<b>Total</b>		<b>49,000</b>				<b>49,000</b>

<b>Funding Sources</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Capital Improvement fund		49,000				49,000
<b>Total</b>		<b>49,000</b>				<b>49,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

**Department** Parks and Recreation  
**Contact** Public Services Director

## City of Anoka, Minnesota

**Project #** PR06-41  
**Project Name** Anoka Nature Preserve Park Development

**Type** New  
**Useful Life** 30 years  
**Category** Parks and Recreation Facilities  
**Priority** 3 Important  
**Status** Active

Update flag x

### Description

Design and development of passive recreation opportunities within the 200 acres of the conservation easement area of the Anoka Nature Preserve. Develop a trailhead with parking, restroom facilities, and picnic shelter. Improvements within the Nature Preserve may include trail surface improvements and possible dockage.

### Justification

Design and development of passive picturesque areas that could include trails, picnic areas, picnic shelters, rest rooms, and parking areas.

Construct trailhead parking lot & playground 2015  
 picnic shelter / tables/ grill  
 Small restroom facility

Grade Main trails and place class 7 material in 2014  
 Pave trails in 2020 - 50% county funds / grants

Intall fishing pier, canoe landing and camp sites in 2019 - DNR Fishing pier grant \$20,000- total City funds \$25,000

Picnic Shelter - 2020 - \$180,000

Prior	Expenditures	2018	2019	2020	2021	2022	Total
182,000	Construction/Maintenance		200,000	45,000	260,000		505,000
<b>Total</b>	<b>Total</b>		<b>200,000</b>	<b>45,000</b>	<b>260,000</b>		<b>505,000</b>

Prior	Funding Sources	2018	2019	2020	2021	2022	Total
182,000	General Obligation Bonds				260,000		260,000
	Grants			20,000			20,000
<b>Total</b>	Outside Sources		100,000				100,000
	Park Dedication fund		100,000	25,000			125,000
	<b>Total</b>		<b>200,000</b>	<b>45,000</b>	<b>260,000</b>		<b>505,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

**Department** Parks and Recreation

## City of Anoka, Minnesota

**Contact** Public Works Director

**Project #** PR10-01

**Type** New

**Project Name** Rum River Trail Connection-4th Ave. & Pleasant St.

**Useful Life** 25 years

**Category** Parks and Recreation Facilities

Update flag x

**Priority** 3 Important

**Status** Active

### Description

Construct an 8 ft. Rum River trailway connection from Pleasant Street to just north of the railroad tracks along the west side of fourth Avenue. This will require right-of-way acquisition, a railroad crossing gate, and other safety features.

### Justification

To complete the Rum River trail in this area and to eliminate crossing over Fourth Avenue twice.

Estimated Costs: Trailway & railroad crossing - \$52,800  
 Right-of-way acquisition - \$28,500  
 Railroad crossing gates / safety features - \$110,000  
 0.285 AC permanent - assume \$100,000/AC  
 0.284 AC temporary

Prior	Expenditures	2018	2019	2020	2021	2022	Total
10,000	Construction/Maintenance		191,300				191,300
<b>Total</b>	<b>Total</b>		<b>191,300</b>				<b>191,300</b>

Prior	Funding Sources	2018	2019	2020	2021	2022	Total
10,000	Grants		100,000				100,000
	Park Dedication fund		91,300				91,300
<b>Total</b>	<b>Total</b>		<b>191,300</b>				<b>191,300</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

Department Parks and Recreation

## City of Anoka, Minnesota

Contact

Project # **PR18-05**  
 Project Name **Mississippi Park Shoreline Restoration**

Type Unassigned

Useful Life

Category Unassigned

Priority n/a

Status Active

Update flag

### Description

Rip Rap and boulders on shoreline eastbank of Mississippi River Community Park

### Justification

This area is on a cut bank and is degrading. Rip rap placed pre-1995 was not effective (too small of rocks) to stop damage from ice and river current

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance		50,000				50,000
<b>Total</b>		<b>50,000</b>				<b>50,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Park Capital Improvement fund		50,000				50,000
<b>Total</b>		<b>50,000</b>				<b>50,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Parks and Recreation  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 30 years  
**Category** Parks and Recreation Facilities  
**Priority** 3 Important  
**Status** Active

**Project #** PR20 - 01  
**Project Name** John Ward Bathroom Reconstruction

Update flag

### Description

John Ward Bathroom Reconstruction

### Justification

Bathroom facility is subpar, no interior or security lighting, access paths too steep for current ADA.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance		250,000				250,000
<b>Total</b>		<b>250,000</b>				<b>250,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Capital Improvement fund		250,000				250,000
<b>Total</b>		<b>250,000</b>				<b>250,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Storm Utility  
**Contact** Public Services Director  
**Type** Redevelopment  
**Useful Life**  
**Category** Public Utilities Facilities  
**Priority** 3 Important  
**Status** Active

**Project #** SW-16-02  
**Project Name** Trunk Storm Sewer Improvements

Update flag

### Description

Trunk storm sewer improvements need to occur during the SRP project. With storm water requirements becoming more costly for the City, the City is planning for trunk storm sewer projects in addition to the storm sewer infrastructure installed on the SRP projects.

### Justification

As areas of the city are completed by the SRP projects, new areas where storm sewer is limited will be completed. Additional budgeting will be required to begin these trunk storm sewer studies and projects.

2019 and 2020 SRP will be in a new areas of the City.

Expenditures	2018	2019	2020	2021	2022	Total
Redevelopment		250,000	100,000			350,000
<b>Total</b>		<b>250,000</b>	<b>100,000</b>			<b>350,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Stormwater Utility Fund		250,000	100,000			350,000
<b>Total</b>		<b>250,000</b>	<b>100,000</b>			<b>350,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Water Utility  
**Contact** Public Works Director  
**Type** Improvement  
**Useful Life** 20 years  
**Category** Public Utilities Facilities  
**Priority** 3 Important  
**Status** Active

**Project #** WU-003  
**Project Name** Water Treatment Plant # 3 Exterior Repairs

Update flag

### Description

Tuck point, replace brick, and perform structural repairs as needed on water treatment plan #3.

### Justification

The face brick façade at water treatment plant number 3 is failing and is in need of repair. Many bricks are loose or missing completely. This needs to be done to reduce larger future maintenance costs and to provide for the ongoing operation of water treatment plant number 3.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance		80,000				80,000
<b>Total</b>		<b>80,000</b>				<b>80,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Water Fund		80,000				80,000
<b>Total</b>		<b>80,000</b>				<b>80,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Water Utility  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 50 years  
**Category** Public Utilities Facilities  
**Priority** 2 Very Important  
**Status** Active

**Project #** WU-024  
**Project Name** Expansion of Water Treatment Plant 6 & 8

Update flag

### Description

Expand the size of Water Treatment Plant 6 & 8 and install two additional filters to double our Pumping & Treatment capacity. Increase the size of the Deep Well Pumps correspondingly to allow production of +/- 4 Million Gallons/Day.

### Justification

City wells are run at near 100% capacity in June, July, and August each summer. A pump or other treatment failure would greatly reduce the City's ability to provide water for domestic use or fire protection.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance		1,000,000	4,521,000			5,521,000
<b>Total</b>		<b>1,000,000</b>	<b>4,521,000</b>			<b>5,521,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Water Fund		1,000,000	4,521,000			5,521,000
<b>Total</b>		<b>1,000,000</b>	<b>4,521,000</b>			<b>5,521,000</b>

### Budget Impact/Other

2020

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# Capital Improvement Plan

2018 *thru* 2022

Department Buildings

## City of Anoka, Minnesota

Contact

**Project #** BM-CH-018  
**Project Name** New ADA Wheel-Chair Lift @ City Hall

**Type** Equipment

**Useful Life** 20 years

**Category** Unassigned

**Priority** 2 Very Important

**Status** Active

Update flag

### Description

The old Wheel-Chair lift located in the Lower Level of City Hall is inadequate in both physical size and weight limitations.

### Justification

Many new wheel chairs are too large to fit within the car and are too heavy for the ancient lift.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance			30,000			30,000
<b>Total</b>			<b>30,000</b>			<b>30,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
General Fund			30,000			30,000
<b>Total</b>			<b>30,000</b>			<b>30,000</b>

### Budget Impact/Other

Budget Items	2018	2019	2020	2021	2022	Total
Equipment	30,000					30,000
<b>Total</b>	<b>30,000</b>					<b>30,000</b>

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Buildings  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 15 years  
**Category** Transportation Facilities  
**Priority** 3 Important  
**Status** Active

**Project #** BM-MB-012  
**Project Name** Walker Parking Ramp - Joint Caulking

Update flag

### Description

Prep and recaulk the ramp's deck joints with elastomeric compound.

### Justification

At present the caulking is worn out or missing. This type of caulking is necessary to prevent water intrusion into the joints. When this water freezes, it will, over time, destroy the concrete deck.

Prior	Expenditures	2018	2019	2020	2021	2022	Total
15,000	Construction/Maintenance			25,000			25,000
<b>Total</b>	<b>Total</b>			<b>25,000</b>			<b>25,000</b>

Prior	Funding Sources	2018	2019	2020	2021	2022	Total
15,000	Parking fund			25,000			25,000
<b>Total</b>	<b>Total</b>			<b>25,000</b>			<b>25,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Buildings  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 10 years  
**Category** General Public Buildings  
**Priority** 2 Very Important  
**Status** Active

**Project #** BM-PW-002  
**Project Name** Public Services - Exterior Painting

Update flag

### Description

Prep, tuck point, caulk, and repaint various areas on the exterior of the Public Services Building.

### Justification

Any building of this size, age and construction type can be expected to require this type of action with some regularity. Keeping a professional, well ordered appearance is important at all City buildings, this one is no different. This repair could be delayed or cancelled depending on the scheduled construction of the New Public Services Building.

Expenditures	2018	2019	2020	2021	2022	Total	Future
Construction/Maintenance			65,000			65,000	65,000
<b>Total</b>			<b>65,000</b>			<b>65,000</b>	<b>Total</b>

Funding Sources	2018	2019	2020	2021	2022	Total	Future
Capital Improvement fund			65,000			65,000	65,000
<b>Total</b>			<b>65,000</b>			<b>65,000</b>	<b>Total</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Buildings  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 20 years  
**Category** General Public Buildings  
**Priority** 4 Less Important  
**Status** Active

**Project #** BM-PW-004  
**Project Name** Public Works - Fire Alarms

Update flag

### Description

Upgrade the building's fire alarm system to modernize and broaden coverage.

### Justification

The present fire alarm system doesn't have horns or strobe lights that can be detected from all parts of the facility. Additional smoke and heat sensors should be added to decrease response time in the event of a fire. This repair could be delayed or cancelled depending on the scheduled construction of the New Public Services Building.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance			35,000			35,000
<b>Total</b>			<b>35,000</b>			<b>35,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
General Fund			35,000			35,000
<b>Total</b>			<b>35,000</b>			<b>35,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Buildings

**Contact**

**Type** Unassigned

**Useful Life** 20 years

**Category** Unassigned

**Priority** 2 Very Important

**Status** Active

**Project #** BM-PW-012  
**Project Name** Re-Roof Public Services Building

Update flag

### Description

Roof Replacement at Public Services

### Justification

Many areas of the Existing Roof are damaged and in need of replacement. We continually have roof repairs don't to stop the roof leaks but the roof is worn out.

Expenditures	2018	2019	2020	2021	2022	Total
Redevelopment			190,000			190,000
<b>Total</b>			<b>190,000</b>			<b>190,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Electric			190,000			190,000
<b>Total</b>			<b>190,000</b>			<b>190,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Buildings  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 25 years  
**Category** General Public Buildings  
**Priority** 3 Important  
**Status** Active

**Project #** PWBM-CH-011  
**Project Name** City Hall-Main Building Reroofing

Update flag

### Description

Remove and replace roof on the main part of City Hall.

### Justification

This built up flat roof is not well over 30 years old, and is beyond its normal life expectancy. It has been modified and patched many times over the years and each one of these sites represents an existing or potential leak.

Possible do with the renovation of City Hall Project. (project PWBM-CH-010)

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance			270,000			270,000
<b>Total</b>			<b>270,000</b>			<b>270,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Capital Improvement fund			270,000			270,000
<b>Total</b>			<b>270,000</b>			<b>270,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

**Department** Cemetery

## City of Anoka, Minnesota

**Contact**

**Project #** CEM17-03

**Type** Improvement

**Project Name** Decorative Fence

**Useful Life** 30 years

**Category** Unassigned

Update flag

**Priority** 5 Future Consideration

**Status** Active

### Description

Upgrade chain link perimeter fence on Forest Ave from Church Street to Main Entrance  
20% project cost for design / engineering

### Justification

The chain link fence is uninviting and degrades the overall esthetic of the cemetery. Installation of black rail fencing and decorative stone pillars along Forest Ave would improve the appearance of cemetery (similar to Oakwood).

<b>Expenditures</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Planning/Design/Engineering			25,000			25,000
Construction/Maintenance				125,000		125,000
<b>Total</b>			<b>25,000</b>	<b>125,000</b>		<b>150,000</b>

<b>Funding Sources</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Cemetery fund			25,000	125,000		150,000
<b>Total</b>			<b>25,000</b>	<b>125,000</b>		<b>150,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Community Development  
**Contact** Community Development Man  
**Type** Redevelopment  
**Useful Life**  
**Category** Community Development Acti  
**Priority** 4 Less Important  
**Status** Active

**Project #** CD-08-2  
**Project Name** Bunker/Thurston Redevelopment

Update flag

### Description

Redevelopment of this area.

### Justification

There is a potential redevelopment project for this area yet to be identified.

Expenditures	2018	2019	2020	2021	2022	Total
Planning/Design/Engineering			25,000			25,000
<b>Total</b>			<b>25,000</b>			<b>25,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Tax Increment Funds			25,000			25,000
<b>Total</b>			<b>25,000</b>			<b>25,000</b>

### Budget Impact/Other

**Capital Improvement Plan**  
**City of Anoka, Minnesota**

2018 *thru* 2022

**Department** Community Development  
**Contact** Community Development Man  
**Type** Redevelopment  
**Useful Life**  
**Category** Community Development Acti  
**Priority** 3 Important  
**Status** Active

**Project #** CD-08-3  
**Project Name** NCBD phase III

Update flag

**Description**

Future redevelopment on 3rd Avenue

**Justification**

Complete NCBD redevelopment by acquiring property and redeveloping 3rd Avenue between Jackson and Harrison Street.

<b>Expenditures</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Planning/Design/Engineering			25,000			25,000
<b>Total</b>			<b>25,000</b>			<b>25,000</b>

<b>Funding Sources</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Tax Increment Funds			25,000			25,000
<b>Total</b>			<b>25,000</b>			<b>25,000</b>

**Budget Impact/Other**

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Engineering  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 20 years  
**Category** Public Utilities Facilities  
**Priority** n/a  
**Status** Active

**Project #** EN-09-04  
**Project Name** Rum River Dam Gate Maintenance

Update flag

### Description

Tainter gate repairs & seal replacement plus equipment painting.  
 In 2016, 5% was added to \$150,000 for construction cost increase

### Justification

During its life to date the dam has required little or no actual repairs and its structure is basically sound. However, the control (tainter) gate has been racked approximately 4" out of plumb, probably by ice action. This gate is the determining factor in the existence of the summer time pool above the dam. Continued deferral of maintenance and repairs will lead to the gate's failure. Also, the gate and its associated equipment have not been painted since the dam was constructed in 1968. This paint is now failing and should be replaced.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance			158,000			158,000
<b>Total</b>			<b>158,000</b>			<b>158,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Stormwater Utility Fund			158,000			158,000
<b>Total</b>			<b>158,000</b>			<b>158,000</b>

### Budget Impact/Other

In 2007 The Public Services Department seized an opportunity to have repairs done to the damaged ice breakers below the dam. This activity was previously laid out in ST 07-02. Expenditures and funding have been reduced to reflect the work already accomplished.

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Engineering  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 30 years  
**Category** Transportation Facilities  
**Priority** 3 Important  
**Status** Active

**Project #** EN-16-10  
**Project Name** 2020 Street Renewal

Update flag

**Description**

Complete reconstruction of the following City streets:

8th Av (Harrison to TH-10)  
 8 1/2 Av (Main to Jackson)  
 9th Av (Main to Jackson)  
 Polk St ( 7th to 8th)  
 Bob Ehlen Dr ( 7th to 8th)  
 Harrison St ( 7th to 8th)  
 Jackson St ( 7th to 89h)  
 Alley (8th Ave) (7th to 9th)

Total Length = 4,750 LF (Street Const)

The relocation of 8 1/2 Av Lift Station is a separate project that should be completed during the 2020 SRP project

**Justification**

Streets and underground utilities are in poor condition and are in need of reconstruction

Expenditures	2018	2019	2020	2021	2022	Total
Planning/Design/Engineering			178,100			178,100
Construction/Maintenance			1,568,620			1,568,620
<b>Total</b>			<b>1,746,720</b>			<b>1,746,720</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Electric			291,120			291,120
Sanitary Sewer Fund			144,100			144,100
Special Assessments			363,900			363,900
Stormwater Utility Fund			322,140			322,140
Street Renewal Fund			343,945			343,945
Water Fund			281,515			281,515
<b>Total</b>			<b>1,746,720</b>			<b>1,746,720</b>

**Budget Impact/Other**

Includes 5% for construction cost increase

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Parking  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 25 years  
**Category** Transportation Facilities  
**Priority** 4 Less Important  
**Status** Active

**Project #** BM-009  
**Project Name** 2nd Avenue - Building Site #2 parking Lot

Update flag

**Description**

Create a parking lot on 2nd Avenue on Building Site Pad No. 2 - just north of the HRRD Parking Ramp on the east side of 2nd Avenue.

Create 136 stalls - includes above ground infiltration basins. A 154 stall parking lot could be created if below ground infiltration containers are used at a total project cost of \$423,500

**Justification**

Create more downtown parking capacity

Expenditures	2018	2019	2020	2021	2022	Total
Planning/Design/Engineering			54,000			54,000
Construction/Maintenance				306,800		306,800
<b>Total</b>			<b>54,000</b>	<b>306,800</b>		<b>360,800</b>

Funding Sources	2018	2019	2020	2021	2022	Total
General Fund			54,000	306,800		360,800
<b>Total</b>			<b>54,000</b>	<b>306,800</b>		<b>360,800</b>

**Budget Impact/Other**

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Parks and Recreation  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 30 years  
**Category** Parks and Recreation Facilities  
**Priority** 5 Future Consideration  
**Status** Active

**Project #** PR06-44  
**Project Name** Reconstruction of Park Buildings Johnson/Sorenson

Update flag

### Description

Upon completion of architectural-structure review of the park buildings, Rick Sorenson park buildings and restrooms, Rudy Johnson Park building and restrooms. Remodling design and reconstruction should be conducted.

### Justification

Both of these park structures need architectural professional services to replace door, glass, air flow, and electrical and mechanical improvements. To keep these structures available for public uses.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance			250,000			250,000
<b>Total</b>			<b>250,000</b>			<b>250,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Capital Improvement fund			250,000			250,000
<b>Total</b>			<b>250,000</b>			<b>250,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Parks and Recreation  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 15 yrs  
**Category** Parks and Recreation Facilities  
**Priority** 3 Important  
**Status** Active

**Project #** PR12-03  
**Project Name** Sunny Acres Park Improvement Project

Update flag

### Description

Improve Sunny Acres Park by rehabilitation the pavillion and regrade softball field outfields

### Justification

To maintain and revitalize Sunny Acres Park.  
 Outfields require periodic leveling due to nature of ground conditions (landfill site).  
 Coordinate field work with irrigation repairs, move irrigation system to city water from well

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance			200,000			200,000
<b>Total</b>			<b>200,000</b>			<b>200,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Park Capital Improvement fund			200,000			200,000
<b>Total</b>			<b>200,000</b>			<b>200,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

**Department** Parks and Recreation  
**Contact** Public Services Director

## City of Anoka, Minnesota

**Type** New  
**Useful Life** 30 years  
**Category** Parks and Recreation Facilities  
**Priority** 4 Less Important  
**Status** Active

**Project #** PR15-05  
**Project Name** 7th Avenue Trailway

Update flag

**Description**  
 Construct a 10' wide bituminous trailway from Garfield Street to Castle Field Boulevard  
 4960' @ \$40/ft = \$200,000

**Justification**  
 As per City trailway plan

Expenditures	2018	2019	2020	2021	2022	Total
Planning/Design/Engineering			15,000			15,000
Construction/Maintenance				200,000		200,000
<b>Total</b>			<b>15,000</b>	<b>200,000</b>		<b>215,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Park Capital Improvement fund			15,000	200,000		215,000
<b>Total</b>			<b>15,000</b>	<b>200,000</b>		<b>215,000</b>

**Budget Impact/Other**

# Capital Improvement Plan

2018 *thru* 2022

**Department** Parks and Recreation  
**Contact** Public Services Director

## City of Anoka, Minnesota

**Project #** PR16 - 01  
**Project Name** Rum River Trail - Riverbank Stabilization

**Type** New  
**Useful Life** 30 years  
**Category** Parks and Recreation Facilities  
**Priority** 3 Important  
**Status** Active

Update flag

### Description

High water erosion and undercutting of bank along Rum River Trail

### Justification

Trees falling into river, parrallel cracks in trail indicate undermining of river bank/trail, massive bank deterioration along 150-200' of trail. East side of river in this location is cut bank. Shoreline is on state/military affairs owned property - Rum River Regional Trail is allowed per easement. Multi-agency coordination will be required to repair shoreline. Grants may be available with assistance from ASWCD.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance			150,000			150,000
<b>Total</b>			<b>150,000</b>			<b>150,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
General Fund			30,000			30,000
Grants			120,000			120,000
<b>Total</b>			<b>150,000</b>			<b>150,000</b>

### Budget Impact/Other

Currently working with ASWCD to determine plan and budget impact

**Prior**

150,000

**Total**

**Capital Improvement Plan**  
**City of Anoka, Minnesota**

2018 *thru* 2022

**Department** Sanitary Utility

**Contact**

**Type** Unassigned

**Useful Life**

**Category** Unassigned

**Priority** n/a

**Status** Active

**Project #** SW-016  
**Project Name** 8 1/2 Av Lift Station

Update flag

**Description**

Relocate the lift station that is presently in the roadway on 8 1/2 Avenue to the east boulevard during the 2020 SRP project.

**Justification**

8 1/2 Avenue will be reconstructed in 2020 and this will be the correct timing to relocate the lift station located in the roadway on 8 1/2 Avenue. It is presently in the center of 8 1/2 and vehicle traffic damaged the cover requiring frequent repair.

<b>Expenditures</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Construction/Maintenance			150,000			150,000
<b>Total</b>			<b>150,000</b>			<b>150,000</b>

<b>Funding Sources</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Sanitary Sewer Fund			150,000			150,000
<b>Total</b>			<b>150,000</b>			<b>150,000</b>

**Budget Impact/Other**

2021

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# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Engineering  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 30 years  
**Category** Transportation Facilities  
**Priority** 3 Important  
**Status** Active

**Project #** EN-16-04  
**Project Name** 2021 SRP - Swede Town

Update flag

### Description

Complete reconstruction of the following City streets:  
 5th Avenue (Golf to Harrison)  
 6th Avenue (Harrison to Jackson)  
 School Street (5th to 7th)  
 Van Buren St (4th to 7th)  
 Alley (4th to 5th)

Total Length = 5,350 LF (Street Const)

### Justification

Streets and underground utilities are in poor condition and are in need of reconstruction

<b>Expenditures</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Planning/Design/Engineering				255,420		255,420
Construction/Maintenance				1,519,580		1,519,580
<b>Total</b>				<b>1,775,000</b>		<b>1,775,000</b>

<b>Funding Sources</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Electric				244,545		244,545
Municipal State Aid				306,200		306,200
Sanitary Sewer Fund				158,925		158,925
Special Assessments				369,475		369,475
Stormwater Utility Fund				348,365		348,365
Street Renewal Fund				77,975		77,975
Water Fund				269,515		269,515
<b>Total</b>				<b>1,775,000</b>		<b>1,775,000</b>

### Budget Impact/Other

Includes 5% for construction cost increase

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Liquor Stores  
**Contact** Liquor Store Manager  
**Type** New  
**Useful Life** 40 years  
**Category** General Public Buildings  
**Priority** 3 Important  
**Status** Active

**Project #** LQ18-02  
**Project Name** West store relocation

Update flag

**Description**  
 Better Values Liquor Store West Relocation

**Justification**

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance				2,500,000		2,500,000
<b>Total</b>				<b>2,500,000</b>		<b>2,500,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Revenue Bonds				2,500,000		2,500,000
<b>Total</b>				<b>2,500,000</b>		<b>2,500,000</b>

**Budget Impact/Other**

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Engineering  
**Contact** Public Works Director  
**Type** New  
**Useful Life** 25 years  
**Category** Transportation Facilities  
**Priority** 2 Very Important  
**Status** Active

**Project #** EN-16-08  
**Project Name** South Frontage Road Phase I

Update flag

### Description

Phase I of the the South Frontage Road from Cutters Grove Avenue to West Main Street backage road is shown in the Greens of Anoka Study and the Highway 10 Access Planning Study. Two lane section with side walk.

Phase I construction will be from Cutters Grove to Fair oak Ave.

2018 Construction

### Justification

This roadway will act as the south frontage road for Trunk Highway 10, providing continuous local connection from Cutters Grove to West Main Street. This frontage road needs to be completed prior to improvements at Thurston Avenue and Highway 10.

Phase 1 Benefits

- Many travelers cut through the existing private parking lot to circulate and will help with this
- Provides a public connection from Cutters Grove to the existing frontage road
- Allows public circulation south of Highway 10 between access points

Expenditures	2018	2019	2020	2021	2022	Total	Future
Planning/Design/Engineering					250,000	250,000	1,750,000
Land Acquisition				100,000		100,000	
<b>Total</b>				<b>100,000</b>	<b>250,000</b>	<b>350,000</b>	<b>Total</b>

Funding Sources	2018	2019	2020	2021	2022	Total	Future
Street Renewal Fund				100,000	250,000	350,000	1,750,000
<b>Total</b>				<b>100,000</b>	<b>250,000</b>	<b>350,000</b>	<b>Total</b>

### Budget Impact/Other

**Capital Improvement Plan**  
**City of Anoka, Minnesota**

2018 *thru* 2022

**Department** Parks and Recreation  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 25 years  
**Category** Parks and Recreation Facilities  
**Priority** 4 Less Important  
**Status** Active

**Project #** PR12-01  
**Project Name** John Ward Park Drainage Enhancement Project

Update flag

**Description**

Install an underdrain system within the low spot adjacent to the skate board area within John Ward Park. The system would have three drains of 150' long located approximately 2 feet below the surface to collect the water. City estimate \$100 dir bore, 25% engineering, 27% inflation. Piping across the park would be 800 lineal feet of 8" HDPE Horizontally Directionally Drilled at a average grade of 0.475% with two large radius pipe riser cleanouts located in the center near one of the existing light poles.  
 Estimated Project Cost of \$67,500.00

**Justification**

To prevent additional stormwater runoff from leaching into the underlying materials.

<b>Expenditures</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Planning/Design/Engineering				30,000		30,000
Construction/Maintenance				130,000		130,000
<b>Total</b>				<b>160,000</b>		<b>160,000</b>

<b>Funding Sources</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Stormwater Utility Fund				160,000		160,000
<b>Total</b>				<b>160,000</b>		<b>160,000</b>

**Budget Impact/Other**

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Parks and Recreation  
**Contact** Public Services Director  
**Type** New  
**Useful Life** 25 years  
**Category** Parks and Recreation Facilities  
**Priority** 3 Important  
**Status** Active

**Project #** PR15-04  
**Project Name** RRSN Trailway Connections

Update flag

### Description

Construct an 10 ft. bituminous trailway connection heading south along CSAH 7 to CSAH 116 trailway system. From ANP to CSAH 7 along the city limits completed in 2016 with the development.

### Justification

To complete trail connections to the ANP to the county trail system in Anoka.  
 Approx 2000' @ \$40/ft = \$80,000

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance				80,000		80,000
<b>Total</b>				<b>80,000</b>		<b>80,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Park Dedication fund				80,000		80,000
<b>Total</b>				<b>80,000</b>		<b>80,000</b>

### Budget Impact/Other

2022

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# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Buildings  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 20 years  
**Category** General Public Buildings  
**Priority** 3 Important  
**Status** Active

**Project #** BM-CH-011  
**Project Name** City Hall - Tuck point exterior walls

Update flag x

### Description

Tuck point - brick replacement - referbishment to exterior walls and brick.

### Justification

The exterior walls of City Hall are in need of spot tuck pointing. Some brick replacement. Block needs to be replaced that have cracked and chipped of.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance					75,000	75,000
<b>Total</b>					<b>75,000</b>	<b>75,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Capital Improvement fund					75,000	75,000
<b>Total</b>					<b>75,000</b>	<b>75,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Buildings  
**Contact** Public Works Director  
**Type** Improvement  
**Useful Life** 10 years  
**Category** General Public Buildings  
**Priority** 4 Less Important  
**Status** Active

**Project #** BM-PD-001  
**Project Name** Safety Center - Masonry Cleaning

Update flag

### Description

Clean the exterior brick to remove efflorescence. Reseal as necessary.

### Justification

This facility is new, the white streaking (efflorescence) should be removed to maintain its appearance.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance					25,000	25,000
<b>Total</b>					<b>25,000</b>	<b>25,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
General Fund					25,000	25,000
<b>Total</b>					<b>25,000</b>	<b>25,000</b>

### Budget Impact/Other

**Capital Improvement Plan**  
**City of Anoka, Minnesota**

2018 *thru* 2022

**Department** Engineering  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 30 years  
**Category** Transportation Facilities  
**Priority** 3 Important  
**Status** Active

**Project #** EN-15-06  
**Project Name** 2022 Street Renewal

Update flag

**Description**  
 Complete reconstruction 3,500 linear feet of City streets.

**Justification**  
 Streets and underground utilities are in poor condition and are in need of reconstruction

Expenditures	2018	2019	2020	2021	2022	Total
Planning/Design/Engineering					272,200	272,200
Construction/Maintenance					1,619,875	1,619,875
<b>Total</b>					<b>1,892,075</b>	<b>1,892,075</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Electric					315,345	315,345
Sanitary Sewer Fund					234,780	234,780
Special Assessments					394,180	394,180
Stormwater Utility Fund					364,200	364,200
Street Renewal Fund					293,425	293,425
Water Fund					290,145	290,145
<b>Total</b>					<b>1,892,075</b>	<b>1,892,075</b>

**Budget Impact/Other**  
 Includes 5% for construction cost increase

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Engineering  
**Contact** Public Works Director  
**Type** Improvement  
**Useful Life** 50 years  
**Category** Utility Infrastructure  
**Priority** 2 Very Important  
**Status** Active

**Project #** EN-19-01  
**Project Name** Utility Expansion/Extension @ TH-47 & BNSF

Update flag

### Description

Extend City Sewer From Martin St. to the BNSF rail road crossing. Currently there are three parcels on spetic systems.  
 Install City Watermain from Martin St to to wells #1 & 2 north of rail road tracks.

### Justification

MNDOT is in preliminary design for the grade seperation project at the rail road crossing located on TH-47.  
 The City will install a new trunk watermain along TH-47 to complete the looping of the water system. The current watermain is old and located under a building.  
 In 2016, 5% was added to \$118,000 for construction cost increase

Expenditures	2018	2019	2020	2021	2022	Total
Redevelopment					199,000	199,000
<b>Total</b>					<b>199,000</b>	<b>199,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Sanitary Sewer Fund					124,000	124,000
Water Fund					75,000	75,000
<b>Total</b>					<b>199,000</b>	<b>199,000</b>

### Budget Impact/Other

Watermain 800 feet @ \$80 per foot = \$75,000  
 In 2016, 5% was added to \$118,000 for construction cost increase for the sanitary sewer.

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Parks and Recreation  
**Contact** Public Services Director  
**Type** New  
**Useful Life**  
**Category** Parks and Recreation Facilities  
**Priority** n/a  
**Status** Active

**Project #** PR14-01  
**Project Name** Anoka Enterprise Park Trail connection

Update flag

### Description

Trail that allows golf cart access from the Anoka Enterprise Business Park to Green Haven Golf Course.  
 Two Sections:  
 Trail Section One - trail into Green Haven Golf Course which connects to the existing golf trails - \$50,000  
 Section Two McKinley Street trail connection to the City of Ramsey - \$50,000

### Justification

Increase use / reveune of Green Haven Golf Course

Expenditures	2018	2019	2020	2021	2022	Total	Future
Construction/Maintenance					50,000	50,000	50,000
<b>Total</b>					<b>50,000</b>	<b>50,000</b>	<b>Total</b>

Funding Sources	2018	2019	2020	2021	2022	Total	Future
Park Capital Improvement fund					50,000	50,000	50,000
<b>Total</b>					<b>50,000</b>	<b>50,000</b>	<b>Total</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Parks and Recreation  
**Contact** Public Services Director  
**Type** New  
**Useful Life** 30 years  
**Category** Parks and Recreation Facilities  
**Priority** 4 Less Important  
**Status** Active

**Project #** PR14-04  
**Project Name** Kings Island Improvements - Phase II

Update flag

**Description**  
 Kings Island Phase II - Traill spurs, camp sites and fishing dock; could also include secondary access off Hwy 10

**Justification**  
 Provide Recreational Opportunities

Expenditures	2018	2019	2020	2021	2022	Total	Future
Planning/Design/Engineering					10,000	10,000	310,000
<b>Total</b>					<b>10,000</b>	<b>10,000</b>	<b>Total</b>

Funding Sources	2018	2019	2020	2021	2022	Total	Future
Park Capital Improvement fund					10,000	10,000	310,000
<b>Total</b>					<b>10,000</b>	<b>10,000</b>	<b>Total</b>

**Budget Impact/Other**

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Public Works  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 15 years  
**Category** General Public Buildings  
**Priority** 2 Very Important  
**Status** Active

**Project #** MP-065  
**Project Name** Power Gate System # 1

Update flag

### Description

Power Gate System at Public Services Building @ 501 Pierce St.

### Justification

The Power Gate Systems at Anoka Public Services Building are 40 Years old and are obsolete, parts no longer available. One gate has failed multiple times and we are loosing our ability to repair/maintain the gates. This repair could be delayed or cancelled depending on the scheduled construction of the New Public Services Building.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance					20,000	20,000
<b>Total</b>					<b>20,000</b>	<b>20,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Capital Improvement fund					20,000	20,000
<b>Total</b>					<b>20,000</b>	<b>20,000</b>

### Budget Impact/Other

Budget Items	2018	2019	2020	2021	2022	Total
Equipment					20,000	20,000
<b>Total</b>					<b>20,000</b>	<b>20,000</b>

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Sanitary Utility  
**Contact** Public Services Director  
**Type** Improvement  
**Useful Life** 30 years  
**Category** Public Utilities Facilities  
**Priority** 3 Important  
**Status** Active

**Project #** SW-014  
**Project Name** Industrial Blvd Sewer Extension

Update flag

### Description

Install 500' of sanitary sewer east of Thurston Av along the south boulevard of Industrial Blvd.

### Justification

Provide sewer services to 650 & 652 Bunker Lake Blvd.  
 Currently parcels are on septic systems that were installed in the late 70's.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance					60,000	60,000
<b>Total</b>					<b>60,000</b>	<b>60,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Sanitary Sewer Fund					60,000	60,000
<b>Total</b>					<b>60,000</b>	<b>60,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

## City of Anoka, Minnesota

**Department** Streets  
**Contact** Public Works Director  
**Type** Improvement  
**Useful Life** 30 years  
**Category** Transportation Facilities  
**Priority** 4 Less Important  
**Status** Active

**Project #** ST 15-06  
**Project Name** Rum River Pedestrian Bridge Coating Project

Update flag

### Description

Paint/ Coat

### Justification

All bridges should be inspected every 2 to 5 years. Maintenance cost to sandblast and paint should occur every 10 years.  
 Possible MNDOT assistance

<b>Expenditures</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Construction/Maintenance					200,000	200,000
<b>Total</b>					<b>200,000</b>	<b>200,000</b>

<b>Funding Sources</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>Total</b>
Street Renewal Fund					200,000	200,000
<b>Total</b>					<b>200,000</b>	<b>200,000</b>

### Budget Impact/Other

# Capital Improvement Plan

2018 *thru* 2022

**Department** Water Utility

## City of Anoka, Minnesota

**Contact**

**Project #** WU-036  
**Project Name** Reconditioning of Water Tower 2 (Industrial Park)

**Type** Unassigned

**Useful Life** 20 years

**Category** Unassigned

**Priority** 3 Important

**Status** Active

Update flag

### Description

The COA 1.5 Million Gallon Water Tower (Tank # 2) at the Industrial Park is now 20+ Years Old and it is time for a Complete Reconditioning of both Inside and Out. Other necessary repairs are often identified during this process.

### Justification

As a Matter of a Good Water Maint. Plan, 15 to 20 year inspections are performed to identify issues needing repair. The Paint on these Towers typically lasts 20 Years.

Expenditures	2018	2019	2020	2021	2022	Total
Construction/Maintenance					1,200,000	1,200,000
<b>Total</b>					<b>1,200,000</b>	<b>1,200,000</b>

Funding Sources	2018	2019	2020	2021	2022	Total
Water Fund					1,200,000	1,200,000
<b>Total</b>					<b>1,200,000</b>	<b>1,200,000</b>

### Budget Impact/Other

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# APPENDIX B:

Water Supply Plan

Local Surface Water Management Plan

Sewer Connection Policy

City Code Chpt. 38 Article III

Minnesota Rules 4715.0310

Copy of MS4 SWPPP Application

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# City of Anoka Local Water Supply Plan Third Generation for 2016-2018

December 28, 2016 (Revised June 2017)

SEH File ANOKA 139052

*Formerly called Water Emergency & Water Conservation Plan*



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## DEPARTMENT OF NATURAL RESOURCES – DIVISION OF ECOLOGICAL AND WATER RESOURCES AND METROPOLITAN COUNCIL

### **INTRODUCTION TO WATER SUPPLY PLANS (WSP)**

#### **Who needs to complete a Water Supply Plan**

Public water suppliers serving more than 1,000 people, large private water suppliers in designated Groundwater Management Areas, and all water suppliers in the Twin Cities metropolitan area are required to prepare and submit a water supply plan.

The goal of the WSP is to help water suppliers: 1) implement long term water sustainability and conservation measures; and 2) develop critical emergency preparedness measures. Your community needs to know what measures will be implemented in case of a water crisis. A lot of emergencies can be avoided or mitigated if long term sustainability measures are implemented.

#### **Groundwater Management Areas (GWMA)**

The DNR has designated three areas of the state as Groundwater Management Areas (GWMAs) to focus groundwater management efforts in specific geographies where there is an added risk of overuse or water quality degradation. A plan directing the DNR's actions within each GWMA has been prepared. Although there are no specific additional requirements with respect to the water supply planning for communities within designated GWMAs, communities should be aware of the issues and actions planned if they are within the boundary of one of the GWMAs. The three GWMAs are the North and East Metro GWMA (Twin Cities Metro), the Bonanza Valley GWMA and the Straight River GWMA (near Park Rapids). Additional information and maps are included in the DNR webpage at <http://www.dnr.state.mn.us/gwmp/areas.html>

#### **Benefits of completing a WSP**

Completing a WSP using this template, fulfills a water supplier's statutory obligations under M.S. [M.S.103G.291](#) to complete a water supply plan. For water suppliers in the metropolitan area, the WSP will help local governmental units to fulfill their requirements under M.S. 473.859 to complete a local comprehensive plan. Additional benefits of completing WSP template:

- The standardized format allows for quicker and easier review and approval.
- Help water suppliers prepare for droughts and water emergencies.
- Create eligibility for funding requests to the Minnesota Department of Health (MDH) for the Drinking Water Revolving Fund.
- Allow water suppliers to submit requests for new wells or expanded capacity of existing wells.
- Simplify the development of county comprehensive water plans and watershed plans.
- Fulfill the contingency plan provisions required in the MDH wellhead protection and surface water protection plans.
- Fulfill the demand reduction requirements of Minnesota Statutes, section 103G.291 subd 3 and 4.

- Upon implementation, contribute to maintaining aquifer levels, reducing potential well interference and water use conflicts, and reducing the need to drill new wells or expand system capacity.
- Enable DNR to compile and analyze water use and conservation data to help guide decisions.
- Conserve Minnesota’s water resources

If your community needs assistance completing the Water Supply Plan, assistance is available from your area hydrologist or groundwater specialist, the MN Rural Waters Association circuit rider program, or in the metropolitan area from Metropolitan Council staff. Many private consultants are also available.

## **WSP Approval Process**

### **10 Basic Steps for completing a 10-Year Water Supply Plan**

1. Download the DNR/Metropolitan Council Water Supply Plan Template [www.mndnr.gov/watersupplyplans](http://www.mndnr.gov/watersupplyplans)
2. Save the document with a file name with this naming convention:  
WSP\_cityname\_permitnumber\_date.doc.
3. The template is a form that should be completed electronically.
4. Compile the required water use data (Part 1) and emergency procedures information (Part 2)
5. The Water Conservation section (Part 3) may need discussion with the water department, council, or planning commission, if your community does not already have an active water conservation program.
6. Communities in the seven-county Twin Cities metropolitan area should complete all the information discussed in Part 4. The Metropolitan Council has additional guidance information on their webpage <http://www.metrocouncil.org/Handbook/Plan-Elements/Water-Resources/Water-Supply.aspx>. All out-state water suppliers do *not* need to complete the content addressed in Part 4.
7. Use the Plan instructions and Checklist document to insure all data is complete and attachments are included. This will allow for a quicker approval process. [www.mndnr.gov/watersupplyplans](http://www.mndnr.gov/watersupplyplans)
8. Plans should be submitted electronically – no paper documents are required. <https://webapps11.dnr.state.mn.us/mpars/public/authentication/login>
9. DNR hydrologist will review plans (in cooperation with Metropolitan Council in Metro area) and approve the plan or make recommendations.
10. Once approved, communities should complete a Certification of Adoption form, and send a copy to the DNR.

Complete Table 1 with information about the public water supply system covered by this WSP.

**Table 1. General information regarding this WSP**

<b>Requested Information</b>	<b>Description</b>
DNR Water Appropriation Permit Number(s)	<b>1976-6187</b>
Ownership	<input checked="" type="checkbox"/> Public or <input type="checkbox"/> Private
Metropolitan Council Area	<input checked="" type="checkbox"/> Yes or <input type="checkbox"/> No (and county name)
Street Address	2015 2nd Ave
City, State, Zip	Anoka, MN 55303
Contact Person Name	Pete Klingenberg
Title	Water & Sewer Superintendent
Phone Number	763.576.2923
MDH Supplier Classification	Municipal

## **PART 1. WATER SUPPLY SYSTEM DESCRIPTION AND EVALUATION**

The first step in any water supply analysis is to assess the current status of demand and availability. Information summarized in Part 1 can be used to develop Emergency Preparedness Procedures (Part 2) and the Water Conservation Plan (Part 3). This data is also needed to track progress for water efficiency measures.

### **A. Analysis of Water Demand**

Complete Table 2 showing the past 10 years of water demand data.

- Some of this information may be in your Wellhead Protection Plan.
- If you do not have this information, do your best, call your engineer for assistance or if necessary leave blank.

If your customer categories are different than the ones listed in Table 2, please describe the differences below:

A column for agricultural water use was added, to highlight that no agricultural water use has occurred in Anoka. Additional columns were added to the table for Max Day per capita Demand (GPCD) and Max Day: Average Day per capita Demand (GPCD) in order to better illustrate historic max day water usage.

Anoka Local Water Supply Plan – December 2016 (Revised June 2017)

Table 2. Historic water demand (see definitions in the glossary after Part 4 of this template)

Year	Pop. Served	Total Connections	Residential Water Delivered (MG)	C/I/I Water Delivered (MG)	Agricultural Water Delivered (MG)	Water used for Non-essential	Wholesale Deliveries (MG)	Total Water Delivered (MG)	Total Water Pumped (MG)
2005	18,076	5189	387.0	376.9	0	0	0	763.90	916.32
2006	18,076	5079	423.5	416.1	0	0	0	839.60	1041.95
2007	18,076	5066	438.4	410.6	0	0	0	849.00	1077.58
2008	18,076	5199	371.0	368.2	0	0	0	739.20	969.30
2009	18,076	5,217	383.3	374.9	0	0	0	758.15	922.28
2010	17,142	5,206	456.3	251.3	0	0	0	707.55	868.19
2011	17,142	5,208	441.7	239.6	0	0	0	681.25	805.44
2012	17,142	5,191	474.5	240.2	0	0	0	737.70	898.44
2013	18,000	7,482	456.7	240.5	0	0	0	737.17	859.49
2014	18,000	7,505	414.2	216.1	0	0	0	637.25	838.92
2015	17,345	5,154	418.2	225.3	0	0	0	675.46	827.43
<b>Avg. 2010-2015</b>	<b>17,462</b>	<b>5,892</b>	<b>443.6</b>	<b>235.5</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>738.75</b>	<b>849.65</b>

Table 2 (Cont.)

Year	Water Supplier Services (MG)	Percent Unmetered/Unaccounted	Average Daily Demand (MGD)	Max. Daily Demand (MGD)	Date of Max. Demand	Residential Per Capita Demand (GPCD)	Total per capita Demand (GPCD)	Max Day per capita Demand (GPCD)	Max Day / Average Day Ratio
2005	N/A	17%	N/A	N/A	N/A	58.66	138.88	N/A	N/A
2006	N/A	19%	N/A	N/A	N/A	64.19	157.92	N/A	N/A
2007	N/A	21%	N/A	N/A	N/A	66.45	163.33	N/A	N/A
2008	N/A	24%	N/A	N/A	N/A	56.23	146.91	N/A	N/A
2009	N/A	18%	2.53	5.80	8/13/2009	58.09	139.79	334.93	2.29
2010	N/A	19%	2.38	4.50	5/29/2010	72.92	138.76	248.33	1.89
2011	N/A	15%	2.21	4.50	9/13/2011	70.59	128.73	262.22	2.04
2012	N/A	20%	2.46	4.88	9/3/2012	75.84	143.59	282.86	1.98
2013	40.00	14%	2.35	5.40	8/27/2013	72.99	137.37	299.78	2.29
2014	6.88	24%	2.30	4.98	7/24/2014	66.21	134.08	276.61	2.17
2015	32.00	18%	2.27	4.08	8/2/2015	66.84	132.24	234.94	1.79
<b>Avg. 2010-2015</b>	<b>26.29</b>	<b>19%</b>	<b>2.33</b>	<b>4.72</b>	<b>--</b>	<b>70.90</b>	<b>135.80</b>	<b>267.46</b>	<b>2.03</b>

**MG** – Million Gallons      **MGD** – Million Gallons per Day      **GPCD** – Gallons per Capita per Day -- See Glossary for definitions

Note: Population served for 2013-2015 is based on City reported data in the MPARS Water Use Reports. All other populations are based on the Metropolitan Council’s Community Profile census data for the relevant decade. Water Supplier Services (WSS) usage wasn’t recorded prior to 2013- Total Water Delivered and Percent Unmetered/Unaccounted do not take into account WSS values for these years.

Complete Table 3 by listing the top 10 water users by volume, from largest to smallest. For each user, include information about the category of use (residential, commercial, industrial, institutional, or wholesale), the amount of water used in gallons per year, the percent of total water delivered, and the status of water conservation measures.

**Table 3. Large volume users**

<b>Customer</b>	<b>Use Category (Residential, Industrial, Commercial, Institutional, Wholesale)</b>	<b>Amount Used (Gallons per Year)</b>	<b>Percent of Total Annual Water Delivered</b>	<b>Implementing Water Conservation Measures? (Yes/No/Unknown)</b>
Hoffman Engineering	Industrial	1,480,511	0.23%	No
Federal Cartridge	Industrial	982,127	0.15%	No
Anoka Rehab & Living Center	Commercial	680,200	0.11%	No
Anoka Metro Regional Treat Ctr	Commercial	652,965	0.10%	No
Rainbow Plaza Apartments	Commercial	622,703	0.10%	No
Anoka County Jail	Commercial	604,000	0.09%	No
Anoka Cty Dept of Property Mgt	Commercial	597,422	0.09%	No
Anoka Government Center	Commercial	554,000	0.09%	No
Anoka Metro Regional Treat Ctr	Commercial	527,960	0.08%	No
Cutter Gr Est/Mgmnt	Commercial	498,434	0.08%	No
<b>Total</b>		<b>7,200,322</b>	<b>1.12%</b>	

## B. Treatment and Storage Capacity

Complete Table 4 with a description of where water is treated, the year treatment facilities were constructed, water treatment capacity, the treatment methods (i.e. chemical addition, reverse osmosis, coagulation, sedimentation, etc.) and treatment types used (i.e. fluoridation, softening, chlorination, Fe/MN removal, coagulation, etc.). Also describe the annual amount and method of disposal of treatment residuals. Add rows to the table as needed.

**Table 4. Water treatment capacity and treatment processes**

Treatment Site ID (Plant Name or Well ID)	Year Constructed	Rated Treatment Capacity (GPD)	Treatment Method	Treatment Type	Annual Amount of Residuals	Disposal Process for Residuals	Do You Reclaim Filter Backwash Water?
TP 3	1947	1.22 MGD	Chemical Add & Filter	FL,CL2, FE/MN Removal	0	NA	No
TP 4	1959	1.15 MGD	Chemical Add & Filter	FL,CL2, HMO (FE/MN Radium Removal)	0	NA	No
TP 5	1965	2.09 MGD	Chemical Add & Filter	FL,CL2, FE/MN Removal	0	NA	No
TP 7	1989	0.860 MGD <sup>(1)</sup>	Chemical Add & Filter	FL,CL2, FE/MN Removal, HMO (Radium Removal)	0	NA	No
TP 6	1974	2.88 MGD	Chemical Add & Filter	FL,CL2, FE/MN Removal, HMO (Radium Removal)	0	NA	No
<b>Total</b>	<b>NA</b>	<b>8.23 MGD<sup>(1)</sup></b>	<b>NA</b>	<b>NA</b>	<b>0</b>	<b>NA</b>	

Notes:

(1) Actual capacity of WTPs restricted to annual flow-weighted average by MDH MOA for radium compliance. Refer to 2015 Comprehensive Water Plan.

Complete Table 5 with information about storage structures. Describe the type (i.e. elevated, ground, etc.), the storage capacity of each type of structure, the year each structure was constructed, and the primary material for each structure. Add rows to the table as needed.

**Table 5. Storage capacity, as of the end of the last calendar year**

Structure Name	Type of Storage Structure	Year Constructed	Primary Material	Storage Capacity (Gallons)
Tower 1	Elevated storage	1953	Steel	0.50 MG
Tower 2	Elevated storage	2002	Steel	1.50 MG
Tower 3	Elevated storage	1960	Steel	0.40 MG
<b>Total</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>2.40 MG</b>

### **Treatment and storage capacity versus demand**

It is recommended that total storage equal or exceed the average daily demand.

Discuss the difference between current storage and treatment capacity versus the water supplier’s projected average water demand over the next 10 years (see Table 7 for projected water demand):

Existing treated water supply capacity is inadequate to meet current and projected demands due to restrictions on the use of some supply sources due to compliance with the MDH flow-weighted MOA. The City is currently working with MDH on adjustments to the flow-weighted compliance agreement, re-sampling wells for radium, and evaluating additional treated water supply sources. Current storage capacity is inadequate to meet projected demand over the next 10 years. For this reason a 1.5 MG elevated storage tank is planned to be constructed in 2020 to replace Tower 3, bringing the total storage capacity to 3.5 MG and exceeding future daily demand projections. Refer to the 2015 Water Comprehensive Plan for a more thorough discussion of alternative sites and storage styles.

### **C. Water Sources**

Complete Table 6 by listing all types of water sources that supply water to the system, including groundwater, surface water, interconnections with other water suppliers, or others. Provide the name of each source (aquifer name, river or lake name, name of interconnecting water supplier) and the Minnesota unique well number or intake ID, as appropriate. Report the year the source was installed or established and the current capacity. Provide information about the depth of all wells. Describe the status of the source (active, inactive, emergency only, retail/wholesale interconnection) and if the source facilities have a dedicated emergency power source. Add rows to the table as needed for each installation.

Include copies of well records and maintenance summary for each well that has occurred since your last approved plan in **Appendix 1**.

Table 6. Water sources and status

Resource Type (Groundwater, Surface water, Interconnection)	Resource Name	MN Unique Well # or Intake ID	Year Installed	Rated Capacity (Gallons per Minute)	Well Depth (Feet)	Status of Normal and Emergency Operations (active, inactive, emergency only, retail/wholesale interconnection))	Does this Source have a Dedicated Emergency Power Source? (Yes or No)
Well 1 (Groundwater)	CEMS – Eau Claire–Mt. Simon	201178	1912	-	409	Inactive	No
Well 2 (Groundwater)	CMTS- Mt. Simon	201182	1918	-	427	Inactive	No
Well 3 (Groundwater)	CTCW – Tunnel City-Wonewoc	202971	1947	850	452	Active	No
Well 4 (Groundwater)	CMTS – Mt. Simon- Hinckley	201191	1959	1450	657	Active	Yes
Well 5 (Groundwater)	CTCW – Tunnel City-Wonewoc	201218	1965	800	444	Active	Yes
Well 6 (Groundwater)	CWMS - Wonewoc - Mt. Simon	224625	1974	1000	640	Active	Yes
Well 7 (Groundwater)	CMTS – Mt. Simon	453792	1989	600	490	Active	Yes
Well 8 (Groundwater)	CTCW – Tunnel City-Wonewoc	676405	2002	1000	425	Active	Yes
Andover Interconnection	Groundwater	-	-	< 500	-	Hose Connection	NA
Coon Rapids Interconnection	Groundwater	-	-	< 500	-	Hose Connection	NA
Ramsey Interconnection	Groundwater	-	-	< 500	-	Hose Connection	NA

**Limits on Emergency Interconnections**

Discuss any limitations on the use of the water sources (e.g. not to be operated simultaneously, limitations due to blending, aquifer recovery issues etc.) and the use of interconnections, including capacity limits or timing constraints (i.e. only 200 gallons per minute are available from the City of Prior Lake, and it is estimated to take 6 hours to establish the emergency connection). If there are no limitations, list none.

- Wells 1 and 2 are currently out of service.
- Pumping from Well 7 has restrictions due to MDH MOA for radium.
- The interconnections with neighboring communities have flow rate and duration limitations due to water demand in those communities and the length of hose required to connect. Expect 6 hours to notify, obtain permission to connect, and establish connections.

## **D. Future Demand Projections – Key Metropolitan Council Benchmark**

### **Water Use Trends**

Use the data in Table 2 to describe trends in 1) population served; 2) total per capita water demand; 3) average daily demand; 4) maximum daily demand. Then explain the causes for upward or downward trends. For example, over the ten years has the average daily demand trended up or down? Why is this occurring?

- 1) The population served in Anoka has generally remained steady since 2005.
- 2) Total per capita water demand peaked 2006-2008 and has decreased over the time period since then, averaging 149 GPD per capita from 2005-2009 and 133 GPD per capita 2010-2015.
- 3) Average daily demand data is limited to 2009-2015, and has varied in an inconsistent pattern over this time period, ranging from 2.2 to 2.5 MGD.
- 4) Max daily demand data is limited to 2009-2015 as well, but has varied to a slightly greater degree, from approximately 4.1 to 5.8 MGD.

Conclusions: It appears that the relatively small variations in average day and maximum day water use from year to year are based on annual variations in number of customers, weather (for non-essential uses) and variations in usage from large volume customers.

Use the water use trend information discussed above to complete Table 7 with projected annual demand for the next ten years. Communities in the seven-county Twin Cities metropolitan area must also include projections for 2030 and 2040 as part of their local comprehensive planning.

Projected demand should be consistent with trends evident in the historical data in Table 2, as discussed above. Projected demand should also reflect state demographer population projections and/or other planning projections.

Table 7. Projected annual water demand

Year	Projected Total Population	Projected Population Served	Projected Total Per Capita Water Demand (GPCD) <sup>3</sup>	Projected Average Daily Demand (MGD)	Projected Maximum Daily Demand (MGD) <sup>4</sup>
2016 <sup>1</sup>	17,454	17,454	145.0	2.53	5.39
2017 <sup>1</sup>	17,765	17,765	145.0	2.58	5.49
2018 <sup>1</sup>	18,077	18,077	145.0	2.62	5.58
2019 <sup>1</sup>	18,388	18,388	145.0	2.66	5.68
2020	18,700	18,700	145.0	2.71	5.78
2021 <sup>2</sup>	18,830	18,830	145.0	2.73	5.82
2022 <sup>2</sup>	18,960	18,960	145.0	2.75	5.86
2023 <sup>2</sup>	19,090	19,090	145.0	2.77	5.90
2024 <sup>2</sup>	19,220	19,220	145.0	2.79	5.94
2025	19,350	19,350	145.0	2.81	5.98
2030	20,000	20,000	145.0	2.90	6.18
2040	21,200	21,200	145.0	3.07	6.55

GPCD – Gallons per Capita per Day

MGD – Million Gallons per Day

Note: Population projections from Metropolitan Council Community Profile projections. Projected total per capita water demand and maximum daily demand based on City of Anoka Comprehensive Water Plan values of 145 gpcd of demand and a max to average day ratio of 2.13.

<sup>1</sup>Value interpolated from 2015 and 2020 data.

<sup>2</sup>Value interpolated from 2020 and 2025 data.

<sup>3</sup>Total per capita demand was greater than 144 in 4 of the past 10 years, with a high of 163 gpcd. Use 145 for projections.

<sup>4</sup>Max Day to Average Day ratio greater than 2.13 in at least 2 of the past 10 years, with a high of 2.29. Use 2.13 for projections.

### Projection Method

Describe the method used to project water demand, including assumptions for population and business growth and how water conservation and efficiency programs affect projected water demand:

New development and redevelopment is expected to drive up Anoka’s population to approximately 21,200 between 2030 and 2040. Changes in projected water system demands are determined based on planned future land use, as detailed in the Comprehensive Water Plan and the Metropolitan Council’s 2040 Community Profiles. The purpose of these water use projections for the City of Anoka is to provide a reasonable “worst case” projection of water system improvements required for financial planning purposes. The projections in the above table indicate the City’s commitment to keep overall per capita water use at 145 or lower (down from a 10 year high of 163), and the Max Day to Average Day ratio down from a high of 2.29 to 2.13. Actual implementation of system improvements will be based on actual water use and revised projections as additional data is known regarding variables such as effectiveness of water conservation programs, and proposed water needs for redevelopment and new development.

## E. Resource Sustainability

### Monitoring – Key DNR Benchmark

Complete Table 8 by inserting information about source water quality and quantity monitoring efforts. List should include all production wells, observation wells, and source water intakes or reservoirs. Add rows to the table as needed. Find information on groundwater level monitoring program at: [http://www.dnr.state.mn.us/waters/groundwater\\_section/obwell/index.html](http://www.dnr.state.mn.us/waters/groundwater_section/obwell/index.html)

**Table 8. Information about source water quality and quantity monitoring**

MN Unique Well # or Surface Water ID	Type of monitoring point	Monitoring program	Frequency of monitoring	Monitoring Method
202971 (Well 3)	<input checked="" type="checkbox"/> production well <input type="checkbox"/> observation well <input type="checkbox"/> source water intake <input type="checkbox"/> source water reservoir	<input type="checkbox"/> routine MDH sampling <input checked="" type="checkbox"/> routine water utility sampling <input type="checkbox"/> other	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> hourly <input type="checkbox"/> daily <input type="checkbox"/> monthly <input type="checkbox"/> quarterly <input type="checkbox"/> annually	<input checked="" type="checkbox"/> SCADA <input type="checkbox"/> grab sampling <input type="checkbox"/> steel tape <input type="checkbox"/> stream gauge
201191 (Well 4)	<input checked="" type="checkbox"/> production well <input type="checkbox"/> observation well <input type="checkbox"/> source water intake <input type="checkbox"/> source water reservoir	<input type="checkbox"/> routine MDH sampling <input checked="" type="checkbox"/> routine water utility sampling <input type="checkbox"/> other	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> hourly <input type="checkbox"/> daily <input type="checkbox"/> monthly <input type="checkbox"/> quarterly <input type="checkbox"/> annually	<input checked="" type="checkbox"/> SCADA <input type="checkbox"/> grab sampling <input type="checkbox"/> steel tape <input type="checkbox"/> stream gauge
201218 (Well 5)	<input checked="" type="checkbox"/> production well <input type="checkbox"/> observation well <input type="checkbox"/> source water intake <input type="checkbox"/> source water reservoir	<input type="checkbox"/> routine MDH sampling <input checked="" type="checkbox"/> routine water utility sampling <input type="checkbox"/> other	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> hourly <input type="checkbox"/> daily <input type="checkbox"/> monthly <input type="checkbox"/> quarterly <input type="checkbox"/> annually	<input checked="" type="checkbox"/> SCADA <input type="checkbox"/> grab sampling <input type="checkbox"/> steel tape <input type="checkbox"/> stream gauge
224625 (Well 6)	<input checked="" type="checkbox"/> production well <input type="checkbox"/> observation well <input type="checkbox"/> source water intake <input type="checkbox"/> source water reservoir	<input type="checkbox"/> routine MDH sampling <input checked="" type="checkbox"/> routine water utility sampling <input type="checkbox"/> other	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> hourly <input type="checkbox"/> daily <input type="checkbox"/> monthly <input type="checkbox"/> quarterly <input type="checkbox"/> annually	<input checked="" type="checkbox"/> SCADA <input type="checkbox"/> grab sampling <input type="checkbox"/> steel tape <input type="checkbox"/> stream gauge
453792 (Well 7)	<input checked="" type="checkbox"/> production well <input type="checkbox"/> observation well <input type="checkbox"/> source water intake <input type="checkbox"/> source water reservoir	<input type="checkbox"/> routine MDH sampling <input checked="" type="checkbox"/> routine water utility sampling <input type="checkbox"/> other	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> hourly <input type="checkbox"/> daily <input type="checkbox"/> monthly <input type="checkbox"/> quarterly <input type="checkbox"/> annually	<input checked="" type="checkbox"/> SCADA <input type="checkbox"/> grab sampling <input type="checkbox"/> steel tape <input type="checkbox"/> stream gauge
676405 (Well 8)	<input checked="" type="checkbox"/> production well <input type="checkbox"/> observation well <input type="checkbox"/> source water intake <input type="checkbox"/> source water reservoir	<input type="checkbox"/> routine MDH sampling <input checked="" type="checkbox"/> routine water utility sampling <input type="checkbox"/> other	<input checked="" type="checkbox"/> continuous <input type="checkbox"/> hourly <input type="checkbox"/> daily <input type="checkbox"/> monthly <input type="checkbox"/> quarterly <input type="checkbox"/> annually	<input checked="" type="checkbox"/> SCADA <input type="checkbox"/> grab sampling <input type="checkbox"/> steel tape <input type="checkbox"/> stream gauge

MN Unique Well # or Surface Water ID	Type of monitoring point	Monitoring program	Frequency of monitoring	Monitoring Method
209297 (Ob. Well)	<input type="checkbox"/> production well <input checked="" type="checkbox"/> observation well <input type="checkbox"/> source water intake <input type="checkbox"/> source water reservoir	<input type="checkbox"/> routine MDH sampling <input type="checkbox"/> routine water utility sampling <input checked="" type="checkbox"/> other	<input type="checkbox"/> continuous <input type="checkbox"/> hourly <input type="checkbox"/> daily <input checked="" type="checkbox"/> monthly <input type="checkbox"/> quarterly <input type="checkbox"/> annually	<input type="checkbox"/> SCADA <input type="checkbox"/> grab sampling <input checked="" type="checkbox"/> steel tape <input type="checkbox"/> stream gauge

**Water Level Data**

A water level monitoring plan that includes monitoring locations and a schedule for water level readings must be submitted as **Appendix 2**. If one does not already exist, it needs to be prepared and submitted with the WSP. Ideally, all production and observation wells are monitored at least monthly.

Complete Table 9 to summarize water level data for each well being monitored. Provide the name of the aquifer and a brief description of how much water levels vary over the season (the difference between the highest and lowest water levels measured during the year) and the long-term trends for each well. If water levels are not measured and recorded on a routine basis, then provide the static water level when each well was constructed and the most recent water level measured during the same season the well was constructed. Also include all water level data taken during any well and pump maintenance. Add rows to the table as needed.

Provide water level data graphs for each well in **Appendix 3** for the life of the well, or for as many years as water levels have been measured. See DNR website for Date Time Water Level

<http://www.dnr.state.mn.us/groundwater/hydrographs.html>

Table 9. Water level data

Unique Well Number or Well ID	Aquifer Name	Seasonal Variation (Feet)	Long-term Trend in water level data	Water level measured during well/pumping maintenance
202971 (Well 3)	CTCW – Tunnel City-Wonewoc	30 ft	<input type="checkbox"/> Falling <input checked="" type="checkbox"/> Stable <input type="checkbox"/> Rising	MM/DD/YY: ____ MM/DD/YY: ____ MM/DD/YY: ____
201191 (Well 4)	CMTS – Mt. Simon-Hinckley	100 ft	<input type="checkbox"/> Falling <input checked="" type="checkbox"/> Stable <input type="checkbox"/> Rising	MM/DD/YY: ____ MM/DD/YY: ____ MM/DD/YY: ____
201218 (Well 5)	CTCW – Tunnel City-Wonewoc	50 ft	<input type="checkbox"/> Falling <input checked="" type="checkbox"/> Stable <input type="checkbox"/> Rising	MM/DD/YY: ____ MM/DD/YY: ____ MM/DD/YY: ____
224625 (Well 6)	CWMS - Wonewoc - Mt. Simon	50 ft	<input type="checkbox"/> Falling <input checked="" type="checkbox"/> Stable <input type="checkbox"/> Rising	MM/DD/YY: ____ MM/DD/YY: ____ MM/DD/YY: ____
453792 (Well 7)	CMTS – Mt. Simon	25 ft	<input type="checkbox"/> Falling <input checked="" type="checkbox"/> Stable <input type="checkbox"/> Rising	MM/DD/YY: ____ MM/DD/YY: ____ MM/DD/YY: ____
676405 (Well 8)	CTCW – Tunnel City-Wonewoc	30 ft	<input type="checkbox"/> Falling <input checked="" type="checkbox"/> Stable <input type="checkbox"/> Rising	MM/DD/YY: ____ MM/DD/YY: ____ MM/DD/YY: ____
209297 (Ob. Well)	CMTS – Mt. Simon	20 ft	<input type="checkbox"/> Falling <input checked="" type="checkbox"/> Stable <input type="checkbox"/> Rising	MM/DD/YY: ____ MM/DD/YY: ____ MM/DD/YY: ____

**Potential Water Supply Issues & Natural Resource Impacts – Key DNR & Metropolitan Council Benchmark**

Complete Table 10 by listing the types of natural resources that are or could be impacted by permitted water withdrawals. If known, provide the name of specific resources that may be impacted. Identify what the greatest risks to the resource are and how the risks are being assessed. Identify any resource protection thresholds – formal or informal – that have been established to identify when actions should be taken to mitigate impacts. Provide information about the potential mitigation actions that may be taken, if a resource protection threshold is crossed. Add additional rows to the table as needed. See glossary at the end of the template for definitions.

Some of this baseline data should have been in your earlier water supply plans or county comprehensive water plans. When filling out this table, think of what are the water supply risks, identify the resources, determine the threshold and then determine what your community will do to mitigate the impacts.

Your DNR area hydrologist is available to assist with this table.

For communities in the seven-county Twin Cities metropolitan area, the *Master Water Supply Plan Appendix 1 (Water Supply Profiles)*, provides information about potential water supply issues and natural resource impacts for your community.

Table 10. Natural resource impacts

Resource Type	Resource Name	Risk	Risk Assessed Through	Describe Resource Protection Threshold*	Mitigation Measure or Management Plan	Describe How Changes to Thresholds are Monitored
<input checked="" type="checkbox"/> River or stream	1. Mississippi River 2. Rum River 3. Elm Creek (South of Mississippi River)	<input checked="" type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends and/or MCLs exceeded <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> GIS analysis <input type="checkbox"/> Modeling <input type="checkbox"/> Mapping <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input checked="" type="checkbox"/> Other: River Gauging Stations, Wellhead Protection Plan	Declining Average River Stage (due to pumping not due to normal fluctuations)	<input type="checkbox"/> Revise permit <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input checked="" type="checkbox"/> Other Review with DNR	Review management plan with DNR
<input type="checkbox"/> Calcareous fen	None listed for Anoka County per July 5, 2016 (40 SR8)	<input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends and/or MCLs exceeded <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts <input type="checkbox"/> Other: _____	<input type="checkbox"/> GIS analysis <input type="checkbox"/> Modeling <input type="checkbox"/> Mapping <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> Other: _____		<input type="checkbox"/> Revise permit <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input type="checkbox"/> Other	NA

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Resource Type	Resource Name	Risk	Risk Assessed Through	Describe Resource Protection Threshold*	Mitigation Measure or Management Plan	Describe How Changes to Thresholds are Monitored
<input checked="" type="checkbox"/> Lake	2 Named water bodies per DNR: -Round Lake - Mill Pond  18 additional unnamed water bodies within 0.5 miles of City of Anoka	<input checked="" type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends and/or MCLs exceeded <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts <input type="checkbox"/> Other:	<input checked="" type="checkbox"/> GIS analysis <input type="checkbox"/> Modeling <input type="checkbox"/> Mapping <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input checked="" type="checkbox"/> Other: Wellhead Protection Plan, DNR resource monitoring	Unacceptable decline in water level caused by City well pumping	<input type="checkbox"/> Revise permit <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input checked="" type="checkbox"/> Other Review with DNR and develop strategy	<b>See Text Box below.</b>
<input checked="" type="checkbox"/> Wetland	5 unnamed wetlands (DNR)  NWI Lists 154 wetlands in City of Anoka 82 FWEW 41 FWF/SW 30 FW Pond 1 Riverine	<input checked="" type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends and/or MCLs exceeded <input checked="" type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts <input type="checkbox"/> Other:	<input checked="" type="checkbox"/> GIS analysis <input type="checkbox"/> Modeling <input type="checkbox"/> Mapping <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input checked="" type="checkbox"/> Other: Wellhead Protection Plan, DNR resource monitoring	Unacceptable decline in water level caused by City well pumping. No known connection between wetlands and source water aquifers.	<input type="checkbox"/> Revise permit <input type="checkbox"/> Change groundwater pumping <input checked="" type="checkbox"/> Increase conservation <input checked="" type="checkbox"/> Other Review with DNR and develop strategy	<b>See Text Box below.</b>
<input checked="" type="checkbox"/> Trout stream	1 listed in Anoka County: Cenaiko Lake (unnamed) = 4.5 miles south of City of Anoka	<input checked="" type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends and/or MCLs exceeded <input checked="" type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts	<input type="checkbox"/> GIS analysis <input type="checkbox"/> Modeling <input type="checkbox"/> Mapping <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input checked="" type="checkbox"/> Other: DNR resource monitoring	Highly unlikely due to distance and Mississippi River – outside applicable DWSMA boundary	<input type="checkbox"/> Revise permit <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input type="checkbox"/> Other	<b>See Text Box below.</b>

Resource Type	Resource Name	Risk	Risk Assessed Through	Describe Resource Protection Threshold*	Mitigation Measure or Management Plan	Describe How Changes to Thresholds are Monitored
		<input type="checkbox"/> Other: _____				
<input checked="" type="checkbox"/> Aquifer	<b>See Text Box below.</b>	<input checked="" type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends and/or MCLs exceeded <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts <input type="checkbox"/> Other: _____	<input type="checkbox"/> GIS analysis <input type="checkbox"/> Modeling <input type="checkbox"/> Mapping <input checked="" type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> Other: _____	<b>See Text Box below.</b>	<input type="checkbox"/> Revise permit <input checked="" type="checkbox"/> Change groundwater pumping <input checked="" type="checkbox"/> Increase conservation <input type="checkbox"/> Other	<b>See Text Box below.</b>
<input type="checkbox"/> Endangered, threatened, or special concern species habitat, other natural resource impacts		<input type="checkbox"/> Flow/water level decline <input type="checkbox"/> Degrading water quality trends and/or MCLs exceeded <input type="checkbox"/> Impacts on endangered, threatened, or special concern species habitat or other natural resource impacts <input type="checkbox"/> Other: _____	<input type="checkbox"/> GIS analysis <input type="checkbox"/> Modeling <input type="checkbox"/> Mapping <input type="checkbox"/> Monitoring <input type="checkbox"/> Aquifer testing <input type="checkbox"/> Other: _____		<input type="checkbox"/> Revise permit <input type="checkbox"/> Change groundwater pumping <input type="checkbox"/> Increase conservation <input type="checkbox"/> Other	

\* Examples of thresholds: a lower limit on acceptable flow in a river or stream; water quality outside of an accepted range; a lower limit on acceptable aquifer level decline at one or more monitoring wells; withdrawals that exceed some percent of the total amount available from a source; or a lower limit on acceptable changes to a protected habitat.

### **Aquifer Impacts from Municipal Pumping**

The City's six active public water supply wells use the Mt. Simon, Wonewoc - Mt. Simon, Mt. Simon-Hinckley, and Tunnel City-Wonewoc aquifers. Neighboring communities use similar aquifers. Data collected from the City SCADA and DNR Ob Well system seems to indicate that temporary, localized water level drawdowns occur near each well during the summer pumping season. To date, none of this pumping has created a problem with pump settings in the City wells, nearby private wells, or natural resources. Data indicates that once the summer pumping is stopped, aquifer levels return to normal rather quickly. Based on these observations, it appears that municipal pumping from Anoka's wells does not (currently) have a large impact on the aquifer. Anoka and neighboring communities should continue to collect data in subsequent years and re-evaluate aquifer levels annually.

### **Wellhead Protection (WHP) and Surface Water Protection (SWP) Plans**

Complete Table 11 to provide status information about WHP and SWP plans.

The emergency procedures in this plan are intended to comply with the contingency plan provisions required in the Minnesota Department of Health's (MDH) Wellhead Protection (WHP) Plan and Surface Water Protection (SWP) Plan.

**Table 11. Status of Wellhead Protection and Surface Water Protection Plans**

Plan Type	Status	Date Adopted	Date for Update
WHP	<input type="checkbox"/> In Process <input checked="" type="checkbox"/> Completed <input type="checkbox"/> Not Applicable	Submitted July 2001	3/3/2019 (in progress)
SWP	<input type="checkbox"/> In Process <input type="checkbox"/> Completed <input checked="" type="checkbox"/> Not Applicable		

### **F. Capital Improvement Plan (CIP)**

Please note that any wells that received approval under a ten-year permit, but that were not built, are now expired and must submit a water appropriations permit.

#### **Adequacy of Water Supply System**

Complete Table 12 with information about the adequacy of wells and/or intakes, storage facilities, treatment facilities, and distribution systems to sustain current and projected demands. List planned capital improvements for any system components, in chronological order. Communities in the seven-county Twin Cities metropolitan area should also include information about plans through 2040.

The assessment can be the general status by category; it is not necessary to identify every single well, storage facility, treatment facility, lift station, and mile of pipe.

Please attach your latest Capital Improvement Plan as **Appendix 4**.

**Table 12. Adequacy of Water Supply System**

System Component	Planned action	Anticipated Construction Year	Notes
Wells/Intakes	<input type="checkbox"/> No action planned - adequate <input type="checkbox"/> Repair/replacement <input checked="" type="checkbox"/> Expansion/addition	2018	Increase Pump Capacity Wells 6 & 8
		2035	Construct Wells #9, #10
Water Storage Facilities	<input type="checkbox"/> No action planned - adequate <input type="checkbox"/> Repair/replacement <input checked="" type="checkbox"/> Expansion/addition	2020	Construct 1.5MG Elevated Tower, remove Tower 3
Water Treatment Facilities	<input type="checkbox"/> No action planned - adequate <input type="checkbox"/> Repair/replacement <input checked="" type="checkbox"/> Expansion/addition	2018	WTP 6/8 Expansion
Distribution Systems (pipes, valves, etc.)	<input type="checkbox"/> No action planned - adequate <input type="checkbox"/> Repair/replacement <input checked="" type="checkbox"/> Expansion/addition	2020	Construct Phase 1 Trunk Water Main
		2025	Construct Phase 2 Trunk Water Main
Pressure Zones	<input checked="" type="checkbox"/> No action planned - adequate <input type="checkbox"/> Repair/replacement <input type="checkbox"/> Expansion/addition		
Other:	<input type="checkbox"/> No action planned - adequate <input type="checkbox"/> Repair/replacement <input type="checkbox"/> Expansion/addition		

**Proposed Future Water Sources**

Complete Table 13 to identify new water source installation planned over the next ten years. Add rows to the table as needed.

**Table 13. Proposed future installations/sources**

Source	Installation Location (approximate)	Resource Name	Proposed Pumping Capacity (gpm)	Planned Installation Year	Planned Partnerships
Groundwater	45.227284, 93.383686	CTCW – Tunnel City-Wonewoc	1,000	2017	
Surface Water	N/A				
Interconnection to another supplier	N/A				

**Water Source Alternatives - Key Metropolitan Council Benchmark**

Do you anticipate the need for alternative water sources in the next 10 years? Yes  No

For metro communities, will you need alternative water sources by the year 2040? Yes  No

**If you answered yes for either question, then complete table 14. If no, insert NA.**

Complete Table 14 by checking the box next to alternative approaches that your community is considering, including approximate locations (if known), the estimated amount of future demand that could be met through the approach, the estimated timeframe to implement the approach, potential partnerships, and the major benefits and challenges of the approach. Add rows to the table as needed.

For communities in the seven-county Twin Cities metropolitan area, these alternatives should include approaches the community is considering to meet projected 2040 water demand.

**Table 14. Alternative water sources**

Alternative Source Considered	Source and/or Installation Location (approximate)	Estimated Amount of Future Demand (%)	Timeframe to Implement (YYYY)	Potential Partners	Benefits	Challenges
<input type="checkbox"/> Groundwater	Existing Source					
<input type="checkbox"/> Surface Water	Mississippi & Rum Rivers	0	NA			Water quality, cost
<input type="checkbox"/> Reclaimed stormwater	NA					Cost
<input type="checkbox"/> Reclaimed wastewater	NA					Cost
<input type="checkbox"/> Interconnection to another supplier	NA					Same source

## Part 2. Emergency Preparedness Procedures

The emergency preparedness procedures outlined in this plan are intended to comply with the contingency plan provisions required by MDH in the WHP and SWP. Water emergencies can occur as a result of vandalism, sabotage, accidental contamination, mechanical problems, power failings, drought, flooding, and other natural disasters. The purpose of emergency planning is to develop emergency response procedures and to identify actions needed to improve emergency preparedness. In the case of a municipality, these procedures should be in support of, and part of, an all-hazard emergency operations plan. Municipalities that already have written procedures dealing with water emergencies should review the following information and update existing procedures to address these water supply protection measures.

### A. Federal Emergency Response Plan

Section 1433(b) of the Safe Drinking Water Act, (Public Law 107-188, Title IV- Drinking Water Security and Safety) requires community water suppliers serving over 3,300 people to prepare an Emergency Response Plan.

**Do you have a federal emergency response plan?** Yes  No

**If yes, what was the date it was certified?** 9/2014

Complete Table 15 by inserting the noted information regarding your completed Federal Emergency Response Plan.

**Table 15. Emergency Preparedness Plan contact information**

Emergency Response Plan Role	Contact Person	Contact Phone Number	Contact Email
Emergency Response Lead	Pete Klingenberg	763.576.2923 Cell 612.791.7217	pklingenberg@ci.anoka.mn.us
Alternate Emergency Response Lead	Mark Anderson	763.576.2921 Cell 612.719.7219	manderson@ci.anoka.mn.us

### B. Operational Contingency Plan

All utilities should have a written operational contingency plan that describes measures to be taken for water supply mainline breaks and other common system failures as well as routine maintenance.

**Do you have a written operational contingency plan?** Yes  No

At a minimum, a water supplier should prepare and maintain an emergency contact list of contractors and suppliers.

### C. Emergency Response Procedures

Water suppliers must meet the requirements of MN Rules 4720.5280 . Accordingly, the Minnesota Department of Natural Resources (DNR) requires public water suppliers serving more than 1,000 people to submit Emergency and Conservation Plans. Water emergency and conservation plans that have been approved by the DNR, under provisions of Minnesota Statute 186 and Minnesota Rules, part 6115.0770, will be considered equivalent to an approved WHP contingency plan.

**Emergency Telephone List**

Prepare and attach a list of emergency contacts, including the MN Duty Officer (1-800-422-0798), as **Appendix 5**. A template is available at [www.mndnr.gov/watersupplyplans](http://www.mndnr.gov/watersupplyplans)

The list should include key utility and community personnel, contacts in adjacent water suppliers, and appropriate local, state and federal emergency contacts. Please be sure to verify and update the contacts on the emergency telephone list and date it. Thereafter, update on a regular basis (once a year is recommended). In the case of a municipality, this information should be contained in a notification and warning standard operating procedure maintained by the Emergency Manager for that community. Responsibilities and services for each contact should be defined.

**Current Water Sources and Service Area**

Quick access to concise and detailed information on water sources, water treatment, and the distribution system may be needed in an emergency. System operation and maintenance records should be maintained in secured central and back-up locations so that the records are accessible for emergency purposes. A detailed map of the system showing the treatment plants, water sources, storage facilities, supply lines, interconnections, and other information that would be useful in an emergency should also be readily available. It is critical that public water supplier representatives and emergency response personnel communicate about the response procedures and be able to easily obtain this kind of information both in electronic and hard copy formats (in case of a power outage).

**Do records and maps exist?** Yes  No

**Can staff access records and maps from a central secured location in the event of an emergency?**

Yes  No

**Does the appropriate staff know where the materials are located?**

Yes  No

**Procedure for Augmenting Water Supplies**

Complete Tables 16 – 17 by listing all available sources of water that can be used to augment or replace existing sources in an emergency. Add rows to the tables as needed.

In the case of a municipality, this information should be contained in a notification and warning standard operating procedure maintained by the warning point for that community. Municipalities are encouraged to execute cooperative agreements for potential emergency water services and copies should be included in **Appendix 6**. Outstate Communities may consider using nearby high capacity wells (industry, golf course) as emergency water sources.

WSP should include information on any physical or chemical problems that may limit interconnections to other sources of water. Approvals from the MDH are required for interconnections or the reuse of water.

**Table 16. Interconnections with other water supply systems to supply water in an emergency**

Other Water Supply System Owner	Capacity (GPM & MGD)	Note Any Limitations On Use	List of services, equipment, supplies available to respond
City Of Coon Rapids	0.505 MGD, 350 GPM	Hose Connection	Staff, tools, spare parts
City Of Ramsey	2.00 MGD, 1,400 GPM	Dependent on Availability	Staff, tools, spare parts
City Of Andover	0.50 MGD, 350 GPM	Hose Connection	Staff, tools, spare parts

GPM – Gallons per minute MGD – million gallons per day

**Table 17. Utilizing surface water as an alternative source**

Surface Water Source Name	Capacity (GPM)	Capacity (MGD)	Treatment Needs	Note Any Limitations On Use
Rum River	N/A	N/A	Significant treatment would be required to utilize Rum River as an emergency source.	No intake, no surface water treatment facility

If not covered above, describe additional emergency measures for providing water (obtaining bottled water, or steps to obtain National Guard services, etc.)

Obtain bottled water, Fire Department and Public Works to haul water, emergency declaration to call in National Guard.

**Allocation and Demand Reduction Procedures**

Complete Table 18 by adding information about how decisions will be made to allocate water and reduce demand during an emergency. Provide information for each customer category, including its priority ranking, average day demand, and demand reduction potential for each customer category. Modify the customer categories as needed, and add additional lines if necessary.

Water use categories should be prioritized in a way that is consistent with Minnesota Statutes 103G.261 (#1 is highest priority) as follows:

1. Water use for human needs such as cooking, cleaning, drinking, washing and waste disposal; use for on-farm livestock watering; and use for power production that meets contingency requirements.
2. Water use involving consumption of less than 10,000 gallons per day (usually from private wells or surface water intakes)
3. Water use for agricultural irrigation and processing of agricultural products involving consumption of more than 10,000 gallons per day (usually from private high-capacity wells or surface water intakes)
4. Water use for power production above the use provided for in the contingency plan.

5. All other water use involving consumption of more than 10,000 gallons per day.
6. Nonessential uses – car washes, golf courses, etc.

Water used for human needs at hospitals, nursing homes and similar types of facilities should be designated as a high priority to be maintained in an emergency. Lower priority uses will need to address water used for human needs at other types of facilities such as hotels, office buildings, and manufacturing plants. The volume of water and other types of water uses at these facilities must be carefully considered. After reviewing the data, common sense should dictate local allocation priorities to protect domestic requirements over certain types of economic needs. Water use for lawn sprinkling, vehicle washing, golf courses, and recreation are legislatively considered non-essential.

**Table 18. Water use priorities**

<b>Customer Category</b>	<b>Allocation Priority</b>	<b>Average Daily Demand (GPD)</b>	<b>Short-Term Emergency Demand Reduction Potential (GPD)</b>
Residential	1	1,200,000	450,000
Institutional	2	30,000	0
Commercial	3	610,000	140,000
Industrial	4	220,000	50,000
Irrigation	5	0	0
Wholesale	NA	NA	NA
Non-Essential	6	270,000	270,000
<b>TOTAL</b>	<b>NA</b>	<b>2,330,000</b>	<b>910,000</b>

GPD – Gallons per Day

***Tip: Calculating Emergency Demand Reduction Potential***

*The emergency demand reduction potential for all uses will typically equal the difference between maximum use (summer demand) and base use (winter demand). In extreme emergency situations, lower priority water uses must be restricted or eliminated to protect priority domestic water requirements. Emergency demand reduction potential should be based on average day demands for customer categories within each priority class. Use the tables in Part 3 on water conservation to help you determine strategies.*

Complete Table 19 by selecting the triggers and actions during water supply disruption conditions.

Table 19. Emergency demand reduction conditions, triggers and actions (Select all that may apply and describe)

Emergency Triggers	Short-term Actions	Long-term Actions
<input checked="" type="checkbox"/> Contamination <input checked="" type="checkbox"/> Loss of production <input checked="" type="checkbox"/> Infrastructure failure <input checked="" type="checkbox"/> Executive order by Governor <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Supply augmentation through <u>sources listed in Table 16</u> <input checked="" type="checkbox"/> Adopt (if not already) and enforce a critical water deficiency ordinance to penalize lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. <input checked="" type="checkbox"/> Water allocation through <u>see Table 18</u> <input checked="" type="checkbox"/> Meet with large water users to discuss their contingency plan.	<input checked="" type="checkbox"/> Supply augmentation through <u>sources listed in Table 16</u> <input checked="" type="checkbox"/> Adopt (if not already) and enforce a critical water deficiency ordinance to penalize lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. <input checked="" type="checkbox"/> Water allocation through <u>see Table 18</u> <input checked="" type="checkbox"/> Meet with large water users to discuss their contingency plan.

**Notification Procedures**

Complete Table 20 by selecting trigger for informing customers regarding conservation requests, water use restrictions, and suspensions; notification frequencies; and partners that may assist in the notification process. Add rows to the table as needed.

Table 20. Plan to inform customers regarding conservation requests, water use restrictions, and suspensions

Notification Trigger(s)	Methods (select all that apply)	Update Frequency	Partners
<input checked="" type="checkbox"/> Short-term demand reduction declared (< 1 year)	<input checked="" type="checkbox"/> Website <input type="checkbox"/> Email list serve <input checked="" type="checkbox"/> Social media (e.g. Twitter, Facebook) <input checked="" type="checkbox"/> Direct customer mailing, <input checked="" type="checkbox"/> Press release (TV, radio, newspaper), <input checked="" type="checkbox"/> Meeting with large water users (> 10% of total city use) <input type="checkbox"/> Other: _____	<input type="checkbox"/> Daily <input checked="" type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Annually	Local newspaper, City Hall, if severe radio & TV
<input checked="" type="checkbox"/> Long-term Ongoing demand reduction declared	<input checked="" type="checkbox"/> Website <input type="checkbox"/> Email list serve <input checked="" type="checkbox"/> Social media (e.g. Twitter, Facebook) <input checked="" type="checkbox"/> Direct customer mailing, <input type="checkbox"/> Press release (TV, radio, newspaper), <input type="checkbox"/> Meeting with large water users (> 10% of total city use) <input type="checkbox"/> Other: _____	<input type="checkbox"/> Daily <input type="checkbox"/> Weekly <input checked="" type="checkbox"/> Monthly <input type="checkbox"/> Annually	City Hall
<input checked="" type="checkbox"/> Governor’s critical water deficiency declared	<input checked="" type="checkbox"/> Website <input checked="" type="checkbox"/> Email list serve <input checked="" type="checkbox"/> Social media (e.g. Twitter, Facebook)	<input type="checkbox"/> Daily <input checked="" type="checkbox"/> Weekly <input type="checkbox"/> Monthly <input type="checkbox"/> Annually	Local newspaper, City Hall, radio & TV

Notification Trigger(s)	Methods (select all that apply)	Update Frequency	Partners
	<input type="checkbox"/> Direct customer mailing, <input checked="" type="checkbox"/> Press release (TV, radio, newspaper), <input checked="" type="checkbox"/> Meeting with large water users (> 10% of total city use) <input type="checkbox"/> Other: _____		

**Enforcement**

Prior to a water emergency, municipal water suppliers must adopt regulations that restrict water use and outline the enforcement response plan. The enforcement response plan must outline how conditions will be monitored to know when enforcement actions are triggered, what enforcement tools will be used, who will be responsible for enforcement, and what timelines for corrective actions will be expected.

Affected operations, communications, and enforcement staff must then be trained to rapidly implement those provisions during emergency conditions.

**Important Note:**

*Disregard of critical water deficiency orders, even though total appropriation remains less than permitted, is adequate grounds for immediate modification of a public water supply authority’s water use permit (2013 MN Statutes 103G.291)*

**Does the city have a critical water deficiency restriction/official control in place that includes provisions to restrict water use and enforce the restrictions? (This restriction may be an ordinance, rule, regulation, policy under a council directive, or other official control)** Yes  No

If yes, attach the official control document to this WSP as **Appendix 7**.

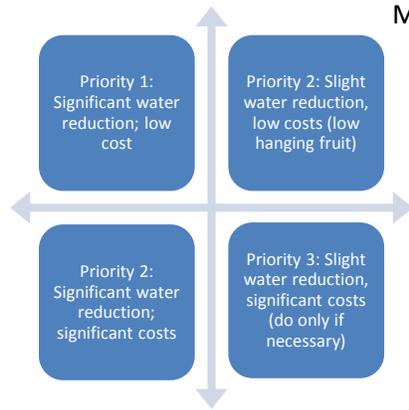
If no, the municipality must adopt such an official control within 6 months of submitting this WSP and submit it to the DNR as an amendment to this WSP.

**Irrespective of whether a critical water deficiency control is in place, does the public water supply utility, city manager, mayor, or emergency manager have standing authority to implement water restrictions?** Yes  No

If yes, cite the regulatory authority reference: \_\_\_\_\_.

If no, who has authority to implement water use restrictions in an emergency?

### PART 3. WATER CONSERVATION PLAN



Minnesotans have historically benefited from the state’s abundant water supplies, reducing the need for conservation. There are however, limits to the available supplies of water and increasing threats to the quality of our drinking water. Causes of water supply limitation may include: population increases, economic trends, uneven statewide availability of groundwater, climatic changes, and degraded water quality. Examples of threats to drinking water quality include: the presence of contaminant plumes from past land use activities, exceedances of water quality standards from natural and human sources, contaminants of emerging concern, and increasing pollutant trends from nonpoint sources.

There are many incentives for conserving water; conservation:

- reduces the potential for pumping-induced transfer of contaminants into the deeper aquifers, which can add treatment costs
- reduces the need for capital projects to expand system capacity
- reduces the likelihood of water use conflicts, like well interference, aquatic habitat loss, and declining lake levels
- conserves energy, because less energy is needed to extract, treat and distribute water (and less energy production also conserves water since water is use to produce energy)
- maintains water supplies that can then be available during times of drought

It is therefore imperative that water suppliers implement water conservation plans. The first step in water conservation is identifying opportunities for behavioral or engineering changes that could be made to reduce water use by conducting a thorough analysis of:

- Water use by customer
- Extraction, treatment, distribution and irrigation system efficiencies
- Industrial processing system efficiencies
- Regulatory and barriers to conservation
- Cultural barriers to conservation
- Water reuse opportunities

Once accurate data is compiled, water suppliers can set achievable goals for reducing water use. A successful water conservation plan follows a logical sequence of events. The plan should address both conservation on the supply side (leak detection and repairs, metering), as well as on the demand side (reductions in usage). Implementation should be conducted in phases, starting with the most obvious and lowest-cost options. In some cases one of the early steps will be reviewing regulatory constraints to water conservation, such as lawn irrigation requirements. Outside funding and grants may be available for implementation of projects. Engage water system operators and maintenance staff and customers in brainstorming opportunities to reduce water use. Ask the question: “How can I help save water?”

#### Progress since 2006

Is this your community’s first Water Supply Plan? Yes  No

If yes, describe conservation practices that you are already implementing, such as: pricing, system improvements, education, regulation, appliance retrofitting, enforcement, etc.

If no, complete Table 21 to summarize conservation actions taken since the adoption of the 2006 water supply plan.

**Table 21. Implementation of previous ten-year Conservation Plan**

2006 Plan Commitments	Action Taken?
Change water rates structure to provide conservation pricing	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Water supply system improvements (e.g. leak repairs, valve replacements, etc.)	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Educational efforts	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
New water conservation ordinances	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Rebate or retrofitting Program (e.g. for toilet, faucets, appliances, showerheads, dish washers, washing machines, irrigation systems, rain barrels, water softeners, etc.)	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Enforcement	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Describe other: Leak Detection & Better Recording of Water Supplier Services Water Used	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

**What are the results you have seen from the actions in Table 21 and how were results measured?**

As shown in Table 2, Total Per Capita water use appears to be slightly decreasing recently and the Max Day/Ave Day ratio is fairly low (at average of 2.03). Unmetered/unaccounted for water use is going down slightly but is still high.

**A. Triggers for Allocation and Demand Reduction Actions**

Complete table 22 by checking each trigger below, as appropriate, and the actions to be taken at various levels or stages of severity. Add in additional rows to the table as needed.

**Table 22. Short and long-term demand reduction conditions, triggers and actions**

Objective	Triggers	Actions
Protect surface water flows	<input type="checkbox"/> Low stream flow conditions <input type="checkbox"/> Reports of declining wetland and lake levels <input type="checkbox"/> Other: _____	<input type="checkbox"/> Increase promotion of conservation measures <input type="checkbox"/> Other: _____
Short-term demand reduction (less than 1 year)	<input checked="" type="checkbox"/> Extremely high seasonal water demand (more than double winter demand) <input checked="" type="checkbox"/> Loss of treatment capacity <input checked="" type="checkbox"/> Lack of water in storage <input checked="" type="checkbox"/> State drought plan <input checked="" type="checkbox"/> Well interference <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Adopt (if not already) and enforce the critical water deficiency ordinance to restrict or prohibit lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. <input checked="" type="checkbox"/> Supply augmentation through <u>sources listed in Table 16</u> <input checked="" type="checkbox"/> Water allocation through <u>see Table 18</u> <input checked="" type="checkbox"/> Meet with large water users to discuss user's contingency plan.
Long-term demand reduction (>1 year)	<input checked="" type="checkbox"/> Per capita demand increasing <input type="checkbox"/> Total demand increase (higher population or more industry)Water level in well(s) below elevation of _____ <input type="checkbox"/> Other: _____	<input checked="" type="checkbox"/> Develop a critical water deficiency ordinance that is or can be quickly adopted to penalize lawn watering, vehicle washing, golf course and park irrigation & other nonessential uses. <input type="checkbox"/> Enact a water waste ordinance that targets overwatering (causing water to flow off the landscape into streets, parking lots, or similar), watering impervious surfaces (streets, driveways or other hardscape areas), and negligence of known leaks, breaks, or malfunctions. <input checked="" type="checkbox"/> Meet with large water users to discuss user's contingency plan. <input checked="" type="checkbox"/> Enhanced monitoring and reporting: audits, meters, billing, etc.
Governor's "Critical Water Deficiency Order" declared	<input checked="" type="checkbox"/> Describe: Governor's Declaration	<input checked="" type="checkbox"/> Describe: Allocation of water per Table 18

**B. Conservation Objectives and Strategies – Key benchmark for DNR**

This section establishes water conservation objectives and strategies for eight major areas of water use.

**Objective 1: Reduce Unaccounted (Non-Revenue) Water loss to Less than 10%**

The Minnesota Rural Waters Association, the Metropolitan Council and the Department of Natural Resources recommend that all water uses be metered. Metering can help identify high use locations and times, along with leaks within buildings that have multiple meters.

It is difficult to quantify specific unmetered water use such as that associated with firefighting and system flushing or system leaks. Typically, water suppliers subtract metered water use from total water pumped to calculate unaccounted or non-revenue water loss.

**Is your five-year average (2005-2014) unaccounted Water Use in Table 2 higher than 10%?**

Yes  No

**What is your leak detection monitoring schedule? (e.g. monitor 1/3rd of the city lines per year)**

Annual leak detection surveys (annual expenditure of approximately \$5,000). Results to date have not detected significant leaks.

**Water Audits** - are intended to identify, quantify and verify water and revenue losses. The volume of unaccounted-for water should be evaluated each billing cycle. The American Water Works Association (AWWA) recommends that ten percent or less of pumped water is unaccounted-for water. Water audit procedures are available from the AWWA and MN Rural Water Association [www.mrwa.com](http://www.mrwa.com). Drinking Water Revolving Loan Funds are available for purchase of new meters when new plants are built.

**What is the date of your most recent water audit? 1/2016**

**Frequency of water audits:**     **yearly**             **other (specify frequency) \_\_\_\_\_**

**Leak detection and survey:**     **every year**     **every other year**         **periodic as needed**

**Year last leak detection survey completed: 2/2016**

If Table 2 shows annual water losses over 10% or an increasing trend over time, describe what actions will be taken to reach the <10% loss objective and within what timeframe

Supply and billing meters are calibrated/repaired/replaced regularly, and City has been keeping more rigorous monitoring of WSS water used for the past several years. As discussed above, the annual leak detection surveys have not identified major leaks. The City will continue these efforts, however, since the City has exhausted the “easier” means to try and locate lost water, the City is now beginning to work with the numerous old, large water using industrial customers to try and locate unknown unmetered connections.

**Metering** -AWWA recommends that every water supplier install meters to account for all water taken into its system, along with all water distributed from its system at each customer’s point of service. An effective metering program relies upon periodic performance testing, repair, maintenance or replacement of all meters. AWWA also recommends that water suppliers conduct regular water audits to ensure accountability. Some cities install separate meters for interior and exterior water use, but some research suggests that this may not result in water conservation.

Complete Table 23 by adding the requested information regarding the number, types, testing and maintenance of customer meters.

**Table 23. Information about customer meters**

Customer Category	Number of Customers	Number of Metered Connections	Number of Automated Meter Readers	Meter testing intervals (years)	Average age/meter replacement schedule (years)
Residential	4479	4481	0	3	3/25-30
Irrigation meters	160	163	0	15	15/25-30
Institutional	0	0	0		
Commercial	612	638	0	15	15/25-30
Industrial	17	31	0	15	15/25-30
Public facilities	0	0	0		
Other	0	0	0		
<b>TOTALS</b>	<b>5268</b>	<b>5313</b>	<b>0</b>	<b>NA</b>	<b>NA</b>

For unmetered systems, describe any plans to install meters or replace current meters with advanced technology meters. Provide an estimate of the cost to implement the plan and the projected water savings from implementing the plan.

NA – City is metered. New meters will be installed if unmetered connections are found during the large industrial water audit process described above.

**Table 24. Water source meters**

	Number of Meters	Meter testing schedule (years)	Number of Automated Meter Readers	Average age/meter replacement schedule (years)
Water source (wells/intakes)	6	Yearly	All (SCADA)	15/20 (Calibrate annually)
Treatment plant	8	Yearly	All (SCADA)	15/20 (Calibrate annually)

**Objective 2: Achieve Less than 75 Residential Gallons per Capita Demand (GPCD)**

The 2002 average residential per capita demand in the Twin Cities Metropolitan area was 75 gallons per capita per day.

**Is your average 2010-2015 residential per capita water demand in Table 2 more than 75?** Yes  No

**What was your 2010 – 2015 five-year average residential per capita water demand?** 70 g/person/day

Describe the water use trend over that timeframe:

Residential per capita water use peaked in 2012 and has dropped since that time.

Complete Table 25 by checking which strategies you will use to continue reducing residential per capita demand and project a likely timeframe for completing each checked strategy (Select all that apply and add rows for additional strategies):

**Table 25. Strategies and timeframe to reduce residential per capita demand**

Strategy to reduce residential per capita demand	Timeframe for completing work
<input type="checkbox"/> Revise city ordinances/codes to encourage or require water efficient landscaping.	
<input type="checkbox"/> Revise city ordinance/codes to permit water reuse options, especially for non-potable purposes like irrigation, groundwater recharge, and industrial use. Check with plumbing authority to see if internal buildings reuse is permitted	
<input type="checkbox"/> Revise ordinances to limit irrigation. Describe the restricted irrigation plan:	
<input checked="" type="checkbox"/> Revise outdoor irrigation installations codes to require high efficiency systems (e.g. those with soil moisture sensors or programmable watering areas) in new installations or system replacements.	2017 – 2018: Consider revising existing codes – but Max Day to Ave day ratio is already well below 2.6, which seems to indicate that irrigation is not a large contributor.
<input type="checkbox"/> Make water system infrastructure improvements	
<input type="checkbox"/> Offer free or reduced cost water use audits for residential customers.	
<input checked="" type="checkbox"/> Implement a notification system to inform customers when water availability conditions change.	2017 – 2018: Review effectiveness of current notification and emergency demand reduction procedures
<input type="checkbox"/> Provide rebates or incentives for installing water efficient appliances and/or fixtures indoors (e.g., low flow toilets, high efficiency dish washers and washing machines, showerhead and faucet aerators, water softeners, etc.)	NA – older housing stock will replace older fixtures with new for remodeling work
<input type="checkbox"/> Provide rebates or incentives to reduce outdoor water use (e.g., turf replacement/reduction, rain gardens, rain barrels, smart irrigation, outdoor water use meters, etc.)	
<input type="checkbox"/> Identify supplemental Water Resources	
<input checked="" type="checkbox"/> Conduct audience-appropriate water conservation education and outreach.	2017 – 2018: Review existing programs
<input type="checkbox"/> Describe other plans	

**Objective 3: Achieve at least a 1.5% per year water reduction for Institutional, Industrial, Commercial, and Agricultural GPCD over the next 10 years or a 15% reduction in ten years.**

Complete Table 26 by checking which strategies you will used to continue reducing non-residential customer use demand and project a likely timeframe for completing each checked strategy (add rows for additional strategies).

Where possible, substitute recycled water used in one process for reuse in another. (For example, spent rinse water can often be reused in a cooling tower.) Keep in mind the true cost of water is the amount on the water bill PLUS the expenses to heat, cool, treat, pump, and dispose of/discharge the water. Don't just calculate the initial investment. Many conservation retrofits that appear to be prohibitively expensive are actually very cost-effective when amortized over the life of the equipment. Often reducing water use also saves electrical and other utility costs. Note: as of 2015, water reuse, and is not

allowed by the state plumbing code, M.R. 4715 (a variance is needed). However several state agencies are addressing this issue.

**Table 26. Strategies and timeframe to reduce institutional, commercial industrial, and agricultural and non-revenue use demand**

Strategy to reduce total business, industry, agricultural demand	Timeframe for completing work
<input type="checkbox"/> Conduct a facility water use audit for both indoor and outdoor use, including system components	
<input type="checkbox"/> Install enhanced meters capable of automated readings to detect spikes in consumption	
<input type="checkbox"/> Compare facility water use to related industry benchmarks, if available (e.g., meat processing, dairy, fruit and vegetable, beverage, textiles, paper/pulp, metals, technology, petroleum refining etc.)	
<input type="checkbox"/> Install water conservation fixtures and appliances or change processes to conserve water	
<input type="checkbox"/> Repair leaking system components (e.g., pipes, valves)	
<input type="checkbox"/> Investigate the reuse of reclaimed water (e.g., stormwater, wastewater effluent, process wastewater, etc.)	
<input type="checkbox"/> Reduce outdoor water use (e.g., turf replacement/reduction, rain gardens, rain barrels, smart irrigation, outdoor water use meters, etc.)	
<input checked="" type="checkbox"/> <del>Train employees</del> Encourage large users to look for ways how to conserve water	2017 and following: When meeting with large volume users, Anoka will inform customers of the Met Council and DNR desire to reduce water use, and will encourage these large users to implement reduction strategies.
<input checked="" type="checkbox"/> Implement a notification system to inform non-residential customers when water availability conditions change.	2017 – 2018: Review effectiveness of current notification and emergency demand reduction procedures. Discuss with large users to understand where they could reduce water use in an emergency and still operate their production process.
<input type="checkbox"/> Rainwater catchment systems intended to supply uses such as water closets, urinals, trap primers for floor drains and floor sinks, industrial processes, water features, vehicle washing facilities, cooling tower makeup, and similar uses shall be approved by the commissioner. Proposed plumbing code 4714.1702.1 <a href="http://www.dli.mn.gov/PDF/docket/4714rule.pdf">http://www.dli.mn.gov/PDF/docket/4714rule.pdf</a>	
<input checked="" type="checkbox"/> Describe other plans:	2016 and following: City of Anoka began work on trying to locate unknown unmetered connections – beginning with the many older, large water using industrial customers. This work will continue for an estimated 2 years.

**Objective 4: Achieve a Decreasing Trend in Total Per Capita Demand**

Include as **Appendix 8** one graph showing total per capita water demand for each customer category (i.e., residential, institutional, commercial, industrial) from 2005-2014 and add the calculated/estimated linear trend for the next 10 years.

Describe the trend for each customer category; explain the reason(s) for the trends, and where trends are increasing.

Overall per capita demand is on a decreasing trend. As discussed above, this is anticipated to be due partially due to weather, and partially due to a slowdown in usage among major C/I/I water customers, which began around 2010 (might be partially due to economic factors).

**Objective 5: Reduce Peak Day Demand so that the Ratio of Average Maximum day to the Average Day is less than 2.6**

Is the ratio of average 2005-2014 maximum day demand to average 2005-2014 average day demand reported in Table 2 more than 2.6? Yes  No

Calculate a ten year average (2005 – 2014) of the ratio of maximum day demand to average day demand: 2.11 Note: 2009 is the earliest year that max day demand data is available

The position of the DNR has been that a peak day/average day ratio that is above 2.6 for in summer indicates that the water being used for irrigation by the residents in a community is too large and that efforts should be made to reduce the peak day use by the community.

It should be noted that by reducing the peak day use, communities can also reduce the amount of infrastructure that is required to meet the peak day use. This infrastructure includes new wells, new water towers which can be costly items.

**Objective 6: Implement a Conservation Water Rate Structure and/or a Uniform Rate Structure with a Water Conservation Program**

***Water Conservation Program***

Municipal water suppliers serving over 1,000 people are required to adopt demand reduction measures that include a conservation rate structure, or a uniform rate structure with a conservation program that achieves demand reduction. These measures must achieve demand reduction in ways that reduce water demand, water losses, peak water demands, and nonessential water uses. These measures must be approved before a community may request well construction approval from the Department of Health or before requesting an increase in water appropriations permit volume (*Minnesota Statutes*, section 103G.291, subd. 3 and 4). Rates should be adjusted on a regular basis to ensure that revenue of the system is adequate under reduced demand scenarios. If a municipal water supplier intends to use a Uniform Rate Structure, a community-wide Water Conservation Program that will achieve demand reduction must be provided.

***Current Water Rates***

Include a copy of the actual rate structure in **Appendix 9** or list current water rates including base/service fees and volume charges below.

Volume included in base rate or service charge: \_\_\_\_\_ gallons or X cubic feet \_\_\_ other

Frequency of billing:  Monthly  Bimonthly  Quarterly  Other: \_\_\_\_\_

Water Rate Evaluation Frequency:  every year  every \_\_\_ years  no schedule

Date of last rate change: 1/1/2016

**Table 27. Rate structures for each customer category (Select all that apply and add additional rows as needed)**

Customer Category	Conservation Billing Strategies in Use *	Conservation Neutral Billing Strategies in Use **	Non-Conserving Billing Strategies in Use ***
Residential	<input checked="" type="checkbox"/> Monthly billing <input checked="" type="checkbox"/> Increasing block rates (volume tiered rates) <input type="checkbox"/> Seasonal rates <input type="checkbox"/> Time of use rates <input type="checkbox"/> Water bills reported in gallons <input type="checkbox"/> Individualized goal rates <input type="checkbox"/> Excess use rates <input type="checkbox"/> Drought surcharge <input checked="" type="checkbox"/> Use water bill to provide comparisons <input checked="" type="checkbox"/> Service charge not based on water volume <input type="checkbox"/> Other (describe)	<input type="checkbox"/> Uniform <input checked="" type="checkbox"/> Odd/even day watering	<input type="checkbox"/> Service charge based on water volume <input type="checkbox"/> Declining block <input type="checkbox"/> Flat <input type="checkbox"/> Other (describe)
Commercial/ Industrial/ Institutional	<input checked="" type="checkbox"/> Monthly billing <input checked="" type="checkbox"/> Increasing block rates (volume tiered rates) <input type="checkbox"/> Seasonal rates <input type="checkbox"/> Time of use rates <input type="checkbox"/> Water bills reported in gallons <input type="checkbox"/> Individualized goal rates <input type="checkbox"/> Excess use rates <input type="checkbox"/> Drought surcharge <input checked="" type="checkbox"/> Use water bill to provide comparisons <input checked="" type="checkbox"/> Service charge not based on water volume <input type="checkbox"/> Other (describe)	<input type="checkbox"/> Uniform	<input type="checkbox"/> Service charge based on water volume <input type="checkbox"/> Declining block <input type="checkbox"/> Flat <input type="checkbox"/> Other (describe)
<input type="checkbox"/> Other			

**\* Rate Structures components that may promote water conservation:**

- **Monthly billing:** is encouraged to help people see their water usage so they can consider changing behavior.
- **Increasing block rates (also known as a tiered residential rate structure):** Typically, these have at least three tiers: should have at least three tiers.
  - The first tier is for the winter average water use.

- The second tier is the year-round average use, which is lower than typical summer use. This rate should be set to cover the full cost of service.
- The third tier should be above the average annual use and should be priced high enough to encourage conservation, as should any higher tiers. For this to be effective, the difference in block rates should be significant.
- **Seasonal rate:** higher rates in summer to reduce peak demands
- **Time of Use rates:** lower rates for off peak water use
- **Bill water use in gallons:** this allows customers to compare their use to average rates
- **Individualized goal rates:** typically used for industry, business or other large water users to promote water conservation if they keep within agreed upon goals. **Excess Use rates:** if water use goes above an agreed upon amount this higher rate is charged
- **Drought surcharge:** an extra fee is charged for guaranteed water use during drought
- **Use water bill to provide comparisons:** simple graphics comparing individual use over time or compare individual use to others.
- **Service charge or base fee that does not include a water volume** – a base charge or fee to cover universal city expenses that are not customer dependent and/or to provide minimal water at a lower rate (e.g., an amount less than the average residential per capita demand for the water supplier for the last 5 years)
- **Emergency rates** -A community may have a separate conservation rate that only goes into effect when the community or governor declares a drought emergency. These higher rates can help to protect the city budgets during times of significantly less water usage.

**\*\*Conservation Neutral\*\***

- **Uniform rate:** rate per unit used is the same regardless of the volume used
- **Odd/even day watering** –This approach reduces peak demand on a daily basis for system operation, but it does not reduce overall water use.

**\*\*\* Non-Conserving \*\*\***

- **Service charge or base fee with water volume:** an amount of water larger than the average residential per capita demand for the water supplier for the last 5 years
- **Declining block rate:** the rate per unit used decreases as water use increases.
- **Flat rate:** one fee regardless of how much water is used (usually unmetered).

Provide justification for any conservation neutral or non-conserving rate structures. If intending to adopt a conservation rate structure, include the timeframe to do so:

N/A

**Objective 7: Additional strategies to Reduce Water Use and Support Wellhead Protection Planning**

Development and redevelopment projects can provide additional water conservation opportunities, such as the actions listed below. If a Uniform Rate Structure is in place, the water supplier must provide a Water Conservation Program that includes at least two of the actions listed below. Check those actions that you intent to implement within the next 10 years.

**Table 28. Additional strategies to Reduce Water Use & Support Wellhead Protection**

<input type="checkbox"/>	Participate in the GreenStep Cities Program, including implementation of at least one of the 20 “Best Practices” for water
<input type="checkbox"/>	Prepare a master plan for smart growth (compact urban growth that avoids sprawl)
<input type="checkbox"/>	Prepare a comprehensive open space plan (areas for parks, green spaces, natural areas)
<input type="checkbox"/>	Adopt a water use restriction ordinance (lawn irrigation, car washing, pools, etc.)
<input type="checkbox"/>	Adopt an outdoor lawn irrigation ordinance
<input type="checkbox"/>	Adopt a private well ordinance (private wells in a city must comply with water restrictions)
<input type="checkbox"/>	Implement a stormwater management program
<input type="checkbox"/>	Adopt non-zoning wetlands ordinance (can further protect wetlands beyond state/federal laws- for vernal pools, buffer areas, restrictions on filling or alterations)
<input type="checkbox"/>	Adopt a water offset program (primarily for new development or expansion)
<input type="checkbox"/>	Implement a water conservation outreach program
<input type="checkbox"/>	Hire a water conservation coordinator (part-time)
<input type="checkbox"/>	Implement a rebate program for water efficient appliances, fixtures, or outdoor water management
<input type="checkbox"/>	Other

**Objective 8: Tracking Success: How will you track or measure success through the next ten years?**

By far, the most important goal for the City of Anoka over the next 3 years is to locate and properly meter the source of the unmetered/unaccounted for water. Getting unaccounted for water under 10% would be a major accomplishment.

Maintaining the current low per capita water use and Max Day /Ave Day ratio will also be considered a success.

**Tip: The process to monitor demand reduction and/or a rate structure includes:**

- a) The DNR Hydrologist will call or visit the community the first 1-3 years after the water supply plan is completed.
- b) They will discuss what activities the community is doing to conserve water and if they feel their actions are successful. The Water Supply Plan, Part 3 tables and responses will guide the discussion. For example, they will discuss efforts to reduce unaccounted for water loss if that is a problem, or go through Tables 33, 34 and 35 to discuss new initiatives.
- c) The city representative and the hydrologist will discuss total per capita water use, residential per capita water use, and business/industry use. They will note trends.
- d) They will also discuss options for improvement and/or collect case studies of success stories to share with other communities. One option may be to change the rate structure, but there are many other paths to successful water conservation.
- e) If appropriate, they will cooperatively develop a simple work plan for the next few years, targeting a couple areas where the city might focus efforts.

### A. Regulation

Complete Table 29 by selecting which regulations are used to reduce demand and improve water efficiencies. Add additional rows as needed.

Copies of adopted regulations or proposed restrictions or should be included in **Appendix 10** (a list with hyperlinks is acceptable).

**Table 29. Regulations for short-term reductions in demand and long-term improvements in water efficiencies**

Regulations Utilized	When is it applied (in effect)?
<input type="checkbox"/> Rainfall sensors required on landscape irrigation systems	<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
<input type="checkbox"/> Water efficient plumbing fixtures required	<input type="checkbox"/> New development <input type="checkbox"/> Replacement <input type="checkbox"/> Rebate Programs
<input type="checkbox"/> Critical/Emergency Water Deficiency ordinance	<input type="checkbox"/> Only during declared Emergencies
<input checked="" type="checkbox"/> Watering restriction requirements (time of day, allowable days, etc.)	<input checked="" type="checkbox"/> Odd/even <input type="checkbox"/> 2 days/week <input type="checkbox"/> Only during declared Emergencies
<input type="checkbox"/> Water waste prohibited (for example, having a fine for irrigators spraying on the street)	<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
<input type="checkbox"/> Limitations on turf areas (requiring lots to have 10% - 25% of the space in natural areas)	<input type="checkbox"/> New development <input type="checkbox"/> Shoreland/zoning <input type="checkbox"/> Other
<input type="checkbox"/> Soil preparation requirements (after construction, requiring topsoil to be applied to promote good root growth)	<input type="checkbox"/> New Development <input type="checkbox"/> Construction Projects <input type="checkbox"/> Other
<input type="checkbox"/> Tree ratios (requiring a certain number of trees per square foot of lawn)	<input type="checkbox"/> New development <input type="checkbox"/> Shoreland/zoning <input type="checkbox"/> Other
<input type="checkbox"/> Permit to fill swimming pool and/or requiring pools to be covered (to prevent evaporation)	<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared Emergencies
<input type="checkbox"/> Ordinances that permit stormwater irrigation, reuse of water, or other alternative water use (Note: be sure to check current plumbing codes for updates)	<input type="checkbox"/> Describe

### B. Retrofitting Programs

Education and incentive programs aimed at replacing inefficient plumbing fixtures and appliances can help reduce per capita water use, as well as energy costs. It is recommended that municipal water suppliers develop a long-term plan to retrofit public buildings with water efficient plumbing fixtures and appliances. Some water suppliers have developed partnerships with organizations having similar conservation goals, such as electric or gas suppliers, to develop cooperative rebate and retrofit programs.

*A study by the AWWA Research Foundation (Residential End Uses of Water, 1999) found that the average indoor water use for a non-conserving home is 69.3 gallons per capita per day (gpcd). The average indoor water use in a conserving home is 45.2 gpcd and most of the decrease in water use is related to water efficient plumbing fixtures and appliances that can reduce water, sewer and energy costs. In Minnesota, certain electric and gas providers are required (Minnesota Statute 216B.241) to fund programs that will conserve energy resources and some utilities have distributed water efficient showerheads to customers to help reduce energy demands required to supply hot water.*

**Retrofitting Programs**

Complete Table 30 by checking which water uses are targeted, the outreach methods used, the measures used to identify success, and any participating partners.

**Table 30. Retrofitting programs (Select all that apply)**

Water Use Targets	Outreach Methods	Partners
<input checked="" type="checkbox"/> Low flush toilets, <input checked="" type="checkbox"/> Toilet leak tablets, <input checked="" type="checkbox"/> Low flow showerheads, <input checked="" type="checkbox"/> Faucet aerators;	<input checked="" type="checkbox"/> Education about <input type="checkbox"/> Free distribution of <input type="checkbox"/> Rebate for <input type="checkbox"/> Other	<input type="checkbox"/> Gas company <input type="checkbox"/> Electric company <input type="checkbox"/> Watershed organization
<input checked="" type="checkbox"/> Water conserving washing machines, <input checked="" type="checkbox"/> Dish washers, <input checked="" type="checkbox"/> Water softeners;	<input checked="" type="checkbox"/> Education about <input type="checkbox"/> Free distribution of <input type="checkbox"/> Rebate for <input type="checkbox"/> Other	<input type="checkbox"/> Gas company <input type="checkbox"/> Electric company <input type="checkbox"/> Watershed organization
<input checked="" type="checkbox"/> Rain gardens, <input checked="" type="checkbox"/> Rain barrels, <input checked="" type="checkbox"/> Native/drought tolerant landscaping, etc.	<input checked="" type="checkbox"/> Education about <input type="checkbox"/> Free distribution of <input type="checkbox"/> Rebate for <input type="checkbox"/> Other	<input type="checkbox"/> Gas company <input type="checkbox"/> Electric company <input type="checkbox"/> Watershed organization

Briefly discuss measures of success from the above table (e.g. number of items distributed, dollar value of rebates, gallons of water conserved, etc.):

Residential per capita water use is already low, therefore it appears that these low cost programs are adequate, and further expenditures of time and money are not required.

**C. Education and Information Programs**

Customer education should take place in three different circumstances. First, customers should be provided information on how to conserve water and improve water use efficiencies. Second, information should be provided at appropriate times to address peak demands. Third, emergency notices and educational materials about how to reduce water use should be available for quick distribution during an emergency.

**Proposed Education Programs**

Complete Table 31 by selecting which methods are used to provide water conservation and information, including the frequency of program components. Select all that apply and add additional lines as needed.

Table 31. Current and Proposed Education Programs

Education Methods	General summary of topics	#/Year	Frequency
Billing inserts or tips printed on the actual bill	General water conservation tips, info on water system	2	<input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Consumer Confidence Reports	General water conservation tips, info on water system	1	<input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Press releases to traditional local news outlets (e.g., newspapers, radio and TV)	Situation specific info		<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input checked="" type="checkbox"/> Only during declared emergencies
Social media distribution (e.g., emails, Facebook, Twitter)	General water conservation tips, info on water system		<input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Paid advertisements (e.g., billboards, print media, TV, radio, web sites, etc.)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Presentations to community groups	Situation specific info		<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input checked="" type="checkbox"/> Only during declared emergencies
Staff training	General water conservation tips, info on water system		<input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Facility tours			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Displays and exhibits			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Marketing rebate programs (e.g., indoor fixtures & appliances and outdoor practices)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Community news letters	General water conservation tips, info on water system		<input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Direct mailings (water audit/retrofit kits, showerheads, brochures)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal

Education Methods	General summary of topics	#/Year	Frequency
			<input type="checkbox"/> Only during declared emergencies
Information kiosk at utility and public buildings			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Public service announcements	Situation specific info		<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input checked="" type="checkbox"/> Only during declared emergencies
Cable TV Programs	Situation specific info		<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input checked="" type="checkbox"/> Only during declared emergencies
Demonstration projects (landscaping or plumbing)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
K-12 education programs (Project Wet, Drinking Water Institute, presentations)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Community events (children’s water festivals, environmental fairs)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Community education classes			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Water week promotions			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Website (include address:) <a href="http://www.ci.anoka.mn.us/index.asp?Type=B_BASIC&amp;SEC={8EE961A4-BB32-46A6-9CB1-AE5E7763A17A}&amp;DE={AF75942B-5847-4153-81F7-A7EC9B8B22C2}">http://www.ci.anoka.mn.us/index.asp?Type=B_BASIC&amp;SEC={8EE961A4-BB32-46A6-9CB1-AE5E7763A17A}&amp;DE={AF75942B-5847-4153-81F7-A7EC9B8B22C2}</a>  <a href="http://www.knowtheflow.us/learn-more-2/">http://www.knowtheflow.us/learn-more-2/</a>	General water conservation tips, info on water system		<input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Targeted efforts (large volume users, users with large increases)			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies

Education Methods	General summary of topics	#/Year	Frequency
Notices of ordinances	General water conservation tips, info on water system		<input checked="" type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Emergency conservation notices		1	<input type="checkbox"/> Ongoing <input checked="" type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies
Other:			<input type="checkbox"/> Ongoing <input type="checkbox"/> Seasonal <input type="checkbox"/> Only during declared emergencies

Briefly discuss what future education and information activities your community is considering in the future:

Continue to participate and leverage the collaborative efforts of Anoka County “Know The Flow” and the Anoka County Water Resources Management Task Force

Leverage Wellhead Protection Plan update process (currently under way) to remind residents of the value of water and the benefits of water conservation.

## Part 4. ITEMS FOR METROPOLITAN AREA COMMUNITIES

Minnesota Statute 473.859 requires WSPs to be completed for all local units of government in the seven-county Metropolitan Area as part of the local comprehensive planning process.



Much of the information in Parts 1-3 addresses water demand for the next 10 years. However, additional information is needed to address water demand through 2040, which will make the WSP consistent with the Metropolitan Land Use Planning Act, upon which the local comprehensive plans are based.

This Part 4 provides guidance to complete the WSP in a way that addresses plans for water supply through 2040.

### A. Water Demand Projections through 2040

Complete Table 7 in Part 1D by filling in information about long-term water demand projections through 2040. Total Community Population projections should be consistent with the community's system statement, which can be found on the Metropolitan Council's website and which was sent to the community in September 2015.

Projected Average Day, Maximum Day, and Annual Water Demands may either be calculated using the method outlined in *Appendix 2* of the *2015 Master Water Supply Plan* or by a method developed by the individual water supplier.

### B. Potential Water Supply Issues

Complete Table 10 in Part 1E by providing information about the potential water supply issues in your community, including those that might occur due to 2040 projected water use.

The *Master Water Supply Plan* provides information about potential issues for your community in *Appendix 1 (Water Supply Profiles)*. This resource may be useful in completing Table 10.

You may document results of local work done to evaluate impact of planned uses by attaching a feasibility assessment or providing a citation and link to where the plan is available electronically.

### C. Proposed Alternative Approaches to Meet Extended Water Demand Projections

Complete Table 12 in Part 1F with information about potential water supply infrastructure impacts (such as replacements, expansions or additions to wells/intakes, water storage and treatment capacity, distribution systems, and emergency interconnections) of extended plans for development and redevelopment, in 10-year increments through 2040. It may be useful to refer to information in the community's local Land Use Plan, if available.

Complete Table 14 in Part 1F by checking each approach your community is considering to meet future demand. For each approach your community is considering, provide information about the amount of

future water demand to be met using that approach, the timeframe to implement the approach, potential partners, and current understanding of the key benefits and challenges of the approach.

As challenges are being discussed, consider the need for: evaluation of geologic conditions (mapping, aquifer tests, modeling), identification of areas where domestic wells could be impacted, measurement and analysis of water levels & pumping rates, triggers & associated actions to protect water levels, etc.

**D. Value-Added Water Supply Planning Efforts (Optional)**

The following information is not required to be completed as part of the local water supply plan, but completing this can help strengthen source water protection throughout the region and help Metropolitan Council and partners in the region to better support local efforts.

**Source Water Protection Strategies**

**Does a Drinking Water Supply Management Area for a neighboring public water supplier overlap your community?** Yes  No

If you answered no, skip this section. If you answered yes, please complete Table 32 with information about new water demand or land use planning-related local controls that are being considered to provide additional protection in this area.

**Table 32. Local controls and schedule to protect Drinking Water Supply Management Areas**

Local Control	Schedule to Implement	Potential Partners
<input type="checkbox"/> None at this time		
<input type="checkbox"/> Comprehensive planning that guides development in vulnerable drinking water supply management areas		
<input type="checkbox"/> Zoning overlay		
<input checked="" type="checkbox"/> Other: Aquifer Pump Test	Winter 2016/2017	Andover, Ramsey

**Technical assistance**

From your community’s perspective, what are the most important topics for the Metropolitan Council to address, guided by the region’s Metropolitan Area Water Supply Advisory Committee and Technical Advisory Committee, as part of its ongoing water supply planning role?

- Coordination of state, regional and local water supply planning roles
- Regional water use goals
- Water use reporting standards
- Regional and sub-regional partnership opportunities
- Identifying and prioritizing data gaps and input for regional and sub-regional analyses
- Others: \_\_\_\_\_

## GLOSSARY

**Agricultural/Irrigation Water Use** - Water used for crop and non-crop irrigation, livestock watering, chemigation, golf course irrigation, landscape and athletic field irrigation.

**Average Daily Demand** - The total water pumped during the year divided by 365 days.

**Calcareous Fen** - Calcareous fens are rare and distinctive wetlands dependent on a constant supply of cold groundwater. Because they are dependent on groundwater and are one of the rarest natural communities in the United States, they are a protected resource in MN. Approximately 200 have been located in Minnesota. They may not be filled, drained or otherwise degraded.

**Commercial/Institutional Water Use** - Water used by motels, hotels, restaurants, office buildings, commercial facilities and institutions (both civilian and military). Consider maintaining separate institutional water use records for emergency planning and allocation purposes. Water used by multi-family dwellings, apartment buildings, senior housing complexes, and mobile home parks should be reported as Residential Water Use.

**Commercial/Institutional/Industrial (C/I/I) Water Sold** - The sum of water delivered for commercial/institutional or industrial purposes.

**Conservation Rate Structure** - A rate structure that encourages conservation and may include increasing block rates, seasonal rates, time of use rates, individualized goal rates, or excess use rates. If a conservation rate is applied to multifamily dwellings, the rate structure must consider each residential unit as an individual user. A community may have a separate conservation rate that only goes into effect when the community or governor declares a drought emergency. These higher rates can help to protect the city budgets during times of significantly less water usage.

**Date of Maximum Daily Demand** - The date of the maximum (highest) water demand. Typically this is a day in July or August.

**Declining Rate Structure** - Under a declining block rate structure, a consumer pays less per additional unit of water as usage increases. This rate structure does not promote water conservation.

**Distribution System** - Water distribution systems consist of an interconnected series of pipes, valves, storage facilities (water tanks, water towers, reservoirs), water purification facilities, pumping stations, flushing hydrants, and components that convey drinking water and meeting fire protection needs for cities, homes, schools, hospitals, businesses, industries and other facilities.

**Flat Rate Structure** - Flat fee rates do not vary by customer characteristics or water usage. This rate structure does not promote water conservation.

**Industrial Water Use** - Water used for thermonuclear power (electric utility generation) and other industrial use such as steel, chemical and allied products, paper and allied products, mining, and petroleum refining.

**Low Flow Fixtures/Appliances** - Plumbing fixtures and appliances that significantly reduce the amount of water released per use are labeled “low flow”. These fixtures and appliances use just enough water to be effective, saving excess, clean drinking water that usually goes down the drain.

**Maximum Daily Demand** - The maximum (highest) amount of water used in one day.

**Metered Residential Connections** - The number of residential connections to the water system that have meters. For multifamily dwellings, report each residential unit as an individual user.

**Percent Unmetered/Unaccounted For** - Unaccounted for water use is the volume of water withdrawn from all sources minus the volume of water delivered. This value represents water “lost” by miscalculated water use due to inaccurate meters, water lost through leaks, or water that is used but unmetered or otherwise undocumented. Water used for public services such as hydrant flushing, ice skating rinks, and public swimming pools should be reported under the category “Water Supplier Services”.

**Population Served** - The number of people who are served by the community’s public water supply system. This includes the number of people in the community who are connected to the public water supply system, as well as people in neighboring communities who use water supplied by the community’s public water supply system. It should not include residents in the community who have private wells or get their water from neighboring water supply.

**Residential Connections** - The total number of residential connections to the water system. For multifamily dwellings, report each residential unit as an individual user.

**Residential Per Capita Demand** - The total residential water delivered during the year divided by the population served divided by 365 days.

**Residential Water Use** - Water used for normal household purposes such as drinking, food preparation, bathing, washing clothes and dishes, flushing toilets, and watering lawns and gardens. Should include all water delivered to single family private residences, multi-family dwellings, apartment buildings, senior housing complexes, mobile home parks, etc.

**Smart Meter** - Smart meters can be used by municipalities or by individual homeowners. Smart metering generally indicates the presence of one or more of the following:

- Smart irrigation water meters are controllers that look at factors such as weather, soil, slope, etc. and adjust watering time up or down based on data. Smart controllers in a typical summer will reduce water use by 30%-50%. Just changing the spray nozzle to new efficient models can reduce water use by 40%.
- Smart Meters on customer premises that measure consumption during specific time periods and communicate it to the utility, often on a daily basis.
- A communication channel that permits the utility, at a minimum, to obtain meter reads on demand, to ascertain whether water has recently been flowing through the meter and onto the

premises, and to issue commands to the meter to perform specific tasks such as disconnecting or restricting water flow.

**Total Connections** - The number of connections to the public water supply system.

**Total Per Capita Demand** - The total amount of water withdrawn from all water supply sources during the year divided by the population served divided by 365 days.

**Total Water Pumped** - The cumulative amount of water withdrawn from all water supply sources during the year.

**Total Water Delivered** - The sum of residential, commercial, industrial, institutional, water supplier services, wholesale and other water delivered.

**Ultimate (Full Build-Out)** - Time period representing the community's estimated total amount and location of potential development, or when the community is fully built out at the final planned density.

**Unaccounted (Non-revenue) Loss** - See definitions for "percent unmetered/unaccounted for loss".

**Uniform Rate Structure** - A uniform rate structure charges the same price-per-unit for water usage beyond the fixed customer charge, which covers some fixed costs. The rate sends a price signal to the customer because the water bill will vary by usage. Uniform rates by class charge the same price-per-unit for all customers within a customer class (e.g. residential or non-residential). This price structure is generally considered less effective in encouraging water conservation.

**Water Supplier Services** - Water used for public services such as hydrant flushing, ice skating rinks, public swimming pools, city park irrigation, back-flushing at water treatment facilities, and/or other uses.

**Water Used for Nonessential Purposes** - Water used for lawn irrigation, golf course and park irrigation, car washes, ornamental fountains, and other non-essential uses.

**Wholesale Deliveries** - The amount of water delivered in bulk to other public water suppliers.

## **Acronyms and Initialisms**

**AWWA** – American Water Works Association

**C/I/I** – Commercial/Institutional/Industrial

**CIP** – Capital Improvement Plan

**GIS** – Geographic Information System

**GPCD** – Gallons per capita per day

**GWMA** – Groundwater Management Area – North and East Metro, Straight River, Bonanza,

**MDH** – Minnesota Department of Health

**MGD** – Million gallons per day

**MG** – Million gallons

**MGL** – Maximum Contaminant Level

**MnTAP** – Minnesota Technical Assistance Program (University of Minnesota)

**MPARS** – MN/DNR Permitting and Reporting System (new electronic permitting system)

**MRWA** – Minnesota Rural Waters Association

**SWP** – Source Water Protection

**WHP** – Wellhead Protection

**APPENDICES TO BE SUBMITTED BY THE WATER SUPPLIER**

**Appendix 1: Well records and maintenance summaries** – see Part 1C

**Appendix 2: Water level monitoring plan** – see Part 1E

**Appendix 3: Water level graphs for each water supply well** - see Part 1E

**Appendix 4: Capital Improvement Plan** - see Part 1E

**Appendix 5: Emergency Telephone List** – see Part 2C

**Appendix 6: Cooperative Agreements for Emergency Services** – see Part 2C

**Appendix 7: Municipal Critical Water Deficiency Ordinance** – see Part 2C

**Appendix 8: Graph showing annual per capita water demand for each customer category during the last ten-years** – see Part 3 Objective 4

**Appendix 9: Water Rate Structure** – see Part 3 Objective 6

**Appendix 10: Adopted or proposed regulations to reduce demand or improve water efficiency** – see Part 3 Objective 7

**Appendix 11: Implementation Checklist** – summary of all the actions that a community is doing, or proposes to do, including estimated implementation dates – see [www.mndnr.gov/watersupplyplans](http://www.mndnr.gov/watersupplyplans)

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# Appendix 1

## Well Records and Maintenance Summaries

WELL MAINTENANCE WELL #3

4/2011

PULLED AND REPLACED WELL PUMP

REPLACED 8" COLUMN PIPE (100')

REPLACED STAINLESS STEEL SHAFT (110')

REPLACED 10' TAIL PIPE (10')

REPLACED FOOTVALVE

REPLACED STAINLESS SHAFT SLEVES

REPLACED RUBBER SPIDERS

REBUILT PACKING BOX

2/2011

REMOVED SAND FROM THE BOTTOM OF WELL

## Anoka Well # 4 Repair & Maintenance

12/2006

Replaced Colum Pipe (260')

Replaced Shaft (260')

Replaced Couplings

Replaced Rubber Bearings

Replaced Retainer Bronze – Spider

Replaced Drawdown Tube

Sand Blast & Paint Head

New pack Box Bushing & Packing

5/2013

Remove & Reinstall Pump

Well Decompressing (11 Hours) \Repair Packing Box

Replace 1 Colum Pipe & 1 Suction Pipe

Repair Motor – New Bearing & Metalize Top Bearing Holder

Balance Motor

## Anoka Well #5

9/2013

Replaced Pump Motor With A New 150 HP Submersible Pump

## Well #6

4/2012

Rehab Well That Had Filled In With Sand

Replaced Motor With A Submersible Pump

Pump Tested Well

## Well #7

10/2013

Replaced Drop Pipe (100')

Replaced Old Motor With A New 75 HP 2 Stage Submersible Pump

Installed A New 8" Check Valve

New Discharge Elbow

Installed New Stilling Tube (100')

## Well #8

9/2007 Replaced Submersible Pump & Check Valve

4/2015

Install 110' Of 1" SCH 80 PVC Pipe For Drawdown Tube

# Trout Wells

141 28th Ave South  
 Waite Park, MN 56387  
 320-251-5090

Email joetraut@troutwells.com  
 www.troutwells.com

## Invoice - Anoka well 3 - pump pull & repair

DATE: April 28, 2011

PROJECT NAME: City of Anoka well 3

JOB # 306249

	Description	Pump Repair	Unit	Unit Price	Quantity	Totals
LABOR	Mobilization & Demobilization		LS	\$ 750.00	1	\$ 750.00
	Pull Pump		HR	\$ 175.00	4	\$ 700.00
	Clean & Disassemble Pump		HR	\$ 75.00	3	\$ 225.00
	Remobilize & Demobilize		LS	\$ 750.00	1	\$ 750.00
	Reinstall Pump & Hook to System		HR	\$ 175.00	4	\$ 700.00
	Start Pump & Test Run		HR	\$ 125.00	1	\$ 125.00
	Video		EA	\$ 1,400.00	1	\$ 1,400.00
MATERIALS	New 75hp US Prem. Eff motor		LS	\$ 6,625.00	1	\$ 6,625.00
	Pump rebuild 12CLC-4 stge		LS	\$ 975.00	1	\$ 975.00
	New - 8" column		LF	\$ 45.00	100	\$ 4,500.00
	New - 1 1/2" SS shaft		LF	\$ 43.00	100	\$ 4,300.00
	New - 8" x 10' tail pipe		EACH	\$ 350.00	1	\$ 350.00
	New - 8" K&K footvalve		EACH	\$ 975.00	1	\$ 975.00
	New - 1 1/2" SS head shaft		EACH	\$ 425.00	1	\$ 425.00
	New - SS shaft sleeves		EACH	\$ 65.00	10	\$ 650.00
	New - Rubber spider inserts		EACH	\$ 25.00	10	\$ 250.00
	1 1/2" packing box rebuild		EACH	\$ 225.00	1	\$ 225.00
	Chlorinate well		LS	\$ 35.00	1	\$ 35.00
	Misc Supplies		LS	\$ 150.00	1	\$ 150.00
	New 8" spiders		EACH	\$ 95.00	10	\$ 950.00

TOTAL MATERIALS	\$ 20,410.00
TOTAL LABOR	\$ 4,650.00
INCOMING FREIGHT	\$ 475.00
<b>TOTAL</b>	<b>\$ 25,535.00</b>



MARK J TRAUT WELLS INC  
 141 28TH AVE SOUTH  
 WAITE PARK, MN 56387  
 UNITED STATES  
 (320)-251-5090

PAGE 1

INVOICE DATE 04/30/2011  
 INVOICE NO 235151

S 031264  
 O CITY OF ANOKA  
 L 2015 FIRST AVE N  
 D ANOKA, MN 55303  
  
 T  
 O

S 031264  
 H CITY OF ANOKA  
 I 2015 FIRST AVE N  
 P ANOKA, MN 55303  
  
 T  
 O

TOTAL DUE 25,535.00

SLS1	SLS2	DUE DATE	DISC DUE DATE	ORDER NO	ORDER DATE	SHIP DATE	SHIP NO
421	366	05/10/2011	04/30/2011	00090566	04/30/2011	04/30/2011	

TERMS DESCRIPTION	CUSTOMER PO NO	SHIP VIA
NET 10		

ITEM ID	TX CL	UNITS	ORDERED	SHIPPED	UNIT PRICE	EXTENSION
12	0		1.0000	1.0000	25,060.0000	25,060.00
PUMP AND/OR TANK INSTALL RE: WELL #3 PUMP PULL & REPAIR						
90	0		1.0000	1.0000	475.0000	475.00
MISC (BULK WATER, FREIGHT, ETC) FREIGHT CHARGES						

VISIT OUR WEB SITE @ WWW.TRAUTWELLS.COM

TAXABLE	NONTAXABLE	FREIGHT	SALES TAX	MISC	TOTAL
0.00	25,535.00	0.00	0.00	0.00	25,535.00
<b>TOTAL DUE</b>					<b>25,535.00</b>

# Traut Wells

141 28th Ave South  
Waite Park, MN 56387  
320-251-5090  
Email joetraut@trautwells.com  
www.trautwells.com

## Invoice - Anoka well 3 - Sand Removal

DATE: 2/15/2011

PHONE # 763-576-2923

NAME: City of Anoka well 3

FAX #

ADDRESS 2015 First Ave N.

Anoka, MN 55303

ATTN: Pete K

JOB # 30-6249

RE: City will remove sand from site

Description  
Mob/Demob  
Setup/ Remove equipmt for sand removal  
Remove sand from bottom of well

Unit	Unit Price	QTY	Totals
LS	1,550.00	1	\$ 1,550.00
HR.	175.00	5	\$ 875.00
HR.	225.00	3	\$ 675.00

TOTAL MATERIALS	
TOTAL LABOR	\$ 3,100.00
INCOMING FREIGHT	
TOTAL	\$ 3,100.00



MARK J TRAUT WELLS INC  
 141 28TH AVE SOUTH  
 WAITE PARK, MN 56387  
 UNITED STATES  
 (320)-251-5090

PAGE 1

INVOICE DATE 02/21/2011  
 INVOICE NO 233723

S 031264  
 O CITY OF ANOKA  
 L 2015 FIRST AVE N  
 D ANOKA, MN 55303  
 T  
 O

S 031264  
 H CITY OF ANOKA  
 I 2015 FIRST AVE N  
 P ANOKA, MN 55303  
 T  
 O

TOTAL DUE 3,100.00

SLS1	SLS2	DUE DATE	DISC DUE DATE	ORDER NO	ORDER DATE	SHIP DATE	SHIP NO
421	366	03/03/2011	02/21/2011	00089107	02/21/2011	02/21/2011	

TERMS DESCRIPTION	CUSTOMER PO NO	SHIP VIA
-------------------	----------------	----------

NET 10

ITEM ID	TX CL	UNITS	ORDERED	SHIPPED	UNIT PRICE	EXTENSION
02		0	1.0000	1.0000	3,100.0000	3,100.00

LABOR  
 RE: WELL #3 SAND REMOVAL ATTN:  
 PETE

VISIT OUR WEB SITE @ WWW.TRAUTWELLS.COM

TAXABLE	NONTAXABLE	FREIGHT	SALES TAX	MISC	TOTAL
0.00	3,100.00	0.00	0.00	0.00	3,100.00
TOTAL DUE					3,100.00

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## Appendix 2

### Water Level Monitoring Plan

## Appendix 2: Water Level Monitoring Plan

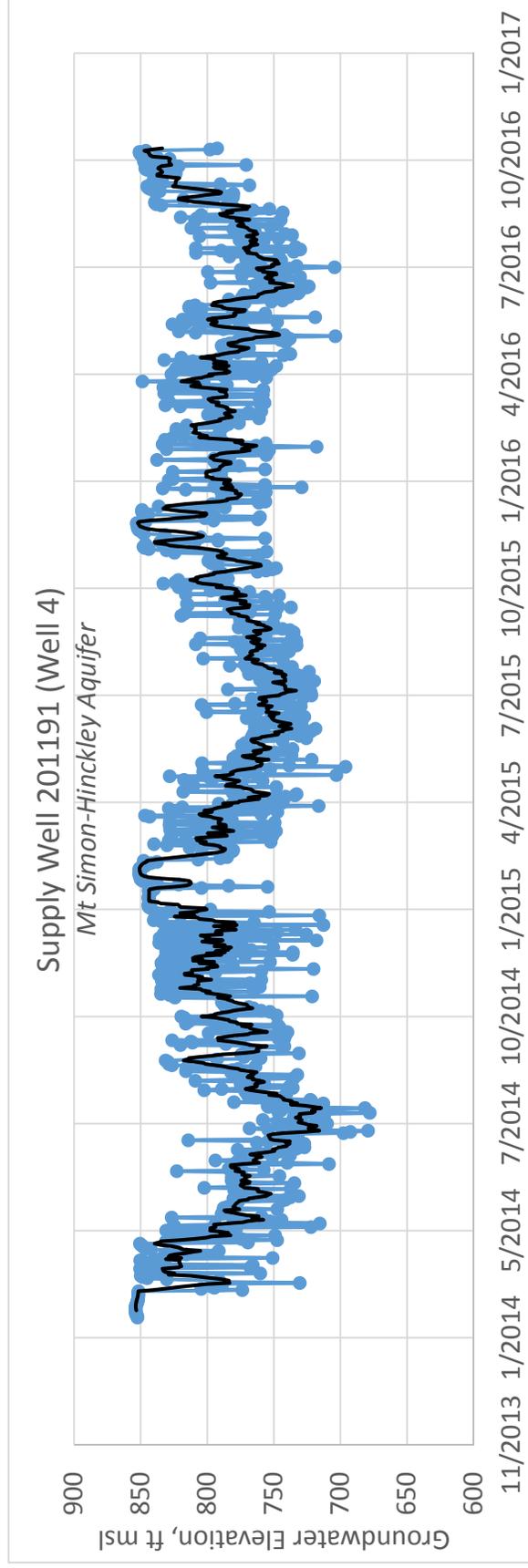
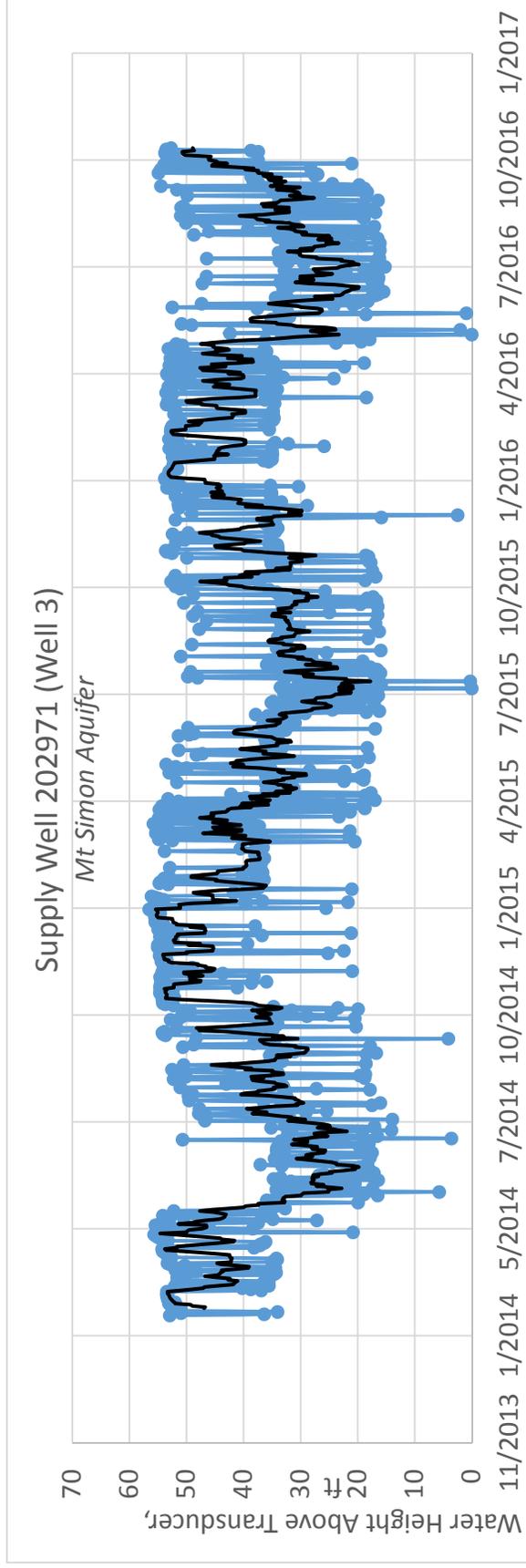
Unique Well ID	Well Name	Location (X, Y; NAD 1983, Zone 15)	Aquifer Name	Type of monitoring point	Monitoring program	Frequency of monitoring	Monitoring Method
202971	Well 3	469816, 5004487	CTCW – Tunnel City-Wonewoc	Production Well	City of Anoka	Continuous	SCADA
201191	Well 4	467904, 5005774	CMTS – Mt. Simon- Hinckley	Production Well	City of Anoka	Continuous	SCADA
201218	Well 5	467939, 5005780	CTCW – Tunnel City-Wonewoc	Production Well	City of Anoka	Continuous	SCADA
224625	Well 6	470146, 5008276	CWMS - Wonewoc - Mt. Simon	Production Well	City of Anoka	Continuous	SCADA
453792	Well 7	471272, 5007499	CMTS – Mt. Simon	Production Well	City of Anoka	Continuous	SCADA
676405	Well 8	470149, 5008324	CTCW – Tunnel City-Wonewoc	Production Well	City of Anoka	Continuous	SCADA
209297	Ob. Well	469794, 5007044	CMTS – Mt. Simon	Observation Well	MDH	Monthly	Steel Tape

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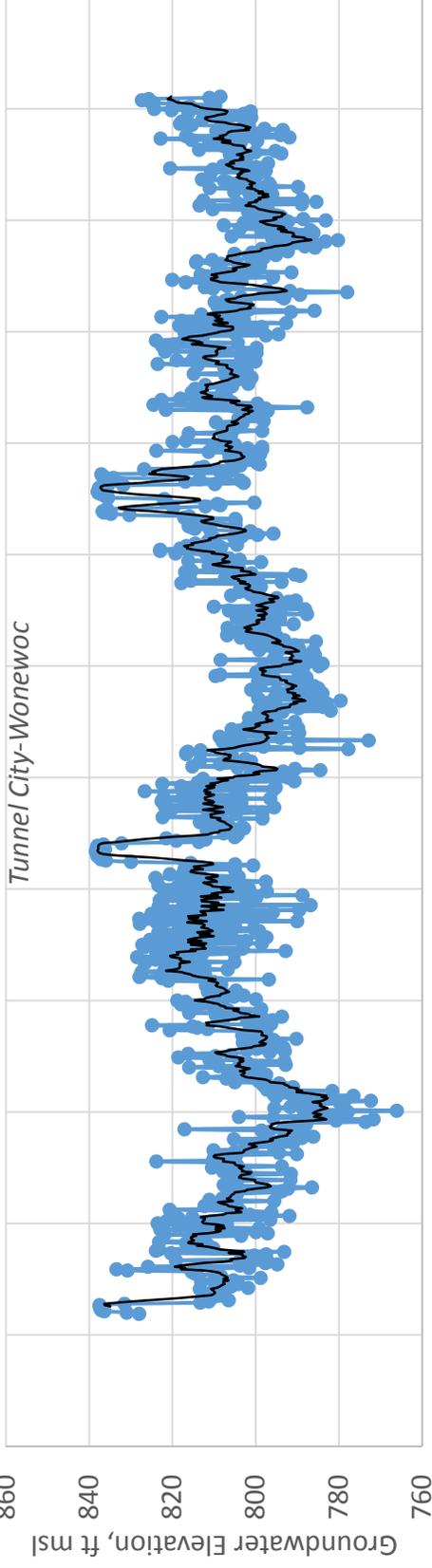
## Appendix 3

### Water Level Graphs for Each Water Supply Well

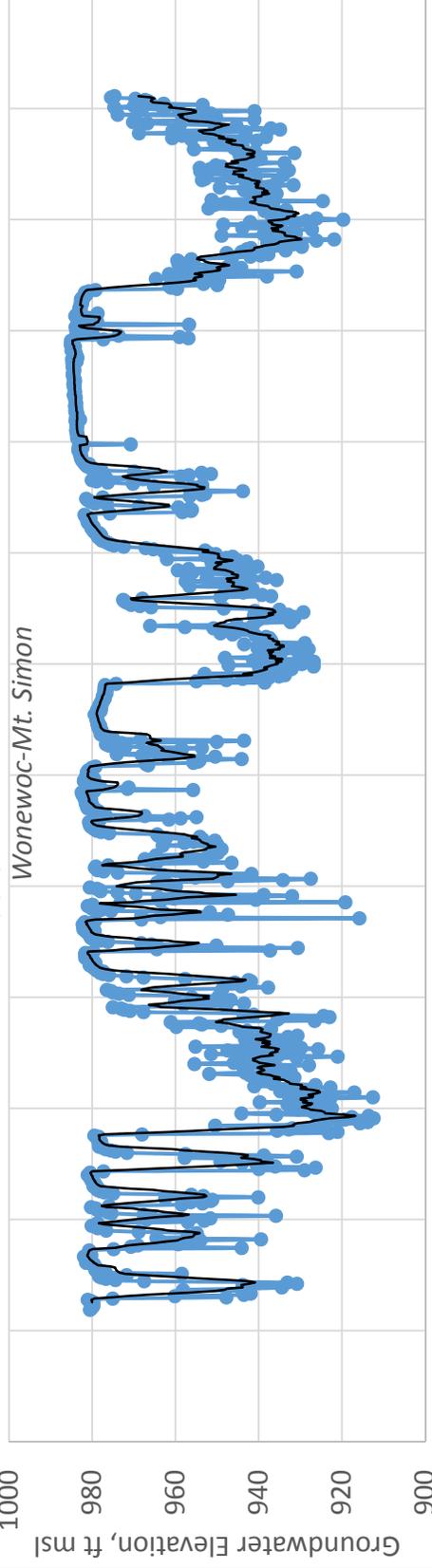
**Appendix 3: Water Level Data Graphs**

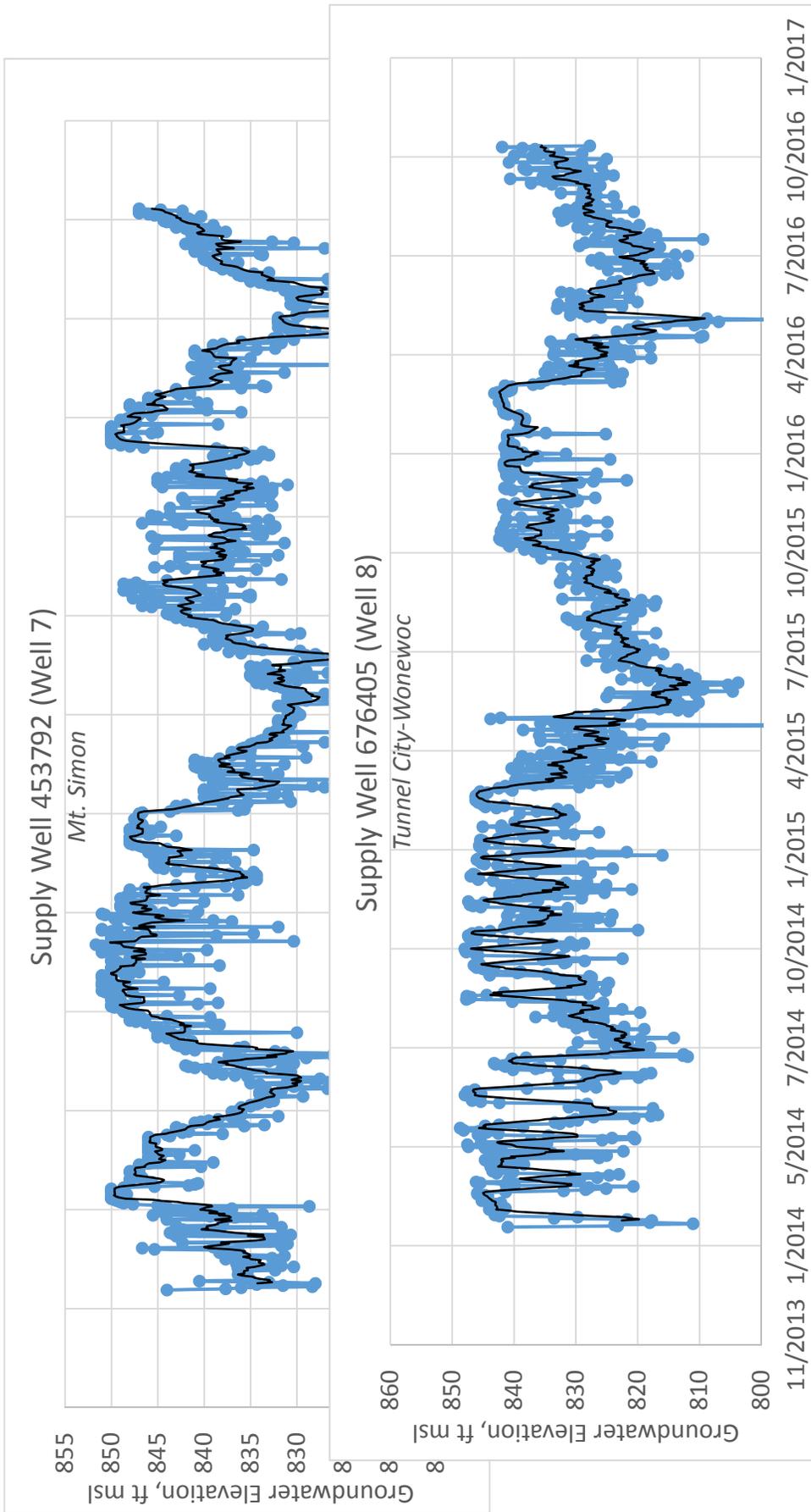


Supply Well 201218 (Well 5)

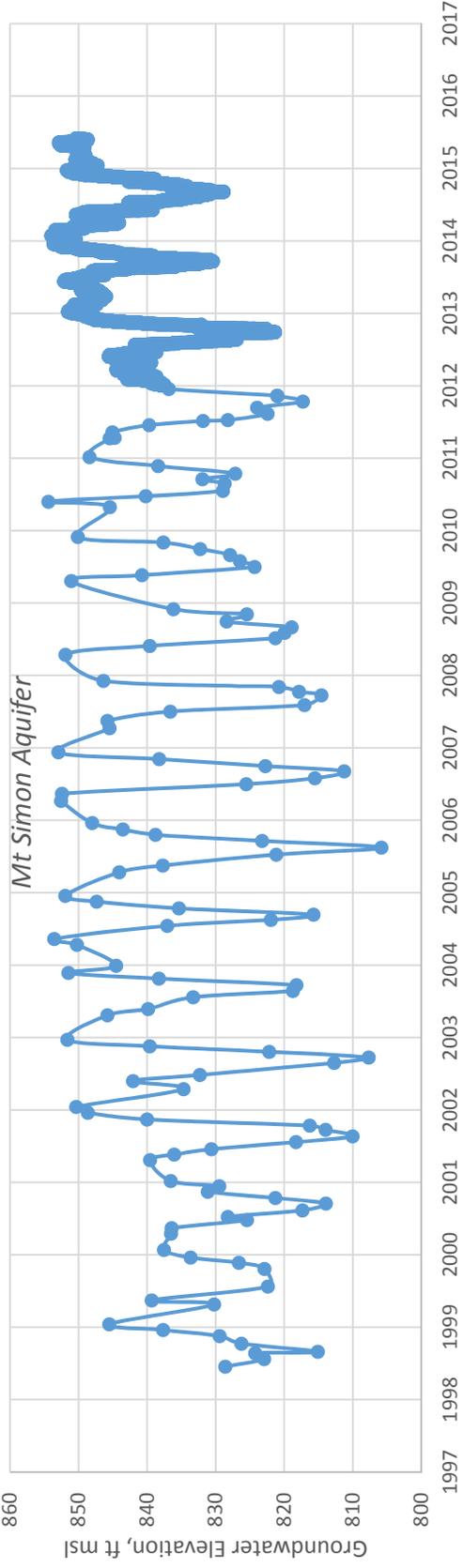


Supply Well 224625 (Well 6)





# Observation Well 209297



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## Appendix 4

### Capital Improvement Plan

# REQUEST FOR COUNCIL ACTION

**MEETING DATE:**  
September 2, 2008

<b>AGENDA SECTION:</b> Ordinances and Resolutions	<b>ORIGINATING DEPT:</b> Public Works - Engineering	<b>ITEM NO.:</b> 9.3
<b>ITEM DESCRIPTION:</b> ORD/Amending Chapter 66, Article IV, Section 66-131; Water Restrictions (2 <sup>nd</sup> Reading)		<b>PREPARED BY:</b> Greg Lee, P.E. Director of Public Services/ City Engineer

## BACKGROUND

This is the second reading of an ordinance to Amend Chapter 66, Article IV, Section 66-131; Water Restrictions. The first reading of this ordinance was held on August 18, 2008. There were no requested amendments to the first reading.

## DISCUSSION

The City's Capital Improvement Program (CIP) has a New Well and Treatment Plant scheduled in 2014, which is just beyond the official scope of the CIP. The estimated cost of this improvement is \$4,500,000. This item has been placed beyond the scope of the CIP because of the lack of available funds in the Enterprise Fund.

During recent budget discussions, staff determined that perhaps the first step that should be taken to delay or perhaps eliminate the need for an additional well and treatment plant is to promote conservation and to limit the peak water demand. This would be done by expanding the current odd/even watering policy to include a restriction that would be applied to selected portions of the day.

On August 18, 2008, the City Council adopted a policy on Water Conservation. In addition to expanding current water conservation regulations, this policy also included a method for assigning penalties for violations. The City's Code currently allows for the option to shut off the water to violating properties; however, staff believes that assigning administrative fines is a more appropriate approach. To do this, staff has submitted a proposed revision to section 66-131 of the City Code to allow for written warnings and administrative fines to be used to for water restriction violations.

## FINANCIAL IMPACT

Should the City hold a second reading and adopt this ordinance, the City will incur cost associated with public notification and enforcement. This would include items such as creating message signs, printing door hangers, and administrative costs associated with processing data and collecting fines. However, the fines collected are anticipated to compensate for administrative costs.

## COUNCIL ACTION REQUESTED

It is requested that the City Council hold the second reading and adopt of this ordinance.

**COUNCIL ACTION:** Motion by: \_\_\_\_\_ Second by: \_\_\_\_\_ Vote: \_\_\_\_\_

**FOLLOW UP:** \_\_\_\_\_

## SUMMARY OF IMPACTS ON FUNDING SOURCES

### WATER FUND

The water fund has some major capital improvement projects within the next few years to improve water distribution and storage. Water utility rates were increased in 2016. In the future it is anticipated that the city will need an additional well to keep up with demand. A new well is projected to cost about \$4.3 million. The new well is projected to be established in 2018.

In 2001 a revenue bond was issued to cover water infrastructure costs. This bond was refunded in 2009 to reduce costs. The refunded debt will be paid off in 2017. New debt will need to be issued to build and new well and to continue scheduled infrastructure improvements. Rate increases are projected for 2022 and forward.

**WATER FUND**

	basic rate					
	9.80%	9.70%				
	2015	2016	2017	2018	2019	2020
Working Capital Beginning Year	1,645,180	1,554,442	1,732,488	1,448,907	142,235	1,121,472
Operating Revenues	1,587,280	1,779,993	1,779,993	1,779,993	1,779,993	1,779,993
Other	333,903	260,500	305,000 #	145,000 #	145,000	145,000
Interest	24,428	23,317	30,319	28,978	3,200	28,037
Transfer In						
Miscellaneous	8,018			<b>250,000</b>		
Bond Issuance					<b>4,320,000</b>	
Total Sources	<u>1,953,629</u>	<u>2,063,810</u>	<u>2,115,312</u>	<u>2,203,971</u>	<u>6,248,193</u>	<u>1,953,030</u>
Personal Services	420,956	477,500	489,438	501,674	511,707	521,941
Supplies	117,686	121,102	135,969	142,512	144,650	146,820
Professional Services	302,073	278,170	309,892	316,176	321,705	313,243
Maintenance	43,363	82,661	80,944	79,481	70,365	73,147
Interest	16,275	12,831	3,625		77,000	154,000
Transfer Out			40,000	40,000	40,000	40,000
Capital Outlay	14,246	109,500	47,000	47,000	110,000	47,000
Capital Improvements	914,768	<b>579,000</b>	1,292,025	2,383,800	3,843,530	484,200
Principal Bond payment	210,000	215,000	225,000			150,000
Principal Bond payment						
Total Uses	<u>2,039,367</u>	<u>1,875,764</u>	<u>2,623,893</u>	<u>3,510,642</u>	<u>5,118,957</u>	<u>1,930,351</u>
Change in available funds	(85,738)	188,046	(508,582)	(1,306,671)	1,129,237	22,679
Other changes	(5,000)	(10,000)	225,000	0	(150,000)	0
Working Capital Ending Year	1,554,442	1,732,488	1,448,907	142,235	1,121,472	1,144,151
					<b>\$ 566,920</b>	

**CAPITAL IMPROVEMENT PLAN**

2017 *thru* 2021

**City of Anoka, Minnesota**

Department Water Utility  
 Contact Public Services Director  
 Type Improvement  
 Useful Life 15 years  
 Category Public Utilities Facilities  
 Priority 3 Important  
 Status Active

Project # WU-027  
 Project Name 7th Av Watermain Lining

Update flag

Total Project Cost: \$365,000

**Description**

Reline the existing watermain under CSAH 7 from North Street to Grant Street.

**Justification**

There has been 3 watermain breaks in the past year on this section of pipe.  
 1500' watermain @ \$120 LF  
 5 valves @ \$600 each  
 2 Hydrants @ \$1,200 each  
 15 Services @ \$ 1,000 each  
 12 Connect to WM @ \$1,000 each  
 Temp water @ \$7,500  
 Traffic control @ \$20,000  
 Street patching @ \$10,000  
 Mobilization @ \$27,000  
 20% Contingency @ \$60,800

Expenditures	2017	2018	2019	2020	2021	Total
Planning/Design/Engineering	61,000					61,000
Construction/Maintenance		304,000				304,000
<b>Total</b>	<b>61,000</b>	<b>304,000</b>				<b>365,000</b>

Funding Sources	2017	2018	2019	2020	2021	Total
Water Fund	61,000	304,000				365,000
<b>Total</b>	<b>61,000</b>	<b>304,000</b>				<b>365,000</b>

**Budget Impact/Other**

**CAPITAL IMPROVEMENT PLAN**

2017 *thru* 2021

**City of Anoka, Minnesota**

Department Water Utility  
 Contact Public Services Director  
 Type Improvement  
 Useful Life 10 years  
 Category Public Utilities Facilities  
 Priority 2 Very Important  
 Status Active

Project # **WU-028**  
 Project Name **Well #9 Site Selection Analysis**

Update flag

Total Project Cost: **\$30,000**

**Description**

Conduct Site Selection Analysis for Future Well #9

**Justification**

Based on our 2015 Comp Water Study the COA has an immediate need for additional water. This is based on maximum pumping limitations placed on the COA by the MDH.

<b>Expenditures</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Equip/Vehicles/Furnishings	30,000					30,000
<b>Total</b>	<b>30,000</b>					<b>30,000</b>

<b>Funding Sources</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Total</b>
Water Fund	30,000					30,000
<b>Total</b>	<b>30,000</b>					<b>30,000</b>

**Budget Impact/Other**

---

# Appendix 5

## Emergency Telephone List

*Updated List Maintained at City Hall and Public Works  
Not Included in Agency Review Copy for Privacy*

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## Appendix 6

### Cooperative Agreements for Emergency Services

Cooperative Agreements for Emergency Services between Andover and Coon Rapids

ANOKA - ANDOVER  
MEMORANDUM OF UNDERSTANDING  
ON

USE/PURCHASE OF ANOKA WATER

The City Council of Anoka has approved the City of Andover's request for use/purchase of water from Anoka by the way of hydrant located at the corner of 15th Avenue Court in Anoka and County Road No. 116.

- The water will be used for emergency use only, for example:
1. Andover's domestic water system failure of the well, pump or water main break. Over-taxing the in place Andover system is not considered a system failure.
  2. Andover's significant fire needs.

Andover understands that Anoka must fulfill its needs first; for example, a fire in Anoka will be a higher priority water use than a significant fire and/or domestic water emergency in Andover.

Andover has provided a hydrant of different style and color at no cost to Anoka on the South side of County Road No. 116.

Only one way water flow from Anoka to Andover will be provided.

Andover will contact the Anoka Fire Department and/or the Public Work's Directors's designee for permission to use Anoka's water.

For fire use, the amount of the water will be estimated. For domestic use, as defined above, the water will be metered.

Andover will pay for the water used at Anoka's current rate (1989 rate is 57.5 cents per 1000 gallons or .43 cents per 100 cubic feet).

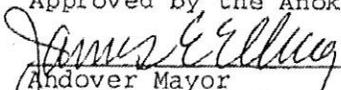
The hose, couplings, adapter, meter and back flow preventer shall be approved by Anoka and purchased by Andover. Hose with couplings shall be stored in Andover. Meter assembly shall be stored in Anoka with installation under the Anoka Water Department supervision.

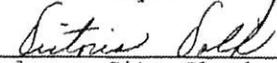
Any fire protection hydrant flow tests requiring the Anoka connection and requested by Andover shall be under the supervision of the Anoka Water Department Superintendent.

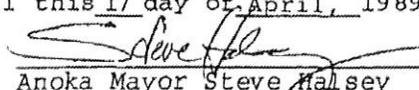
The memorandum of understanding will be reviewed every five (5) years. Any changes must be approved by the City Councils.

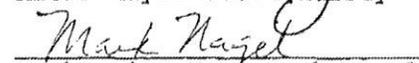
Approved by Andover City Council this 4th day of April 1989.

Approved by the Anoka City Council this 17 day of April, 1989.

  
\_\_\_\_\_  
Andover Mayor

  
\_\_\_\_\_  
Andover City Clerk

  
\_\_\_\_\_  
Anoka Mayor Steve Halsey

  
\_\_\_\_\_  
Anoka City Mgr. Mark Nagel

JOINT POWERS AGREEMENT BETWEEN THE  
CITY OF ANOKA AND THE CITY OF RAMSEY  
FOR THE SUPPLY OF MUNICIPAL WATER SERVICE  
TO PORTIONS OF THE CITY OF RAMSEY

THIS AGREEMENT is entered into between the City of Anoka, Minnesota, a Charter City under the laws of the State of Minnesota ("Anoka"), and the City of Ramsey, Minnesota, a Charter City under the laws of the State of Minnesota ("Ramsey"), on the 14<sup>th</sup> day of August, 1996.

WHEREAS, both Anoka and Ramsey own and operate municipal water systems for the purpose of providing municipal water service to their citizens, and

WHEREAS, Anoka's and Ramsey's corporate boundaries are adjacent and their respective water systems are in close proximity at the West boundary of Anoka and the East boundary of Ramsey; and

WHEREAS, Anoka has reserve municipal water system capacity beyond that which is currently needed to supply its peak day demand, and Ramsey has an expanding customer base which has exhausted Ramsey's municipal water system capacity, and

WHEREAS, it would be in the best interests of both cities to cooperate in providing municipal water service to portions of Ramsey and providing Ramsey with a secondary emergency water source, by utilizing Anoka's excess capacity, and

WHEREAS, such cooperation will provide revenue to Anoka and postpone the need for Ramsey to spend substantial amounts to expand its water system capacity.

NOW, THEREFORE, Anoka and Ramsey, pursuant to the authority contained in Minnesota Statutes, Section 471.59, commonly known as the "Joint Powers Act," in order to accomplish the foregoing purposes, agree as follows:

1. CONSTRUCTION OF INTERCONNECTIONS. Anoka and Ramsey shall and have constructed two interconnections between the Anoka municipal water system and the Ramsey municipal water system, as follows:

(a) Highway 10 Connection - a permanent connection located at the Anoka/Ramsey boundary on the North side of Highway 10 which consists of water main, a manhole, a back flow preventer, water meter, and valves and fittings. The purpose of this connection is to provide a supplemental source to Ramsey and an emergency water supply to Ramsey in the event of a water main break or interruption of Ramsey's water supply.

(b) County Road #116/Thurston Avenue Connection - a connection at the Southeast corner of the intersection of County Road #116 and Thurston Avenue. This connection is temporary in nature and has been accomplished by the connection of fittings and a hose line between two fire hydrants. Water drawn at this location will be for emergency use only. The connection contains a backflow preventer and meter.

2. OWNERSHIP OF HIGHWAY 10 CONNECTION EQUIPMENT. Anoka shall own all equipment East of the metering manhole and within the corporate limits of Anoka, and shall own and maintain the meter within the metering manhole and have access to the meter. Ramsey shall own and maintain the metering manhole and all equipment West of the manhole and within the corporate limits of Ramsey. All water flow through this connection shall be from Anoka to Ramsey and the one-way flow is insured by a double check backflow preventer owned and maintained by Ramsey. All equipment has been

purchased and installed by Ramsey, and Anoka has credited Ramsey for that portion of the equipment owned by Anoka. The construction, equipment, engineering, and other costs are described in Exhibit A attached hereto, as is the portion of the cost charged to Anoka and the credit given by Anoka. Ramsey has furnished Anoka a set of reproducible "as built" drawings of the connection.

3. SALE OF WATER. Anoka shall sell, at Ramsey's option, at least one million gallons of water per day through both connections described above, provided however:

(a) Anoka may, without notice to Ramsey, reduce or eliminate the amount of water sold to Ramsey in the event of a catastrophic event or emergency circumstance which causes an extraordinary demand for water within Anoka. The existence of any such catastrophic event or emergency circumstance shall be determined in the sole discretion and judgment of Anoka.

(b) Commencing upon and after January 1, 2000, Anoka may, upon nine months' written notice, reduce or eliminate the amount of water sold to Ramsey

4. WATER CONSERVATION. Ramsey agrees, with regard to its customers drawing water from Anoka, to implement water conservation and water restriction regulations similar to those imposed by Anoka on its water customers.

5. COMPENSATION.

(a) Ramsey shall pay Anoka for water supplied pursuant to this agreement according to the following schedule:

That standard industrial rate charged by Anoka to its industrial customers from time to time (currently 85 cents per 1,000 gallons) plus an additional monthly charge, based on the high usage day of each month, in the following amounts:

\$150.00 if the high usage day of the month is less than 250,001 gallons.

IN WITNESS WHEREOF, the undersigned Cities, by action of their governing bodies, have caused this agreement to be executed in accordance with the authority of Minnesota Statutes, Section 471.59.

CITY OF RAMSEY

By: [Signature]  
Mayor Date

Attest: [Signature] 8/14/96  
City Clerk Date

Approved as to form:

[Signature]  
City Attorney

CITY OF ANOKA

By: Peter M. Baly 8-19-96  
Mayor Date

Attest: Mark Kappel 8/16/96  
City Clerk Date

Approved as to form:

[Signature]  
City Attorney

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## Appendix 7

### Municipal Critical Water Deficiency Ordinance

CITY OF ANOKA

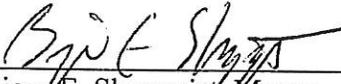
ORDINANCE NO. 2006-1272

AN ORDINANCE AMENDING CHAPTER 66; UTILITIES,  
ARTICLE IV; WATER SYSTEM,  
SECTION 66-131; ANNUAL ODD/EVEN WATER RESTRICTIONS  
OF THE ANOKA CITY CODE.

THE COUNCIL OF THE CITY OF ANOKA ORDAINS:

**Section 1.** Pursuant to Minnesota Law, the Anoka City Charter and the Anoka City Code, and upon a review of a study conducted by City staff of Chapter 66; Utilities, Article IV. Water System, Section 66-131. Annual Odd/Even Water Restriction, by an affirmative vote of a majority of the Anoka City Councilmembers present, is hereby amended as shown on Exhibit A, attached hereto, with stricken text deleted and underlined text inserted into existing code.

**SECTION 2:** This Ordinance shall be in full force and effective upon passage and seven days after publication.

  
Bjorn E. Skogquist, Mayor

  
Amy T. Oehlers, City Clerk

Introduced: June 19, 2006  
Adopted: July 6, 2006  
Published: July 14, 2006  
Effective: July 21, 2006

	Aye	Nay	Abstain	Absent
Skogquist	<u>X</u>	<u>          </u>	<u>          </u>	<u>          </u>
Anderson	<u>X</u>	<u>          </u>	<u>          </u>	<u>          </u>
Freeburg	<u>X</u>	<u>          </u>	<u>          </u>	<u>          </u>
Rice	<u>X</u>	<u>          </u>	<u>          </u>	<u>          </u>
Schumacher	<u>X</u>	<u>          </u>	<u>          </u>	<u>          </u>

## CHAPTER 66. UTILITIES

## ARTICLE IV. Water System\*

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 \*State law reference--Authority to regulate use of waterworks, Minn. Stats. §§ 410.33, 410.231, subd. 11.  
 -----

Section 66-131. ~~Annual odd/even~~ Watering restriction(s).

- (a) Upon the determination of City staff that water restrictions are necessary to protect water reserves, or to protect the public's health, safety and/or welfare, the City staff may order the restriction or ban of watering, using City supplied water, which shall include but not be limited to the use of irrigation systems and the watering of grass, trees and shrubs.

~~The council, by resolution, may order that during anytime between The City hereby orders that between June 1 and August 31 of each year, lawn and garden sprinkling, including the use of irrigation systems and the watering of trees and shrubs, using City supplied water, shall be permitted only as follows:~~

- (1) ~~Except for hand watering, as permitted in subsection (2) of this section, properties having odd numbered mailing addresses may be watered only on odd numbered days and properties having even numbered mailing addresses may be watered only on even numbered days.~~
- (2) ~~Hand watering, either with a hose or with a container, shall be permitted at any time unless specifically restricted by further order.~~
- (b) ~~Upon the advice of the department of public works that further watering restrictions are necessary to protect water reserves, the Council, by resolution, may order the following additional restrictions, which shall take effect immediately upon publication:~~
- (1) ~~In addition to the restrictions contained in subsection (a) of this section, the Council may ban all watering with city supplied water, including or excluding hand watering by hose, between the hours of 12:00 noon and 10:00 p.m.~~
- (2) ~~The City Council may impose a total ban on watering with city supplied water upon a finding that such ban is necessary to protect the public's health, safety and/or welfare.~~
- (c) The person in whose name the account for City water is kept by the City for each property within the City shall be responsible to maintain compliance with this section on such property. Upon any violation of the restrictions imposed by subsections (a) or (b) of this section this article, the Department of Public Works may shut off water service to the subject property and service shall be restored when the standard reconnection charges as outlined in the rules and regulations of the utilities department are paid.

CITY OF ANOKA

ORDINANCE NO. 2008-1362

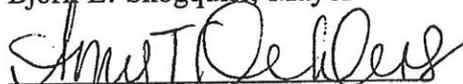
AN ORDINANCE AMENDING THE ANOKA CITY CODE,  
CHAPTER 66, ARTICLE IV; WATER SYSTEM;

THE COUNCIL OF THE CITY OF ANOKA ORDAINS:

**Section 1.** Pursuant to Minnesota Law, the Anoka City Charter and the Anoka City Code, and upon a review of a study conducted by City staff, Chapter 22, Article VIII; Water System, is hereby amended, by an affirmative vote of a majority of the Anoka City Councilmembers present, to read as listed on Exhibit A, hereto attached, with stricken text deleted and underlined text inserted into existing code:

**Section 2:** This Ordinance shall be in full force and effective upon passage and seven days after publication.

  
Bjorn E. Skogquist, Mayor

  
Amy T. Oehlers, City Clerk

Introduced: August 18, 2008  
Adopted: September 2, 2008  
Published: September 5, 2008  
Effective: September 12, 2008

	<u>Aye</u>	<u>Nay</u>	<u>Abstain</u>	<u>Absent</u>
Skogquist	X	_____	_____	_____
Anderson	X	_____	_____	_____
Freeburg	X	_____	_____	_____
Rice	X	_____	_____	_____
Weaver	X	_____	_____	_____

CHAPTER 66. UTILITIES

**ARTICLE IV. Water System\***

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\*State law reference--Authority to regulate use of waterworks, Minn. Stats. §§ 410.33, 410.231, subd. 11.  
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**Section 66-131.**

**Watering restriction(s).**

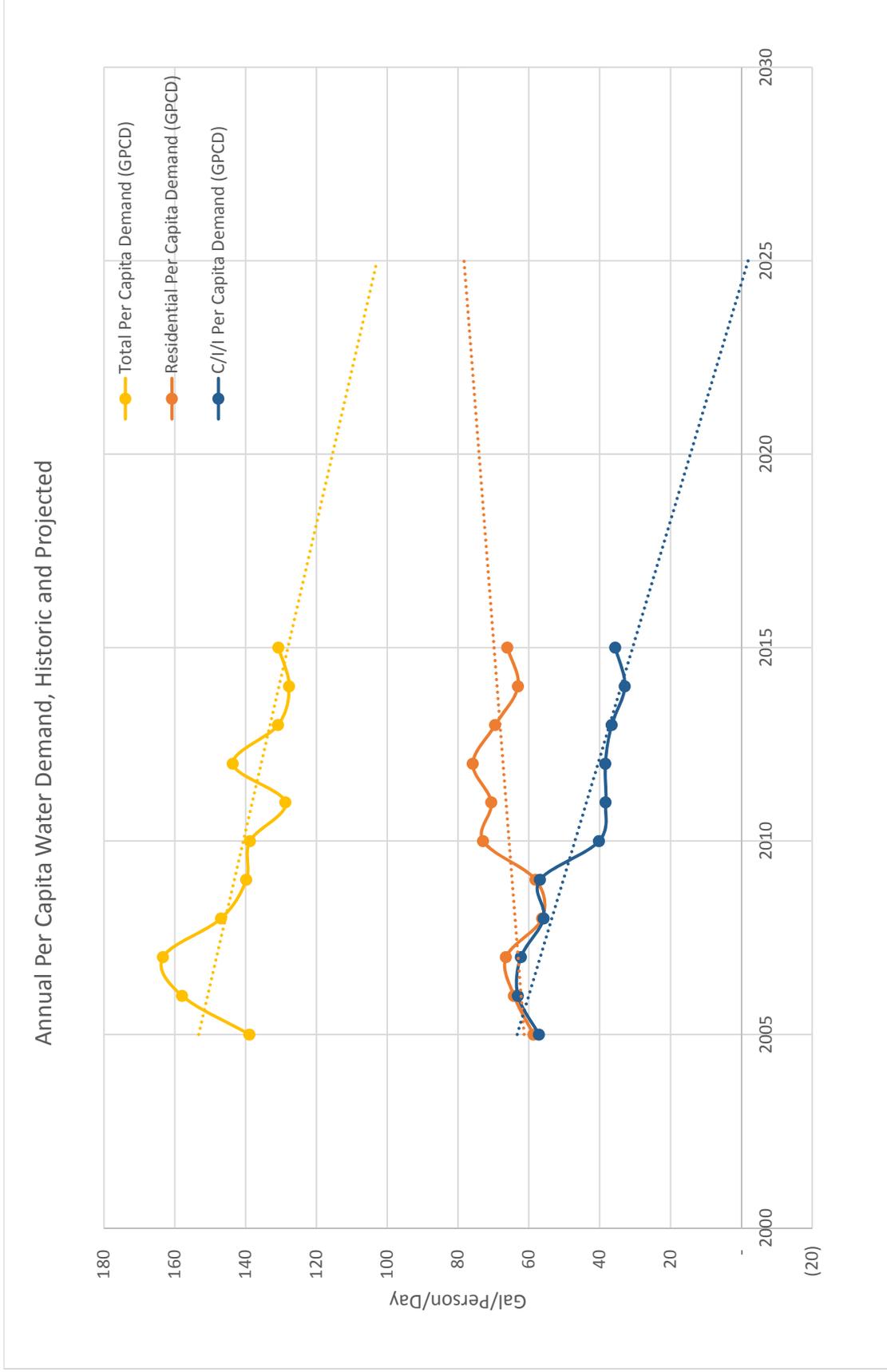
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- (b) The person in whose name the account for City water is kept by the City for each property within the City shall be responsible to maintain compliance with this section on such property. Upon any violation of the restrictions imposed by this article, the ~~Department of Public Works~~ City may shut off water service to the subject property and service shall be restored when the standard reconnection charges as outlined in the rules and regulations of the utilities department are paid. issue written warnings and administrative fines. For cases of repeat or continued violations, the City may prosecute or terminate water service to the subject property. Service may be restored upon payment of all fines and associated service restoration fees.

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## Appendix 8

Graph Showing Annual Per Capita Water Demand for Each Customer Category  
During the Last Ten Years

**Appendix 8: Total per Capita Demand for Customer Categories**



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# Appendix 9

## Water Rate Structure

# 2016 Rates effective 01/01/2016

## ELECTRIC

	Residential	Small Commercial	Large Commercial	
Fixed Charge	\$ 9.70	\$ 9.70	\$ 40.00	per month
Energy Charge summer	\$ 0.1110	\$ 0.1110	\$ 0.0610	per kwh
Energy Charge winter	\$ 0.0990	\$ 0.0990	\$ 0.0610	per kwh
Clean Energy add on rate	\$ 0.0175	\$ -	\$ -	per kwh
Green Energy 100kwh block	\$ 1.7500	\$ -	\$ -	per block
Demand Charge summer	\$ -	\$ -	\$ 11.40	per kw
Demand Charge winter	\$ -	\$ -	\$ 7.40	per kw
Primary ownership discount	\$ -	\$ -	\$ 0.55	per kw
Primary ownership discount	\$ -	\$ -	\$ 0.0007	per kwh
Data pulse meter	\$ -	\$ -	\$ 15.00	per month
Interruptible/Off Peak Fixed	\$ -	\$ -	\$ 46.50	per month
Off Peak rate A	\$ -	\$ -	\$ 0.0575	per kwh
Off Peak rate B	\$ -	\$ -	\$ 0.1020	per kwh
Interruptible Demand	\$ -	\$ -	\$ 3.80	per kw
Parallel Generation (under 40kw)	\$ 0.10890	\$ 0.11090	\$ 0.08720	per kwh
Simultaneous Purchase/Sale	\$ 0.05274	\$ 0.05274	\$ 0.05274	per kwh
Time of day purchase rate	\$ 0.05274	\$ 0.05274	\$ 0.05274	per kwh
Downtown street lights	\$ -	\$ 0.004	\$ 0.004	per kwh

\* Energy usage (kwh sales) is subject to the purchase power adjustment (PPA). The PPA takes into account the varying prices being charged to AMU by our power supplier. When the amount AMU pays its power supplier rises, the increased cost is added to the customers energy charges. It is important to note with PPA there is no mark up for AMU, and the PPA is implemented by most utilities throughout Minnesota and the nation.

## WATER

	Residential	Commercial	Industrial (over 3")	
Fixed Charge	\$ 6.25	\$ 12.50	\$ 186.95	per month
State testing fee	\$ 0.53	\$ 0.53	\$ 0.53	per month
Tier One (limits 2000/40000/200000)	\$ 1.47	\$ 1.47	\$ 1.47	per 100cf
Tier Two (limits 4000/80000/400000)	\$ 1.62	\$ 1.62	\$ 1.62	per 100cf
Tier Three all addition consumption	\$ 1.84	\$ 1.84	\$ 1.84	per 100cf

Commercial irrigation meters use same tiered rates. Up to 20,000cf - Up to 40,000cf - and over

## SEWER

	Residential	Commercial	Industrial	
Fixed Charge	\$ 5.00	\$ 10.00	\$ 149.50	per month
Consumption Charge	\$ 2.45	\$ 2.45	\$ 2.45	per 100cf
Sewer only, no water	\$ 19.00	\$ 19.00	\$ 19.00	per month

\* Residential sewer charges are based on average water usage billed in January, February & March. Commercial/Industrial is actual water use

# 2016 Rates effective 01/01/2016

**Security light fee:**

100watt	\$ 8.50
150watt	\$ 11.00
250watt	\$ 14.90
400watt	\$ 16.20

**Recycling fee:**

Apartment	\$ 2.30
Residential	\$ 2.90

**Sales and franchise taxes:**

State tax	6.8750%
Metro Transit tax	0.2500%
Hennepin County tax	0.1500%
Coon Rapids Franchise	4%
Champlin Franchise	

**Ace garbage fee:**

Small	\$ 15.25
Medium	\$ 16.75
Large	\$ 17.75

Increased 11-1-2016

**Republic garbage fee:**

Small	\$ 13.34
Medium	\$ 14.37
Large	\$ 15.40

Residential	\$ 3.50
Small Comm w/o demand	\$ 9.50
Small Comm w/demand	\$ 40.00
Large Commercial	\$ 140.00

Anoka Franchise included in rates

**Stormwater fee per month:**

Open space	\$ 3.07 per acre
Single Family	\$ 3.07 per lot
Townhouse/Duplex	\$ 2.38 per unit
Multi Family	\$ 18.41 per acre
Institutional	\$ 24.54 per acre
Commercial	\$ 34.74 per acre

**Utility Account Deposits:**

**Residential**

Apartment	\$ 100.00
Apartment, own gas heat	\$ 150.00
Water/Sewer only	\$ 130.00
Electric only	\$ 150.00
All services	\$ 250.00
Electric only, with electric heat	\$ 300.00
All services, with electric heat	\$ 400.00

**Minimums for disconnection**

Apartments	\$ 50.00
House in Anoka	\$ 150.00
Out of Anoka	\$ 120.00

Deposit after bankruptcy 3x monthly average  
 Deposit waived with AutoBankPay/Letter of Credit

**Commercial**

3x monthly average  
 \$200 minimum  
 Deposit minimum/waived bond or bank letter  
 2016 Interest on deposits 0.50%

**Rate change dates:**

Winter rate	October 1st
Summer rate	June 1st
Taxable (electric heat)	May 1st
Non taxable	November 1st

**Penalty**

**5% current charges**

**Convenience fee**

**\$ 3.25**

**on non present payments**

---

## Appendix 10

Adopted or Proposed Regulations to Reduce Demand or Improve Water Efficiency

CITY OF ANOKA

ORDINANCE NO. 2008-xxxx

AN ORDINANCE AMENDING THE ANOKA CITY CODE,  
CHAPTER 66, ARTICLE IV; WATER SYSTEM;

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**Section 2:** This Ordinance shall be in full force and effective upon passage and seven days after publication.

\_\_\_\_\_  
Bjorn E. Skogquist, Mayor

\_\_\_\_\_  
Amy T. Oehlers, City Clerk

Introduced: August 18, 2008  
Adopted: \_\_\_\_\_  
Published: \_\_\_\_\_  
Effective: \_\_\_\_\_

	<u>Aye</u>	<u>Nay</u>	<u>Abstain</u>	<u>Absent</u>
Skogquist	_____	_____	_____	_____
Anderson	_____	_____	_____	_____
Freeburg	_____	_____	_____	_____
Rice	_____	_____	_____	_____
Weaver	_____	_____	_____	_____

CHAPTER 66. UTILITIES

ARTICLE IV.                      Water System\*

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---

## Appendix 11

Implementation Checklist – Summary of All the Actions that a Community is doing,  
or Proposes to do, Including Estimated Implementation Dates

**Appendix 11: Implementation Checklist – summary of all the actions that a community is doing, or proposes to do, including estimated implementation dates**

Implementation Date	Community Action
<b>Current-Future</b>	The City is working with many of its older large water using industrial customers to try and locate unknown unmetered connections. Supply and billing meters are calibrated/repaired/replaced regularly.
<b>2017</b>	Construct Well #9
<b>2017</b>	Water Treatment Plant 6 & 8 Expansions
<b>2020</b>	Construct 1.5 MG Elevated Tower Remove Tower 3
<b>2020</b>	Construct Phase 1 Trunk Water Main
<b>2025</b>	Construct Phase 2 Trunk Water Main
<b>2035</b>	Construct Well #10

A scenic view of a river with a dam and autumn foliage. The water is flowing over the dam, creating a series of small cascades. The background is filled with trees in various shades of green and yellow, suggesting an autumn setting. The sky is a clear, bright blue.

**City of Anoka**

**Local Surface Water Management Plan**

**July 2015**

**Revised May 8, 2019**

**Adopted: May 21, 2015**

# City of Anoka

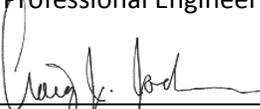
## Local Surface Water Management Plan

Prepared for City of Anoka

April 2015

Revised May 8, 2019

I hereby certify that this plan, specification, or report was prepared by me under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

	23461	5/8/19
_____ CRAIG J. JOCHUM, P.E.	_____ LIC. NO.	_____ DATE

By:



3601 Thurston Avenue  
Anoka, MN 55303  
Phone: 763-427-5860  
Fax: 763-427-0520

City of Anoka

Stormwater Management Plan

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Appendix C City of Anoka Stormwater Retrofit  
Analysis, Prepared by Anoka Conservation District

Appendix D Infiltration Credits

## **0.0 Executive Summary**

This Local Surface Water Management Plan (Plan) serves as a comprehensive planning document to guide the City of Anoka in protecting, restoring, and conserving its surface water resources. This plan was prepared to fulfill the legal requirements of the Metropolitan Surface Water Rules as well as the policies and requirements of the Lower Rum River Watershed Management Organization (LRRWMO) and other local, state, and federal agencies. The plan includes the following sections:

Section 1: Introduction – presents background information regarding the city, general watershed information, and plan purposes.

Section 2: Land and Water Resources Inventory – provides an inventory of the water resources within the city, the physical environment, and pertinent water resources data.

Sections 3 through 12: Watershed Descriptions and Recommendations – describes the general watershed area, drainage patterns, flood protection concerns, stormwater system analysis and results, and implementation recommendations for each of the major watersheds in the city.

Section 13: Goals and Policies – presents the city’s goals as they relate to water resource planning and the policies that they will implement to achieve its goals.

Section 14: Implementation – discusses the implementation components of the Plan.

Section 15: Technical Methods and Assumptions – describes the data, methods and assumptions used for the stormwater analyses.

Section 16: System Maintenance – discusses the city’s responsibilities with respect to maintenance of stormwater facilities.

Section 17: Amendments – discusses the amendment procedures for this Plan.

This Local Surface Water Management Plan was adopted by the City Council on May 21, 2015. As part of the City’s 2040 Comprehensive Plan Update, the City updated this document.

### **1.1 Study Area General Description and Watershed Nomenclature**

The City of Anoka is bisected by the Rum River, and its southern limits are situated along the Mississippi River. Early-development occurred along the southern portion of the Rum River. The city has since expanded northward to the most recent development in the northwest corner. The city's land use plan is shown on Figure 1-1. The majority of the city is developed except for a portion located north of Bunker Lake Road.

All of the land in the City of Anoka eventually drains to the Mississippi River. The northwest corner and southernmost regions of the city are directly tributary to the Mississippi, which flows southeasterly. The downtown and remaining portions of the city are directly tributary to the Rum River, which joins the Mississippi at the southern edge of the city.

Based on drainage divides, the city has been divided into ten major watersheds. State Statutes requires "issues and corrective actions" as components of Local Surface Water Management Plans. The issues and corrective actions have been analyzed on a watershed basis, and are summarized in their respective sections. The ten major watersheds are as follows:

1. Mississippi River East
2. Mississippi River West
3. Anoka Enterprise
4. Rum River Northeast
5. Rum River Northwest
6. Rum River Southeast
7. Rum River Southwest
8. U.S. Highway 169 and 10
9. Coon Rapids Tributary
10. Rum River North

These ten watersheds are shown on Figure 1-2. Sections 3 through 12 describe the stormwater management requirements and recommended system improvements for each of these

watersheds. The ten major watersheds were subdivided into minor watersheds and subwatersheds. In most cases, watershed divides were determined using USGS quadrangle maps (10-foot contour interval), and field verified. Other watershed divides were determined using construction plans and lidar 2 foot contours. Minor watersheds in each of the major watersheds were designated according to the street or other location where the watershed outlets. For example, the Jefferson Street subwatersheds are labeled JF-1,2,3,...etc., the Porter Avenue watersheds are labeled PTR-1,2,3,... etc., and the Moore Middle School watersheds are labeled MMS-1,2,3,... etc. The City of Anoka is entirely within the jurisdiction of the Lower Rum River Watershed Management Organization (LRRWMO).

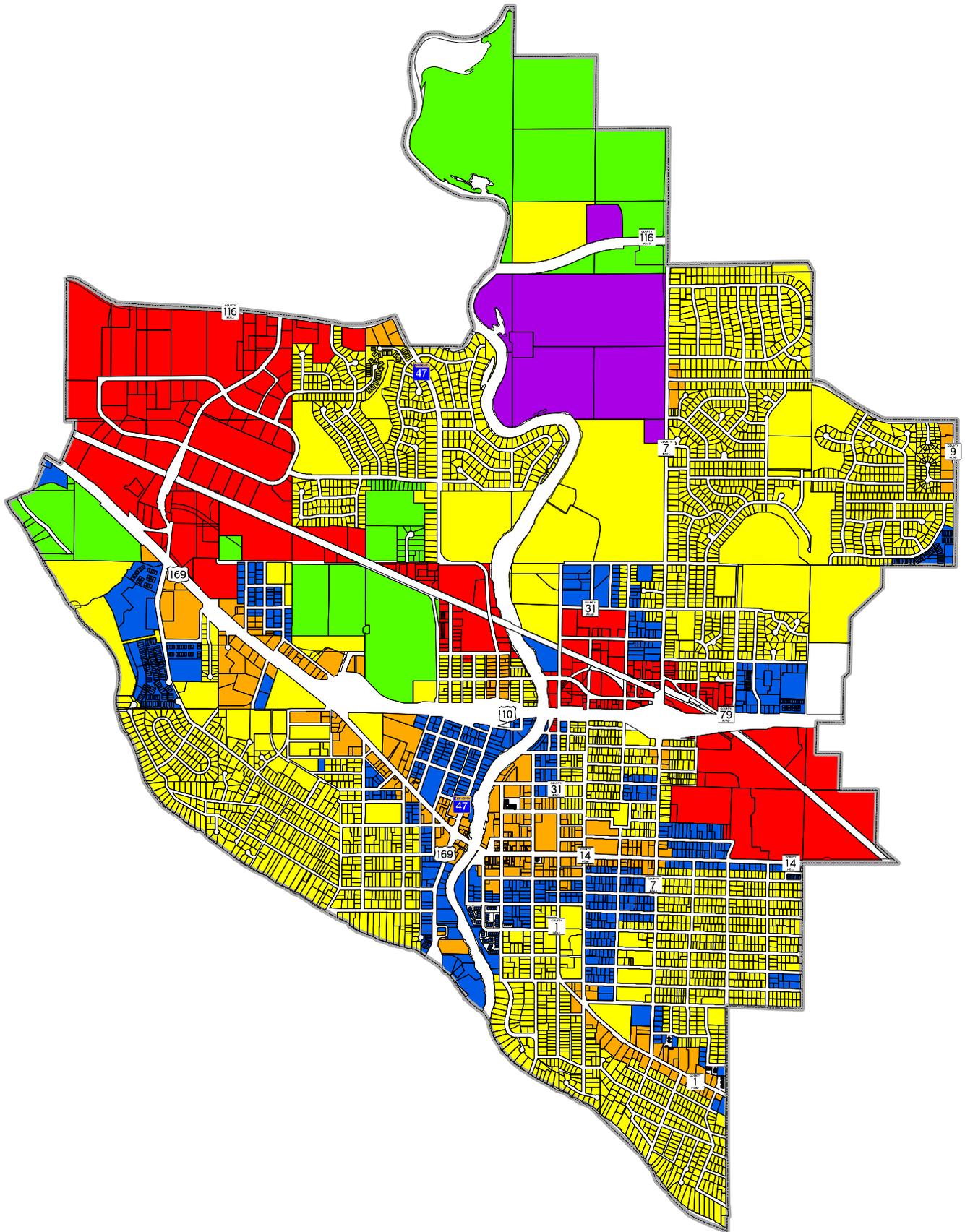
## **1.2 Plan Purposes**

This plan provides the City of Anoka with an overall comprehensive stormwater management plan. This plan was developed to address current and future stormwater issues, especially those related to future development and redevelopment.

This plan will assist the City of Anoka in defining and implementing a comprehensive and environmentally sound system of surface water management. It is intended to be used as a tool to:

1. Plan for projects and other water management activities so as to correct existing problems and prevent foreseeable future problems from occurring.
2. Assist the city in considering water resource impacts resulting from variances to the city's long-range land use plan.
3. Enable the city to grow/redevelop in a systematic and orderly manner while protecting its vital water resources.

In order to accomplish these objectives, the plan considers a specific array of land uses within the city's legal boundary. If and when land uses change, this plan provides the means to (1) address the proposed changes; (2) determine the impact of the changes on the city's infrastructure, flooding, and natural resources; and (3) determine the actions needed within the proposed areas of land use change to prevent undesirable impacts.

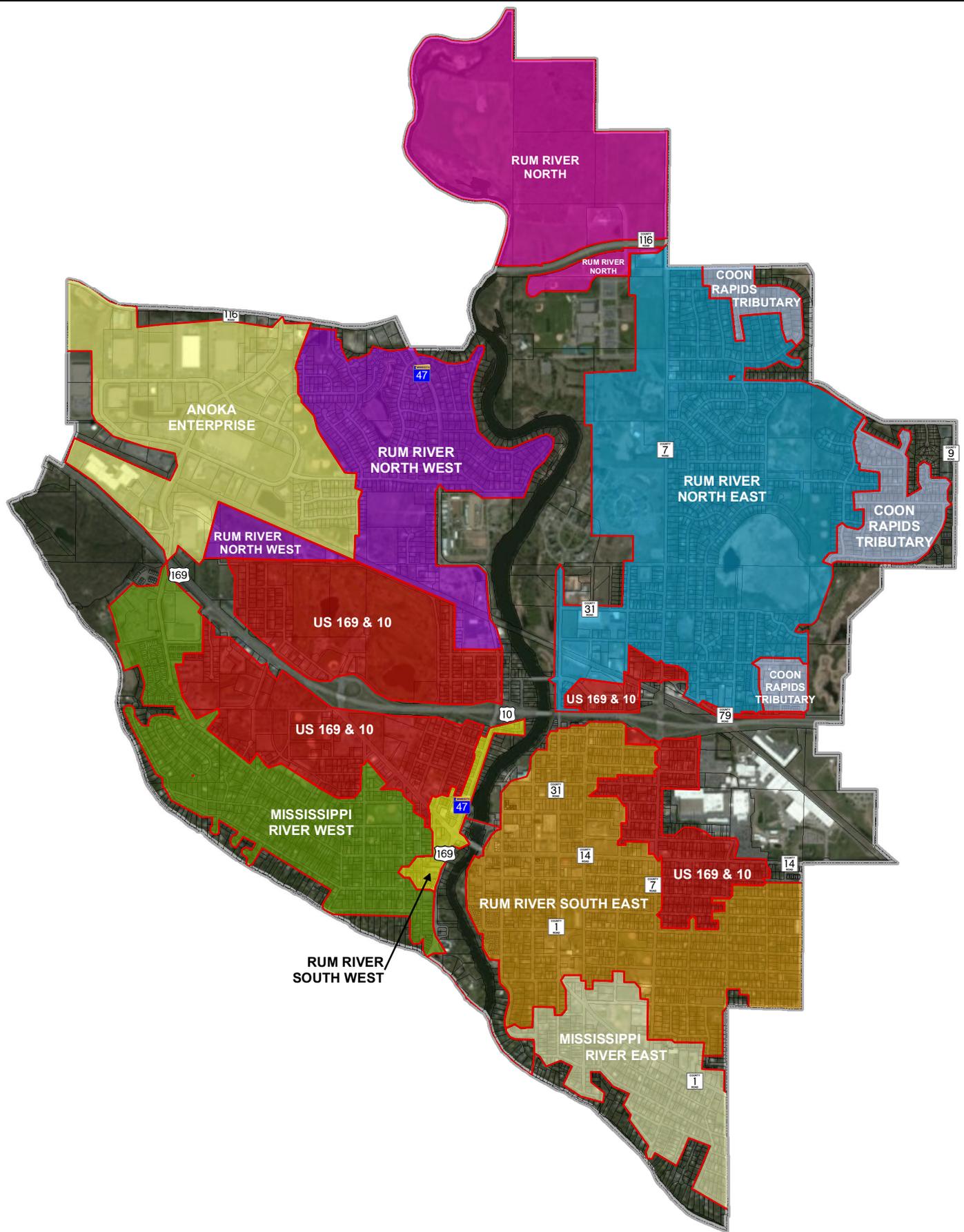


**Land Use**

- |   |   |
|---|---|
|  Agricultural/Open |  Institutional             |
|  Commercial        |  Multiple Family Residence |
|  Industrial        |  Single Family Residential |

**FIGURE 1-1**

**LAND USE  
CITY OF ANOKA**



**FIGURE 1-2  
MAJOR  
WATERSHEDS  
CITY OF ANOKA**

0 0.1 0.2 0.4  
Miles

**Hakanson  
Anderson**

**Major Watersheds**

Anoka Enterprise	Rum River North East	Rum River South East
Coon Rapids Tributary	Rum River North West	US 169 and US 10
Mississippi River East	Rum River South West	
Mississippi River West	Rum River North	

## 2.0 Land and Water Resources Inventory

This section provides a summary of the climate, precipitation, geology and soils information. The City of Anoka and the Twin Cities Metropolitan Area have a climate that is characterized by wide variations in temperature, ample rainfall and moderate snowfall.

### 2.1 Climate

The total average annual precipitation in the Twin Cities Metropolitan Area is 30.61 inches. The total average annual snowfall is 54.4 inches. Mean daily temperature, average precipitation, and average snowfall are shown in Table 2-1.

Table 2-1 Average Monthly Climate Data for Minneapolis/St. Paul, 1981 - 2010

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean Daily Temperature (°F)	15.6	20.8	32.8	47.5	59.1	68.8	73.8	71.2	62.0	48.9	33.7	19.7	46.2
Average Precipitation (inches)	0.90	0.77	1.89	2.66	3.36	4.25	4.04	4.30	3.08	2.43	1.77	1.16	30.61
Average Snowfall (inches)	12.2	7.7	10.3	2.4	0.0	0.0	0.0	0.0	0.0	0.6	9.3	11.9	54.4

Source: Minnesota Climatology Working Group

### 2.2 Precipitation

Rainfall frequencies are often used in the design of storm sewer, conveyances, stormwater ponds, and other features that are used to convey, store, or treat stormwater. Until recently, the city relied on *Technical Paper No. 40, Rainfall Frequency Atlas of the United States, published by the U.S. Weather Bureau*. Recently, the *National Oceanic and Atmospheric Administration (NOAA) released Atlas 14, Volume 8*. The precipitation frequency estimates as presented in *NOAA Atlas 14, Volume 8* indicate that rainfalls have generally become more intense over the

recent years. The precipitation frequency estimates for the Cedar station located in Oak Grove, Minnesota are shown in Table 2-2.

Table 2-2 – Rainfall Frequency

Recurrence Intervals (years)	1-Hour Duration	24-Hour Duration
1	1.18	2.45
2	1.39	2.84
10	2.06	4.21
50	2.87	6.07
100	3.25	6.99

Source: NOAA Atlas 14, Volume 8

### 2.3 Topography

The topography in Anoka was shaped by several ice advances into east-central Minnesota during the last (Wisconsin) glaciation, which occurred about 10,000 years ago. A large glacial outwash deposit, called the Anoka sandplain, is the dominant geomorphic feature. It was formed largely by glacial drainage (melt-water) from the receding Grantsburg sublobe of the Des Moines glacier. The surface of the Anoka sandplain is flat to moderately undulating. Low regions of upland represent areas of till left from previous ice movements that were not buried by the outwash sand. Other features of positive relief are patches of sand dunes formed by southwesterly winds after the sandplain was abandoned by the outwash streams. Landscape features of negative relief include numerous lakes and marshes which formed as ice blocks, originally buried by the outwash sand that melted to create the depressions and are now filled with water or organic soils.

### 2.4 Soils

The United States Department of Agriculture, Soil Conservation Service published the Soil Survey of Anoka County in 1977. The majority of the city is occupied by the Hubbard-Nymore Association. This association is nearly level to slightly sloping and contains excessively drained

soils that are sandy throughout. Hubbard soils are black and dark grayish brown at the surface and are underlain by dark brown and yellowish brown coarse sand. Nymore soils are very dark gray and black to very dark grayish brown loamy sand underlain by dark brown loamy sand. Soils of the Hubbard-Nymore Association are well-suited to urban uses and moderately well-suited to farming and recreation. Control of wind erosion and the water table in low-lying areas is often necessary. Due to the permeable nature of the soils, it may be possible for contaminants in stormwater to be transported through the soil to the aquifers which are used for drinking water. The Drinking Source Water Protection Areas, and their corresponding vulnerability, are shown in Figure 2-4. Most of the soils within the city are Hydrologic Soil Group A or B.

## **2.5 Land Use**

The current Land Use within the city includes residential, commercial, industrial, agricultural, and public open spaces. The city is mostly developed, with some agricultural and public open space (conservation easement) uses located within the Rum River North watershed. The existing Land Use is shown in Figure 1-1. The proposed 2030 Land Use is shown in Figure 2-1.

## **2.6 Watersheds and Drainage Patterns**

The drainage boundaries for the City of Anoka have been delineated and ten major watersheds have been identified. In general, the surface water generally drains to the Rum River and the Rum River flows south until it converges with the Mississippi River at its southern most point. A relatively small portion of the city drains directly into the Mississippi River. The major watersheds are shown on Figure 1-2.

## **2.7 MnDNR Protected Waters, Wetlands and Watercourses**

The Minnesota Department of Natural Resources (MnDNR) has designated certain waters of the state as public waters (Minn. Rules 6115.1060). MnDNR "Protected Waters and Wetlands" maps show public waters within the city. A MnDNR permit is required for work within designated public water.

Public waters wetlands means all types 3, 4 and 5 wetlands, as defined in United States Fish and Wildlife Service Circular 39 (USDI, 1971), that are ten or more acres in size in unincorporated areas, or 2.5 acres in incorporated areas.

Figure 2-2 shows the protected waters, wetlands, and water courses located in the city.

## **2.8 Other Regulated Wetlands**

In addition to the MnDNR waters discussed in Section 2.7, many additional wetlands are located within the city. The National Wetland Inventory (NWI) maps, included as Figure 2-3, depicts some of these wetlands. The following three characteristics make these water bodies exclusive from the MnDNR public waters and public waters wetlands.

- First, an individual basin may be dominated by wetland habitat (Types 1, 2, 6, and 7 [USDI, 1971] not statutorily covered by MnDNR and yet is immediately adjacent to an inventoried MnDNR basin or watercourse.
- Second, an individual isolated wetland basin may be smaller than the minimum MnDNR size (2.5 or 10 acres) as discussed previously.
- Third, an individual isolated wetland basin may be dominated by habitat types (Types 1, 2, 6, and 7) not statutorily covered by MnDNR.

Excavation, filling, grading and/or development actions which may adversely affect these resources may be subject to federal permitting authority under Sections 404 and 401 of the Clean Water Act, (33 USC 125 et. seq.) and LRRWMO approval under the 1991 Wetland Conservation Act, as amended. Prior to any site disturbing activity, wetlands must be determined on a case by case basis and delineated using methodology approved by the MN Wetland Conservation Act.

The wetlands within the City of Anoka were previously classified by Barr Engineering Company using a Modified Routine Assessment Method to determine the Functions and Value. The results from the evaluation are shown on the following page in Table 2-3. The wetlands listed on Table 2-3 may not be a comprehensive list of all of the wetlands within the city.

Sensitivity levels and associated wetland standards have been developed that are based on the functions and values. Refer to Table 2-4 for the City of Anoka Wetland Management Standards.

Table 2-3 – City of Anoka Wetland Classifications

ID Number	Circular 39	National Wetlands Inventory Code (NWI)	Modified Routine Assessment <sup>1</sup>									Sensitivity*
			Date	Hydrology	Vegetation	Wildlife	Fisheries	Attenuation	Quality	Shore Protection	Aesthetics	
Anoka-1	TypeS	PEMC & PUBG	10/9/98	2	2	2	2	3	3	0	2	Moderate
Anoka-3	TypeS	PUBF	10/9/98	1	1	1	0	3	3	0	1	Least
Anoka-4	TypeS	PEMF, PUBF, & PEMC	10/9/98	2	3	2	0	2	3	0	3	Moderate
Anoka-S	Type3	PEMC & PSS1C	10/9/98	1	3	2	0	2	4	0	2	Moderate
Anoka-6	Types 3 & S	PEMF & PUBF	10/9/98	1	3	3	0	2	4	0	3	Moderate
Anoka-7	Type3	PSS6Cd & PEMCd	10/22/98	1	1	1	0	4	4	0	2	Least
Anoka-8	Types 3 & 6	No information available	10/22/98	1	1	1	0	2	4	0	2	Least
Anoka-9	Types 3 & 6	PEMCd	10/22/98	1	1	1	0	2	1	1	2	Least
Anoka-10	Type3	PEMC, PF01C, PEMF, PUBFx, & PEMCd	10/22/98	1	2	2	0	2	4	0	3	Moderate
Anoka-11	Types 3 & 6	PEMC	10/22/98	1	1	2	0	3	3	0	3	Least
Anoka-12	Type2	PEMCd	10/22/98	1	1	2	0	2	3	0	2	Least
Anoka-13	Types 2 & 3	PEMCd	10/22/98	1	1	1	0	3	3	0	2	Least
Anoka-14	Types 1 & 2	PEMU	10/22/98	1	1	2	0	3	3	0	2	Least
Anoka-1S	TypeS	No information available	10/9/98	1	1	1	0	3	2	0	2	Least
Anoka-16	TypeS	No information available	10/9/98	1	2	2	0	4	2	0	2	Moderate
Anoka-18	Types 2, 3 & 6	PEMC, PF01B, PEMF, & PUBF	10/22/98	2	2	3	0	3	4	3	3	Moderate
Anoka-19	TypeS	PEMC	10/20/98	1	1	1	0	2	1	0	1	Least
Anoka-20	Types 1 & 2	PSS1B	10/20/98	2	1	1	0	2	3	0	3	Least
Anoka-21	Types 2, 3 & 6	PSS6C, PEMC, PEMF, PF06C, & PSS1C	10/22/98	1	1	1	0	2	3	0	2	Least
Anoka-22	Types2, S&6	PF01Ch, PSS1C, PUBFh, PUBF, & L1UBHh	10/1S/98	1	3	3	2	4	3	3	3	Moderate
Anoka-23	TypeS	PUBG	10/9/98	1	1	1	0	3	2	2	2	Least
Anoka-24	TypeS	PUBG	10/9/98	1	1	1	0	3	2	2	2	Least
Anoka-2S	Types 2 & 7	PF01C	10/20/98	1	1	2	1	2	3	0	2	Least
Anoka-26	Types 6 & 7	PF01C	10/1S/98	3	2	2	4	1	1	3	3	Moderate
Anoka-27	TypeS	PSS1C	10/20/98	1	2	2	0	2	3	0	2	Moderate
Anoka-28	Types 3 & S	PSS1C	10/20/98	1	1	2	0	3	3	0	2	Least
Anoka-30	Type2	PEMC	10/20/98	2	1	2	0	2	3	0	2	Moderate
Anoka-32	Types 3, S&6	No information available	10/1S/98	2	3	3	3	1	3	2	3	Moderate
Anoka-33	TypeS	No information available	10/1S/98	1	1	2	2	1	2	2	2	Least
Anoka-34	TypeS	No information available	10/1S/98	1	1	2	2	1	1	2	1	Least

\*See Table 2-4

Source: City of Anoka Stormwater Plan, August 2000, Barr Engineering Company

0 = N/A	3 = High
1 = Low	4 = Exceptional
2 = Medium	

Based upon the functions and values, wetland management standards have been developed. These standards are shown below in Table 2-4.

Table 2-4 – City of Anoka Wetland Management Standards

High	Moderate	Least
Special consideration must be given to avoid altering these wetland types. Inundation must be avoided. Water chemistry due to alteration by stormwater impacts can also cause adverse impacts.	These wetlands can tolerate only moderate alterations in hydrology. They have very good wildlife habitat value and a relatively diverse plant community. They will tolerate an additional 6 inches of inundation, but will be adversely impacted by sediment and/or nutrient loading and prolonged high water levels.	These wetlands are usually so degraded that input of urban stormwater may not have adverse impacts.
Maintain the existing <b>Storm Water Bounce</b> or degree of water level fluctuation.	Maintain the existing <b>Storm Water Bounce</b> or degree of water level fluctuation. Limit the maximum addition of water to 6 inches.	No limit for <b>Storm Water Bounce</b> or degree of water level fluctuation.
Maintain the existing <b>Discharge Rate</b> .	Maintain the existing <b>Discharge Rate</b> .	Maintain or decrease the existing <b>Discharge Rate</b> .
For 1& 2 year storm events, maintain existing <b>Inundation periods</b> .	For 1 & 2 year storm events maintain existing <b>Inundation periods</b> . Limit maximum inundation to one additional day.	For 1 & 2 year storm events, maintain existing <b>Inundation periods</b> . Limit maximum inundation to an additional 7 days.
For 10 year storm events and greater, maintain existing <b>Inundation periods</b> .	For 10 year storm events and greater maintain existing <b>Inundation periods</b> . Limit maximum inundation to an additional 7 days.	For 10 year storm events and greater, maintain existing <b>Inundation periods</b> . Limit maximum inundation to an additional 21 days.
Do not change the <b>outlet control elevation</b> .	Do not change the <b>outlet control elevation</b> .	May raise <b>outlet control elevation</b> up to 4 feet above existing outlet elevation.
For landlocked wetlands, keep the <b>Run-out</b> control elevations above the delineated wetland edge.	For landlocked wetlands, keep the <b>Run-out</b> control elevations above the delineated wetland edge.	For landlocked wetlands, keep the <b>Run-out</b> control elevations above the delineated wetland edge.
<u>Recommendations</u> : If not already implemented, a preservation program should be initiated. Active protection from invasive plant species should begin. Purple Loosestrife, reed canary grass, and hybrid cattail should be eradicated from these wetlands.	<u>Recommendation</u> : These wetlands have good potential to restore native plant communities. It is well worth the effort to control invasive species (especially purple loosestrife) in these wetlands.	<u>Recommendation</u> : These wetlands could be altered to improve stormwater storage and to improve water quality and not severely impact the wetland quality.
Sedge Meadows, Open Bogs, Coniferous Bogs, Calcareous Fens, Low Prairies, Coniferous Swamps, Lowland Hardwood Swamps, Seasonally Flooded Basins.	Shrub-carrs, Alder Thickets, Fresh (Wet) Meadows, Shallow Marshes, Deep Marshes	Gravel Pits, Cultivated Hydric Soils, Dredged Material/Fill material Disposal Sites.

Note:

These management levels are based on the criteria set forth in the “Storm-water and Wetlands: Planning and Evaluations Guidelines for addressing Potential Impacts of Urban Storm-water and Snow-melt Runoff on Wetlands” prepared by the State of Minnesota Storm-Water Advisory Group, published June 1997.

Source: City of Anoka Stormwater Plan, August 2000, Barr Engineering Company

## 2.9 Impaired Waters

The Rum River and the Mississippi River are both listed on the Minnesota Pollution Control’s list of impaired waters. It is required that waters that do not meet the federal water quality standards be listed. Impaired waters in the City of Anoka are listed in table 2-5 below.

Table 2-5 – Impaired Waters

Watercourse	Affected Use	Pollutant or Stressor	TMDL Status
Rum River	Aquatic Consumption	Mercury	Approved 2008
Mississippi River	Aquatic Consumption	Mercury PCB in Fish Tissue	Approved 2007 Target Completion 2020
	Aquatic Life	Nutrients	Target Completion 2018
	Aquatic Recreation	Fecal Coliform	Target Completion 2024

Both the Rum River and the Mississippi River are impaired for Mercury. Most of the mercury that impairs our lakes and rivers is delivered by the atmosphere. Mercury is carried down into our lakes and rivers by rain and snow. Once in the water, the mercury is converted by bacteria in highly organic portions of the aquatic systems into methylmercury. Zooplankton pick up the methylmercury as they filter water and feed on algae. When small fish eat the Zooplankton, the mercury builds up in their bodies. When larger fish eat the smaller fish, the mercury continues to accumulate all of the way up the food chain. Therefore, the longest living fish at the top of the food chain tend to have the highest concentrations of mercury in their bodies.

Studies indicate that human consumption of fish with high levels of mercury is linked to impaired neurological development and is particularly critical to fetuses, infants, and children. Since the mercury comes from the atmosphere, the only way to reduce the levels is by reducing at the source. Although the primary source of mercury in Minnesota comes from coal-fired electric generation plants, the following sources have also been found to introduce mercury into the atmosphere: industrial/commercial and institutional boilers, petroleum refining, ferrous mining/processing, sewage sludge incineration, cremation, and dental preparations.

The Mississippi River is also impaired for polychlorinated biphenyls (PCB) in fish tissue. PCB's are a group of chemicals that have extremely high boiling points and are practically non-flammable. Because of these properties, PCB's were used in many industrial and commercial products such as electrical components, heat transfer, and hydraulic equipment until they were banned in the late 1970's. PCB's accumulates in fish much like mercury does and has been classified as a probable human carcinogen and is listed in the top ten percent of the EPA's most toxic chemicals. Much like mercury, PCB's are nearly impossible to remove from the environment.

For both impairments, following the Minnesota Department of Health's guidelines for fish consumption is the recommended best management practice for minimizing potential adverse impacts to human health.

The Mississippi River in 2006 was listed as impaired for fecal coliform. However, in 2012, a section of the Mississippi River was delisted for fecal coliform concerns due to the water quality standard being met. This section includes the northwest city limits of Anoka to the Rum River. Areas downstream of the Rum River are still considered to be impaired for fecal coliform. Fecal coliform is commonly found in human and animal feces and is an indicator that possible pathogenic bacteria and viruses that also live in human and animal digestive systems are present in the water. Therefore, swimming in the river may pose a health risk if water is digested. The following sources may contribute to higher levels of fecal coliform: malfunctioning wastewater treatment plants, faulty on-site septic systems, domestic and wild animal manure, and stormwater runoff.

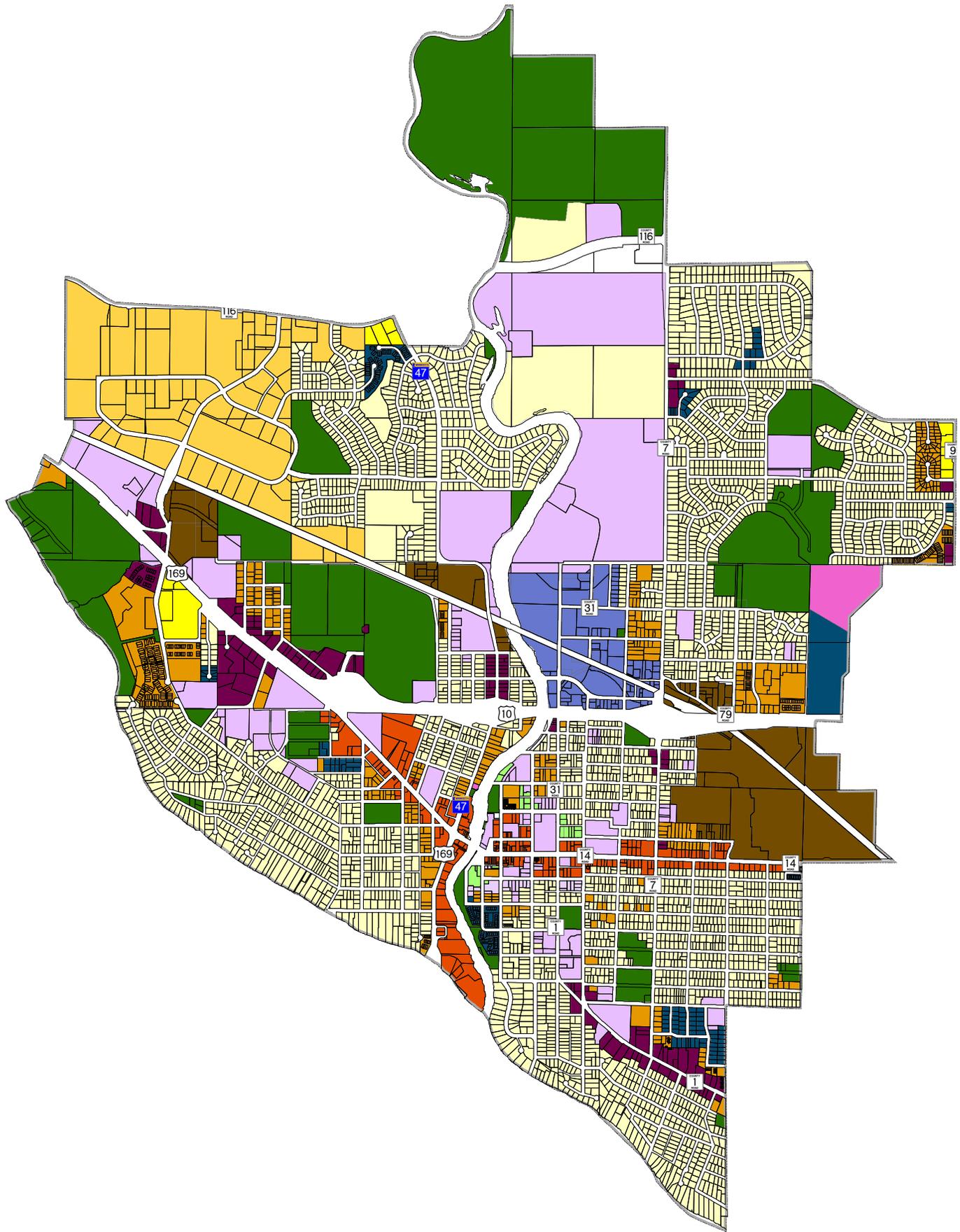
In the most recent approved 2016 impaired waters list added a nutrient impairment to the Mississippi River. Nutrient impairment occurs when there is abundant phosphorus, which is a food source for algae, in the water. Not only is algae aesthetically disagreeable, but algae can also block sunlight for aquatic plants and deplete oxygen levels for other species living in the river. Most organic material contain phosphorus, so leaves, grass clipping, fertilizer, and pet waste that enter the stormwater can contribute to nutrient impairment. Additionally, phosphorus can bind to sediment, so sediment from noncompliant construction sites or exposed stockpiles can also lead to increases in nutrient concentrations in downstream waters.

Currently, there are no TMDL requirements for the City of Anoka. There was a 2014 TMDL report for bacteria in the Upper Mississippi River Basin, but the two stream reaches in the City of Anoka,

07010206-568 and 07010206-511, were considered protection reaches. There were no TMDL requirements for areas within the protection reaches.

### **2.10 Scenic and Recreational Rivers**

The segment of the Rum River that bisects Anoka from its northern border to Madison and Rice Streets in Anoka is designated as a scenic and recreational river and is subject to MN Rules 6105.1440-1480. The City will implement land use ordinances and all other activities consistent with the management plan as prepared by the Minnesota Department of Natural Resources. Also, because the Rum River is listed as an Outstanding Value Resource Water (ORVW), no person may cause a new or expanded discharge of any sewage, industrial waste, or other waste unless there is not a prudent and feasible alternative.



**2030 Land Use**

- |                          |                            |                              |
|--------------------------|----------------------------|------------------------------|
| General Commercial       | Limited Commercial         | Planning Area                |
| General Industrial       | Local Commercial           | Shopping Center              |
| High Density Residential | Medium Density Residential | Single Family Residential    |
| Institutional            | Mixed Use                  | Transit Oriented Development |
| Light Industrial         | Park and Recreation        | Undeveloped Space            |

**FIGURE 2-1**

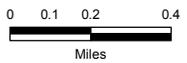
**2030 LAND USE  
CITY OF ANOKA**



**LEGEND**

-  Protected Water
-  Ditches
-  Parcels

**FIGURE 2-2  
PUBLIC WATERS  
& DITCHES  
CITY OF ANOKA**

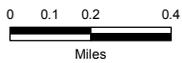
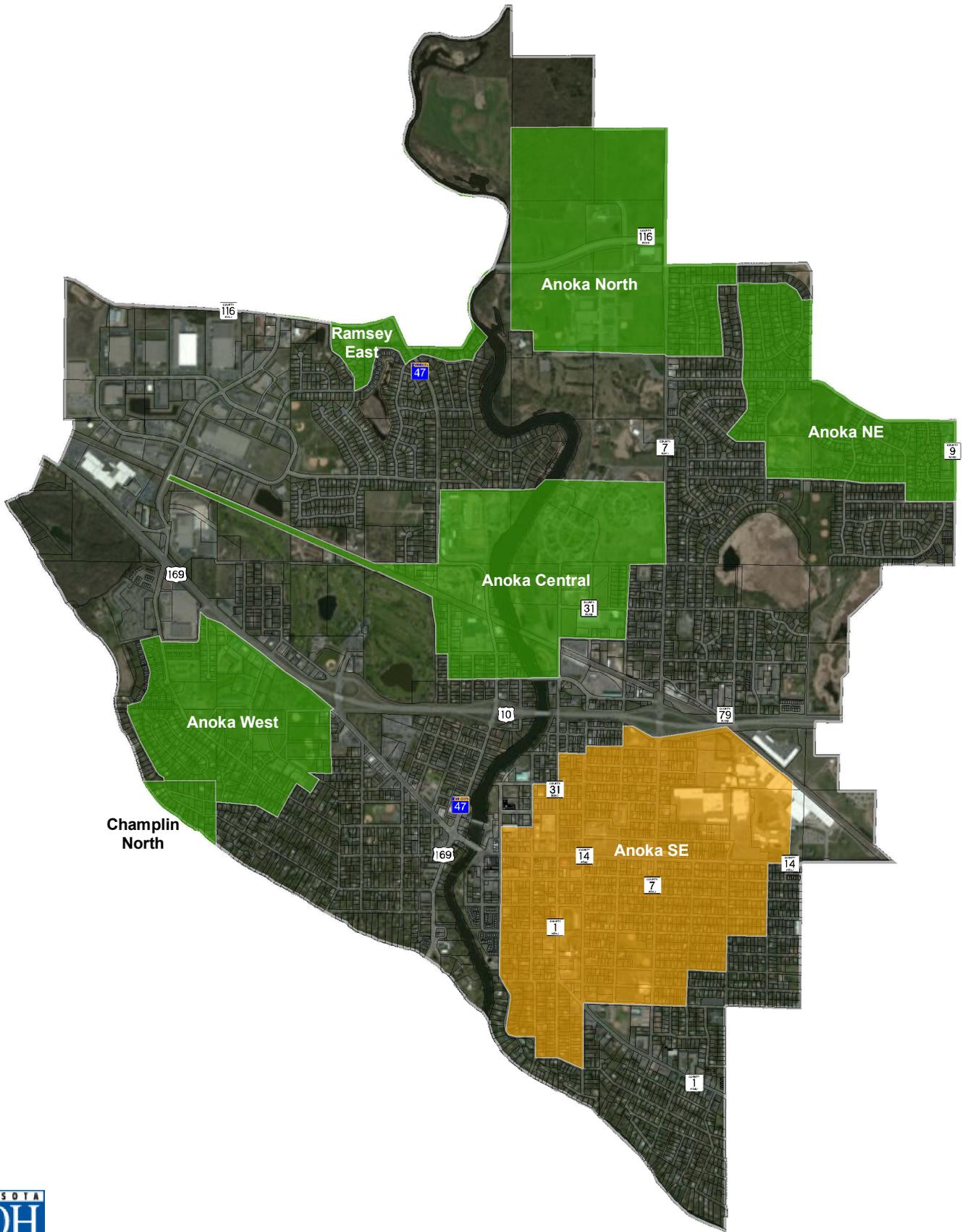


**LEGEND**

- NWI System Type
-  Lacustrine
-  Palustrine
-  Parcels

**FIGURE 2-3  
NWI (WETLAND)  
MAP  
CITY OF ANOKA**





**LEGEND**

- |                            |          |          |
|----------------------------|----------|----------|
| <b>DWSMA Vulnerability</b> | High     | Low      |
| Very High                  | Moderate | Very Low |

**FIGURE 2-4  
DWSMA  
VULNERABILITY  
CITY OF ANOKA**

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## **3.0 Mississippi River East Watershed**

### **3.1 General Watershed Description**

The Mississippi River East Watershed and the subwatersheds that comprise it are shown in detail in Figure 3-1. This watershed consists of the land in the City of Anoka that drains directly to the Mississippi River on the east side of the Rum River.

The Mississippi River East Watershed includes the southernmost portion of the city. The area of this watershed is approximately 445 acres. The watershed is mostly developed, with land use consisting of single family residential, multiple family residential, and a small section of commercial land use. The city has made various stormwater related improvements within this watershed over the past decade as part of its annual street renewal program. Four water quality treatment structures have been constructed within this watershed to treat the stormwater and remove pollutants prior to discharging into the Mississippi River.

#### **3.1.1 Drainage Patterns**

This watershed drains south via storm sewers to the Mississippi River. There are eight stormwater outfalls that discharge to the Mississippi River, east of Rum River. From east to west, the eight storm sewer network minor watersheds modeled for this project are:

River Lane (RVR)

Eastwood Lane (EWD)

Kings Lane (KGS)

Oakwood Drive (OWD)

5th Avenue (5TH)

3rd Avenue (3RD)

Oakwood Lane (OWL)

Washington Street (WAS)

Each storm sewer system is named for the location of the minor watershed outlet. Subwatersheds within these minor watersheds were delineated, named and numbered according to the minor watershed. For example, the system draining to 5th Avenue is so named because the outlet for the stormwater system is on 5th Avenue. The eleven subwatersheds are numbered consecutively from the outlet.

There are no existing stormwater detention basins within this subwatershed.

### **3.1.2 Flood Protection Concerns**

Where the storm sewer system capacity is not sufficient, surface overflow will occur via the streets to the lowest point within the watershed. For the Mississippi River East Watershed, overflow occurs toward the river. If sufficient capacity for the critical 10-year storm at these outlet points is not maintained, it is possible ponding will occur in the street and yards at this storm frequency until surface overflow occurs. It appears that flooding of homes or businesses will not occur since the surface overflow is at an elevation below the lowest structure.

### **3.2 Stormwater System Analysis and Results**

The 10-year and 100-year event flood analyses were performed for the Mississippi River East Watershed. Table 3-1 presents watershed information and the peak runoff rates of the 10-year and 100-year critical storm events.

### **3.3 Implementation Considerations**

When originally constructed, many of the storm sewer outfalls discharged storm water directly into the Mississippi River. Several of the outfalls have been retrofitted to provide stormwater treatment prior to discharging to the Mississippi River. One additional water quality structure and one stormwater basin are proposed. These issues are discussed in the following paragraphs.

#### **3.3.1 Construction of Additional Stormwater Basins**

The construction of a stormwater basin located in subwatershed 9<sup>th</sup>\_5 would allow for smaller pipe sizes to be used while also providing treatment to the runoff before it discharges into the river. Table 3-2 lists the necessary storage for the basin.

#### **3.3.2 Construction of Water Quality Structures**

As depicted in Figure A (in Appendix A), one additional water quality structure is proposed which will reduce the amount of suspended solids and phosphorus load to the Mississippi River. Water quality structures will be designed to achieve an annual removal efficiency of 60% of the total phosphorus and 90% of the total suspended solids.

### **3.3.3 Storm Sewer Capacity**

As shown on Figure B (Appendix A), storm sewer upgrades are proposed on South Street to provide capacity for the 10-year storm event.

**Table 3-1: Results of the Mississippi River East Watershed**

**10-Year and 100-Year Critical Storm Events (TP-40)**

Minor Watershed	Subwatershed	Drainage Area (acres)	Impervious Percentage	Peak Runoff Rate (cfs) 10-yr storm	Peak Runoff Rate (cfs) 100 yr storm
3RD	1	2.3	47	4	10
3RD	2	1.1	42	2	3
3RD	3	5.4	51	9	18
5TH	1	4.9	100	10	20
5TH	2	1.9	38	2	5
5TH	3	6.7	36	7	17
5TH	4	8.8	38	12	27
5TH	5	4.1	38	4	10
5TH	6	2.9	30	6	12
5TH	7	3.6	0	8	15
5TH	8	2.3	60	5	9
5TH	9	7.0	45	20	34
5TH	10	5.4	38	5	13
5TH	11	6.5	33	7	14
EWD	1	38	38	4	9
KGS	1	2.0	37	2	6
KGS	2	4.5	31	4	10
KGS	3	2.9	22	1	5
KGS	4	3.3	36	3	9
KGS	5	1.5	43	2	5
KGS	6	2.2	35	2	6
KGS	7	2.1	46	3	7
KGS	8	4.4	31	3	10
KGS	9	4.1	33	3	7
KGS	10	1.3	32	1	3
KGS	11	1.4	37	2	4
KGS	12	1.2	35	1	3
KGS	13	0.7	21	0	1
KGS	14	3.1	32	3	7
KGS	15	5.4	35	5	13
KGS	16	3.2	40	4	9
KGS	17	1.7	13	0	2
KGS	18	3.3	26	2	6
KGS	19	1.9	40	2	5
KGS	20	1.6	47	3	5

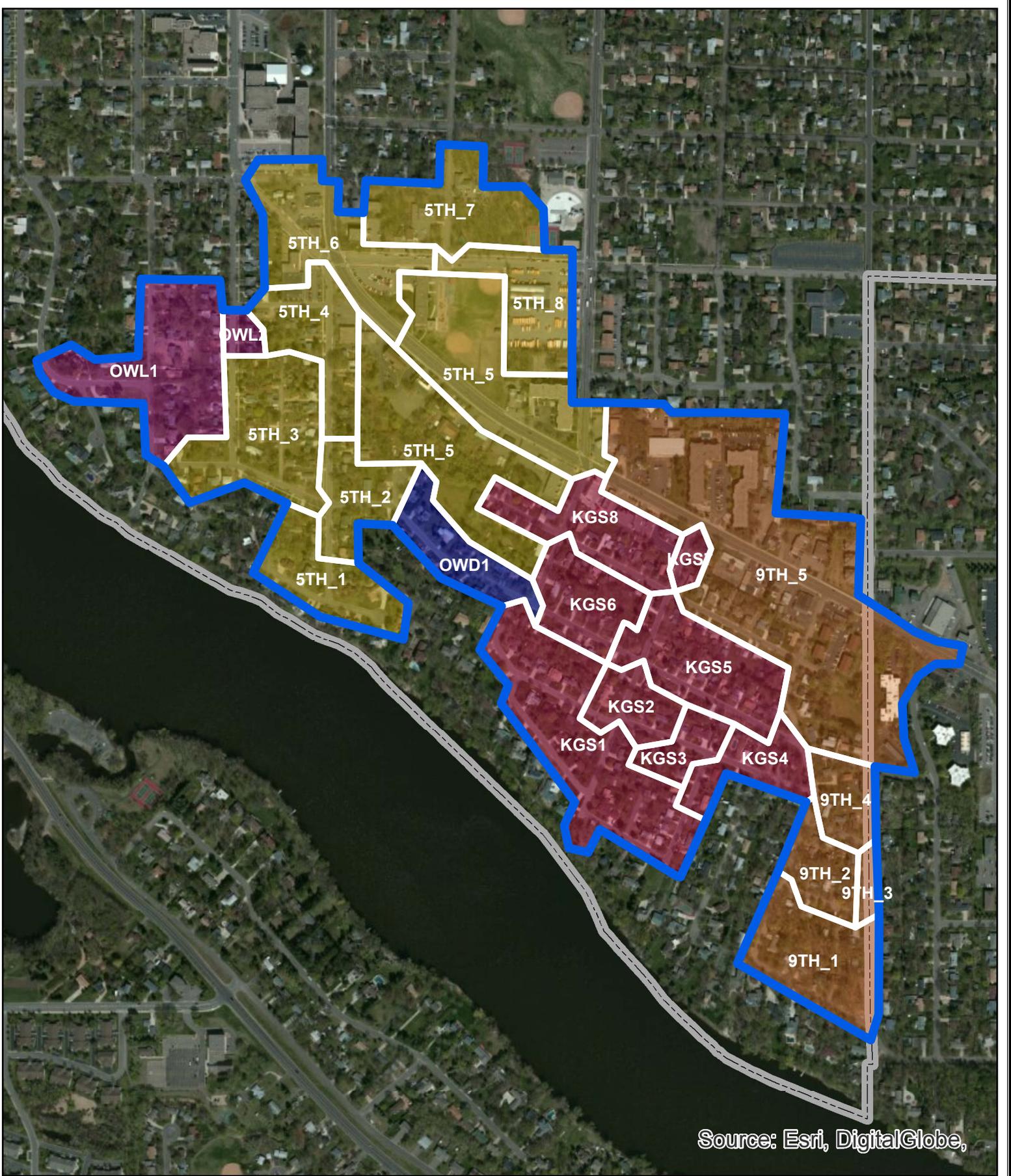
**Table 3-1: Results of the Mississippi River East Watershed (continued)****10-Year and 100-Year Critical Storm Events (TP-40)**

<b>Minor Watershed</b>	<b>Subwatershed</b>	<b>Drainage Area (acres)</b>	<b>Impervious Percentage</b>	<b>Peak Runoff Rate (cfs) 10-yr storm</b>	<b>Peak Runoff Rate (cfs) 100 yr storm</b>
KGS	21	8.3	38	8	20
KGS	22	2.2	51	4	9
KGS	23	5.3	55	12	22
KGS	24	2.5	56	6	11
KGS	25	1.0	57	2	4
KGS	26	6.3	48	11	22
KGS	27	1.9	89	10	15
KGS	28	8.1	44	11	24
KGS	29	2.2	79	10	14
KGS	30	8.8	73	34	56
KGS	31	4.9	79	21	34
OWL	1	2.4	37	3	7
OWL	2	1.9	32	1.5	4
OWL	3	5.2	28	4	14
OWD	1	1.3	31	1	3
OWD	2	2.6	38	3	7
RVR	1	8.7	38	8	20
WAS	1	6.6	28	4	13

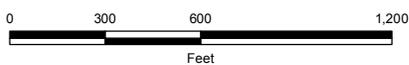
**Table 3-2: Results of 100-Year Storm Event (TP 40) Basin Requirements for Mississippi River East Watershed**

<b>Subwatershed</b>	<b>Drainage Area acres</b>	<b>Dead Storage acre-feet</b>	<b>Live Storage acre-ft</b>	<b>Total Storage acre-ft</b>	<b>100yr Discharge cfs</b>	<b>Outlet Size</b>
Proposed Ponds						
9TH_5	30.8	2.0	4.8	6.8	3	12"

*Source: Anoka Stormwater Plan, August 2000, Barr Engineering Company*



Source: Esri, DigitalGlobe,



Hakanson  
Anderson

K:\cad\_eng\PROJECTS\GIS\AN409\Mississippi River East

**LEGEND**

- Major Watershed
- Sub Watershed
- Minor Watersheds**
- 5TH
- 9TH
- KGS
- OWB
- OWD

**FIGURE 3-1**  
**MISSISSIPPI RIVER**  
**EAST WATERSHED**  
**CITY OF ANOKA**

### **4.1 General Watershed Description**

The Mississippi River West Watershed includes the southern portion of the city west of the Rum River, which drains directly into the Mississippi River. This watershed is approximately 287 acres. It is made up of mostly single-family residential with small sections of multiple-family residential and commercial land use. Figure 4-1 shows the watershed and subwatershed boundaries. The city has made various stormwater related improvements within this watershed recently as part of its annual street renewal program. Two water quality treatment structures have been constructed within this watershed to treat the stormwater and remove pollutants prior to discharging into the Mississippi River.

#### **4.1.1 Drainage Patterns**

Portions of the Mississippi River West Watershed are serviced by storm sewers. Subwatersheds within this watershed were delineated and named according to the location of the minor watershed outlet. For example, the Levee Avenue subwatershed is so named because the outlet for the stormwater system is on Levee Avenue. All of the subwatersheds ultimately discharge to the Mississippi River. This watershed has two existing stormwater and remove pollutants basins in the private town home development.

There are eight stormwater outfalls that discharge to the Mississippi River, west of Rum River. From east to west, the storm sewer network minor watersheds modeled for this project are:

Mississippi West (MW)

Levee Avenue (LEV)

Shaw Avenue (SHAW)

West Lane (WEST)

Porter Avenue (PTR)

Benton Street (BEN)

Private Town Home Development (PV)

#### **4.1.2 Flood Protection Concerns**

Where the storm sewer system capacity is not sufficient, surface overflow will occur via the streets to the lowest point within the watershed. For the Mississippi River West Watershed, the water reaching the low points is conveyed via pipe to the Mississippi River. If sufficient capacity for the critical 10-year storm at these outlet points is not maintained, it is possible that ponding will occur in the streets and yards at this storm frequency until the surface overflow occurs. However, as with the Mississippi River East watershed, it appears that flooding of homes is not likely to occur as the land is sloped towards the Mississippi River and the surface overflow is at an elevation below the lowest structure.

#### **4.2 Stormwater System Analysis and Results**

The 10-year and 100-year event analyses were performed for the Mississippi River West Watershed. Table 4-1 presents watershed information and the peak runoff rates of the 10-year and 100-year flood analyses for each of the subwatersheds.

#### **4.3 Implementation Considerations**

When originally constructed, many of the storm sewer outfalls discharged storm water directly into the Mississippi River. However, two of the outfalls have been retrofitted with water quality structures to treat the stormwater and reduce pollutants prior to discharging to the Mississippi River. Three additional water quality structures are proposed within this watershed as well as one stormwater basin. These issues are discussed in the following paragraphs.

##### **4.3.1 Construction of Additional Stormwater Basins**

Currently, Sorensen Park is sufficient for stormwater storage for the 100-year event. Table 4-2 lists the necessary storage for the 100-year event. Construction of a basin at this location may reduce the recommended pipe upgrade sizes downstream while also providing water quality treatment.

##### **4.3.2 Construction of Water Quality Structures**

As depicted in Figure A (in Appendix A), three additional water quality structures are proposed which will greatly reduce the amount of suspended solids and phosphorus load to the Mississippi

River. Water quality structures will be designed to achieve an annual removal efficiency of 60% of the total phosphorus and 90% of the total suspended solids.

#### **4.3.3 Storm Sewer Capacity**

From the hydraulic model results, many of the city's storm sewer pipes cannot handle the runoff from a 10-year event. This may not be a serious problem, but more of an inconvenience since this area of the city is fortunate enough to be sloped towards the river. In the areas of steep slopes, much of the excess stormwater runoff that cannot be managed in the existing pipes, can flow downstream in the system of roads, curbs and gutters, and overflow swales. The areas where the overflow system may create problems are: (1) where the natural terrain is too flat, (2) where low areas exist and unwanted ponding occurs (i.e. at intersections and in developed parts of the city), and (3) when roads carrying the excess runoff make sharp turns.

As depicted on Figure B (Appendix A) upgrades to the storm sewer on Porter Avenue and West Lane are necessary to accommodate the 10-year storm event.

**Table 4-1: Results of the Mississippi River West Watershed  
10-Year and 100-Year Critical Storm Events (TP 40)**

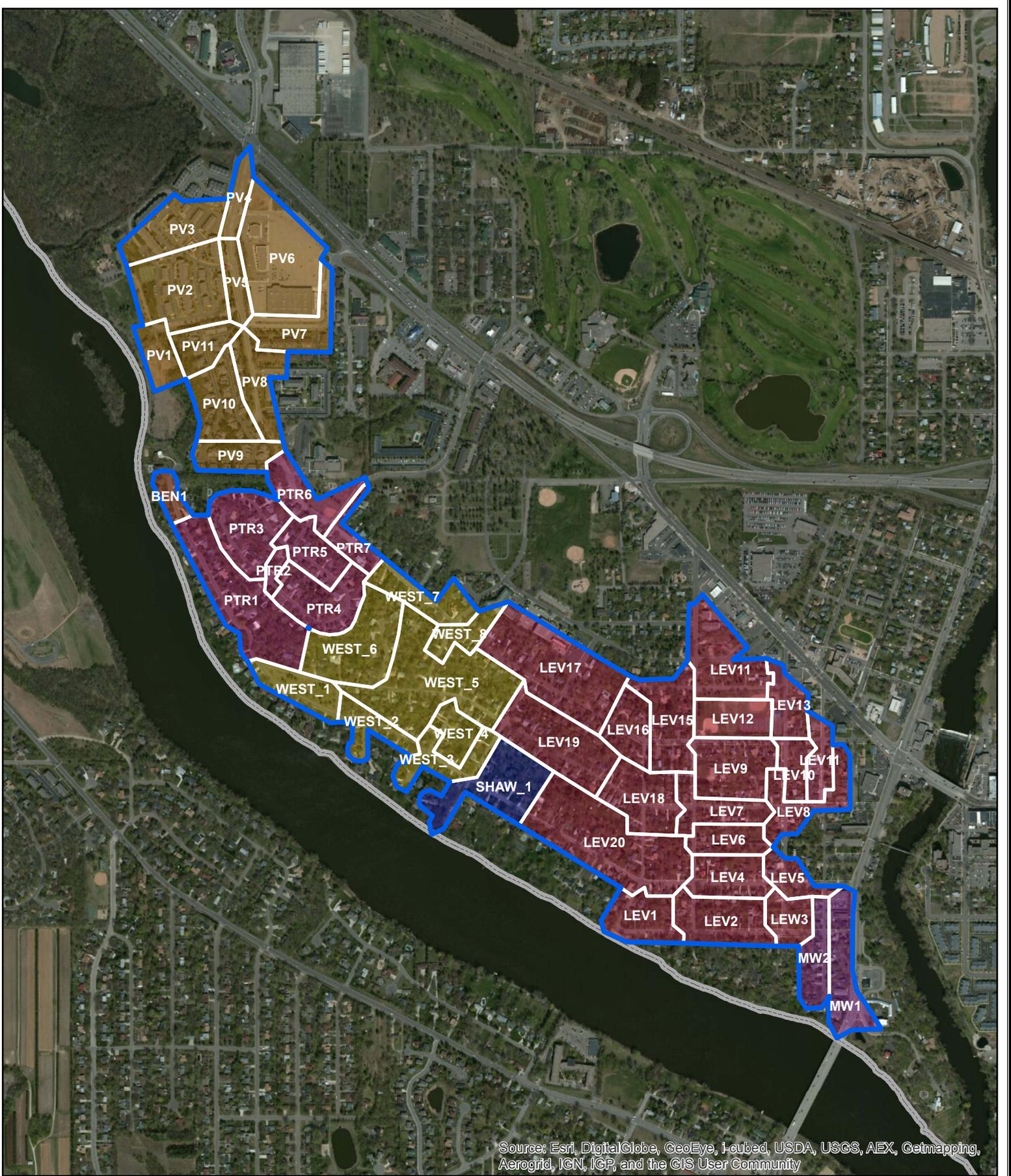
**Table 4-1: Results of the Mississippi River West Watershed (continued)  
10-Year and 100-Year Critical Storm Events (TP 40)**

Minor Watershed	Subwatershed	Drainage Area (acres)	Impervious Percentage	Peak Runoff Rate (cfs) 10-yr storm	Peak Runoff Rate (cfs) 100 yr storm
PV	9	4.0	65	12	20
SHAW	1	1.0	100	1	3
SHAW	2	10.3	38	10	24
SHAW	3	3.0	38	3	8
SHAW	4	15.4	38	15	36
SHAW	5	1.9	38	2	5
SHAW	6	4.3	38	4	10
SHAW	7	4.0	38	3	8
SHAW	8	8.3	38	5	14
WEST	1	5.4	38	6	15
WEST	2	6.0	38	7	17
WEST	3	11.1	38	11	26
LEV	15	12.1	38	12	27
LEV	16	2.5	38	3	7
LEV	16A	2.8	100	14	20
LEV	17	10.9	54	5	17
LEV	18	3.9	51	1	6
LEV	19	3.8	38	4	11
LEV	20	1.4	38	2	4
BEN	1	1.9	38	2	5
BEN	2	5.5	38	6	15
CG	1	6.9	38	7	16
MW	1	6.6	52	12	22
PTR	1	8.5	38	8	20
PTR	2	8.0	38	9	22
PTR	3A	1.7	100	9	12
PTR	3B	6.3	0	0	1
PTR	4	5.7	38	7	16
PTR	5	8.7	38	10	25
PV	1	9.4	65	27	47
PV	2	2.3	100	11	16
PV	3	10.6	85	45	69
PV	4	4.4	65	12	22
PV	5	5.0	38	5	12
PV	6	8.5	65	21	37
PV	7	7.4	63	17	31
PV	8	5.2	84	18	29

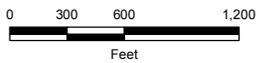
**Table 4-2: Results of 100-Year Storm Event (TP 40) Basin Requirements for Mississippi River West Watershed**

<b>Subwatershed</b>	<b>Drainage Area acres</b>	<b>Dead Storage acre-feet</b>	<b>Live Storage acre-ft</b>	<b>Total Storage acre-ft</b>	<b>100yr Discharge cfs</b>	<b>Outlet Size</b>
<i>Existing Basins with Improvements</i>						
PV3	18.7	1.6	0.8	2.4	20	36"
PV11	35.0	2.4	6.2	8.6	65	
<i>Proposed Ponds</i>						
LEV12	37.5	1.0	15.4	16.4	5	

*Source: Anoka Stormwater Management Plan, August 2000, Barr Engineering Company*



Source: Esri, DigitalGlobe, GeoEye, I-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



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**LEGEND**

- Major Watershed
- Sub Watershed
- Minor Watersheds**
- BEN
- LEV
- MW
- PTR
- PV
- SHAW
- WEST

**FIGURE 4-1  
MISSISSIPPI RIVER  
WEST WATERSHED  
CITY OF ANOKA**

### **5.1 General Watershed Description**

Figure 5-1 shows the Anoka Enterprise Watershed and its subwatersheds. This region is located in the northwest corner of the city. It is routed to the Mississippi River through a significant storm sewer network.

This watershed includes the industrial park of the city and the Anoka-Hennepin Technical College. The 362-acre watershed includes a small area of single family residential with the remainder classified as industrial land use. This watershed has remained largely unchanged over the past 10 years, and therefore it was not necessary to remodel the entire watershed with this study.

#### **5.1.1 Drainage Patterns**

The Anoka Enterprise watershed is served by the city's stormwater system. The stormwater system is comprised of storm sewers, ditches, and basins. Anoka Enterprise watershed is made up of one minor watershed that discharges to the Mississippi River near King's Island. The minor watershed is:

Anoka Enterprise (AEP)

There are four existing basins in this watershed which can be used for stormwater treatment and detention.

#### **5.1.2 Flood Protection Concerns**

Where the storm sewer system capacity is not sufficient, surface overflow will occur via the streets to the lowest point within the subwatershed. Unlike the other Mississippi River watersheds, the Anoka Enterprise Watershed will not overflow to the river, but rather to the existing basins. There are no known problems in this watershed. Structures surrounding the basins appear to have sufficient freeboard for flood protection.

## **5.2 Stormwater System Analysis and Results**

The 10-year and 100-year flood events were analyzed for the Anoka Enterprise Watershed. Table 5-1 presents watershed information and the peak flow rates of the 10-year and 100-year analyses for each of the subwatersheds shown on Figure 5-1.

## **5.3 Implementation Considerations**

This region of the city provides sufficient storm sewer capacity to meet the 10-year level of service and 100-year level of protection downstream of the basins. Both the basin storage capacity and outlet sizes are adequate. The other basins will be sufficient with the existing outlet if the necessary storage in Table 5-2 is provided.

### **5.3.1 Construction of Water Quality Basins**

The existing basins will provide sufficient water quality treatment if the necessary “dead storage” volume as stated in Table 5-2 is provided. No new basins are required although the storm sewer network should have an added water quality structure to treat the stormwater and reduce the pollutants that discharge into the river from those watersheds downstream of the water quality basins. Table 5-2 lists the necessary “dead storage” required to achieve an annual removal efficiency of 60% of the total phosphorus and 90% of the total suspended solids.

**Table 5-1: Results of the Anoka Enterprise Watershed  
10-Year and 100-Year Critical Storm Events (TP 40)**

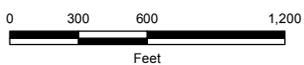
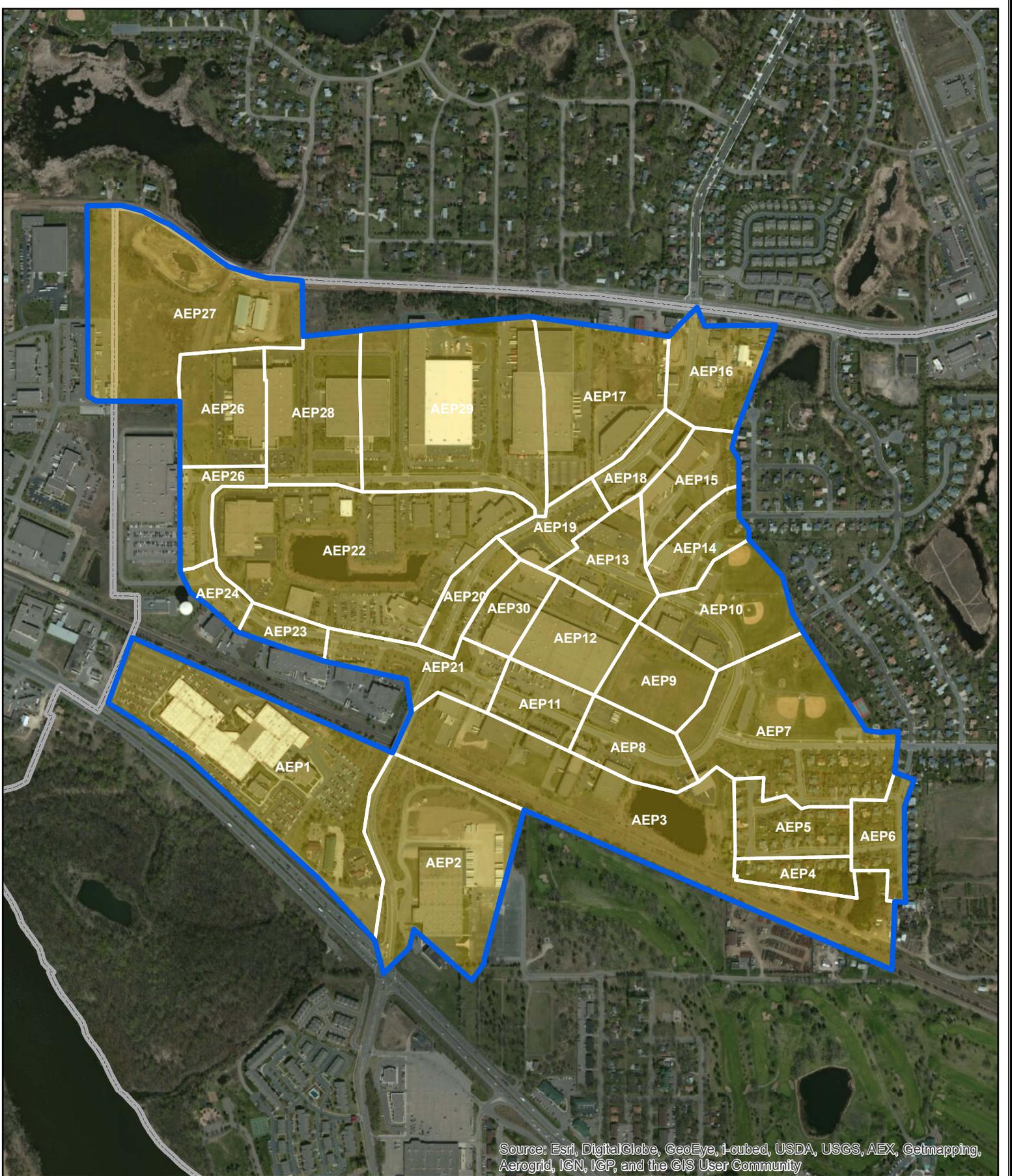
<b>Minor Watershed</b>	<b>Subwatershed</b>	<b>Drainage Area (acres)</b>	<b>Impervious Percentage</b>	<b>Peak Runoff Rate (cfs) 10-yr storm</b>	<b>Peak Runoff Rate (cfs) 100 yr storm</b>
AEP	1	2.5	90	5	8
AEP	2	23.8	65	70	115
AEP	3	27.1	48	44	75
AEP	4	3.0	20	5	9
AEP	5	6.3	20	8	17
AEP	6	5.7	20	10	20
AEP	7	25.5	16	25	53
AEP	8	6.5	65	26	29
AEP	9	6.5	65	17	28
AEP	10	11.4	35	24	39
AEP	11	6.7	65	23	18
AEP	12	8.4	65	33	312
AEP	13	7.2	65	25	56
AEP	14	5.1	65	13	22
AEP	15	6.8	65	18	29
AEP	16	6.2	63	15	24
AEP	17	23.3	62	57	94
AEP	18	6.5	65	24	53
AEP	19	4.7	65	17	16
AEP	20	4.0	65	3	21
AEP	21	7.6	65	20	35
AEP	22	28.7	65	79	341
AEP	23	2.8	65	13	21
AEP	24	2.4	65	11	17
AEP	25	5.5	65	16	26
AEP	26	13.6	65	39	64
AEP	27	31.0	57	77	129
AEP	28	15.8	65	63	104
AEP	29	22.9	65	54	89
AEP	30	3.9	65	16	27

*Source: City of Anoka Stormwater Plan, August 2000, Barr Engineering Company*

**Table 5-2: Results of 100-Year Storm Event (TP 40) Basin Requirements for Anoka Enterprise Watershed**

<b>Subwatershed</b>	<b>Drainage Area acres</b>	<b>Dead Storage acre-feet</b>	<b>Live Storage acre-ft</b>	<b>Total Storage acre-ft</b>	<b>100yr Discharge cfs</b>	<b>Outlet Size</b>
<i>Existing Basins with Improvements</i>						
AEP22	100.2	6.5	17.0	23.5	24	30" & 24"
AEP17	23.3	3.0	3.1	6.1	12	
AEP27	31.0	2.4	5.2	7.6	6	24"
AEP3	131.9	7.0	18.2	25.2	32	36"

*Source: City of Anoka Stormwater Plan, August 2000, Barr Engineering Company*



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**LEGEND**

-  Major Watershed
-  Sub Watershed
-  Minor Watersheds
-  AEP

**FIGURE 5-1  
ANOKA ENTERPRISE  
WATERSHED  
CITY OF ANOKA**

### **6.1 General Watershed Description**

Figure 6-1 shows the Rum River Northeast minor watersheds and subwatersheds. The region is located north of U.S. Highway 169 and 10 and east of the Rum River.

The Rum River Northeast Watershed is the largest with an area of 670 acres, approximately 1 square mile. The general land uses of this watershed include single family residential and multiple family residential. This drainage basin includes the new high school and library facilities. This watershed has remained largely unchanged over the past 10 years, and therefore it was not necessary to remodel the entire watershed with this study.

#### **6.1.1 Drainage Patterns**

This entire watershed is serviced by the city's storm sewer. There are a series of basins which provide both quantity and quality control. Ultimately, surface water is conveyed via storm sewer west to the Rum River.

There are three stormwater outlets that discharge directly to the Rum River; however the watershed was divided into five minor watershed because of the complexity and large area of the systems. From north to south, the storm sewer minor watersheds modeled for this project are:

38th Lane (38TH)

Bryant Avenue (BRY)

Sunny Acres Pond (SA)

Grant Street (GRT)

4th Avenue (4AV)

This watershed has four existing basins, two of which were designed as stormwater detention basins. The Anoka High School and Anoka Metro Regional Treatment Center located immediately east of the Rum River were not analyzed. Both of these facilities drain directly to the Rum River. If future improvements are made to the existing system at these facilities, water quality

treatment must be provided. Because surface overflow of these areas will drain to the river, flooding of the structures is not a concern.

### **6.1.2 Flood Protection Concerns**

Excess water that the existing storm sewer system cannot handle flows toward the basins within this watershed. If the storage and outflow capacities of the basins in this watershed are not sufficient, the basins will overflow, which could impact existing structures adjacent to these ponding basins. Detailed survey information is required to determine the capacity of the existing basins.

## **6.2 Stormwater System Analysis and Results**

The 10-year and 100-year events were previously analyzed for the Rum River Northeast Watershed. Table 6-1 summarizes the peak runoff rates of the 10-year and 100-year analyses for each of the subwatersheds shown on Figure 6-1.

## **6.3 Implementation Considerations**

Existing and future drainage problems within the watershed can be resolved with a combination of increased storm sewer capacity and storage volume within the existing basins. These are discussed in the following paragraphs.

### **6.3.1 Construction of Additional Stormwater Basins**

New stormwater detention basins are not necessary if the existing basins provide the required amounts of storage. Table 6-2 lists the stormwater storage volumes necessary for 100-year storage.

### **6.3.2 Construction of Water Quality Basins**

The construction of additional water quality basins is not necessary within this watershed.

### **6.3.3 Storm Sewer Capacity**

As shown in Figure B (Appendix A), storm sewer upgrades are proposed on Ninth Lane, Grant Street, Grant Circle, Garfield Street, Bryant Circle, and 7<sup>th</sup> Avenue.

**Table 6-1: Results of the Rum River Northeast Watershed**

**10-Year and 100-Year Critical Storm Events (TP 40)**

Minor Watershed	Subwatershed	Drainage Area (acres)	Impervious Percentage	Peak Runoff Rate (cfs) 10-yr storm	Peak Runoff Rate (cfs) 100 yr storm
4AV	1	15.1	61	34	56
38 <sup>TH</sup>	1	27.3	12	52	97
38 <sup>TH</sup>	2	13.2	34	28	49
38 <sup>TH</sup>	3	13.6	21	16	32
38 <sup>TH</sup>	4	10.9	20	14	28
38 <sup>TH</sup>	5	29.6	20	27	56
38 <sup>TH</sup>	6	13.8	20	20	39
38 <sup>TH</sup>	7	13.1	14	13	26
38 <sup>TH</sup>	8	5.5	5	6	14
38 <sup>TH</sup>	9	6.3	20	9	18
BRY	1	50.8	18	58	113
BRY	2	7.8	20	12	23
BRY	3	1.3	20	3	51
BRY	4	1.8	25	4	9
BRY	5	10.8	20	15	31
BRY	6	7.9	20	14	25
BRY	7	3.7	21	7	13
BRY	8	10.4	20	29	50
BRY	9	46.4	14	106	198
BRY	10	9.9	20	12	24
BRY	11	8.1	20	10	20
BRY	12	23.1	20	27	54
BRY	13	3.7	20	6	11
BRY	14	3.5	20	7	13
BRY	15	12.4	20	13	28
BRY	16	5.7	20	14	26
GRT	1	27.5	54	29	53
GRT	2	15.4	35	25	47
GRT	3	3.1	32	7	13
GRT	4	3.3	41	15	24
GRT	5	9.0	63	17	28
SA	1	97.7	11	225	401
SA	2	48.6	20	55	112
SA	3	5.5	20	7	14
SA	4	7.3	45	13	23
SA	5	39.7	20	50	101
SA	6	17.8	37	24	46
SA	7	7.5	36	14	26

**Table 6-1: Results of the Rum River Northeast Watershed (continued)****10-Year and 100-Year Critical Storm Events (TP 40)**

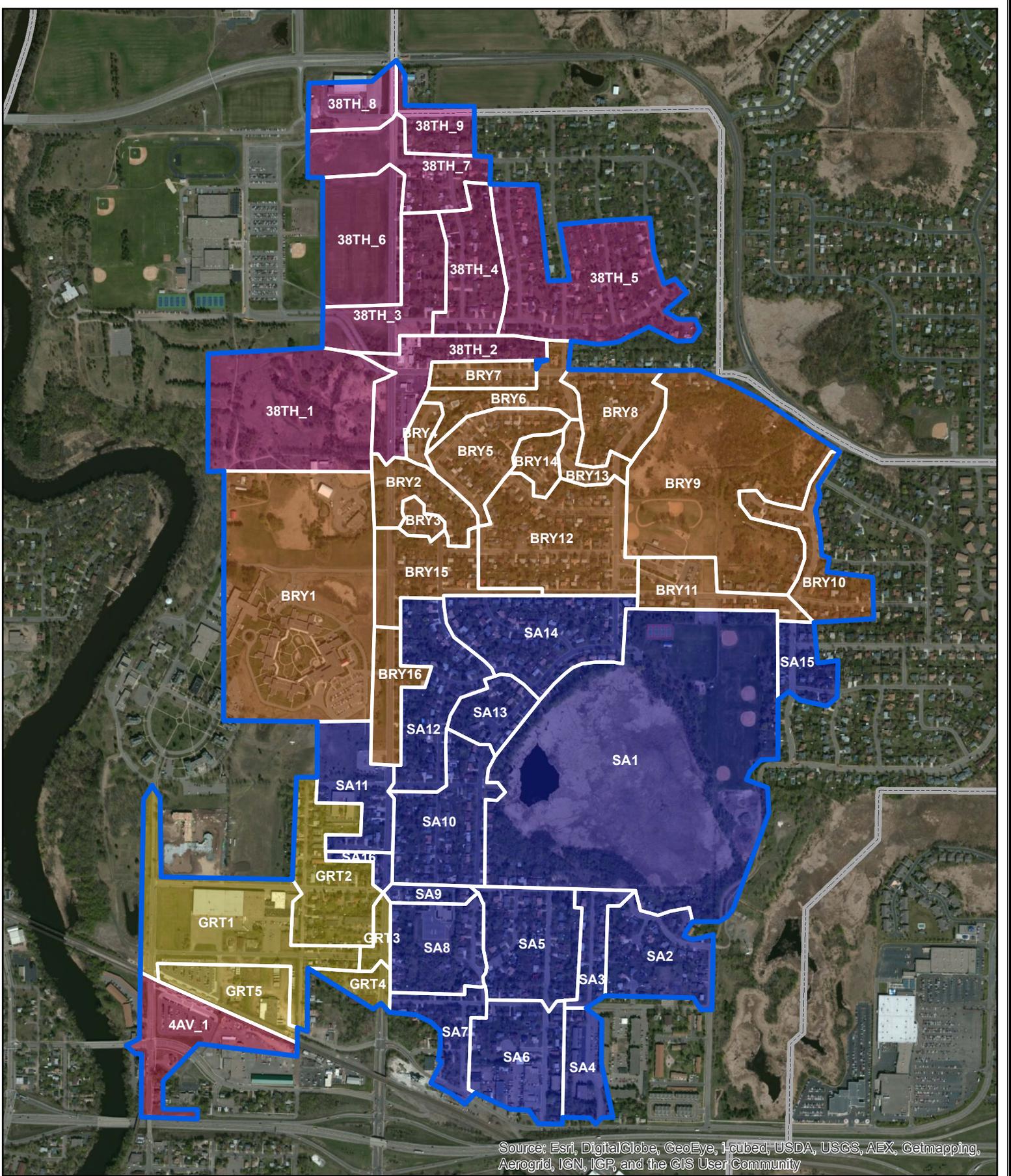
<b>Minor Watershed</b>	<b>Subwatershed</b>	<b>Drainage Area (acres)</b>	<b>Impervious Percentage</b>	<b>Peak Runoff Rate (cfs) 10-yr storm</b>	<b>Peak Runoff Rate (cfs) 100 yr storm</b>
SA	8	11.3	20	20	40
SA	9	3.1	20	5	11
SA	10	15.0	20	16	32
SA	11	9.2	15	13	27
SA	12	15.6	20	21	42
SA	13	5.3	20	9	18
SA	14	20.2	20	22	46
SA	15	5.2	20	6	12
SA	16	2.0	21	3	7

*Source: City of Anoka Stormwater Plan, August 2000, Barr Engineering Company*

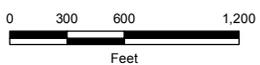
**Table 6-2: Results of 100-Year Storm Event (TP 40) Basin Requirements for Rum River Northeast Watershed**

<b>Subwatershed</b>	<b>Drainage Area acres</b>	<b>Dead Storage acre-feet</b>	<b>Live Storage acre-ft</b>	<b>Total Storage acre-ft</b>	<b>100yr Discharge cfs</b>	<b>Outlet Size</b>
<i>Existing Basins with Improvements</i>						
SA1	290.1	12.0	43.9	55.9	6	24"
38TH_1	133.2	4.8	33.0	37.8	3	
BRY9	86.3	3.0	23.8	26.8	5	
BRY1	50.8	1.8	31.7	33.5	3	
GRT1	60.4	4.0	-	4.0		

*Source: City of Anoka Stormwater Plan, August 2000, Barr Engineering Company*



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



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**LEGEND**

- Major Watershed
- Sub Watershed
- 38TH
- BRY
- GRT
- SA
- 4AV

**FIGURE 6-1  
RUM RIVER NORTH-  
EAST WATERSHED  
CITY OF ANOKA**

## **7.0 Rum River Northwest Watershed**

### **7.1 General Watershed Description**

The Rum River Northwest Watershed is 276 acres. Figure 7-1 shows the Rum River Northwest minor watersheds modeled for this plan. The general land uses in this watershed include single family residential, industrial, and open/agricultural. This watershed has remained largely unchanged over the past 10 years, and therefore it was not necessary to remodel the entire watershed with this study.

#### **7.1.1 Drainage Patterns**

From the industrial park limits, the runoff from the watershed flows east to the Rum River, which then flows south to the Mississippi River. The majority of the Rum River Northwest Watershed drains through storm sewer systems.

One extensive storm sewer network exists in this watershed, while the remainder is serviced by outlets which flow directly to the Rum River. Modeling was previously performed for these two minor watersheds:

McKinley Street (MK)

Rum Northwest (RNW)

The McKinley Street network includes two basins within its system.

#### **7.1.2 Flood Protection Concerns**

There are no known existing problems in this watershed. The subwatersheds that directly outfall into the river will not have any flooding problems as it appears the overflow will drain to the river. For the remaining watersheds, any excess water that the existing storm sewer system cannot handle flows toward the basins within this watershed. If the storage and outflow capacities are not sufficient, the basins will overflow, which could result in impacts to the existing structures. Detailed survey information is required to determine the capacity of the existing basins.

## **7.2 Stormwater System Analysis and Results**

The 10-year and 100-year events were analyzed for the portions of the Rum River Northwest Watershed that are served by the city's storm sewer system. Table 7-1 summarizes the peak runoff rates of the 10-year and 100-year analyses for each of the subwatersheds shown on Figure 7-1.

## **7.3 Implementation Considerations**

The city's existing storm sewer systems are adequate for this watershed. The necessary storage and outlet sizes were determined to provide adequate detention for the storm sewer network to function and are given in Table 7-2.

### **7.3.1 Construction of Water Quality Structures**

Figure A (Appendix A) shows the locations where water quality structures in the storm sewer would reduce the amount of suspended solids and phosphorus load to the Rum River. As shown, six water quality structures are proposed. Water quality structures will be designed to achieve an annual removal efficiency of 60% of the total phosphorus and 90% of the total suspended solids.

### **7.3.2 Storm Sewer Capacity**

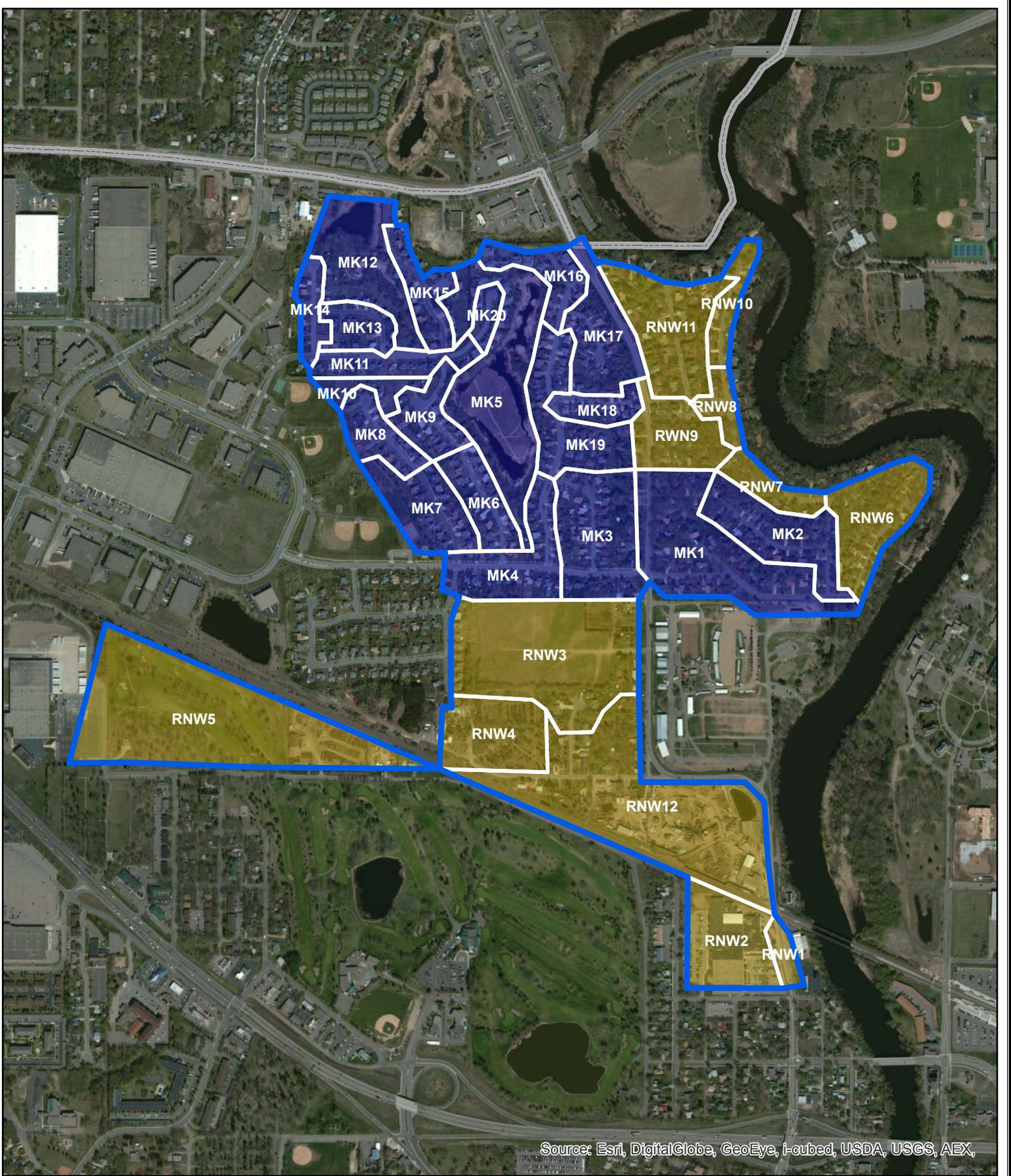
The storm sewer crossing Ferry Street from the Anoka Hennepin Learning Center to the Rum River does not provide capacity for the 10-year storm.

Table 7-1: Results of the Rum River Northwest Watershed					
10-Year and 100-Year Critical Storm Events (TP 40)					
Minor Watershed	Subwatershed	Drainage Area (acres)	Impervious Percentage	Peak Runoff Rate (cfs) 10-yr storm	Peak Runoff Rate (cfs) 100 yr storm
MK	1	18.2	20	19	39
MK	2	9.9	20	11	22
MK	3	11.1	20	14	28
MK	4	7.4	17	10	20
MK	5	23.5	13	62	112
MK	6	4.9	20	10	20
MK	7	6.9	15	10	21
MK	8	5.3	20	11	21
MK	9	4.5	20	8	15
MK	10	2.7	20	8	17
MK	11	4.2	20	6	11
MK	12	17.4	21	66	114
MK	13	2.6	20	6	11
MK	14	3.87	20	9	17
MK	15	4.5	29	7	14
MK	16	5.6	22	8	16
MK	17	9.9	20	16	31
MK	18	3.6	20	7	14
MK	19	10.3	20	13	27
MK	20	1.8	45	6	11
RNW	1	2.2	65	9	15
RNW	2	9.3	65	23	38
RNW	3	28.2	8	86	209
RNW	4	10.0	52	28	48
RNW	5	33.0	5	37	83
RNW	6	9.7	20	13	26
RNW	7	3.6	20	6	12.5
RNW	8	3.0	20	6	11
RNW	9	7.7	20	14	27
RNW	10	4.5	20	6	13
RNW	11	11.7	20	17	34
RNW	12	34.0	51	70	120

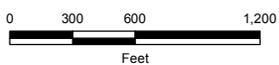
Source: City of Anoka Stormwater Plan, August 2000, Barr Engineering Company

Table 7-2: Results of 100-Year Storm Event (TP 40) Basin Requirements for Rum River Northwest Watershed						
Subwatershed	Drainage Area acres	Dead Storage acre-feet	Live Storage acre-ft	Total Storage acre-ft	100yr Discharge cfs	Outlet Size
<i>Existing Basins with Improvements</i>						
MK5	88.5	3.0	14.0	17.0	5	30"
MK12	22.7	1.0	3.3	4.3	5	

Source: City of Anoka Stormwater Plan, August 2000, Barr Engineering Company



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX,



Hakanson  
Anderson



**LEGEND**

-  Major Watershed
-  Sub Watershed
-  Minor MK
-  RNW

**FIGURE 7-1**  
**RUM RIVER NORTH-**  
**WEST WATERSHED**  
**CITY OF ANOKA**

### **8.1 General Watershed Description**

Figure 8-1 shows the Rum River Southeast minor watershed and its subwatersheds. This region is located south of U.S. Highway 169 and 10 and east of the Rum River and it is the oldest part of the city.

This watershed includes Moore Middle School, Washington Elementary School, the City of Anoka offices, and the downtown area. General land uses in this watershed vary from single-family residential to multiple-family residential and commercial. This watershed has remained largely unchanged over the past 10 years, and therefore it was not necessary to remodel the entire watershed with this study.

#### **8.1.1 Drainage Patterns**

The Rum River Southeast watershed is served by the city's storm sewer system. The stormwater system is complex because there are two trunk systems that carry the majority of the runoff. The Rum River Southeast watershed is made up of 12 minor watersheds. From north to south the subwatersheds are:

- Polk Street (POLK)
- Tyler Street (TY)
- Harrison Street (HAR)
- Main Street (MAIN)
- Monroe Street (MON)
- Jefferson Street (JF)
- Moore Middle School (MMS)
- Adams Street (ADAMS)
- Washington Street (WASH)
- 6th Avenue (6TH)
- 10th Avenue (10TH)
- Brisbin Street (BRIS)

### **8.1.2 Flood Protection Concerns**

Where the storm sewer system capacity is not sufficient, surface overflow will occur via the streets to the lowest point within the subwatershed. The Rum River Southeast Watershed has some areas which will not overflow to the river. The proposed and existing storage and outflow capacities are necessary to prevent basin overflow and the flooding of existing structures. Detailed survey information is required to determine the capacity of the existing basins.

### **8.2 Stormwater System Analysis and Results**

The 10-year and 100-year events were previously analyzed for the Rum River Southeast Watershed. Table 8-1 presents watershed information and the peak runoff rates of the 10-year and 100-year analyses for each of the subwatersheds shown on Figure 8-1.

### **8.3 Implementation Considerations**

As a part of the surface water management planning process, the problem areas were investigated to determine possible mitigation alternatives. Two water quality structures have already been retrofitted in this watershed to treat the stormwater and remove pollutants prior to discharging into the Rum River. Additional water quality structures and storm sewer upgrades are proposed and are discussed in the following paragraphs.

#### **8.3.1 Increased Storm Sewer Capacity Projects**

Pipe carrying capacity needs to be increased in parts of this watershed to provide 10-year level of service for the city's storm sewer system. Modifications are necessary because all of the watershed does not naturally flow to the Rum River. The limited capacity could result in flooding of homes and businesses. As shown in Figure B (Appendix A), storm sewer upgrades are proposed on Tenth Avenue, Brisbin Street, Seventh Avenue, Fifth Avenue, Washington Street, Adams Street, and Harrison Street. The pipes will be analyzed in detail as the city prepares plans and specifications for street reconstruction projects within this watershed.

### **8.3.2 Construction of Water Quality Structures**

As depicted in Figure A (in Appendix A), five additional water quality structures are proposed which will greatly reduce the amount of suspended solids and phosphorus load to the Mississippi River. Water quality structures will be designed to achieve an annual removal efficiency of 60% of the total phosphorus and 90% of the total suspended solids.

**Table 8-1: Results of the Rum River Southeast Watershed****10-Year and 100-Year Critical Storm Events (TP 40)**

Minor Watershed	Subwatershed	Drainage Area (acres)	Impervious Percentage	Peak Runoff Rate (cfs) 10-yr storm	Peak Runoff Rate (cfs) 100 yr storm
10 <sup>TH</sup>	1	11.6	51	21	45
10 <sup>TH</sup>	2	12.75	20	17	34
10 <sup>TH</sup>	3	4.94	20	8	16
10 <sup>TH</sup>	4	3.51	20	5	10
10 <sup>TH</sup>	5	2.97	20	5	11
10 <sup>TH</sup>	6	6.86	20	8	17
10 <sup>TH</sup>	7	4.78	20	7	14
10 <sup>TH</sup>	8	9.88	20	12	24
10 <sup>TH</sup>	9	5.10	20	8	15
10 <sup>TH</sup>	10	9.57	20	13	26
10 <sup>TH</sup>	11	7.17	20	9	17
ADAMS	1	3.2	20	5	11
ADAMS	2	7.6	20	12	24
6 <sup>TH</sup>	1	6.5	5	8	47
6 <sup>TH</sup>	2	11.5	20	18	35
6 <sup>TH</sup>	3	1.2	25	3	6
6 <sup>TH</sup>	4	3.6	40	9	16
6 <sup>TH</sup>	5	1.7	31	5	9
6 <sup>TH</sup>	6	1.7	20	4	9
6 <sup>TH</sup>	7	2.8	20	6	11
6 <sup>TH</sup>	8	8.4	20	12	35
6 <sup>TH</sup>	9	5.1	20	9	21
6 <sup>TH</sup>	10	4.0	20	8	16
6 <sup>TH</sup>	11	4.3	20	6	13
6 <sup>TH</sup>	12	2.9	48	7	11
6 <sup>TH</sup>	13	1.6	20	4	8
BRS	1	4.0	20	7	15
BRS	2	9.6	24	17	32
BRS	3	7.1	20	13	25
BRS	4	9.6	21	12	24
HAR	1	5.7	90	18	28
HAR	2	5.0	57	15	26
HAR	3	2.2	67	11	17
HAR	4	4.7	90	15	23
JF	1	5.1	39	9	9
JF	2	7.6	54	13	23
JF	3	6.4	37	13	24
JF	4	6.5	46	16	28

**Table 8-1: Results of the Rum River Southeast Watershed (continued)**

**10-Year and 100-Year Critical Storm Events (TP 40)**

Minor Watershed	Subwatershed	Drainage Area (acres)	Impervious Percentage	Peak Runoff Rate (cfs) 10-yr storm	Peak Runoff Rate (cfs) 100 yr storm
JF	5	3.6	26	8	15
JF	6	7.7	20	14	27
JF	7	4.5	44	11	20
JF	8	5.9	20	10	21
MAIN	1	1.5	90	8	12
MAIN	2	3.5	90	14	21
MAIN	3	1.8	90	8	12
MAIN	4	4.3	90	16	25
MAIN	5	6.6	90	21	32
MAIN	6	2.1	68	7	11
MAIN	7	3.0	58	9	16
MAIN	8	5.4	90	19	30
MAIN	9	2.9	90	16	25
MAIN	10	4.3	90	18	27
MAIN	11	0.9	30	3	5
MAIN	12	0.9	47	3	6
MAIN	13	1.0	90	6	9
MAIN	14	0.9	90	5	8
MAIN	15	3.4	90	13	20
MAIN	16	3.7	59	13	22
MAIN	17	6.6	87	22	35
MAIN	18	4.7	71	15	24
MAIN	19	3.1	40	8	15
MAIN	20	2.9	22	6	12
MAIN	21	5.0	20	9	18
MAIN	22	4.1	20	9	18
MAIN	23	2.0	90	17	26
MAIN	24	2.7	82	12	19
MAIN	25	1.6	45	6	11
MAIN	26	5.7	76	18	28
MAIN	27	1.6	85	8	13
MAIN	28	2.5	67	10	17
MAIN	29	3.7	90	21	33
MMS	1	6.7	20	19	40
MMS	2	2.0	34	5	10
MMS	3	1.8	55	7	13
MMS	4	3.3	39	8	15
MMS	5	12.2	42	23	41

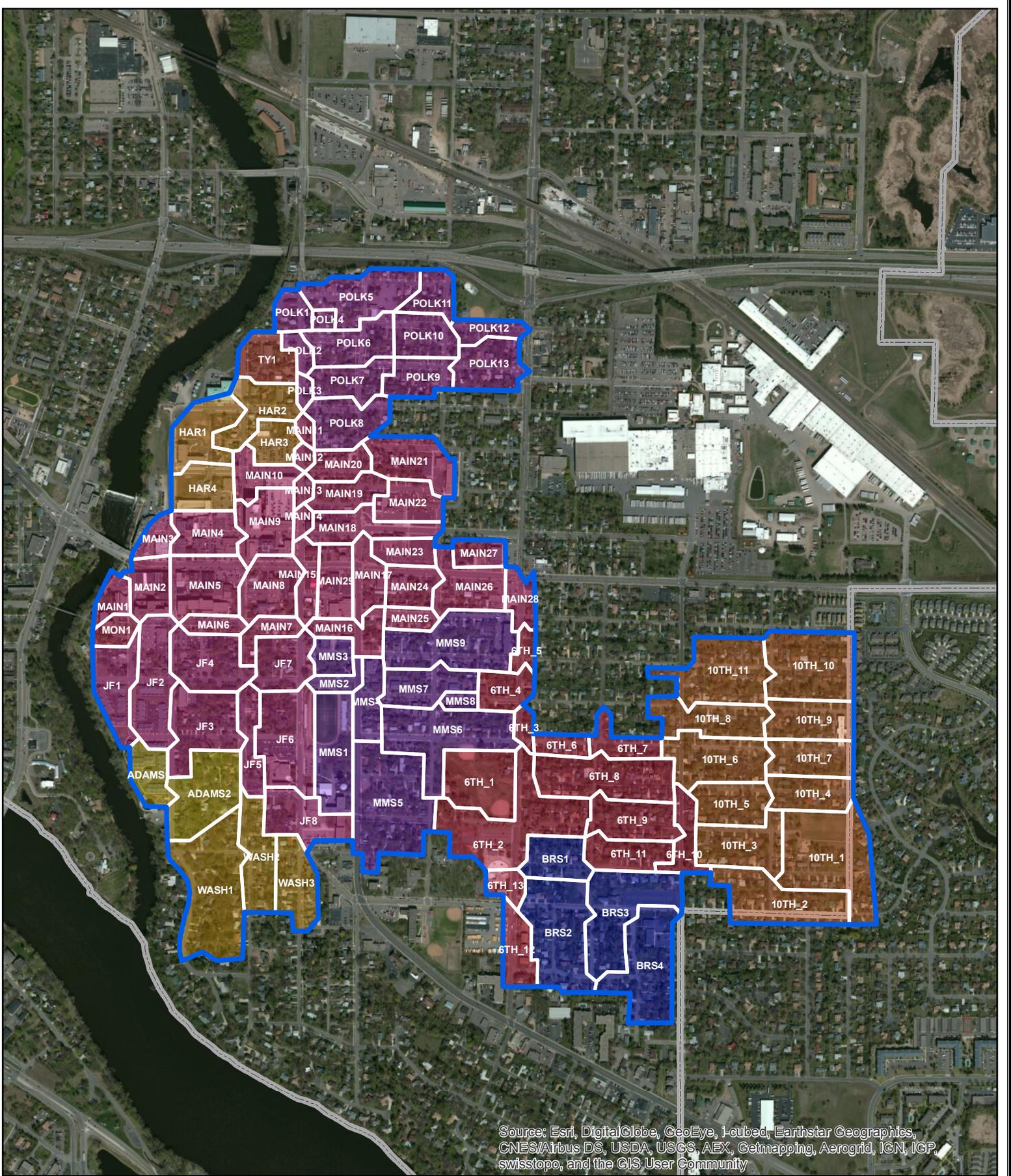
**Table 8-1: Results of the Rum River Southeast Watershed (continued)****10-Year and 100-Year Critical Storm Events (TP 40)**

<b>Minor Watershed</b>	<b>Subwatershed</b>	<b>Drainage Area (acres)</b>	<b>Impervious Percentage</b>	<b>Peak Runoff Rate (cfs) 10-yr storm</b>	<b>Peak Runoff Rate (cfs) 100 yr storm</b>
MMS	6	9.6	35	19	36
MMS	7	4.0	45	9	16
MMS	8	1.2	45	4	8
MMS	9	9.5	45	21	37
MON	1	1.8	68	8	13
POLK	1	2.3	46	12	22
POLK	2	1.5	38	5	8
POLK	3	1.0	31	3	6
POLK	4	1.0	20	3	6
POLK	5	7.3	23	15	29
POLK	6	4.4	20	8	15
POLK	7	4.0	20	9	18
POLK	8	4.9	20	8	16
POLK	9	4.0	20	7	14
POLK	10	3.8	20	7	14
POLK	11	4.3	20	8	15
POLK	12	2.7	24	7	14
POLK	13	4.5	25	11	23
TY	1	3.6	47	8	14
WASH	1	11.5	20	14	29
WASH	2	6.3	20	12	23
WASH	3	4.8	20	8	16

*Source: City of Anoka Stormwater Plan, August 2000, Barr Engineering Company*

Table 8-2: Results of 100-Year Storm Event (TP 40) Basin Requirements for Rum River Southeast Watershed						
Subwatershed	Drainage Area acres	Dead Storage acre-feet	Live Storage acre-ft	Total Storage acre-ft	100yr Discharge cfs	Outlet Size
<i>Existing Basins with Improvements</i>						
6 <sup>TH</sup> _1	73.7	2.0	8.4	10.4	30	36"
BRS2	33.0	1.2	4.0	5.2	3	15"
10 <sup>TH</sup> _1	141.4	4.0	10.5	14.5	5	42"

Source: City of Anoka Stormwater Plan, August 2000, Barr Engineering Company



Source: Esri, DigitalGlobe, GeoEye, I-cubed, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

0 300 600 1,200  
Feet

Hakanson  
Anderson



**LEGEND**

- Major Watershed
- Sub Watershed
- Minor Watershed**
- 10TH
- ADAMS
- BRS
- HAR
- 6TH
- ADAMS
- BRS
- HAR
- JF
- MAIN
- MMS
- MON
- POLK
- TY
- WASH

**FIGURE 8-1**  
**RUM RIVER SOUTH-  
EAST WATERSHED**  
**CITY OF ANOKA**

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## **9.0 Rum River Southwest Watershed**

### **9.1 General Watershed Description**

Figure 9-1 shows the Rum River Southwest Watershed and its subwatersheds. This region is located south of U.S. 10 and west of the Rum River.

This watershed includes only a very small area and consists of single-family residential land use. This watershed has remained largely unchanged over the past 10 years, and therefore it was not necessary to remodel the entire watershed with this study.

#### **9.1.1 Drainage Patterns**

The Rum River Southwest Watershed flows east directly into the Rum River either via storm sewer or overland flow. The watershed follows the Highway 169 corridor; therefore the storm sewer network is predominately owned and maintained by Mn/DOT.

#### **9.1.2 Flood Protection Concerns**

The low point on Franklin Avenue where it intersects with the alley does not have any means of discharge according to the information provided. This could be an area of flooding and a pipe is necessary to direct flows away from the homes surrounding the low point. This is discussed in the following sections. The remainder of the watershed overflows to the river.

### **9.2 Stormwater System Analysis and Results**

The 10-year and 100-year storm events were previously analyzed for the portions of the Rum River Southwest Watershed that are served by the city's storm sewer system. Table 9-1 presents watershed information and the peak runoff rates of the 10-year and 100-year analyses for each of the subwatersheds shown on Figure 9-1. There are no existing basins in this watershed.

### **9.3 Implementation Considerations**

Existing and future drainage problems within the watershed can be resolved the construction of a new storm sewer. These are discussed in the following paragraphs.

#### **9.3.1 Increased Storm Sewer Capacity Projects**

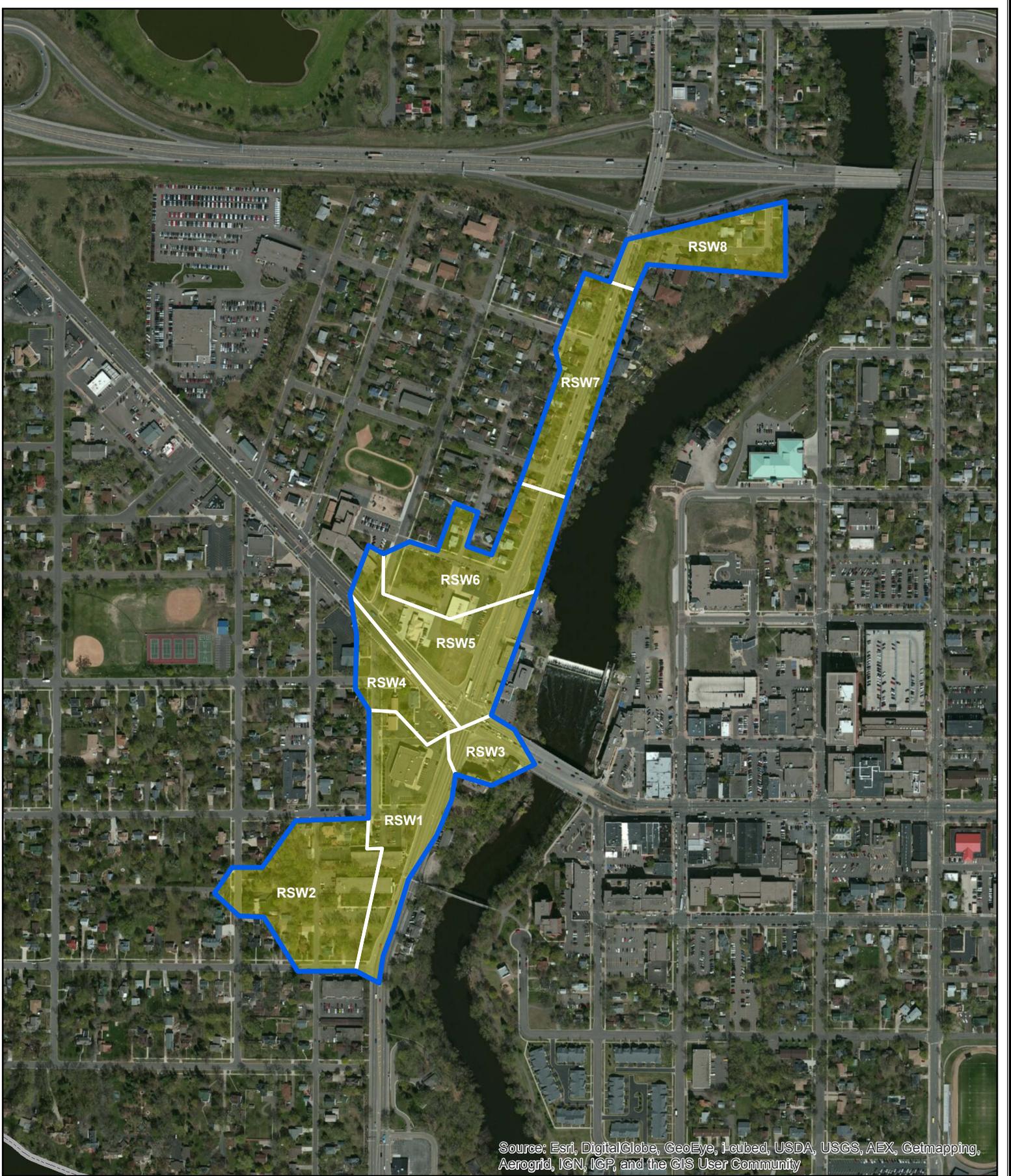
Previous analysis has indicated that the carrying capacity of the existing city storm sewer system needs to be increased on Franklin Avenue. The pipes will be analyzed in detail as the city prepares plans and specifications for street reconstruction projects within this watershed.

### **9.3.2 Construction of Water Quality Structures**

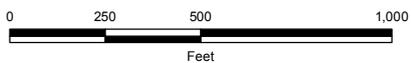
Most of the storm sewer network in this watershed is owned and maintained by Mn/DOT, and determination of water quality structures will be considered as projects are proposed.

<b>Table 9-1: Results of the Rum River Southwest Watershed</b>					
<b>10-Year and 100-Year Critical Storm Events (TP 40)</b>					
<b>Minor Watershed</b>	<b>Subwatershed</b>	<b>Drainage Area (acres)</b>	<b>Impervious Percentage</b>	<b>Peak Runoff Rate (cfs) 10-yr storm</b>	<b>Peak Runoff Rate (cfs) 100 yr storm</b>
RSW	1	5.4	57	10	17
RSW	2	5.8	36	14	25
RSW	3	1.2	65	6	11
RSW	4	1.0	20	2	4
RSW	5	5.2	90	14	22
RSW	6	3.7	55	11	20
RSW	7	3.4	45	9	15
RSW	8	3.0	45	7	13

*Source: City of Anoka Stormwater Plan, August 2000, Barr Engineering Company*



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



**Hakanson  
Anderson**

**LEGEND**

-  Major Watershed
-  Sub Watershed
-  Minor Watershed
-  RSW

**FIGURE 9-1  
RUM RIVER SOUTH-  
WEST WATERSHED  
CITY OF ANOKA**

## **10.0 U.S. Highway 169 and 10 Watershed**

### **10.1 General Watershed Description**

Figure 10-1 shows the U.S. Highway 169 and 10 minor watersheds and its subwatersheds. This region includes the areas tributary to the storm sewer network maintained by the state for Highway 169 and 10 which extends through the entire city from east to west. This watershed includes the golf course and cemeteries. General land uses in this watershed are varied, with a combination of commercial, open/agricultural, single family residential, and multiple family residential. This watershed has remained largely unchanged over the past 10 years, and therefore it was not necessary to remodel the entire watershed with this study.

#### **10.1.1 Drainage Patterns**

The U.S. Highway 169 and 10 watershed was previously analyzed only for the portions of storm sewer maintained by the City of Anoka. The state's system for the highway was not evaluated and assumed adequate. Flows at the discharge locations into the highway system are given, and the networks upstream of the discharge points were analyzed. U.S. Highway 169 and 10 watershed is made up of nine minor watersheds that are serviced by city storm sewer systems that discharge into the highway system. From east to west the minor watersheds are:

Fairoak Avenue, south of Hwy 10 (FOS)

Fairoak Avenue, north of Hwy 10 (FON)

Church Street (CH)

Golf Course (GC)

State Avenue (STA)

Branch Avenue (BRC)

Highway 169 (US169)

7th Avenue (7TH)

8th Avenue (8TH)

### **10.1.2 Flood Protection Concerns**

This watershed also has low points that may lead to flooding during the 100-year storm event. The subwatersheds where this is a concern are FON3 (intersection of Verndale and Jerome Street) and STA7 (alley section south of Clay and east of Branch Avenue). These areas do not have an overland flow route for runoff exceeding the 10-year storm event. Pipes with 100-year capacity are necessary to direct flows away from the homes surrounding the low points.

### **10.2 Stormwater System Analysis and Results**

The 10-year and 100-year storm events were previously analyzed for the portions of the U.S. Highway 169 and 10 Watershed that are served by the city's storm sewer system. Table 10-1 presents watershed information and the peak runoff rates of the 10-year and 100-year flood analyses for each of the subwatersheds shown on Figure 10-1.

### **10.3 Implementation Considerations**

This region of the city requires several upgrades to the existing system as discussed below.

#### **10.3.1 Increased Storm Sewer Capacity Projects**

Pipe capacity needs to be increased in parts of this watershed to provide 10-year level of service for the city's storm sewer system. As shown on Figure B, storm sewer upgrades are proposed on Clay Street, State Avenue, Calhoun Street, Fairoak Street, Euclid Avenue, Pleasant Street, Wingfield Avenue, Branch Avenue, and Eighth Avenue. The pipes will be analyzed in detail as the city prepares plans and specifications for street reconstruction projects within this watershed.

#### **10.3.2 Construction of Additional Stormwater Basins**

The existing basins in this watershed will be sufficient if the necessary storage and outlet sizes are provided as given in Table 10-2. Further investigation of these basins is necessary to determine their actual storage capacity. Pond GC-1 is proposed to be expanded in 2015 in conjunction with the reconstruction of the streets to the east.

#### **10.3.3 Construction of Water Quality Structures**

As depicted in Figure A (in Appendix A), two water quality structures are proposed where the runoff receives no treatment prior to entering the highway system. Water quality structures will be designed to achieve an annual removal efficiency of 60% of the total phosphorus and 90% of the total suspended solids.

**Table 10-1: Results of the U.S. Highway 169 and 10 Watershed**

**10-Year and 100-Year Critical Storm Events (TP 40)**

Minor Watershed	Subwatershed	Drainage Area (acres)	Impervious Percentage	Peak Runoff Rate (cfs) 10-yr storm	Peak Runoff Rate (cfs) 100 yr storm
7TH	1	8.6	34	12	23
7TH	2	8.2	32	15	27
7TH	3	3.3	34	8	16
7TH	4	5.3	45	18	28
7TH	5	4.1	24	8	16
7TH	6	4.6	27	10	19
7TH	7	2.0	20	5	11
7TH	8	2.0	20	5	10
7TH	9	6.3	52	17	29
7TH	10	1.0	61	5	8
8TH	1	9.8	34	15	29
8TH	2	4.8	40	10	18
8TH	3	1.5	57	5	9
8TH	4	12.2	41	18	34
8TH	5	3.2	20	6	11
8TH	6	4.5	20	9	17
8TH	7	9.3	20	14	27
8TH	8	2.0	20	4	9
BRC	1	4.3	20	5	85
BRC	2	6.8	41	17	30
BRC	3	5.1	20	9	42
BRC	4	6.9	65	26	43
BRC	5	5.2	18	5	11
BRC	6	4.2	45	9	16
CH	1	19.8	75	45	73
CH	2	19.4	7	24	53
CH	3	12.1	5	13	30
CH	4	5.9	61	14	24
CH	5	10.4	21	11	23
CH	6	4.5	20	8	16
FON	1	5.9	50	15	26
FON	2	6.6	51	14	24
FON	3	10.5	45	24	42
FON	4	5.5	23	9	18
FON	5	5.9	18	9	20
FON	6	10.8	33	40	79
FON	7	59.5	5	88	185

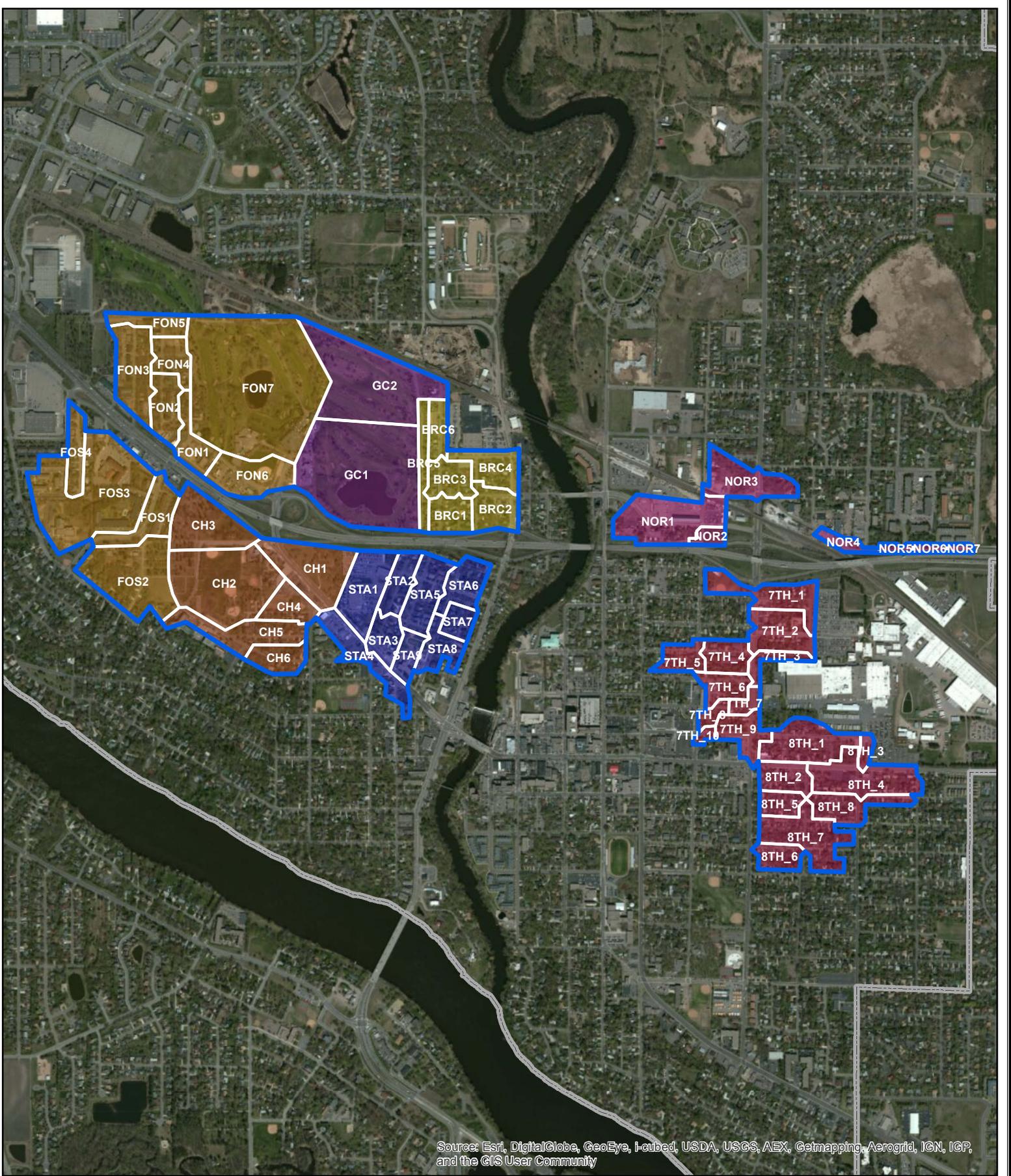
Table 10-1: Results of the U.S. Highway 169 and 10 Watershed					
10-Year and 100-Year Critical Storm Events (TP 40)					
Minor Watershed	Subwatershed	Drainage Area (acres)	Impervious Percentage	Peak Runoff Rate (cfs) 10-yr storm	Peak Runoff Rate (cfs) 100 yr storm
FOS	1	4.7	39	11	20
FOS	2	16.4	13	24	51
FOS	3	27.9	53	56	95
FOS	4	3.5	20	5	9
GC	1	36.7	4	60	121
GC	2	25.7	5	76	188
STA	1	4.9	45	15	26
STA	2	10.3	86	30	47
STA	3	5.0	52	12	20
STA	4	9.2	75	22	35
STA	5	5.6	45	12	20
STA	6	6.1	45	13	23
STA	7	3.0	45	11	19
STA	8	5.1	45	15	25
STA	9	5.6	45	13	23
NOIR	1	13.8	61	28	47
NOIR	2	2.0	45	6	11
NOIR	3	8.3	58	20	33
NOIR	4	2.5	65	6	10
NOIR	5	1.4	45	5	8
NOIR	6	0.8	45	3	5
NOIR	7	1.2	45	4	7

Source: City of Anoka Stormwater Plan, August 2000, Barr Engineering Company

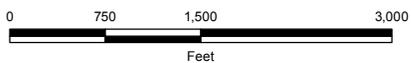
**Table 10-2: Results of 100-Year Storm Event (TP 40) Basin Requirements for U.S. Highway 169 and 10 Watershed**

Subwatershed	Drainage Area acres	Dead Storage acre-feet	Live Storage acre-ft	Total Storage acre-ft	100yr Discharge cfs	Outlet Size
<i>Existing Basins with Improvements</i>						
GC1	148.7	6.0	24.0	30.0	20	44"
FOS3	30.1	3.1	4.4	7.5	14	30"
FON7	92.5	1.6	6.3	7.9	5	
<i>Proposed Ponds</i>						
8TH_1	54.2	1.2	8.0	9.2	5	
CH2	46.5	0.6	5.4	6.0	3	

*Source: City of Anoka Stormwater Plan, August 2000, Barr Engineering Company*



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, ICP, and the GIS User Community



**LEGEND**

- |                 |                         |     |     |
|-----------------|-------------------------|-----|-----|
| Major Watershed | <b>Minor Watersheds</b> | BRC | GC  |
| Sub Watershed   | 7TH                     | CH  | NOR |
|                 | 8TH                     | FON | STA |

**FIGURE 10-1  
US 169 AND US 10  
WATERSHED  
CITY OF ANOKA**

## **11.0 Coon Rapids Tributary Watershed**

### **11.1 General Watershed Description**

Figure 11-1 shows the Coon Rapids Tributary minor watersheds and subwatersheds. This watershed is comprised of the sections of Anoka which drain into the storm sewer network of the city of Coon Rapids. General land use in this watershed is single-family residential. This watershed has remained largely unchanged over the past 10 years, and therefore it was not necessary to remodel the entire watershed with this study.

#### **11.1.1 Drainage Patterns**

There are portions of Anoka which ultimately flow into Coon Rapids, but have storm sewer in the City of Anoka extending to the city border. These regions continue into the neighboring city and enter its network. These regions were evaluated only for the sections within Anoka city limits. Downstream of the city limits, the adequacy of the system is unknown. From north to south the subwatersheds are:

41st Street (41ST)

Bunker Lake Road (BL)

Coon Rapids (CR)

#### **11.1.2 Flood Protection Concerns**

This watershed consists of areas that either flow into a bordering basin or into the Coon Rapids storm sewer system. Capacity of the basin located within Coon Rapids must be evaluated for adequacy to determine if flooding is a valid concern for the structures within the area.

### **11.2 Stormwater System Analysis and Results**

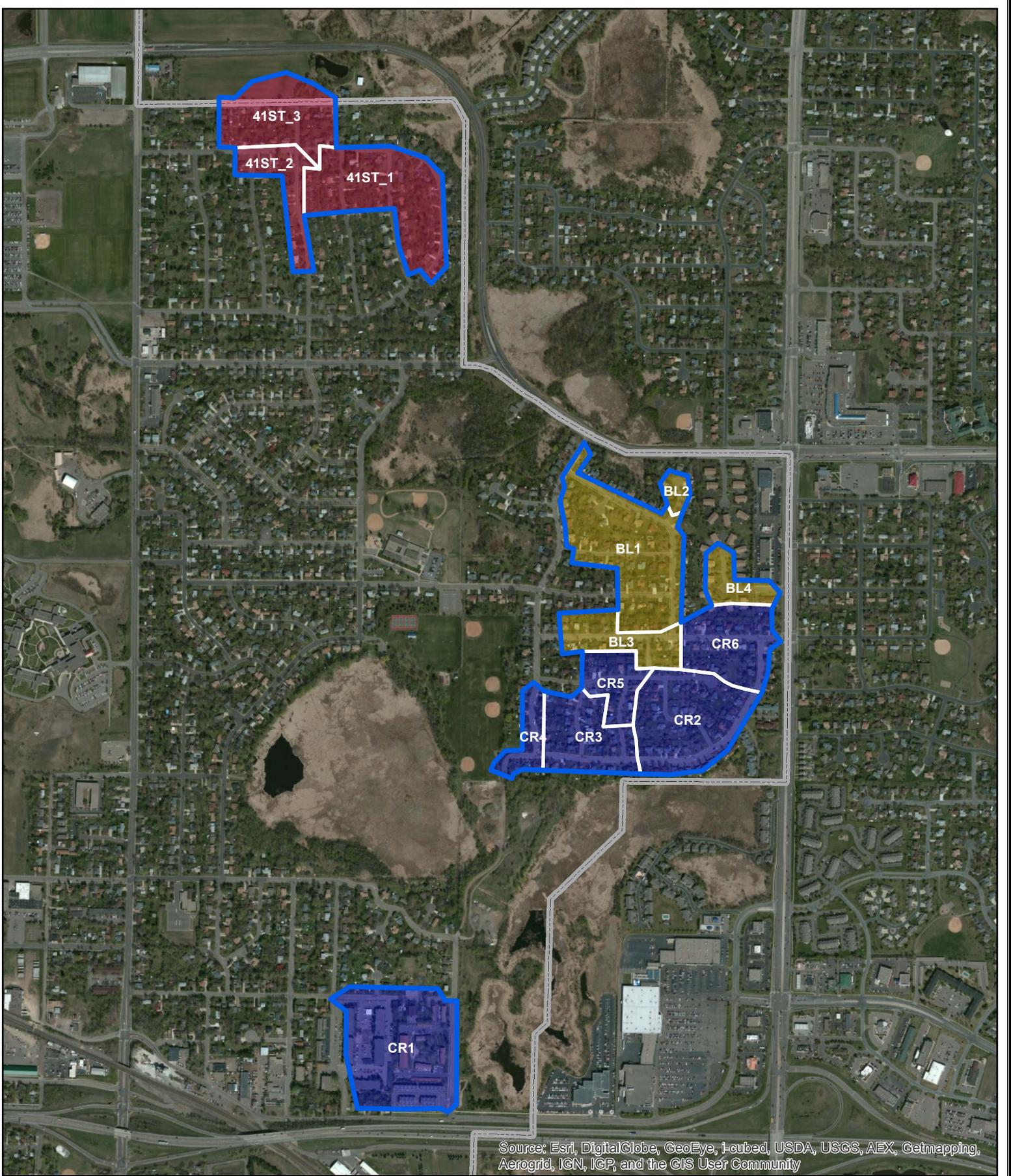
The 10-year and 100-year flood events were previously analyzed for the portions of the Coon Rapids Tributary Watershed that are served by the city's storm sewer system. Table 11-1 presents watershed information and the peak runoff rates of the 10-year and 100-year flood analyses for each of the subwatersheds shown on Figure 11-1.

### **11.3 Implementation Considerations**

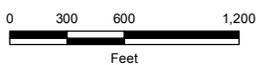
This region of the city provides sufficient storm sewer capacity to meet the 10-year level of service upstream of the Coon Rapids system.

<b>Table 11-1: Results of the Coon Rapids Tributary Watershed</b>					
<b>10-Year and 100-Year Critical Storm Events (TP 40)</b>					
<b>Minor Watershed</b>	<b>Subwatershed</b>	<b>Drainage Area (acres)</b>	<b>Impervious Percentage</b>	<b>Peak Runoff Rate (cfs) 10-yr storm</b>	<b>Peak Runoff Rate (cfs) 100 yr storm</b>
BL	1	18.6	20	22	45
BL	2	1.2	20	3	7
BL	3	7.1	20	9	18
BL	4	3.6	37	11	21
CR	1	20.4	40	25	46
CR	2	14.8	24	21	41
CR	3	9.7	20	19	38
CR	4	5.2	20	11	23
CR	5	5.9	20	12	25
CR	6	9.6	25	18	34
41ST	1	18.2	20	18	37
41ST	2	6.6	20	9	18
41ST	3	18.0	20	25	51

*Source: City of Anoka Stormwater Plan, August 2000, Barr Engineering Company*



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



**LEGEND**

- |   |  |   |
|---|--|---|
|  Major Watershed |  Minor Watersheds |  BL |
|  Sub Watershed   |  41ST             |  CR |

**FIGURE 11-1  
COON RAPIDS  
TRIBUTARY  
WATERSHED  
CITY OF ANOKA**

### **12.1 General Watershed Description**

Figure 12-1 shows the Rum River North Watershed and its 3 minor watersheds and subcatchments. This region includes the areas tributary to the storm sewer network maintained by Anoka County for CSAH 116 and a small portion of 7<sup>th</sup> Avenue. The watershed is bound by the Rum River on the West, the city limits to the North, 7<sup>th</sup> Avenue to the East and Anoka High School to the South.

This watershed includes the Rum River Library. General land uses in this watershed are varied, with a combination of single family residential, park and recreational, institutional and agriculture. The undeveloped portion of the watershed is guided for a shopping center.

#### **12.2.1 Drainage Patterns**

The Rum River North watershed was analyzed only for the portions of storm sewer maintained by the City of Anoka. The county's system for the county road was not evaluated and assumed adequate. The Rum River North Watershed flows west into the Rum River either via storm sewer or overland flow. This watershed has three existing stormwater basins which provide both quantity and quality control. Two of them are located in the single family residential development while the other is located on the library property. There are two existing stormwater outfalls that discharge directly to the Rum River. Because one of the outfalls belongs to the county's storm sewer system, only one outfall was modeled in this project. The outfall modeled for this project is for the Rum River Shores (RRS) single family development. The Anoka High School located immediately south of the watershed was not included in this analysis.

#### **12.1.2 Flood Protection Concerns**

There are no known problems in this watershed. The minor watersheds that directly outfall into the river will not have any flooding problems as it appears the overflow will drain to the river. Where the storm sewer capacity is not sufficient, surface overflow will occur via the streets or designed overflows to the lowest point within the watershed. The water reaching

the low points is conveyed via pipe to the Rum River.

## **12.2 Stormwater System Analysis and Results**

The 10-year and 100-year events were analyzed for the Rum River North Watershed. Table 12-1 summarizes the peak runoff rates of the 10-year and 100-year analyses for each of the subcatchments shown on Figure 12-1.

## **12.3 Implementation Considerations**

The city's existing storm sewer systems are adequate for this watershed. Upon development, it is assumed that three additional basins will be necessary. The necessary storage and outlet sizes were determined to provide adequate detention for the storm sewer network to function and are given in Table 12-2.

### **12.3.1 Construction of Water Quality Basins**

Figure A shows the location of water quality basins that would greatly reduce the amount of suspended solids and phosphorous load to the Rum River. These new basins are necessary when the property east of 6<sup>th</sup> Avenue and west of 7<sup>th</sup> Avenue is developed. Table 12-2 lists the necessary "dead storage" required to achieve an annual removal efficiency of 60% of the total phosphorous and 90% of the total suspended solids. The basins will provide sufficient water quality treatment if the necessary "dead storage" volume as shown in Table 12-2 is provided.

**Table 12-1: Results of the Rum River North Watershed**

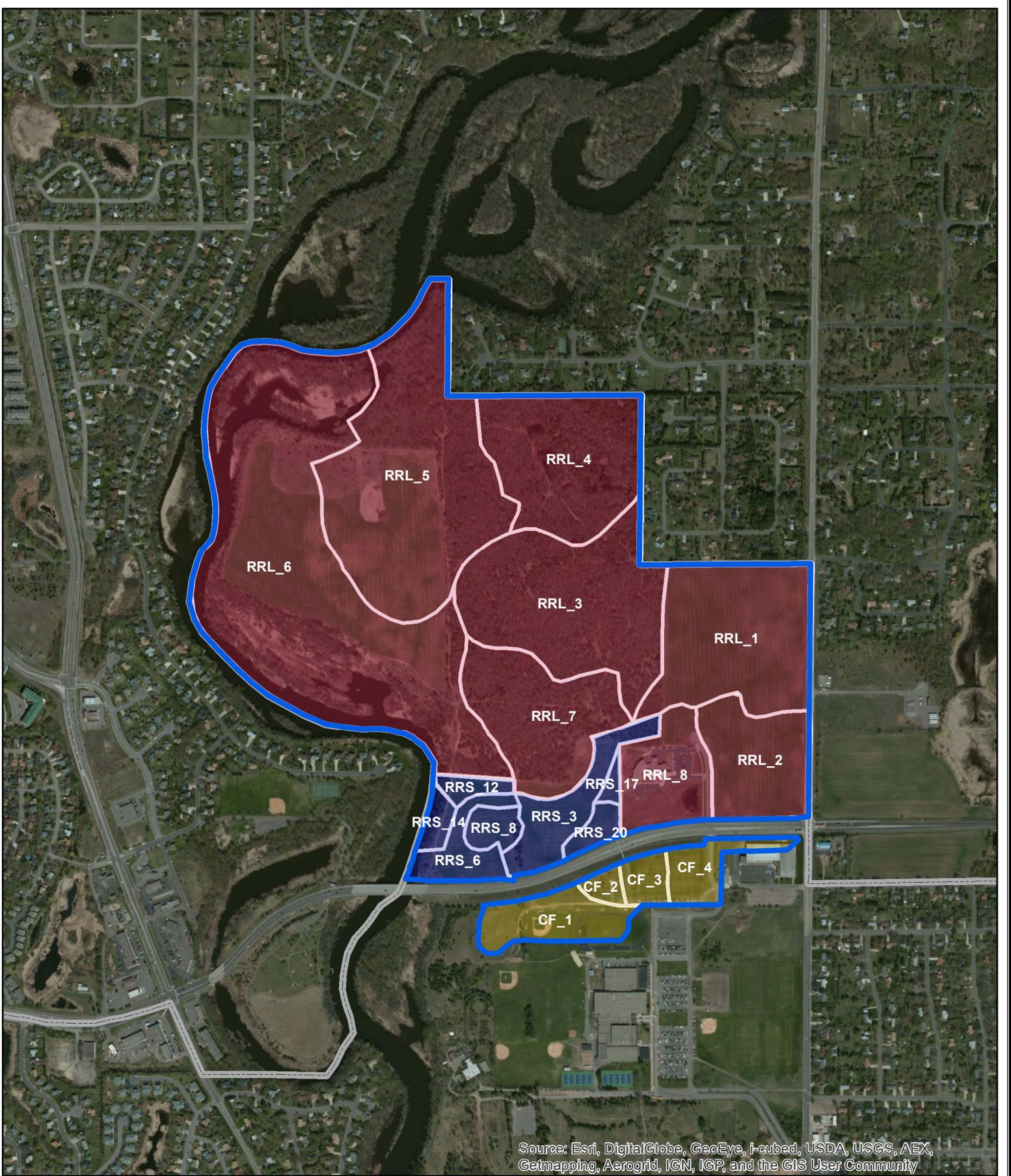
**10-Year and 100-Year Critical Storm Events (TP 40)**

<b>Minor Watershed</b>	<b>Subwatershed</b>	<b>Drainage Area (acres)</b>	<b>Impervious Percentage</b>	<b>Peak Runoff Rate (cfs) 10-yr storm</b>	<b>Peak Runoff Rate (cfs) 100 yr storm</b>
CF	1	2.3	4	1	1
CF	2	0.9	16	1	1
CF	3	2.6	12	1	2
CF	4	1.9	27	2	4
RRL	1	30.9	82	142	264
RRL	2	13.6	85	69	126
RRL	3	37.6	0	2	27
RRL	4	36.2	0	1	59
RRL	5	29.0	0	41	135
RRL	6	69.0	0	84	338
RRL	7	26.4	2	1	48
RRL	8	14.3	36	27	77
RRS	3	8.6	38	9	22
RRS	6	7.1	25	6	15
RS	8	2.8	38	2	6
RRS	12	1.6	8	1	2
RRS	14	0.9	11	1	3
RRS	17	1.2	14	1	2
RRS	20	1.2	11	1	2

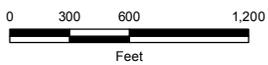
**Table 12-2: Results of 100 Year Storm Event (TP 40) Basin Requirements for Rum River North Watershed**

Subwatershed	Drainage Area acres	Dead Storage acre-feet	Live Storage acre-ft	Total Storage acre-ft	100yr Discharge cfs	Outlet Size
<i>Existing Basins with Improvements</i>						
RRL8	27.9	3.1	3.8	6.9	6	15"
RRS3	15.5	2.1	1.4	3.5	2	12"
RRS6	12.4	0.6	0.5	1.1	5	12"
<i>Proposed Ponds</i>						
RRL8-INF*	0	2.0	1.3	3.3	8	18"
RRL1	30.9	4.2	6.0	10.2	17	
RRL1-INF*	0	1.0	3.7	4.7	2	

\* Note: Drainage area is listed as zero (0) acres as proposed infiltration basins are second device in treatment train and they received treated stormwater from upstream NURP Ponds with no additional contributing drainage area.



Source: Esri, DigitalGlobe, GeoEye, i-cubed, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, and the GIS User Community



**Hakanson  
Anderson**

K:\cad\_eng\PROJECTS\GIS\AN409\Rum River North

**LEGEND**

- Major Watershed
- Sub Watershed
- RRL
- RRS
- CF

**FIGURE 12-1  
RUM RIVER NORTH  
WATERSHED  
CITY OF ANOKA**

This section presents the goals and policies developed for the management of water resources within Anoka. Goals and policies are provided for new development and redevelopment, linear projects, flood protection, wetlands, water quality, flood plain and shoreland management, recreation, open space and wildlife management, groundwater protection, erosion and sedimentation control, public education and outreach, and illicit discharge detection and elimination. Goals propose the desired end and policies provide the means to achieve the goals. Section 14.0 provides more specific detail on how the goals and policies will be implemented.

### 13.1 New Development and Redevelopment

Goal: Manage new development and re-development activities to prevent / reduce flooding and achieve non-degradation of surface waters.

Policy: For new development projects with land disturbances greater than or equal to one acre, there shall be no net increase from pre-project conditions (on an average annual basis) of:

1. Stormwater discharge volume, unless precluded by site limitations
2. Stormwater discharges of Total Suspended Solids (TSS)
3. Stormwater discharges of Total Phosphorous (TP)

Policy: For redevelopment projects with land disturbances greater than or equal to one acre, there shall be a net decrease from pre-project conditions (on an average annual basis) of:

1. Stormwater discharge volume, unless precluded by site limitations.
2. Stormwater discharges of Total Suspended Solids (TSS).
3. Stormwater discharges of Total Phosphorous (TP).

Policy: Per LRRWMO requirements, a volume equal to one inch of runoff from all impervious surfaces shall be infiltrated on-site. In cases of redevelopment, this volume control requirement applies only if greater than 50% of the project area is disturbed.

Policy: For new development and redevelopment projects that disturb more than 10,000 square feet but less than one acre, the following requirements shall be enforced:

1. There shall be no net increase from pre-project conditions (on an average annual basis) of stormwater discharge volume, unless precluded by site limitations
2. There shall be no net increase in peak runoff rates for the 2-year, 10-year, and 100 year return frequency storm events.

Policy: Promote ground water recharge in areas without site limitations.

Policy: Consistent with Minnesota Rules 7050.0180, no person may cause or allow a new or expanded discharge to the Rum River unless there is not a prudent and feasible alternative because of its classification as an Outstanding Resource Value Water. Determinations about discharges that may or may not impact the Rum River are made by the MPCA and shall be addressed through the MPCA's regulatory process.

Policy: Facilitate LRRWMO review of all projects requiring a LRRWMO permit.

### **13.2 Linear Projects**

Goal: Maintain existing runoff volume and rate characteristics unless mitigation measures are utilized to ensure no downstream impacts.

Goal: Upgrade storm sewer to provide capacity for 10 year return frequency.

Policy: Implement volume reduction strategies for new impervious surfaces such that the new surfaces cause no increase on an average annual basis of runoff volume.

Policy: Replace storm sewer that does not provide capacity for the 10 year return frequency storm event as streets are re-constructed.

Policy: Anoka will consider retrofits on existing systems prior to discharging to a surface water in areas where no treatment currently exists.

### **13.3 Flood Protection**

Goal: Provide flood protection for the 100-year return frequency event.

Policy: The lowest floor elevation for all structures, including basements, must be at least 3 feet above the highest anticipated ground water table, 2 feet above the designated or designed 100-year flood elevation, or 1 foot above the emergency overflow, whichever is higher as per LRRWMO requirements.

Policy: Flood levels in landlocked basis shall be determined as per LRRWMO standards.

Policy: Promote the preservation and retention capacities of wetlands, streams, rivers, other conveyances and floodplain areas.

Policy: Provide a positive overflow for stormwater ponds and wetlands to the maximum extent practicable.

Policy: Trunk storm drainage systems that serve as the outlet for areas where flooding of structures or where significant flood damage is likely to occur will typically be designed to meet freeboard protection standards for the critical duration 1 percent chance flood. The design shall be based on a hydrograph method for appropriate rainfall and snowmelt events. The design shall be based on proposed ultimate land use. The design shall consider potential flood, wetland, and water quality impacts to upstream and downstream areas.

#### **13.4 Water Quality**

Goal: Manage activities within the city such that there is no net increase in sediment and nutrient loading.

Policy: Infiltration of stormwater shall be required prior to discharging stormwater to a lake, stream, or wetland and prior to discharge from the site.

Policy: Facilities shall be designed to provide annual removal efficiencies of 60% of total phosphorous and 90% of total suspended solids.

Policy: Require skimmer structures to prevent floatable materials and debris from entering surface waters.

Policy: Continue to implement a city wide street sweeping program to capture the sediment prior to entering conveyance systems.

Policy: Implement an Erosion and Sediment Control inspections program to ensure that sites are controlling erosion and sediment to the Maximum Extent Practicable.

Policy: Cooperate with the LRRWMO in water quality monitoring, modeling and planning to protect water resources.

Policy: Implement Projects identified in the City of Anoka Stormwater Retrofit Analysis, which is included as Appendix C, when possible.

### **13.5 Erosion and Sediment Control**

Goal: Prevent sediment from entering the storm water conveyance systems and surface waters to the Maximum Extent Practicable.

Policy: Require development and redevelopment to implement construction site erosion and sediment control practices to minimize erosion and trap sediment.

Policy: Implement an Erosion and Sediment Control inspection program as required by the city's MS4 permit.

### **13.6 Wetland Protection**

Goal: Manage activities adjacent and tributary to wetlands to maintain their function and value.

Policy: The city will require that a field wetland delineation and report detailing the findings of the delineation shall be submitted prior to development activities. Wetland delineations shall be conducted using methodology approved by the MN Wetland Conservation Act (1987 US Army Corps of Engineers Wetland Delineation Manual, along with any regional supplements, or other methodology approved by WCA in the future).

Policy: The city will continue to cooperate with the LRRWMO in administering the Wetland Conservation Act to ensure no net loss of functions and values.

Policy: Areas within 16.5 feet of a wetland boundary must be protected from land grading and other disturbances by a temporary wetland buffer during construction.

Policy: The city will require, through future development proposals, that a permanent upland wetland buffer 16.5 feet in width from the wetland edge be provided. The buffer shall not be

mowed or fertilized and the construction of structures, retaining walls, and septic systems shall be prohibited within the buffer, consistent with LRRWMO requirements.

Policy: The city will require the permanent wetland buffer to be within a drainage and utility easement.

Policy: A performance surety shall be collected to ensure the proper execution of wetland protection measures.

Policy: The city requires that stormwater runoff be pre-treated prior to discharge to wetlands for new development proposals. Stormwater discharge must comply with LRRWMO standards.

Policy: Consider retrofits in existing systems to provide pre-treatment prior to discharging to wetlands where no treatment currently exists for redevelopment projects.

### **13.7 Floodplain Management**

Goal: Manage activities within the floodplain in accordance with the city's ordinance and state and federal regulations.

Policy: The city shall prohibit encroachment into the floodway that will reduce storage capacity unless the storage volume is mitigated.

Policy: The city shall manage the land use within the 100-year flood level as designated by this plan or the National Flood Insurance Program Flood Insurance Rate Maps (FIRM).

### **13.8 Shoreland Management**

Goal: Manage activities within the shoreland districts to preserve the functions and values of the resource.

Policy: The city will manage activities within the shoreland overlay district in accordance with the city ordinances.

### **13.9 Recreation, Open Space and Wildlife Management**

Goal: Protect and restore natural areas for recreation and wildlife habitat.

Policy: The city shall seek opportunities for integration of recreation open space and wildlife management facilities in conjunction with possible future water resource capital improvement projects.

Policy: The city shall encourage protection and/or preservation of wetlands and uplands that provide habitat for game fish spawning and wildlife, especially in the residential development areas.

### **13.10 Groundwater Protection**

Goal: Manage surface water in a manner that prevents contamination in groundwater and promotes groundwater recharge.

Policy: The evaluation and control of development in groundwater recharge areas shall be protected from potential sources of contamination in accordance with Minnesota Statutes section 103H.001 and the city ordinances.

Policy: The disposal of any solid or liquid wastes shall be controlled as necessary to ensure that the underground waters of the watershed are maintained within the range of natural background quality.

Policy: Cooperate with the Anoka County Health Department in ensuring that abandoned wells are properly sealed according to the Minnesota Department of Health Well Code.

### **13.11 Maintenance of Stormwater Systems**

Goal: Maintain the design capacity and treatment effectiveness of stormwater conveyances and BMP's through inspections and maintenance.

Policy: The city shall maintain public water quality structures, sedimentation ponds and regional detention basins.

Policy: Maintain, clean, and replace storm drainage systems as needed to preserve the initial design capacity.

Policy: For privately owned stormwater ponds, basins and treatment structures; require a maintenance agreement that is recorded against the property.

### **13.12 Public Education and Outreach and Public Participation**

Goal: Educate the public about the impacts of stormwater discharges on receiving waters.

Policy: Implement the public education and outreach strategies outlined in the city's SWPPP.

Policy: Implement the public participation strategies outlined in the city's SWPPP.

### **13.13 Illicit Discharge Detection and Elimination**

Goal: Eliminate or reduce illicit discharges into surface waters to the maximum extent practicable.

Policy: Implement and enforce the illicit discharge detection and elimination strategies outlined in the city's SWPPP.

Policy: Provide training opportunities to city employees to prevent or reduce pollutant runoff from municipal operations.

### **13.14 Stormwater Pollution Prevention Program**

Goal: Continue to develop, implement and enforce a storm water pollution prevention program to reduce the discharge of pollutants to the Maximum Extent Practicable.

Policy: Develop a program which meets or exceeds the requirements as stated in the MPCA's General MS4 Permit.

Policy: Regional detention areas receiving runoff from more than one acre of surface area will comply with MS4 requirements.

To uphold the goals and policies of this Plan, the city will review all proposed developments and improvements. Approvals for BMPs relating to water quality, wetland protection, and erosion and sediment control and rate control will be required.

The city has established the following regulatory controls and criteria relating to its policies. These controls and criteria apply to the management of: wetlands, floodplains, shorelands, water quantity and quality, groundwater, soil erosion and sedimentation control and recreation, open space and wildlife and municipal operations. While these controls and criteria relate to one of the policy areas, it should be noted that they are interrelated and may serve multiple purposes.

The criteria, as a minimum, establish the degree of performance necessary to achieve improvements in water quantity and quality management. These criteria are not intended to dictate or preempt the design process, but rather provide a guide to proper development.

### **14.1 LRRWMO Permit Program**

The city will require that all projects that disturb more than one acre of surface area, or propose wetland impacts that meet the requirements of the WCA, obtain a permit from the LRRWMO unless eligible for an exemption. If necessary, the city will enforce the permit requirements through its ordinances and mechanisms.

### **14.2 Water Quantity and Quality Management**

The water quantity and quality management strategies are guided by requiring all projects, including redevelopment, disturbing 10,000 square feet or more to adhere to this Plan's policies and criteria for the control of surface runoff. This includes a disturbance to the land that results in a change in the topography, existing soil cover (both vegetative and non vegetative), or the existing soil topography that may result in accelerated stormwater runoff, leading to soil erosion and movement of sediment into surface waters or drainage systems. Examples of construction activity may include clearing, grading, filling and excavating.

The following order preference for stormwater quantity and quality management techniques shall be followed:

- 1<sup>st</sup> - Better site design (as defined in the Minnesota Stormwater Manual)
- 2<sup>nd</sup> - Infiltration
- 3<sup>rd</sup> - Biofiltration, filtration, wetland treatment systems, extended detention basins, or NURP ponds (in no particular order of preference)
- 4<sup>th</sup> - Hydrodynamic Separators

It is expected that a combination of techniques, used in series, will be necessary. The design of stormwater BMPs, including infiltration basins, shall be in accordance with the MN Stormwater Manual and the standards as described herein. Hydrodynamic separators will be considered when a storm water basin is not feasible. During the design and selection of hydrodynamic separators, the designer shall estimate removal efficiencies by the use of a model, such as SHSAM developed by Barr Engineering, or other similar studies or reports.

### **14.3 Volume Control**

For all projects that disturb or alter one acre or more, including common plans of development that disturb or alter one acre or more, a volume equal to one inch of runoff from all impervious surfaces shall be retained on the site through infiltration or other volume reduction BMPs as approved by the city. In cases of redevelopment, this volume control requirement only applies if >50% of the project area is disturbed.

#### **14.3.1 Infiltration Basin Design and Construction**

Infiltration basin design and construction shall be in accordance with the MN Stormwater Manual Chapter 12-INF, Volume 2 as amended. Construction of an approved pre-treatment device or BMP shall be required prior to discharging stormwater into the infiltration basin.

Soil borings shall be conducted on the site to determine soil types, groundwater elevations, seasonally high water table elevations, and impeding layers. Infiltration rates shall be per Table 14.3.1 below or as published in the most current version of the MN Stormwater Manual, or measured on-site with a double ring infiltrometer at the elevation of the proposed BMP and adjusted appropriately to account for sediment accumulation. A maximum infiltration rate of 3 in/hr is allowed.

Table 14.1 Infiltration Rates for Hydrologic Soil Groups

Hydrologic Soil Group	Soil Textures	Corresponding Unified Soil Classification	Infiltration Rate (in/hr)
A	Gravel, sand, sandy gravel, silty gravel, loamy sand, sandy loam	<b>GW</b> – Well graded gravel or well-graded gravel with sand <b>GP</b> – Poorly graded gravel or poorly graded gravel with sand <b>GM</b> – Silty gravel or silty gravel with sand <b>SW</b> – Well graded sand or well graded sand with gravel	1.63
		<b>SP</b> – Poorly graded sand or poorly graded sand with gravel	0.8
B	Loam, silt loam	<b>SM</b> – Silty sand or silty sand with gravel	0.45
		<b>MH</b> – Micaceous silts, diatomaceous silts	0.3
C	Sandy clay loam	<b>ML</b> – Silts, very fine sands, silty or clayey fine sands	0.2
D	Clay, clay loam, silty clay loam, sandy clay, silty clay	<b>GC</b> – clayey gravels, clayey sandy gravels <b>SC</b> – clayey sands, clayey gravelly sands <b>CL</b> – Low plasticity clays, sandy or silty clays <b>OL</b> – Organic silts and clays <b>CH</b> – Fat clay or fat clay with sand or gravel or gravelly fat clay <b>OH</b> – Organic silts and clays	0.06

### **14.3.2 Infiltration in Drinking Water Supply Management Area (DWSMA)**

Infiltration may not be suitable within a Drinking Water Supply Management Area due to elevated risk of groundwater contamination. The site designer shall verify DWSMA boundaries for each site. DWSMA boundaries are available from the Minnesota Department of Health (<http://www.health.state.mn.us/divs/eh/water/swp/maps/index.htm>). Projects within a DWSMA should refer to Minnesota Department of Health guidance entitled “Evaluating Proposed Stormwater Infiltration Projects in Vulnerable Wellhead Protection Areas” (<http://www.health.state.mn.us/divs/eh/water/swp/stormwater.pdf>) to determine if infiltration techniques are appropriate.

### **14.3.3 Sites with Other Restrictions for Infiltration**

Infiltration may also be infeasible or inappropriate for sites in the following cases:

- Physical limitations including soils or insufficient separation to the seasonally high water table
- Physical limitations of space in the case of redevelopment
- Stormwater discharges from potential stormwater hotspots, such as fueling stations, vehicle service or washing areas, vehicle fleet storage areas, auto recycling or salvage, stockpiled snow from salted roadways, construction site inputs, manufacturing sites, public works storage areas, facilities that generate or store hazardous waste materials, and others determined by the city or LRRWMO.
- Conflicts with underground utilities
- Sites with contaminated soils

### **14.3.4 Exceptions to On-Site Infiltration**

In the cases where infiltration is infeasible or inappropriate due to the circumstances as described above, the required volume shall be treated as per the following techniques, in order of preference:

1. On site infiltration of the entire, or a portion of the required volume, in combination with methods 3, 4 or 5 as described below.
2. On site filtration of the required volume or off site infiltration of the required volume at another project site within the boundaries of the LRRWMO.

3. Other non-volume control treatment on site.
4. Contribution to a stormwater impact fund held by the LRRWMO. This fund is used for projects that offset the volume reduction that permitted projects were unable to achieve. Such projects may occur throughout the LRRWMO, but funds are favored in the city where they originated. The LRRWMO determines the contribution amount necessary per acre of impervious surface.
5. Infiltration credits from the City of Anoka may be available for purchase. Applicants would need to verify with the City of Anoka engineering department regarding credit availability. At the time of this publication, the City had an excess of 2,838 cubic feet of excess infiltration volume. The Summary of Infiltration Credits is included on Table D.1 in Appendix D.

#### **14.4 Wet Sedimentation Basins**

In situations where wet sedimentation is allowed, permanent pool volume shall be provided which is equal to or greater than the volume of stormwater runoff from a 2.5 inch storm over the entire contributing area. Facilities shall be designed to provide annual removal efficiencies of 60% of total phosphorous and 90% of total suspended solids. The permanent pool average depth shall be greater than 3 feet, with a maximum depth of 10 feet.

#### **14.5 Peak Flow Rate Control**

Post-development peak runoff rates shall not exceed the existing rates for the 2-year, 10-year, and 100 year return frequency storm events. In determining the existing condition in the case of redevelopment, the city may consider the condition immediately prior to the start of construction as well as the condition in the year 1984, which is the year that the Rum River was listed as an Outstanding Resource Value Water in Minn. R. 7050.0470.

## **14.6 Flood Protection**

Consistent with state and federal regulations, Anoka requires that the level of flood protection along all ditches, detention basins, streams and wetlands be established based upon the 1 percent (100-year frequency) storm event utilizing NOAA Atlas 14, Volume 8 precipitation amounts. Land use within floodplains shall be regulated in accordance with city ordinances and state floodplain zoning regulations. The following freeboard values are required for the City of Anoka:

- Landlocked Basins (no outlet)                      2.0 feet                      (Established high water)
- Non-Landlocked Basins                                      2.0 feet                      (100-year frequency)

## **14.7 Storm Sewer Design**

Generally speaking, storm sewer shall be designed for the 10-year return frequency event. The designer shall evaluate overflow elevations to ensure flood protection standards are met for larger storms. In some circumstances, when there is not an overland overflow location, it may be necessary to design for a larger storm, such as the 100-year return frequency event.

## **14.8 Water Quality Monitoring Program**

The city will continue to cooperate with the LRRWMO for matters including water quality monitoring, modeling, and planning to protect priority resources. The LRRWMO in cooperation with the Anoka Conservation District will continue to monitor water quality.

## **14.9 Floodplains and Shoreland Management**

Various levels of government are involved in regulation of surface water, wetlands and floodplain. As previously discussed, the MnDNR has inventoried and classified water bodies and wetlands in the State of Minnesota. The “protected waters and wetlands” program identifies water bodies and wetlands that require DNR permits for activities like draining, filling, dredging, and diverting of water. The MnDNR Shoreland Management Program has also established a classification system for lakes greater than 10 acres in size and rivers with a drainage area two square miles or greater. Floodplain and shoreland areas are governed by the city’s Shoreland

and Floodplain Ordinances, which regulate activities adjacent to water bodies classified by the Minnesota DNR.

#### **14.10 Recreation, Open Space and Wildlife Management**

Through development review the city shall encourage protection and/or preservation of wetlands and uplands that provide habitat for fish and wildlife.

#### **14.11 Groundwater Management**

The City of Anoka contains natural characteristics that result in moderate to very high sensitivity for groundwater contamination. Infiltration practices and other structural BMPs in Drinking Water Supply Management Areas (DWSMA) will be evaluated as per the Minnesota Department of Health's guidelines entitled "Evaluating Proposed Stormwater Infiltration Projects in Vulnerable Wellhead Protection Areas". The DWSMA's Vulnerability, as per the Minnesota Department of Health, is depicted in Figure 2-4.

#### **14.12 Well Abandonment**

The city will develop, in cooperation with the Anoka Conservation District and Anoka County Extension, an education program relating to land use control practices and proper well abandonment procedures in accordance with Minn. Rules 4725.2700.

#### **14.13 Anoka Dam**

The City of Anoka has been the sole owner of the Anoka Dam located on the Rum River since 1935. The City of Anoka will continue to perform all regular inspections, maintenance and repairs as necessary.

#### **14.14 Wetland Protection**

Wetland protection standards, as discussed in Section 13.11, shall be applicable for all projects that disturb/alter one acre or more of land, or are part of a common plan of development or sale that disturbs/alters one acre or more of land. The following activities are exempt:

- Road reconstruction
- Utility construction/reconstruction within the road right-of-way and utility easement

- Agricultural operations > 300 feet from the Rum River and not creating impervious area
- Gardens
- Pole setting
- Emergency activities immediately necessary for the protection of life, property, or natural resources
- In circumstances in which the LRRWMO board determines that the proposed project is not likely to impair attainment of the purpose and intent of the wetland management standards

Projects exempt from wetland protection standards must still comply with any applicable local, state, or federal requirements. The LRRWMO is the local governmental unit (LGU) administering the requirements of the Wetland Conservation Act (WCA) in the City of Anoka.

#### **14.15 Soil Erosion and Sediment Control**

Although development and redevelopment is moderate within the City of Anoka, the control of erosion and sedimentation remains important to maintaining water quality in the area. Of paramount importance to the maintenance of water quality in the city is the proper enforcement of erosion and sediment controls. Enforcement will involve indirect and direct approaches.

##### **14.15.1 Indirect Approach**

The indirect approach includes incentives within the ordinance such as the requirement for a performance bond equal to the work to be performed and civil penalties.

##### **14.15.2 Direct Approach**

The direct approach involves the inspection and enforcement of the sediment control elements in the Plan to ensure compliance with the principles and standards. The inspection and enforcement will be undertaken by the city or its representative.

### **14.15.3 Erosion and Sediment Control Plans & SWPPPs**

For applicable land disturbance activities, the applicant shall prepare and implement an erosion and sediment control plan and Storm Water Pollution Prevention Plan (SWPPP). The plans shall include the necessary erosion and sediment control practices, implementation schedule and other necessary items to conform to the General Stormwater Permit for Construction Activity (MN R100001) and city ordinances.

### **14.16 Implementation Program**

Table 14.2 below presents the City of Anoka’s Implementation Program. The table includes the planned year of the activity and budgeted cost for each item, as well as a total for the five year period. The City of Anoka generally replaces storm sewer infrastructure and constructs water quality BMPs in conjunction with its street renewal program.

Table 14.2 City of Anoka Implementation Program

<b>Description</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>2022</b>	<b>2023</b>	<b>2019-2023 Total</b>
2019 SSIP Infiltration Trench	\$15,000	-	-	-	-	\$15,000
2019 SRP Infiltration Trench on South Street	\$25,000	-	-	-	-	\$25,000
2020 SSIP Rain Gardens	-	\$50,000	-	-	-	\$50,000
Mississippi River Bank Stabilization	\$200,000	\$300,000	\$350,000	-	-	\$850,000
Outfall Repairs, Planning and Stabilization	\$10,000	\$95,000	-	-	-	\$105,000
Expand Pond GRT-1	-	\$150,000	-	-	-	\$150,000
Trunk storm sewer Improvements	\$40,000	\$250,000	\$150,000	-	-	\$440,000
Trunk Hwy 10 Pond and Infiltration Basin Construction	-	-	-	\$200,000	\$200,000	\$400,000
Drainage Enhancement at Pond CH 2	-	-	-	-	\$70,000	\$70,000
Survey ponds to determine treatment effectiveness	-	-	\$10,000	\$5,000	-	\$15,000
Inspection of Outfalls ponds, and water quality structures	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$30,000
Educational Program, Newsletter and Website	\$5,000	\$5,000	\$5,000	\$5,000	\$5,000	\$25,000
Establish No Wake Zone on Mississippi River and Implementation	\$5,000	\$5,000	\$3,000	\$3,000	\$3,000	\$19,000

Description	2019	2020	2021	2022	2023	2019-2023 Total
Street Sweeping	\$10,000	\$10,000	\$10,000	\$10,000	\$10,000	\$50,000
General stormwater maintenance and repairs	\$40,000	\$40,000	\$40,000	\$40,000	\$40,000	\$200,000
General storm sewer and catch basin repairs	\$20,000	\$20,000	\$20,000	\$20,000	\$20,000	\$100,000
Construction Site Erosion and Sediment Control Implementation	\$8,000	\$8,000	\$8,000	\$8,000	\$8,000	\$40,000
Post Construction Stormwater Management and Implementation	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$30,000
Illicit Discharge Implementation	\$6,000	\$6,000	\$6,000	\$6,000	\$6,000	\$30,000

#### 14.17 Funding Sources

The City of Anoka will fund the plans and programs herein primarily through use of its stormwater utility fund. If appropriate, the city may also consider grant monies that may be available from various other agencies, including the MPCA, the MnDNR, and BWSR and may partner with the LRRWMO to obtain the funds. Certain activities, such as construction site erosion control and post construction stormwater, may be funded by developer escrows. Improvements and BMPs on private property as a result of development and/or redevelopment will be funded by developers.

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## **15.0 Technical Methods and Assumptions**

### **15.1 General Overview**

The need for stormwater modeling has increased as new construction changes the usage of the surrounding land. For example, replacing a stand of trees with a parking lot has a dramatic effect on runoff, greatly increasing its total volume and the rate of runoff. The potential for erosion and flooding is increased in areas downstream of construction. To prevent such damage, the runoff must be predicted before construction so that suitable steps can be taken to handle the runoff in a safe and effective manner.

HydroCAD, a hydrologic computer modeling program, was used for the watersheds modeled in this management plan. The three watersheds that were modeled are as follows: Mississippi River East Watershed, Mississippi River West Watershed, and Rum River North Watershed. Hydraulic evaluations of pipes, ditches, and other structures were performed using standard engineering procedures. The Flood Insurance Study for the Rum River and the Mississippi River was adopted by this plan and was not restudied.

To determine the critical flood levels for each subwatershed, runoff volumes from pervious and impervious areas were determined for the 24-hour, 100-year storm event.

The remaining seven watersheds which were previously modeled in detail in 2000, were not remodeled. The methodology for the seven watersheds previously modeled is discussed in Section 13.0 of the City of Anoka Stormwater Plan, August 2000, by Barr Engineering Company.

### **15.2 Hydrologic Model (HydroCAD)**

Stormwater modeling and drainage design techniques can be divided into two basic groups:

- 1) Steady-state (constant flow) methods, such as the Rational Method as applied to storm sewer pipe networks.
- 2) Hydrograph generation and routing procedures designed to simulate the time varying nature of actual runoff.

Although HydroCAD can be used for steady-state designs, it is designed primarily as a hydrograph generation and routing program. It is based primarily on hydrology techniques developed by the Soil Conservation Service (SCS) combined with standard hydraulic calculations. For any given storm these techniques are used to generate hydrographs throughout a watershed.

### **15.2.1 Runoff Volumes**

The volume and rate of runoff from a subwatershed are affected by the runoff curve number (CN), soil group classification and antecedent soil moisture condition.

The soil group classification used for this study is Group B. Soil Group B contains shallow, sandy loams. The antecedent soil moisture condition (AMC) is a measure of how much rain falls five days before a 24-hour storm. For this study, AMC II was used. The total 5 day antecedent rainfall, for AMC II, is 0.5-1.1" during the dormant season and 1.4 – 2.1" during the growing season. From this information a CN, which indicates the percentage of runoff from a subwatershed, can be determined. For this study, the CN's range from 69-100. With the CN and the rainfall distribution and duration information, the runoff from each subwatershed can be determined using the SCS TR-20 method.

### **15.2.2 Rainfall Distribution and Duration**

Design storm characteristics must be determined for the model. This requires determining both the amount of precipitation and the intensity distribution of the precipitation. Atlas 14, Volume 8 as published by the National Oceanic and Atmospheric Administration (NOAA) is used to determine the amount of precipitation.

The SCS Type II rainfall intensity distribution was used for this study. The SCS Type II distribution is used for the continental U.S. east of the Sierra Nevada and Cascade Mountains in California, Oregon, and Washington. The Type II distribution is based on the generalized rainfall depth-duration frequency relationships shown in technical publications of the Weather Bureau.

### **15.2.3 Flood Elevations**

After the hydrographs are created for each subwatershed, they are routed through storage areas (wetlands, lakes, detention ponds, etc.) and conveyance systems (storm sewers and ditches) and combined with other hydrographs at junctions with other subwatersheds. Specific characteristics

of the water body and its outlet are input into the elevation-flood storage-discharge relationship used in the routing through each water body.

The storm duration that is critical for a watershed is dependent on the watershed size and slope, the volume of storage available in the system, and the outlet capacity. The critical duration is determined by routing several different duration storms of a given frequency and determining which duration produces the greatest peak discharge or flood elevation. A small watershed with little available storage will have a critical storm of shorter duration than a large watershed with abundant storage.

The elevations reported in this plan have been derived using limited topographic information and shall not be used for the purpose of establishing flood protection standards of new or existing structures. As development/building applications are submitted, the applicants will be required to further investigate the drainage patterns to more accurately determine flood elevations using Atlas 14 precipitation amounts.

### **15.3 Water Quality**

A combination of computer models and standards will be utilized to determine if water quality goals have been met. For determining annual removal efficiencies of 60% of total phosphorous and 90% of total suspended solids a computer model that generates average annual rainfalls and removal efficiencies, such as the P8 Urban Catchment Model by William W. Walker, Jr., Ph.D. may be utilized. Alternatively, wet sedimentation basins may be designed to NURP standards as stated in Section 13.4 of this plan and infiltration BMPs can be sized to infiltrate the first inch of runoff as discussed in Section 14.3 of this plan.

For determining removal efficiencies for hydrodynamic separators, the designer shall estimate removal efficiencies of Total Suspended Solids by the use of a model, such as SHSAM developed by Barr Engineering, or other similar studies or reports.

### **16.1 Maintenance of Stormwater Facilities**

The City of Anoka stormwater system includes not only pipes and constructed basins, but also wetlands, ditches, swales, and other drainageways. In addition to more typical maintenance measures, maintenance of the stormwater system may also mean maintaining or restoring the ecological characteristics of the natural portions of the stormwater system. The City of Anoka recognizes that maintenance of the all of the city's stormwater facilities is an important part of stormwater management. Proper maintenance will ensure that the stormwater system provides the necessary flood control and water quality treatment.

### **16.2 Private Stormwater Facilities**

Owners of private storm water facilities are responsible for maintaining the facilities in proper condition, consistent with the original performance design standards. Owners of private stormwater facilities must provide the city with a maintenance plan that defines who will conduct the maintenance, the type of maintenance and the maintenance intervals and will be required to record a Maintenance Agreement against the property at the office of the Anoka County Recorder.

### **16.3 Publicly Owned Stormwater Facilities**

The City of Anoka is responsible for performing the maintenance of the stormwater facilities under city ownership. The city will conduct regular inspections of its stormwater infrastructure per MS4 Permit requirements and schedule maintenance as required. In general, the city will plan to perform maintenance on its swirl structures, hydraulic separators, and sump manholes bi-annually, unless inspections warrant an adjustment. Sediment basins will be scheduled for dredging on 15-25 years intervals.

The Minnesota Department of Transportation is responsible for maintaining road ditches and culverts along U.S. Highway 169/10. Anoka County is responsible for maintaining road ditches and culverts along C.S.A.H. 1, C.S.A.H. 18, C.S.A.H. 21, C.R. 45, C.R. 46, C.R. 53, and C.S.A.H. 66.

#### **16.4 Street Sweeping**

Street sweeping serves an important role in reducing the amount of sediment, organic matter, and solids that enter the storm sewer conveyance system and ultimately our surface waters. Sediment accumulation in the conveyance system has the potential to reduce the hydraulic capacity and increase the risk for flooding. Further, accumulation of sediment and organic matter in conveyance systems, sediment ponds and structural BMPs has a negative impact on water quality. Therefore, the city will adopt a pro-active plan to sweep streets and parking lots at least twice a year— generally once after snowmelt and again after leaf drop.

## **17.0 Amendments**

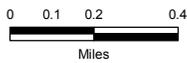
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This plan is based on information that was current at the time of plan preparation and is therefore subject to change. Changes in land use, zoning, watersheds, and drainage patterns, and revisions to governmental regulations/rules could affect all or part of this plan. As a result, the city may need to revise the plan to keep it current. The city expects that most revisions to will be minor (i.e. minor changes to the implementation program) and not require formal revision to the plan. Plan amendments, if required, will follow the procedures as outlined in Minnesota Statutes 103B.235.

# APPENDIX A



WQS = Water Quality Structure



**LEGEND**

- Existing WQS
- Proposed WQS
- ★ Proposed Pond
- Storm Sewer
- Abandoned Pipe
- Existing Basins

**FIGURE A**

**PROPOSED SYSTEM IMPROVEMENTS**

# APPENDIX B



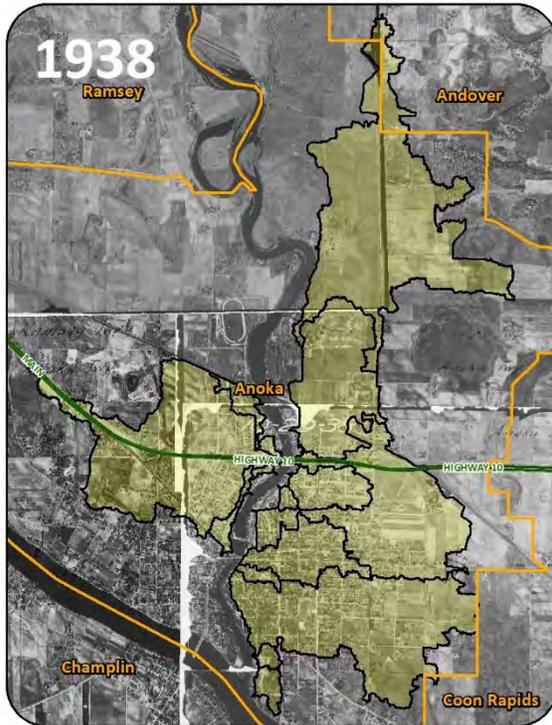
**LEGEND**

- Storm Sewer**
- Storm Sewer
- Upgrade Storm Sewer
- Proposed Storm Sewer

**FIGURE B**

**PROPOSED STORM SEWER UPGRADES**

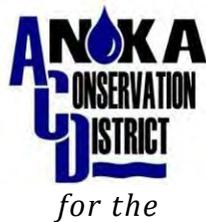
# APPENDIX C



# City of Anoka Stormwater Retrofit Analysis

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*Prepared by:*



CITY OF ANOKA AND

LOWER RUM RIVER WATERSHED MANAGEMENT ORGANIZATION

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**August 2016**

**Cover photo:** Aerial images from 1938 and 2014 showing the change in land use within the subwatersheds analyzed in this report.

**Disclaimer:** At the time of printing, this report identifies and ranks potential BMPs for selected subwatersheds in the City of Anoka that drain to the Rum River. This list of practices is not all-inclusive and does not preclude adding additional priority BMPs in the future. An updated copy of the report shall be housed at either the Anoka Conservation District or the City of Anoka.

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## Executive Summary

The City of Anoka and the Lower Rum River Watershed Management Organization (LRRWMO) contracted the Anoka Conservation District (ACD) to complete this stormwater retrofit analysis (SRA) for the purpose of identifying and ranking water quality improvement projects in selected subwatersheds that drain to the Rum River. The subwatersheds are located on the western and eastern side of the Rum River within the City of Anoka and consist of commercial, industrial, and residential land uses. Volume, total phosphorus (TP), and total suspended solids (TSS) were the target parameters analyzed.

This analysis is primarily intended to identify potential projects within the target area to improve water quality in the Rum River through stormwater retrofits. Stormwater retrofits refer to best management practices (BMPs) that are added to an already developed landscape where little open space exists. The process is investigative and creative. Stormwater retrofits can be improperly judged by the total number of projects installed or by comparing costs alone. Those approaches neglect to consider how much pollution is removed per dollar spent. In this SRA, both costs and pollutant reductions were estimated and used to calculate cost-effectiveness for each potential retrofit identified.

Water quality benefits associated with the installation of each identified project were individually modeled using the Source Loading and Management Model for Windows (WinSLAMM). WinSLAMM uses an abundance of stormwater data from the Upper-Midwest and elsewhere to quantify runoff volumes and pollutant loads from urban areas. It has detailed accounting of pollutant loading from various land uses, and allows the user to build a model “landscape”. WinSLAMM uses rainfall and temperature data from a typical year (1959 data from Minneapolis for this analysis), routing stormwater through the user’s model for each storm.

WinSLAMM estimates volume and pollutant loading based on acreage, land use, and soils information. Therefore, the volume and pollutant estimates in this report are not waste load allocations, nor does this report serve as a TMDL for the study area. The WinSLAMM model was not calibrated and was only used as an estimation tool to provide relative ranking across potential retrofit projects. Specific model inputs (e.g. pollutant probability distribution, runoff coefficient, particulate solids concentration, particle residue delivery, and street delivery files) are detailed in Appendix A – Modeling Methods.

The costs associated with project design, administration, promotion, land acquisition, opportunity costs, construction oversight, installation, and maintenance were estimated. The total costs over the assumed effective life of each project were then divided by the modeled benefits over the same time period to enable ranking by cost-effectiveness.

A variety of stormwater retrofit approaches were identified. They included:

- Bioretention,
- Hydrodynamic devices,
- Permeable Pavement,
- Iron enhanced sand filter pond benches,
- Existing stormwater pond modifications,
- New stormwater ponds, and

- Water reuse.

If all of these practices were installed, significant volume and pollutant reductions could be accomplished. However, funding limitations and landowner interest make this goal unlikely. Instead, it is recommended that projects be installed in order of cost effectiveness (pounds of pollution reduced per dollar spent). Other factors, including a project's educational value/visibility, construction timing, total cost, or non-target pollutant reduction also affect project installation decisions and need to be weighed by resource managers when selecting projects to pursue.

For each type of recommended retrofit, conceptual siting is provided in the project profiles section. The intent of these figures is to provide an understanding of the approach. If a project is selected, site-specific designs must be prepared. In addition, many of the proposed retrofits (e.g. new ponds) will require a more detailed feasibility analysis and engineered plan sets if selected. This typically occurs after committed partnerships are formed to install the project. Committed partnerships must include willing landowners, both public and private.

The 1,474-acre target study area was consolidated into four drainage networks and 17 catchments. Based on WinSLAMM model results, the total study area contributes an estimated 941 acre-feet of runoff, 299,153 pounds of TSS, and 807 pounds of TP annually.

The tables in the Project Ranking and Selection section (pages 13-18) summarize potential projects ranked by cost effectiveness with respect to either TP or TSS. Potential projects are organized from most cost effective to least based on pollutants removed.

Installation of projects in series will result in lower total treatment than the simple sum of treatment achieved by the individual projects due to treatment train effects. Reported treatment levels are dependent upon optimal site selection and sizing. More detail about each project can be found in the catchment profile pages of this report. Projects that were deemed unfeasible due to prohibitive size, number, or expense were not included in this report.

## Document Organization

This document is organized into five sections, plus references and appendices. Each section is briefly discussed below.

### Background

The background section provides a brief description of the landscape characteristics within the study area.

### Analytical Process and Elements

The analytical process and elements section overviews the procedures that were followed when analyzing the subwatershed. It explains the processes of retrofit scoping, desktop analysis, field investigation, modeling, cost/treatment analysis, project ranking, and project selection. Refer to Appendix A – Modeling Methods for a detailed description of the modeling methods.

### Project Ranking and Selection

The project ranking and selection section describes the methods and rationale for how projects were ranked. Local resource management professionals will be responsible to select and pursue projects, taking into consideration the many possible ways to prioritize projects. Several considerations in addition to project cost-effectiveness for prioritizing installation are included. Project funding opportunities may play a large role in project selection, design, and installation.

This section also ranks stormwater retrofit projects across all catchments to create a prioritized project list. The list is sorted by the amount of pollutant removed by each project over 30 years. The final cost per pound treatment value includes installation and maintenance costs over the estimated life of the project. If a practice's effective life was expected to be less than 30 years, rehabilitation or reinstallation costs were included in the cost estimate. There are many possible ways to prioritize projects, and the list provided in this report is merely a starting point.

### BMP Descriptions

For each type of project included in this report, there is a description of the rationale for including that type of project, the modeling method employed, and the cost calculations used to estimate associated installation and maintenance expenses.

### Catchment Profiles

The drainage areas targeted for this analysis were consolidated into 17 catchments distributed between four drainage networks and assigned unique identification numbers. For each catchment, the following information is detailed:

#### Drainage Network

Catchments were grouped into drainage networks based on their geographic distribution throughout the study area and drainage to a common waterbody (i.e. the Rum River). The drainage networks were used to further subdivide the report to aid with organization and clarity.

**Catchment Description**

Within each catchment profile is a table that summarizes basic catchment information including acres, land cover, parcels, and estimated annual pollutant and volume loads under existing conditions. Existing conditions included notable stormwater treatment practices for which information was available from the City of Anoka. Small, site-specific practices (e.g. rain-leader disconnect rain gardens) were not included in the existing conditions model. A brief description of the land cover, stormwater infrastructure, and any other important general information is also described in this section. Notable existing stormwater practices are explained and their estimated effectiveness presented.

**Retrofit Recommendations**

Retrofit recommendations are presented for each catchment and include a description of the proposed BMP, cost-effectiveness table including modeled volume and pollutant reductions, and an overview map showing the contributing drainage area for each BMP.

**References**

This section identifies various sources of information synthesized to produce the protocol used in this analysis.

**Appendices**

This section provides supplemental information and/or data used during the analysis.

## Background

Many factors are considered when choosing which subwatersheds to analyze for stormwater retrofits. Water quality monitoring data, non-degradation report modeling, and TMDL studies are just a few of the resources available to help determine which water bodies are a priority. Stormwater retrofit analyses supported by a Local Government Unit with sufficient capacity (staff, funding, available GIS data, etc.) to greater facilitate the process also rank highly. For some communities a stormwater retrofit analysis complements their MS4 stormwater permit. The focus is always on a high priority waterbody.

The drainage areas studied for this analysis are located in the City of Anoka and discharge to the Rum River. The total area of the 17 catchments is 1,474 acres. Six of the catchments lie on the western side of the Rum River and are roughly bound by Greenhaven Road to the north and Park Street to the south. The remaining eleven catchments are on the eastern side of the Rum River. These catchments are bound roughly by Bunker Lake Boulevard to the north and East River Road to the south.

These catchments were selected for analysis because they drain to a high priority waterbody, and existing treatment in many of the catchments could be supplemented. Stormwater retrofits may provide cost-effective options for additional treatment of runoff, thereby improving water quality in the Rum River.

The catchments analyzed are urbanized. Development throughout the City of Anoka has resulted in the installation of subsurface drainage systems (i.e. stormwater infrastructure) to convey stormwater runoff, which increased due to the coverage of impervious surfaces throughout the catchments. The runoff generated within the areas targeted for this analysis is still conveyed to the Rum River, as it was historically. However, the runoff is now captured by catch basins and directed underground before being discharged to the Rum River via stormwater pipes.

Stormwater runoff from impervious surfaces can carry a variety of pollutants. While stormwater treatment to remove these pollutants is adequate in some areas, other areas were built prior to modern-day stormwater treatment technologies and requirements. The City of Anoka and LRRWMO contracted the ACD to complete this SRA for the purpose of identifying and analyzing projects to improve the quality of stormwater runoff to the Rum River. Overall subwatershed loading of TP, TSS, and stormwater volume were estimated for selected drainage areas. Proposed retrofits were modeled to estimate each practice's capability for removing pollutants and reducing volume. Finally, each project was ranked based on the estimated cost-effectiveness of the project to reduce pollutants.

## Analytical Process and Elements

This stormwater retrofit analysis is a watershed management tool to identify and prioritize potential stormwater retrofit projects by performance and cost-effectiveness. This process helps maximize the value of each dollar spent. The process used for this analysis is outlined in the following pages and was modified from the Center for Watershed Protection's Urban Stormwater Retrofit Practices, Manuals 2 and 3 (Schueler & Kitchell, 2005 and Schueler et al. 2007). Locally relevant design considerations were also incorporated into the process (Technical Documents, Minnesota Stormwater Manual, 2014).

**Scoping** includes determining the objectives of the retrofits (volume reduction, target pollutant, etc.) and the level of treatment desired. It involves meeting with local stormwater managers, city staff and watershed management organization members to determine the issues in the subwatershed. This step also helps to define preferred retrofit treatment options and retrofit performance criteria. In order to create a manageable area to analyze in large subwatersheds, a focus area may be determined.

In this analysis, the focus areas were the contributing drainage areas to storm sewer outfalls that discharge directly into the Rum River. More specifically, outfalls with limited existing treatment were selected. Included are areas of residential, commercial, industrial, and institutional land uses. Existing stormwater infrastructure maps and topography data were used to determine drainage boundaries for the 17 catchments included in this analysis. Street reconstruction plan sets were also digitized by ACD where updated stormwater infrastructure GIS data was lacking.

The targeted pollutants for this study were TP and TSS, though volume was also estimated and reported. Volume of stormwater was tracked throughout this study because it is necessary for pollutant loading calculations and potential retrofit project considerations. Table 1 describes the target pollutants and their role in water quality degradation. Projects that effectively reduce loading of multiple target pollutants can provide greater immediate and long-term benefits.

**Table 1: Target Pollutants**

Target Pollutant	Description
<b>Total Phosphorus (TP)</b>	Phosphorus is a nutrient essential to plant growth and is commonly the factor that limits the growth of plants in surface water bodies. TP is a combination of particulate phosphorus (PP), which is bound to sediment and organic debris, and dissolved phosphorus (DP), which is in solution and readily available for plant growth (active).
<b>Total Suspended Solids (TSS)</b>	Very small mineral and organic particles that can be dispersed into the water column due to turbulent mixing. TSS loading can create turbid and cloudy water conditions and carry with it PP. As such, reductions in TSS will also result in TP reductions.
<b>Volume</b>	Higher runoff volumes and velocities can carry greater amounts of TSS to receiving water bodies. It can also exacerbate in-stream erosion, thereby increasing TSS loading. As such, reductions in volume may reduce TSS loading and, by extension, TP loading. However, in-stream erosion is not an issue in these catchments because stormwater is piped directly to the Rum River.

**Desktop analysis** involves computer-based scanning of the subwatershed for potential retrofit catchments and/or specific sites. This step also identifies areas that do not need to be analyzed because of existing stormwater treatment or disconnection from the target water body. Accurate GIS data are

extremely valuable in conducting the desktop retrofit analysis. Some of the most important GIS layers include: 2-foot or finer topography (Light Detection and Ranging [LiDAR] was used for this analysis), surface hydrology, soils, watershed/subwatershed boundaries, parcel boundaries, high-resolution aerial photography, and the stormwater drainage infrastructure (with invert elevations).

**Field investigation** is conducted after potential retrofits are identified in the desktop analysis to evaluate each site and identify additional opportunities. During the investigation, the drainage area and surface stormwater infrastructure mapping data were verified. Site constraints were assessed to determine the most feasible retrofit options as well as eliminate sites from consideration. The field investigation may have also revealed additional retrofit opportunities that could have gone unnoticed during the desktop search.

**Modeling** involves assessing multiple scenarios to estimate pollutant loading and potential reductions by proposed retrofits. WinSLAMM (version 10.2.0), which allows routing of multiple catchments and stormwater treatment practices, was used for this analysis. This is important for estimating treatment train effects associated with multiple BMPs in series. Furthermore, it allows for estimation of volume and pollutant loading at the outfall point to the waterbody, which is the primary point of interest in this type of study.

WinSLAMM estimates volume and pollutant loading based on acreage, land use, and soils information. Therefore, the volume and pollutant estimates in this report are not waste load allocations, nor does this report serve as a TMDL for the study area. The WinSLAMM model was not calibrated and was only used as an estimation tool to provide relative ranking across potential retrofit projects. Soils throughout the study area were predominantly sandy based on the information available in the Anoka County soil survey. Specific model inputs (e.g. pollutant probability distribution, runoff coefficient, particulate solids concentration, particle residue delivery, and street delivery files) are detailed in Appendix A – Modeling Methods.

The initial step was to create a “base” model which estimates pollutant loading from each catchment in its present-day state without taking into consideration any existing stormwater treatment. To accurately model the land uses in each catchment, drainage area delineations were completed using the watershed delineation tool in ArcSWAT. The drainage areas were then consolidated into catchments using geographic information systems (specifically, ArcGIS). Land use data (based on 2010 Metropolitan Council land use file) were used to calculate acreages of each land use type within each catchment. Each land use polygon classification was compared with 2014 aerial photography, the most recent available at the time of this analysis, and corrected if land use had changed since 2010. This process addressed recent development throughout the study area by reclassifying land use types accordingly. Soil types throughout the subwatershed were modeled as sand and silt in this analysis based on the information available in the Anoka County soil survey. Entering the acreages, land use, and soil data into WinSLAMM ultimately resulted in a model that included estimates of the acreage of each type of source area (roof, road, lawn, etc.) in each catchment.

Once the “base” model was established, an “existing conditions” model was created by incorporating notable existing stormwater treatment practices in the catchment for which data were available from the City of Anoka (Figure 1 and Figure 2). For example, street cleaning with mechanical or vacuum street sweepers, stormwater treatment ponds, hydrodynamic devices, and others were included in the “existing conditions” model if information was available.

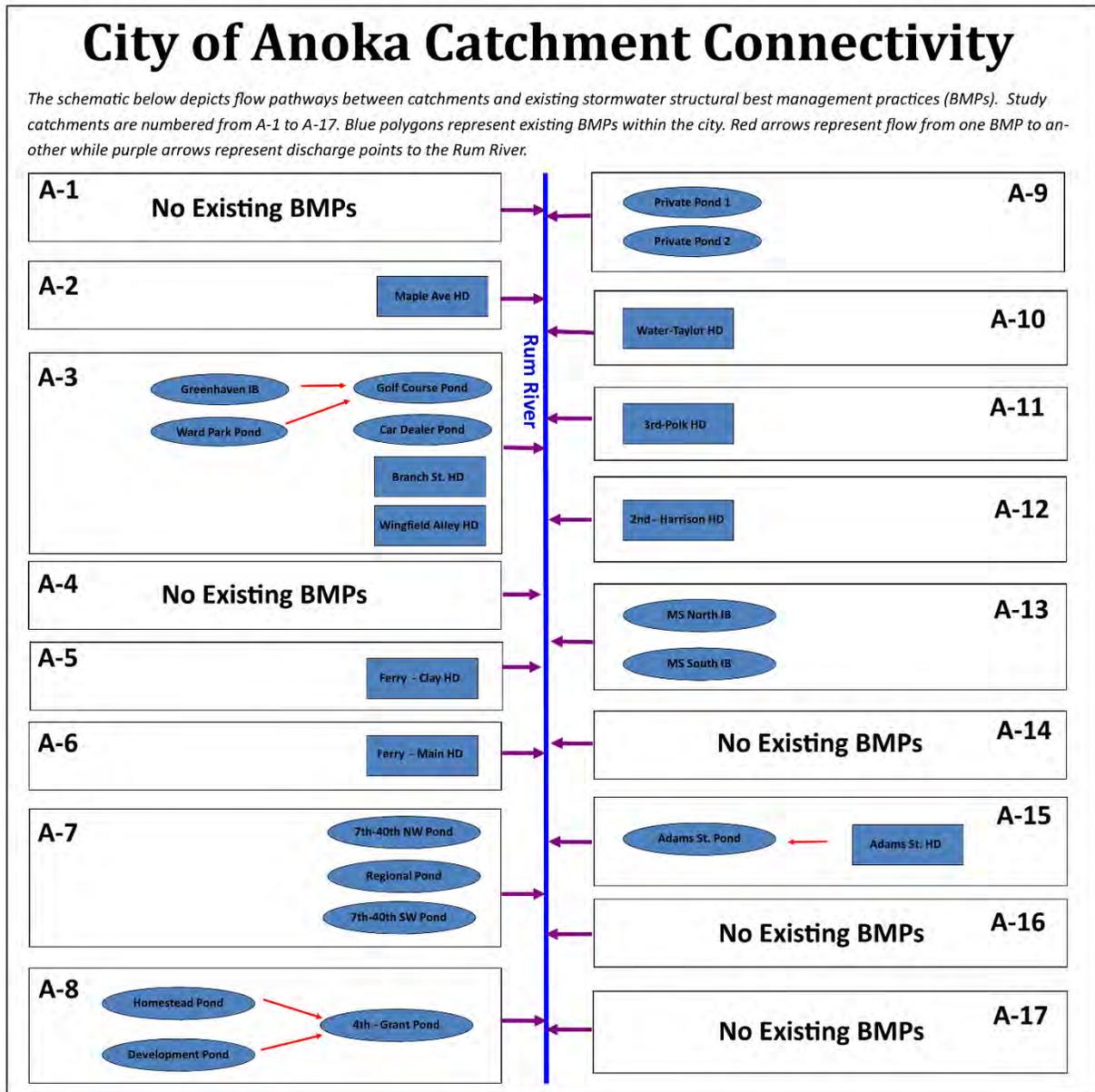


Figure 1: Schematic showing the existing BMPs in each catchment and their connectivity.

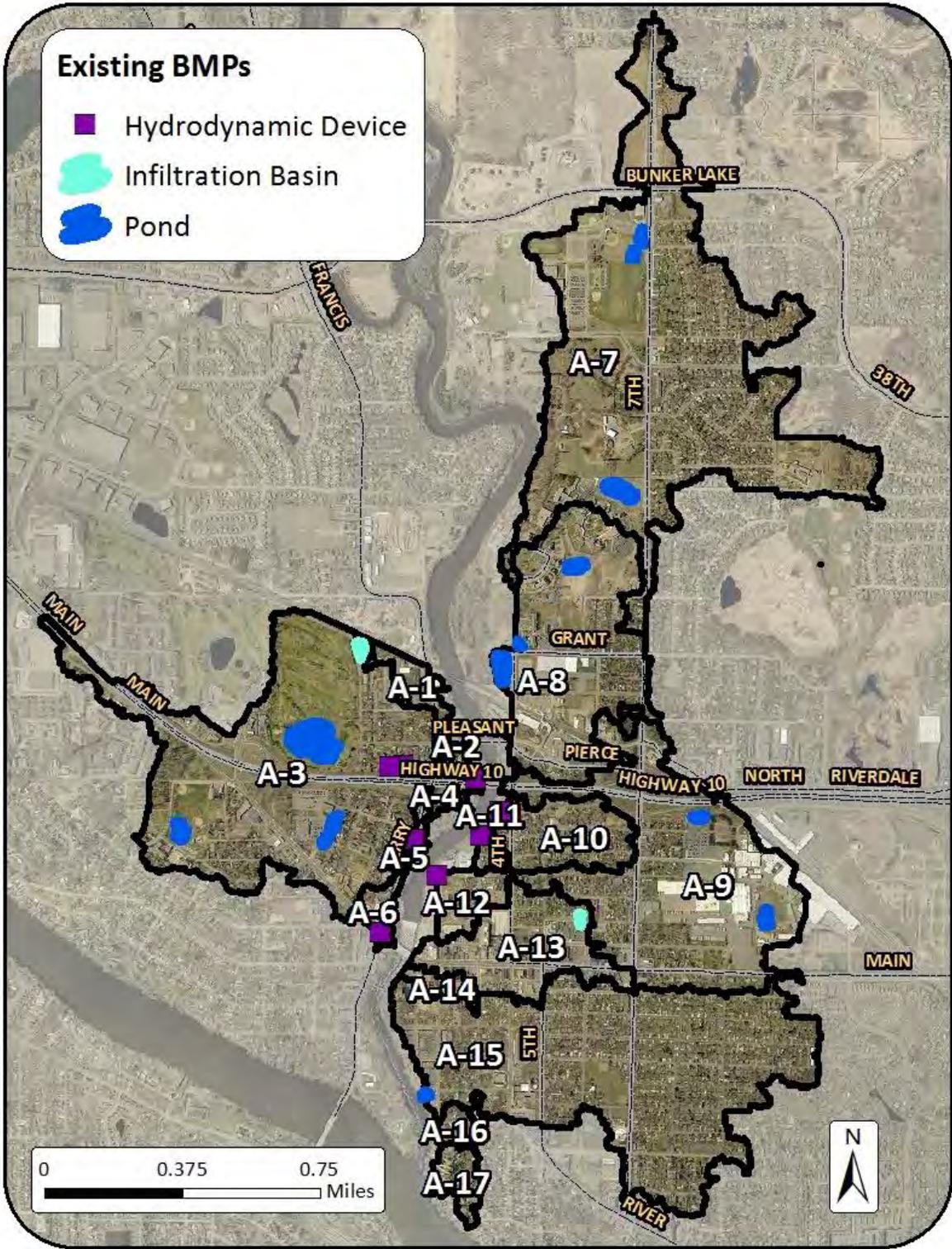


Figure 2: Study area map showing existing BMPs included in the WinSLAMM model. Street sweeping is not shown on the map but was included throughout the study area.

Finally, each proposed stormwater retrofit practice was added individually to the “existing conditions” model and pollutant reductions were estimated. Because neither a detailed design of each practice nor in-depth site investigation was completed, a generalized design for each practice was used. Whenever possible, site-specific parameters were included. Design parameters were modified to obtain various levels of treatment. It is worth noting that each practice was modeled individually, and the benefits of projects may not be additive, especially if serving the same area (i.e. treatment train effects). Reported treatment levels are dependent upon optimal site selection and sizing. Additional information on the WinSLAMM models can be found in Appendix A – Modeling Methods.

**Cost estimating** is essential for the comparison and ranking of projects, development of work plans, and pursuit of grants and other funds. All estimates were developed using 2016 dollars. Costs throughout this report were estimated using a multitude of sources. Costs were derived from The Center for Watershed Protection’s Urban Subwatershed Restoration Manuals (Schueler & Kitchell, 2005 and Schueler et al. 2007) and recent installation costs and cost estimates provided to the ACD by personal contacts. Cost estimates were annualized costs that incorporated the elements listed below over a 30-year period.

**Project promotion and administration** includes local staff efforts to reach out to landowners, administer related grants, and complete necessary administrative tasks.

**Design** includes site surveying, engineering, and construction oversight.

**Land or easement acquisition** cover the cost of purchasing property or the cost of obtaining necessary utility and access easements from landowners.

**Construction** calculations are project specific and may include all or some of the following; grading, erosion control, vegetation management, structures, mobilization, traffic control, equipment, soil disposal, and rock or other materials.

**Maintenance** includes annual inspections and minor site remediation such as vegetation management, structural outlet repair and cleaning, and washout repair.

In cases where promotion to landowners is important, such as rain gardens, those costs were included as well. In cases where multiple, similar projects are proposed in the same locality, promotion and administration costs were estimated using a non-linear relationship that accounted for savings with scale. Design assistance from an engineer is assumed for practices in-line with the stormwater conveyance system, involving complex stormwater treatment interactions, or posing a risk for upstream flooding. It should be understood that no site-specific construction investigations were done as part of this stormwater retrofit analysis, and therefore cost estimates account for only general site considerations. Detailed feasibility analyses may be necessary for some projects.

**Project ranking** is essential to identify which projects could be pursued to achieve water quality goals. Project ranking tables are presented based on cost per pound of TP and per 1,000 pounds of TSS removed.

**Project selection** involves considerations other than project ranking, including but not limited to total cost, treatment train effects, social acceptability, and political feasibility.

## Project Ranking and Selection

The intent of this analysis is to provide the information necessary to enable local natural resource managers to successfully secure funding for the most cost-effective projects to achieve water quality goals. This analysis ranks potential projects by cost-effectiveness to facilitate project selection. There are many possible ways to prioritize projects, and the list provided in this report is merely a starting point. Local resource management professionals will be responsible to select projects to pursue. Several considerations in addition to project cost-effectiveness for prioritizing installation are included.

### Project Ranking

If all identified practices were installed (Figure 3), significant pollution reduction could be accomplished. However, funding limitations and landowner interest will likely be limiting factors for implementation. The tables on the following pages rank all modeled projects by cost-effectiveness.

Projects were ranked in two ways:

- 1) Cost per pound of total phosphorus removed (Table 2, Table 3, and Table 4) and
- 2) Cost per 1,000 pounds of total suspended solids removed (Table 5, Table 6, and Table 7).

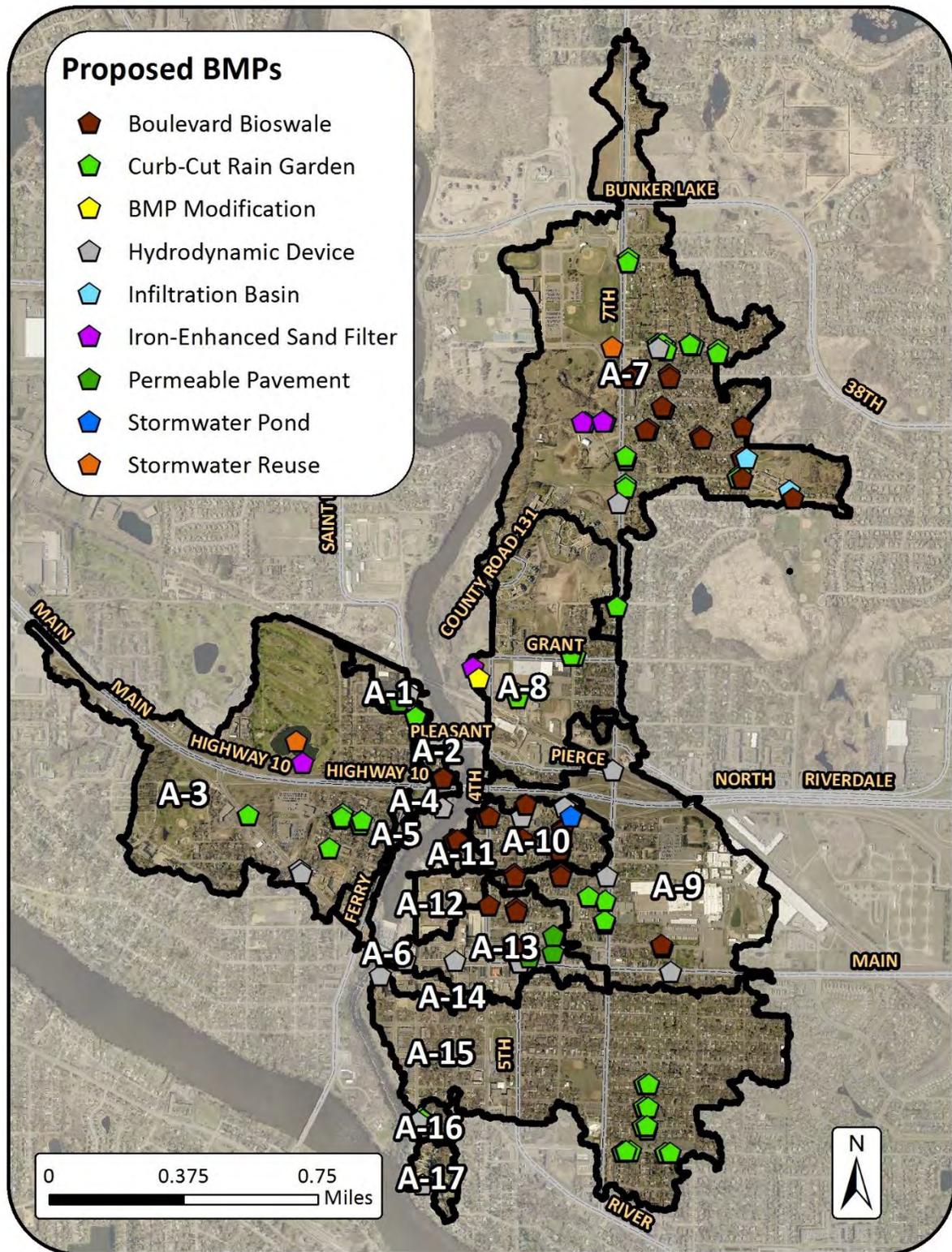


Figure 3: Study area map showing the proposed retrofits included in this report.

**Table 2: Cost-effectiveness of retrofits with respect to TP reduction. Projects ranked 1 – 16 are shown on this table. TSS and volume reductions are also shown. For more information on each project refer to either the Catchment Profile or BMP Descriptions pages in this report. Volume and pollutant reduction benefits cannot be summed with other projects that provide treatment for the same source area.**

Project Rank	Project ID	Page Number	Retrofit Type	Retrofit Location	Catchment	TP Reduction (lb/yr)	TSS Reduction (lb/yr)	Volume Reduction (ac-ft/yr)	Probable Project Cost	Estimated Annual Operations & Maintenance	Estimated cost/lb-TP/year (30-year) <sup>1</sup>
1	7-H1	73	New Pond	7th Ave.	A-7	111.6	54,558	0.9	\$802,138.00	\$5,500.00	\$289.00
2	7-D	69	Infiltration Basin	Colfax Ave. and Blackoaks Ln.	A-7	9.6	3,256	8.1	\$118,796.00	\$225.00	\$436.00
3	7-H2	74	New Pond	7th Ave.	A-7	31.5	13,452	0.4	\$360,484.00	\$1,800.00	\$439.00
4	7-E	70	Infiltration Basin	Sunny Ln.	A-7	1.7	676	1.8	\$22,796.00	\$225.00	\$579.00
5	10-C	97	Infiltration Basin	5th Ave. and Polk St.	A-10	2.6	808	2.1	\$43,796.00	\$225.00	\$648.00
6	7-I1	75	IESF Bench	7th Ave.	A-7	26.6	0	0	\$580,991.00	\$4,591.00	\$902.00
7	16-A	128	Curb-Cut Rain Garden	Washington St.	A-16	0.5-1.0	157-315	0.4-0.8	\$8,982-\$17,234	\$225-\$450	\$1,024-\$1,049
8	1-A	38	Curb-Cut Rain Garden	Ferry St. and Front Ave.	A-1	0.5	187	0.5	\$8,982.00	\$225.00	\$1,049.00
9	3-A	48	Curb-Cut Rain Garden	Various locations in catchment	A-3	0.5-3.5	157-1,089	0.4-2.7	\$15,844-\$65,356	\$225-\$1,575	\$1,072-\$1,506
10	7-A	66	Curb-Cut Rain Garden	Various locations in catchment	A-7	0.5-8.1	153-2,539	0.4-6.2	\$15,844-\$147,876	\$225-\$3,825	\$1,081-\$1,506
11	9-A	87	Curb-Cut Rain Garden	Various locations in catchment	A-9	0.5-2.0	155-623	0.4-1.5	\$15,844-\$40,600	\$225-\$900	\$1,127-\$1,506
12	8-B	81	Pond Modification	4th Ave. and Grant St.	A-8	10.5	6,443	0	\$330,840-\$690,840	\$1,300.00	\$1,174-\$2,317
13	15-A	125	Curb-Cut Rain Garden	Various locations in catchment	A-15	0.4-4.4	135-1,343	0.4-3.7	\$15,844-\$90,112	\$225-\$2,250	\$1,194-\$1,883
14	3-D	51	IESF Bench	Green Haven Golf Course Pond	A-3	10.4	0	0	\$282,955.00	\$3,214.00	\$1,216.00
15	3-E	52	Stomwater Reuse	Green Haven Golf Course Pond	A-3	18.2	3,409	46.4	\$608,760.00	\$3,000.00	\$1,280.00
16	8-A	80	Curb-Cut Rain Garden	Various locations in catchment	A-8	0.7-0.8	190-301	0.7-1.1	\$17,234.00	\$450.00	\$1,281-\$1,464

<sup>1</sup> [(Probable Project Cost) + 30\*(Annual O&M)] / [30\*(Annual TP Reduction)]

**Table 3: Cost-effectiveness of retrofits with respect to TP reduction. Projects ranked 17 – 31 are shown on this table. TSS and volume reductions are also shown. For more information on each project refer to either the Catchment Profile or BMP Descriptions pages in this report. Volume and pollutant reduction benefits cannot be summed with other projects that provide treatment for the same source area.**

Project Rank	Project ID	Page Number	Retrofit Type	Retrofit Location	Catchment	TP Reduction (lb/yr)	TSS Reduction (lb/yr)	Volume Reduction (ac-ft/yr)	Probable Project Cost	Estimated Annual Operations & Maintenance	Estimated cost/lb-TP/year (30-year) <sup>1</sup>
17	8-C	82	IESF Bench	4th Ave. and Grant St.	A-8	7.2	0	0	\$282,955.00	\$1,607.00	\$1,534.00
18	7-I2	76	IESF Bench	7th Ave.	A-7	7.2	0	0	\$305,875.00	\$1,837.00	\$1,669.00
19	7-G	72	Stomwater Reuse	38th Ave. and 7th Ave.	A-7	17.5	5,987	18.7	\$958,760.00	\$3,000.00	\$1,998.00
20	10-E	99	New Pond	Rudy Johnson Park	A-10	4	1,712	0.1	\$239,925.00	\$300.00	\$2,074.00
21	9-E	91	Boulevard Bioswale	Various locations in catchment	A-9	0.2	112	0.2	\$8,526.00	\$225.00	\$2,131.00
22	13-D	112	Hydrodynamic Device	5th Ave. and Main St.	A-13	1.4	644	0	\$109,752.00	\$630.00	\$3,063.00
23	2-A	44	Boulevard Bioswale	Maple Ave.	A-2	0.2	55	0.1	\$8,526.00	\$225.00	\$3,140.00
24	7-F	71	Boulevard Bioswale	Various locations in catchment	A-7	0.2	61	0.1	\$8,526.00	\$225.00	\$3,264.00
25	10-D	98	Boulevard Bioswale	Various locations in catchment	A-10	0.1	52	0.1	\$8,526.00	\$225.00	\$3,427.00
26	11-A	102	Boulevard Bioswale	3rd Ave.	A-11	0.1	49	0.1	\$8,526.00	\$225.00	\$3,523.00
27	7-B	67	Hydrodynamic Device	38th Ln. and 8th Ave.	A-7	1.2	491	0	\$109,752.00	\$630.00	\$3,574.00
27	9-B	88	Hydrodynamic Device	7th Ave. and Pierce St.	A-9	1.2	686	0	\$109,752.00	\$630.00	\$3,574.00
29	9-D	90	Hydrodynamic Device	Main St. and 8 1/2 Ave.	A-9	1.1	777	0	\$109,752.00	\$630.00	\$3,899.00
30	3-C	50	Hydrodynamic Device	Main St. and State Ave.	A-3	0.6	302	0	\$55,752.00	\$630.00	\$4,147.00
31	1-B	39	Hydrodynamic Device	Ferry St.	A-1	1	584	0	\$109,752.00	\$630.00	\$4,288.00
31	9-C	89	Hydrodynamic Device	7th Ave. and Harrison St.	A-9	1	407	0	\$109,752.00	\$630.00	\$4,288.00

<sup>1</sup> [(Probable Project Cost) + 30\*(Annual O&M)] / [30\*(Annual TP Reduction)]

**Table 4: Cost-effectiveness of retrofits with respect to TP reduction. Projects ranked 33 – 48 are shown on this table. TSS and volume reductions are also shown. For more information on each project refer to either the Catchment Profile or BMP Descriptions pages in this report. Volume and pollutant reduction benefits cannot be summed with other projects that provide treatment for the same source area.**

Project Rank	Project ID	Page Number	Retrofit Type	Retrofit Location	Catchment	TP Reduction (lb/yr)	TSS Reduction (lb/yr)	Volume Reduction (ac-ft/yr)	Probable Project Cost	Estimated Annual Operations & Maintenance	Estimated cost/lb-TP/year (30-year) <sup>1</sup>
33	13-C	111	Hydrodynamic Device	Main St. and 5th Ave.	A-13	0.9	427	0	\$109,752.00	\$630.00	\$4,765.00
34	13-A	109	Hydrodynamic Device	Main St. and 1st Ave.	A-13	0.5	272	0	\$55,752.00	\$630.00	\$4,977.00
34	13-B	110	Hydrodynamic Device	Main St. and 3rd Ave.	A-13	0.5	285	0	\$55,752.00	\$630.00	\$4,977.00
34	3-B	49	Hydrodynamic Device	Main St. and State Ave.	A-3	0.5	280	0	\$55,752.00	\$630.00	\$4,977.00
37	13-H	116	Boulevard Bioswale	Various locations in catchment	A-13	0.1	22	0.1	\$8,526.00	\$225.00	\$5,092.00
38	4-A	55	Hydrodynamic Device	Maple Ln.	A-4	0.3	113	0	\$28,752.00	\$630.00	\$5,295.00
39	14-A	121	Hydrodynamic Device	Parking lot off 1st Ave.	A-14	0.8	385	0	\$109,752.00	\$630.00	\$5,361.00
39	7-C	68	Hydrodynamic Device	7th Ave.	A-7	0.8	383	0	\$109,752.00	\$630.00	\$5,361.00
41	17-A	133	Hydrodynamic Device	Oakwood Dr.	A-17	0.6	244	0	\$109,752.00	\$630.00	\$7,147.00
42	10-A	95	Hydrodynamic Device	6th Ave. and Taylor St.	A-10	0.5	211	0	\$109,752.00	\$630.00	\$8,577.00
43	10-B	96	Hydrodynamic Device	5th Ave. and Taylor St.	A-10	0.5	195	0	\$109,752.00	\$630.00	\$8,577.00
44	16-B	129	Hydrodynamic Device	Oakwood Dr. and Washington St.	A-16	0.4	163	0	\$109,752.00	\$630.00	\$10,721.00
45	13-F	114	Permeable Pavement	St. Stephen's Catholic School	A-13	1.6	562	1.6	\$282,796.00	\$20,925.00	\$18,970.00
46	13-E	113	Permeable Pavement	St. Stephen's Catholic Church	A-13	0.9	320	0.9	\$162,796.00	\$11,925.00	\$19,279.00
47	13-G	115	Permeable Pavement	St. Stephen's Catholic School	A-13	1.9	672	1.9	\$343,796.00	\$25,500.00	\$19,453.00
48	1-C	40	Permeable Pavement	Anoka-Hennepin Education Center	A-1	2.9	1,325	3.5	\$552,656.00	\$41,165.00	\$20,547.00

<sup>1</sup> [(Probable Project Cost) + 30\*(Annual O&M)] / [30\*(Annual TP Reduction)]

**Table 5: Cost-effectiveness of retrofits with respect to TSS reduction. Projects ranked 1 – 16 are shown on this table. TP and volume reductions are also shown. For more information on each project refer to either the Catchment Profile or BMP Descriptions pages in this report. Volume and pollutant reduction benefits cannot be summed with other projects that provide treatment for the same source area.**

Project Rank	Project ID	Page Number	Retrofit Type	Retrofit Location	Catchment	TP Reduction (lb/yr)	TSS Reduction (lb/yr)	Volume Reduction (ac-ft/yr)	Probable Project Cost	Estimated Annual Operations & Maintenance	Estimated cost/ 1,000lb-TSS/year (30-year) <sup>1</sup>
1	7-H1	73	New Pond	7th Ave.	A-7	111.6	54,558	0.9	\$802,138.00	\$5,500.00	\$591.00
2	7-H2	74	New Pond	7th Ave.	A-7	31.5	13,452	0.4	\$360,484.00	\$1,800.00	\$1,027.00
3	7-D	69	Infiltration Basin	Colfax Ave. and Blackoaks Ln.	A-7	9.6	3,256	8.1	\$118,796.00	\$225.00	\$1,285.00
4	7-E	70	Infiltration Basin	Sunny Ln.	A-7	1.7	676	1.8	\$22,796.00	\$225.00	\$1,457.00
5	8-B	81	Pond Modification	4th Ave. and Grant St.	A-8	10.5	6,443	0	\$330,840-\$690,840	\$1,300.00	\$1,913-\$3,776
6	10-C	97	Infiltration Basin	5th Ave. and Polk St.	A-10	2.6	808	2.1	\$43,796.00	\$225.00	\$2,085.00
7	1-A	38	Curb-Cut Rain Garden	Ferry St. and Front Ave.	A-1	0.5	187	0.5	\$8,982.00	\$225.00	\$2,804.00
8	16-A	128	Curb-Cut Rain Garden	Washington St.	A-16	0.5-1.0	157-315	0.4-0.8	\$8,982-\$17,234	\$225-\$450	\$3,252-\$3,340
9	8-A	80	Curb-Cut Rain Garden	Various locations in catchment	A-8	0.7-0.8	190-301	0.7-1.1	\$17,234.00	\$450.00	\$3,404-\$5,392
10	3-A	48	Curb-Cut Rain Garden	Various locations in catchment	A-3	0.5-3.5	157-1,089	0.4-2.7	\$15,844-\$65,356	\$225-\$1,575	\$3,447-\$4,797
11	7-A	66	Curb-Cut Rain Garden	Various locations in catchment	A-7	0.5-8.1	153-2,539	0.4-6.2	\$15,844-\$147,876	\$225-\$3,825	\$3,448-\$4,922
12	9-A	87	Curb-Cut Rain Garden	Various locations in catchment	A-9	0.5-2.0	155-623	0.4-1.5	\$15,844-\$40,600	\$225-\$900	\$3,617-\$4,859
13	15-A	125	Curb-Cut Rain Garden	Various locations in catchment	A-15	0.4-4.4	135-1,343	0.4-3.7	\$15,844-\$90,112	\$225-\$2,250	\$3,912-\$5,579
14	9-E	91	Boulevard Bioswale	Various locations in catchment	A-9	0.2	112	0.2	\$8,526.00	\$225.00	\$4,561.00
15	10-E	99	New Pond	Rudy Johnson Park	A-10	4	1,712	0.1	\$239,925.00	\$300.00	\$4,847.00
16	9-D	90	Hydrodynamic Device	Main St. and 8 1/2 Ave.	A-9	1.1	777	0	\$109,752.00	\$630.00	\$5,519.00

<sup>1</sup> [(Probable Project Cost) + 30\*(Annual O&M)] / [30\*(Annual TSS Reduction/1,000)]

**Table 6: Cost-effectiveness of retrofits with respect to TSS reduction. Projects ranked 17 – 32 are shown on this table. TP and volume reductions are also shown. For more information on each project refer to either the Catchment Profile or BMP Descriptions pages in this report. Volume and pollutant reduction benefits cannot be summed with other projects that provide treatment for the same source area.**

Project Rank	Project ID	Page Number	Retrofit Type	Retrofit Location	Catchment	TP Reduction (lb/yr)	TSS Reduction (lb/yr)	Volume Reduction (ac-ft/yr)	Probable Project Cost	Estimated Annual Operations & Maintenance	Estimated cost/1,000lb-TSS/year (30-year) <sup>1</sup>
17	7-G	72	Stomwater Reuse	38th Ave. and 7th Ave.	A-7	17.5	5,987	18.7	\$958,760.00	\$3,000.00	\$5,839.00
18	9-B	88	Hydrodynamic Device	7th Ave. and Pierce St.	A-9	1.2	686	0	\$109,752.00	\$630.00	\$6,251.00
19	13-D	112	Hydrodynamic Device	5th Ave. and Main St.	A-13	1.4	644	0	\$109,752.00	\$630.00	\$6,659.00
20	3-E	52	Stomwater Reuse	Green Haven Golf Course Pond	A-3	18.2	3,409	46.4	\$608,760.00	\$3,000.00	\$6,833.00
21	1-B	39	Hydrodynamic Device	Ferry St.	A-1	1	584	0	\$109,752.00	\$630.00	\$7,343.00
22	3-C	50	Hydrodynamic Device	Main St. and State Ave.	A-3	0.6	302	0	\$55,752.00	\$630.00	\$8,240.00
23	7-F	71	Boulevard Bioswale	Various locations in catchment	A-7	0.2	61	0.1	\$8,526.00	\$225.00	\$8,352.00
24	13-B	110	Hydrodynamic Device	Main St. and 3rd Ave.	A-13	0.5	285	0	\$55,752.00	\$630.00	\$8,731.00
25	7-B	67	Hydrodynamic Device	38th Ln. and 8th Ave.	A-7	1.2	491	0	\$109,752.00	\$630.00	\$8,734.00
26	3-B	49	Hydrodynamic Device	Main St. and State Ave.	A-3	0.5	280	0	\$55,752.00	\$630.00	\$8,887.00
27	13-A	109	Hydrodynamic Device	Main St. and 1st Ave.	A-13	0.5	272	0	\$55,752.00	\$630.00	\$9,149.00
28	2-A	44	Boulevard Bioswale	Maple Ave.	A-2	0.2	55	0.1	\$8,526.00	\$225.00	\$9,202.00
29	10-D	98	Boulevard Bioswale	Various locations in catchment	A-10	0.1	52	0.1	\$8,526.00	\$225.00	\$9,853.00
30	13-C	111	Hydrodynamic Device	Main St. and 5th Ave.	A-13	0.9	427	0	\$109,752.00	\$630.00	\$10,043.00
31	11-A	102	Boulevard Bioswale	3rd Ave.	A-11	0.1	49	0.1	\$8,526.00	\$225.00	\$10,342.00
32	9-C	89	Hydrodynamic Device	7th Ave. and Harrison St.	A-9	1	407	0	\$109,752.00	\$630.00	\$10,537.00

<sup>1</sup> [(Probable Project Cost) + 30\*(Annual O&M)] / [30\*(Annual TSS Reduction/1,000)]

**Table 7: Cost-effectiveness of retrofits with respect to TSS reduction. Projects ranked 33 – 48 are shown on this table. TP and volume reductions are also shown. For more information on each project refer to either the Catchment Profile or BMP Descriptions pages in this report. Volume and pollutant reduction benefits cannot be summed with other projects that provide treatment for the same source area.**

Project Rank	Project ID	Page Number	Retrofit Type	Retrofit Location	Catchment	TP Reduction (lb/yr)	TSS Reduction (lb/yr)	Volume Reduction (ac-ft/yr)	Probable Project Cost	Estimated Annual Operations & Maintenance	Estimated cost/1,000lb-TSS/year (30-year) <sup>1</sup>
33	14-A	121	Hydrodynamic Device	Parking lot off 1st Ave.	A-14	0.8	385	0	\$109,752.00	\$630.00	\$11,139.00
34	7-C	68	Hydrodynamic Device	7th Ave.	A-7	0.8	383	0	\$109,752.00	\$630.00	\$11,197.00
35	4-A	55	Hydrodynamic Device	Maple Ln.	A-4	0.3	113	0	\$28,752.00	\$630.00	\$14,057.00
36	17-A	133	Hydrodynamic Device	Oakwood Dr.	A-17	0.6	244	0	\$109,752.00	\$630.00	\$17,575.00
37	10-A	95	Hydrodynamic Device	6th Ave. and Taylor St.	A-10	0.5	211	0	\$109,752.00	\$630.00	\$20,324.00
38	10-B	96	Hydrodynamic Device	5th Ave. and Taylor St.	A-10	0.5	195	0	\$109,752.00	\$630.00	\$21,992.00
39	13-H	116	Boulevard Bioswale	Various locations in catchment	A-13	0.1	22	0.1	\$8,526.00	\$225.00	\$23,072.00
40	16-B	129	Hydrodynamic Device	Oakwood Dr. and Washington St.	A-16	0.4	163	0	\$109,752.00	\$630.00	\$26,309.00
41	1-C	40	Permeable Pavement	Anoka-Hennepin Education Center	A-1	2.9	1,325	3.5	\$552,656.00	\$41,165.00	\$44,971.00
42	13-F	114	Permeable Pavement	St. Stephen's Catholic School	A-13	1.6	562	1.6	\$282,796.00	\$20,925.00	\$54,006.00
43	13-E	113	Permeable Pavement	St. Stephen's Catholic Church	A-13	0.9	320	0.9	\$162,796.00	\$11,925.00	\$54,224.00
44	13-G	115	Permeable Pavement	St. Stephen's Catholic School	A-13	1.9	672	1.9	\$343,796.00	\$25,500.00	\$55,000.00
48	3-D	51	IESF Bench	Green Haven Golf Course Pond	A-3	10.4	0	0	\$282,955.00	\$3,214.00	N/A
48	7-11	75	IESF Bench	7th Ave.	A-7	26.6	0	0	\$580,991.00	\$4,591.00	N/A
48	7-12	76	IESF Bench	7th Ave.	A-7	7.2	0	0	\$305,875.00	\$1,837.00	N/A
48	8-C	82	IESF Bench	4th Ave. and Grant St.	A-8	7.2	0	0	\$282,955.00	\$1,607.00	N/A

<sup>1</sup> [(Probable Project Cost) + 30\*(Annual O&M)] / [30\*(Annual TSS Reduction/1,000)]

## Project Selection

The combination of projects selected for pursuit could strive to achieve TSS and TP reductions in the most cost-effective manner possible. Several other factors affecting project installation decisions should be weighed by resource managers when selecting projects to pursue. These factors include but are not limited to the following:

- Total project costs
- Cumulative treatment
- Availability of funding
- Economies of scale
- Landowner willingness
- Project combinations with treatment train effects
- Non-target pollutant reductions
- Timing coordination with other projects to achieve cost savings
- Stakeholder input
- Number of parcels (landowners) involved
- Project visibility
- Educational value
- Long-term impacts on property values and public infrastructure

## BMP Descriptions

BMP types proposed throughout the target areas are detailed in this section. This was done to reduce duplicative reporting. For each BMP type, the method of modeling, assumptions made, and cost estimate considerations are described.

BMPs were proposed for a specific site within the research area. Each of these projects, including site location, size, and estimated cost and pollutant reduction potential are noted in detail in the Catchment Profiles section. Project types included in the following sections are:

- Bioretention
  - Curb-cut Rain Garden
  - Boulevard Bioswale
  - Infiltration Basin
- Hydrodynamic Device
- Permeable Pavement
- Iron-Enhanced Sand Filter Pond Bench
- Modification to an Existing Pond
- New Stormwater Pond
- Stormwater Reuse

## Bioretention

Bioretention is a BMP that uses soil and vegetation to treat stormwater runoff from roads, driveways, roof tops, and other impervious surfaces. Differing levels of volume and/or pollutant reductions can be achieved depending on the type of bioretention selected.

Bioretention can function as either filtration (biofiltration) or infiltration (bioinfiltration). Biofiltration BMPs are designed with a buried perforated drain tile that allows water in the basin to discharge to the stormwater drainage system after having been filtered through the soil. Bioinfiltration BMPs have no underdrain, ensuring that all water that enters the basins will either infiltrate into the soil or be evapotranspired into the air. Bioinfiltration provides 100% retention and treatment of captured stormwater, whereas biofiltration basins provide excellent removal of particulate contaminants but limited removal of dissolved contaminants, such as DP (Table 8).

**Table 8: Matrix describing curb-cut rain garden efficacy for pollutant removal based on type.**

Curb-cut Rain Garden Type	TSS Removal	PP Removal	DP Removal	Volume Reduction	Size of Area Treated	Site Selection and Design Notes
Bioinfiltration	High	High	High	High	High	Optimal sites are low enough in the landscape to capture most of the watershed but high enough to ensure adequate separation from the water table for treatment purposes. Higher soil infiltration rates allow for deeper basins and may eliminate the need for underdrains.
Biofiltration	High	Moderate	Low	Low	High	

The treatment efficacy of a particular bioretention project depends on many factors, including but not limited to the pollutant of concern, the quality of water entering the project, the intensity and duration of storm events, project size, position of the project in the landscape, existing downstream treatment, soil and vegetation characteristics, and project type (i.e. bioinfiltration or biofiltration). Optimally, new bioretention will capture water that would otherwise discharge into a priority waterbody untreated.

The volume and pollutant removal potential of each bioretention practice was estimated using WinSLAMM. In order to calculate cost-benefit, the cost of each project had to be estimated. To fully estimate the cost of project installation, labor costs for project outreach and promotion, project design, project administration, and project maintenance over the anticipated life of the practice were considered in addition to actual construction costs. If multiple projects were installed, cost savings could be achieved on the administration and promotion costs (and possibly the construction costs for a large and competitive bid).

Please note infiltration examples included in this section would require site specific investigations to verify soils are appropriate for infiltration.

### Curb-cut Rain Gardens

Curb-cut rain gardens capture stormwater that is in roadside gutters and redirects it into shallow roadside basins. These curb-cut rain gardens can provide treatment for impervious surface runoff from one to many properties and can be located anywhere sufficient space is available. Because curb-cut rain gardens capture water that is already part of the stormwater drainage system, they are more likely to provide higher benefits. Generally, curb-cut rain gardens were proposed in areas without sufficient existing stormwater treatment and located immediately up-gradient of a catch basin serving a large drainage area. Bioinfiltration was solely proposed (as opposed to biofiltration) as the available soil information suggested infiltration rates could be sufficient to allow complete draw-down within 24-48 hours following a storm event (Figure 4).

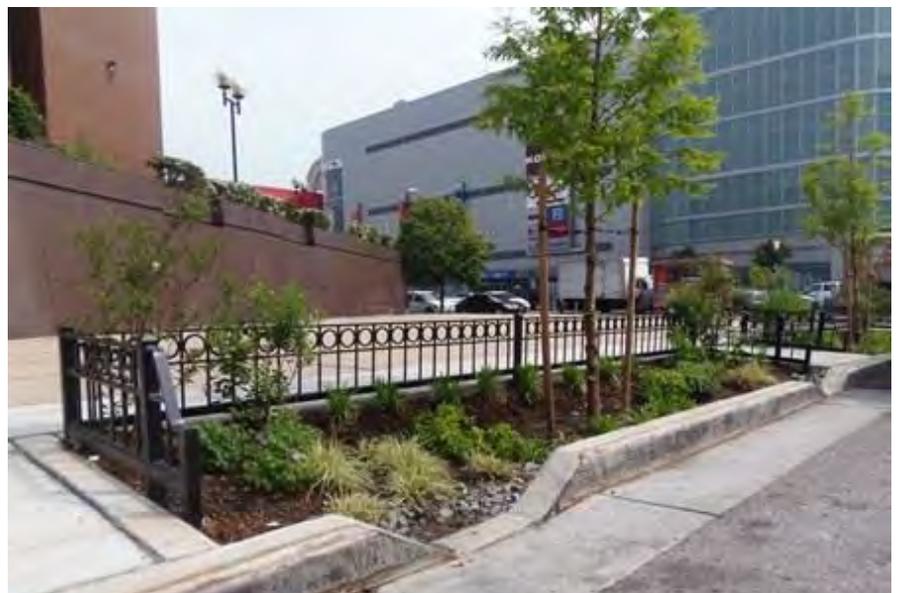


**Figure 4: Rain garden before/after and during a rainfall event**

All curb-cut rain gardens were presumed to have a 12" ponding depth, pretreatment, mulch, and perennial ornamental and native plants. The useful life of the project was assumed to be 30 years and so all costs are amortized over that time period. Additional costs were included for rehabilitation of the gardens at years 10 and 20. Annual maintenance was assumed to be completed by the landowner of the property at which the rain garden could be installed.

### Boulevard Bioswale

One option for retrofitting a stormwater BMP within an existing boulevard is a bioswale. This practice is similar to the curb-cut rain garden in its orientation and size. Bioswales typically range from 5-30' in length, house a rich native plant community, and are installed between the existing sidewalk and roadway curb (Figure 5). Unlike rain gardens, these practices are typically much shallower (1-3" in depth) and have a curb-cut inlet and outlet (Figure 5). Although many rain gardens have outlets in the form of underdrains or risers, the bioswale outlet allows for a nearly continuous flow of



**Figure 5: Right-of-way bioswale installed in New York City (NYC Environmental Protection, 2013)**

stormwater through the practice. Although some infiltration does occur, the primary form of treatment is the settling of pollutants as stormwater flows through the dense plant community.

This practice was modeled to estimate the pollutant reduction capacity for TSS, TP, and stormwater volume in medium density residential drainage areas ranging from 0.25 to 4 acres (Table 9). A 20' long (parallel to roadway), 4' wide (perpendicular to roadway), and 3" deep bioswale was modeled with an infiltration rate of 2.5"/hour. No underdrain was modeled with this practice as they are designed to be flow-through systems with limited ponding ( $\leq 3''$ ). Additional model inputs are noted in Appendix A – Modeling Methods.

**Table 9: WinSLAMM model results for the boulevard bioswale with a 2.5"/hour infiltration rate.**

Drainage Area (acres)	<i>Standard Boulevard Bioswale</i>					
	TP Removal		TSS Removal		Volume Removal	
	lbs-TP	%	lbs-TSS	%	ac-ft	%
0.25	0.07	33.3%	43	38.0%	0.058	21.9%
0.5	0.09	23.7%	61	28.3%	0.067	12.6%
1	0.08	13.0%	53	15.6%	0.074	7.0%
2	0.07	8.0%	45	9.8%	0.082	3.8%
3	0.08	6.8%	47	8.6%	0.087	2.7%
4	0.08	6.2%	48	8.0%	0.09	2.1%

### Infiltration Basin

Infiltration basins function identically to the curb-cut rain gardens previously described in this bioretention section. However, these basins are proposed in locations where a large amount of space is available. This presents an opportunity to construct a large-scale (i.e. > 500 sq.-ft.) infiltration basin. This allows stormwater runoff to fill the basin and be filtered by the soil and vegetation.

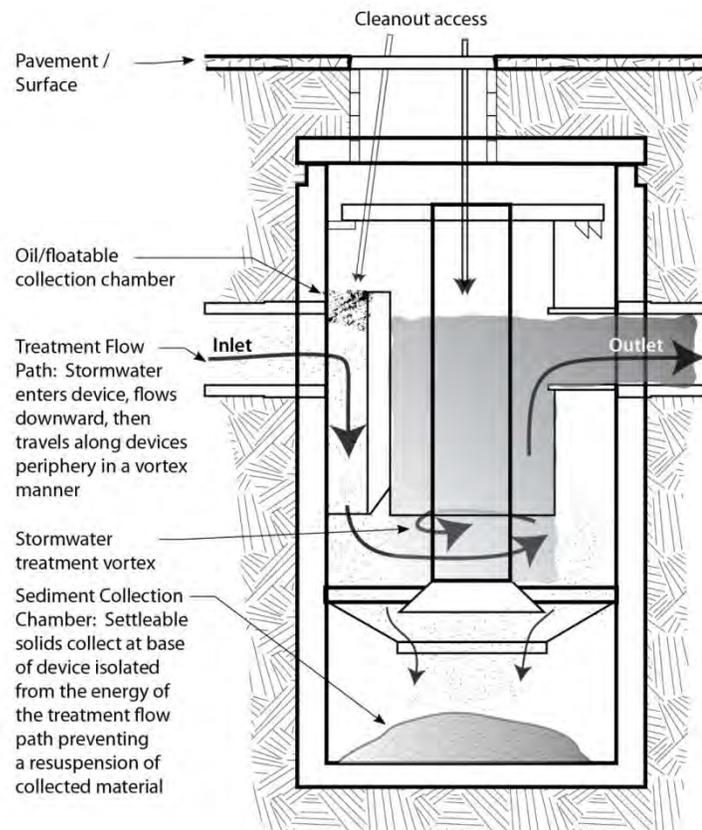
Probable project cost includes installation of the project as well as promotion, administrative, and design costs, all in 2016 dollars. A reduced construction cost (i.e. \$15 to \$20 per ft.<sup>2</sup>) relative to other bioretention practices was proposed for the infiltration basin because of assumed cost savings with a larger project. Furthermore, the large open spaces available at each of the proposed project locations could allow the basins to be constructed without retaining walls, which would result in a significant cost savings. Maintenance was assumed to be completed by city public works crews. Maintenance costs were also included for rehabilitation of the basin every 10 years for the life of the project.

## Hydrodynamic Devices

In heavily urbanized settings stormwater is immediately intercepted along roadway catch basins and conveyed rapidly via storm sewer pipes to its destination. Once stormwater is intercepted by catch basins, it can be very difficult to supply treatment without large end-of-pipe projects such as regional ponds. One of the possible solutions is the hydrodynamic device (Figure 6). These are installed in-line with the existing storm sewer network and can provide treatment for up to 10-15 acres of upland drainage. This practice applies some form of filtration, settling, or hydrodynamic separation to remove coarse sediment, litter, oil, and grease. These devices are particularly useful in small but highly urbanized drainage areas and can be used as pretreatment for other downstream stormwater BMPs.

Each device's pollutant removal potential was estimated using WinSLAMM. Devices were sized based on upstream drainage area to ensure peak flow does not exceed each device's design guidelines. For this analysis, Downstream Defender devices were modeled based on available information and to maintain continuity across other SRAs. Devices were proposed along particular storm sewer lines and often just upstream of intersections with another, larger line. Model results assume the device is receiving input from all nearby catch basins noted.

In order to calculate the cost-benefit, the cost of each project had to be estimated. To fully estimate the cost of project installation, labor costs for project outreach, promotion, design, administration, and maintenance over the anticipated life of the practice were considered in addition to actual construction costs. Load reduction estimates for these projects are noted in the Catchment Profiles section.

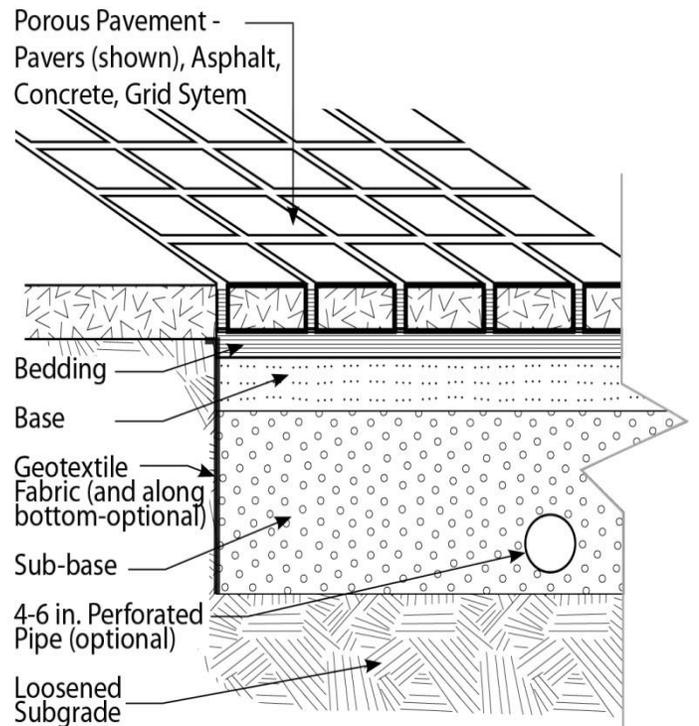


**Figure 6: Schematic of a typical hydrodynamic device**

## Permeable Pavement

Relatively flat, low traffic areas provide a suitable location for diverting stormwater runoff from impervious surfaces to porous pavement. Void space between concrete pavers or within permeable asphalt and concrete allow water to percolate through the surface to an underlying layer(s) of coarse aggregate rock (Figure 7). This aggregate can act as a reservoir providing water quality and quantity benefits by filtering the stormwater and creating storage. From here water can either be stored temporarily or can infiltrate into the ground to recharge local groundwater aquifers. Many designs include permeable geotextile fabric to separate the un-compacted soil subgrade from the coarse aggregate and to facilitate infiltration. If soils don't allow for infiltration, a liner can be installed with an underdrain attached to nearby storm sewers or additional stormwater BMPs. This still allows for filtration through the pavement and aggregate, and reduces peak discharge from the site.

This practice is ideally suited for small drainage areas flowing to low traffic pavement surfaces (Figure 8). For a residential property, roof runoff can be diverted via rain leaders to a permeable driveway. On a commercial property, parking spaces within a large parking lot could be converted to permeable pavement to capture runoff from the parking lot, sidewalks, and any buildings on the property. On a residential roadway, parking spaces on either side of the street could be converted to permeable pavement. In this case the practice could treat not just the roadway but multiple properties along the street. Permeable pavement can be used for many



Graphic adapted from the Charles River Watershed Association - Information Sheet

**Figure 7: Schematic of typical permeable pavement surface and subgrade.**



**Figure 8: Photo comparing conventional and permeable asphalt**

other scenarios in areas where soil type, seasonal water table, and frost line allow for groundwater recharge.

The capacity for this practice is completely dependent on the reservoir size within the aggregate and whether or not infiltration can occur on the site. In most cases the permeable pavement treats stormwater received from just the surface itself and adjacent impervious surfaces. A general design guideline used in this analysis is a ratio between the permeable pavement surface area and the area of the impervious surface draining to the practice of 1:2. Other than reservoir capacity, this ratio also depends on the infiltration rate (in the case that the BMP allows for infiltration) or drainage time (if an underdrain is installed) and how well the practice is maintained as clogging can greatly decrease the ability of the practice to capture runoff.

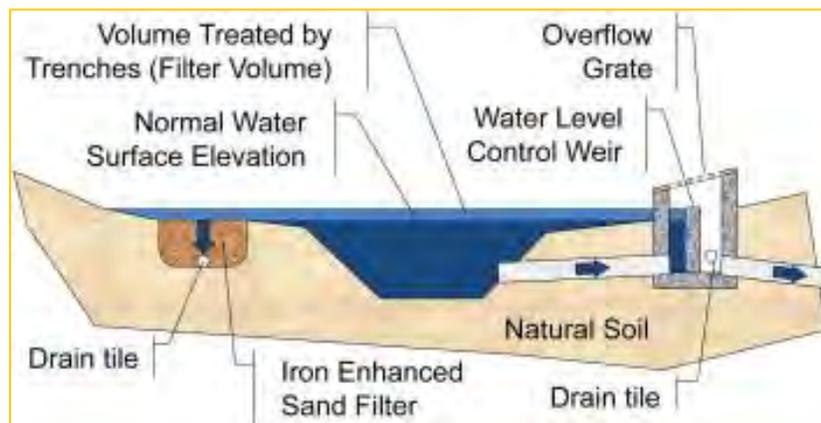
The pollutant removal potential of permeable pavement was estimated using WinSLAMM. A detailed account of the methodologies used is included in Appendix A – Modeling Methods. In order to calculate cost-benefit, the cost of each project had to be estimated. To fully estimate the cost of project installation, labor costs for project outreach, promotion, design, administration, and maintenance over the anticipated life of the practice were considered in addition to actual construction costs. Load reduction estimates for these projects are noted in the Catchment Profiles section.

## Iron-Enhanced Sand Filter Pond Bench

Wet retention ponds, although very effective in treating stormwater for suspended sediment and nutrients bound to sediment, have shown a limited ability at retaining dissolved species of nutrients. This is most notable for phosphorus, which easily adsorbs to sediment when in particulate form. Median values for pollutant removal percentage by wet retention ponds are 84% for TSS and 50% for TP (MN Stormwater Manual). For the case of phosphorus, dissolved species typically constitute 40-50% of TP in urban stream systems, but only 34% (median efficiency; Weiss et al., 2005) of dissolved phosphorus is treated by the pond. Thus, a majority of the phosphorus escaping wet retention ponds is in dissolved form. This has important effects downstream as dissolved phosphorus is a readily available nutrient for algal uptake in waterbodies and can be a main cause for nutrient eutrophication.

To address this deficiency, researchers at the University of Minnesota developed a method to augment phosphorus retention within a sand filter. They've named this technology the "Iron Enhanced Sand Filter" (IESF; Figure 9). Locally, this practice has also been identified as the "Minnesota Filter." IESFs rely on the properties of iron to bind dissolved phosphorus as it passes through an iron rich medium. Depending on topographic characteristics of the installation sites, IESFs can rely on gravitational flow and natural water level fluctuation, or water pumping to hydrate the IESF. IESFs must be designed to prevent anoxic conditions in the filter medium because such conditions will release the bound phosphorus. Because IESFs are intended to remove dissolved phosphorus and not organic phosphorus, they are typically constructed just downstream of stormwater ponds, minimizing the amount of suspended solids that could compromise their efficacy and drastically increase maintenance. As an alternative to an IESF, a ferric-chloride injection system could be installed to bind dissolved phosphorus into a flocculent, which would settle in the bottom of the new pond.

Figure 9 shows an IESF that is installed at an elevation slightly above the normal water level of the pond so that following a storm event the increase in depth of the pond would be first diverted to the IESF. The filter would have drain tile installed along the base of the trench and would outlet downstream of the current pond outlet. Large storm events that overwhelm the IESF's capacity would exit the pond via the existing outlet.



**Figure 9: Iron Enhanced Sand Filter Concept (Erickson & Gulliver, 2010)**

Benefits for stormwater ponds were modeled utilizing WinSLAMM. After selecting an optimal pond configuration in terms of cost-benefit, or by using the existing pond configuration if no updates are needed, modeling for an IESF was also completed in WinSLAMM. WinSLAMM is able to calculate flow through constructed features such as rain gardens with underdrains, soil amendments, and controlled

overflow elevations. An IESF works much the same way. Storm event based discharge volumes and phosphorus concentrations estimated by WinSLAMM at the pond outlet were entered into WinSLAMM as inputs into the IESF. Various iterations of IESFs were modeled to identify an optimal treatment level compared to construction costs and space available. A detailed account of the methodologies used is included in Appendix A – Modeling Methods.

To account for the DP treated by the IESF, an additional 80% DP removal was assumed for each IESF in addition to any removal by the pond. This value is based on laboratory and field tests performed by the University of Minnesota (Erickson & Gulliver, 2010) and assumes only removal of DP species within the device. Load reduction estimates for these projects are noted in the Catchment Profiles sections.

In order to calculate cost-benefit, the cost of each project had to be estimated. IESF projects were assumed to involve some excavation and disposal of soil, land acquisition (if necessary), erosion control, and vegetation management. Additionally, project engineering, promotion, administration, construction oversight, and long-term maintenance had to be considered in order to capture the true cost of the effort. Annual maintenance costs were estimated to be \$10,000 per acre of IESF based on information received from local, private consulting firms. Additional costs associated with specific projects are listed in Appendix B – Project Cost Estimates.

## Modification to an Existing Pond

Developments prior to enactment of contemporary stormwater rules often included wet detention ponds which were frequently designed purely for flood control based on the land use, impervious cover, soils, and topography of the time. Changes to stormwater rules since the early 1970's have altered the way ponds are designed.

Enactment of the National Pollution Discharge Elimination System (NPDES) in 1972 followed by research conducted by the Environmental Protection Agency in the early 1980's as part of the Nationwide Urban Runoff Program (NURP) set standards by which stormwater best management practices should be designed. Municipal Separate Storm Sewer System (MS4) guidelines issued in 1990 (affecting cities with more than 100,000 residents) and 1999 (for cities with less than 100,000 residents) required municipalities to obtain an NPDES permit and develop a plan for managing their stormwater.

Listed below are five strategies which exist for retrofitting a stormwater pond to increase pollutant retention (modified from *Urban Stormwater Retrofit Practices*):

- Excavate pond bottom to increase permanent pool storage
- Raise the embankment to increase flood pool storage
- Widen pond area to increase both permanent and flood pool storage
- Modify the riser
- Update pool geometry or add pretreatment (e.g. forebay)

These strategies can be employed separately or together to improve BMP effectiveness. Each strategy is limited by cost-effectiveness and constraints of space on the current site. Pond retrofits are preferable to most new BMPs as additional land usually does not need to be purchased, stormwater easements already exist, maintenance issues change little following project completion, and construction costs are greatly cheaper. There can also be a positive effect on reducing the rate of overflow from the pond, thereby reducing the risk for erosion (and thus further pollutant generation) downstream.

For this analysis, all existing ponds were modeled in the water quality model WinSLAMM to estimate their effectiveness based on best available information for pond characteristics and land use and soils. One proposed modification, excavating the pond bottom to increase storage, often has a very wide range in expected cost due to the nature of the excavated soil. If the soil has been contaminated and requires landfilling, the cost for disposal can quickly lead to a doubling in project cost. For this reason, projects which include the excavation of ponds have been priced based on the following criteria:

- Management Level 1: Dredged pond soil is suitable for use or reuse on properties with a residential or recreational use
- Management Level 2: Dredged pond soil is suitable for use or reuse on properties with an industrial use
- Management Level 3: Dredged pond soil is considered significantly contaminated and must be managed specifically for the contaminants present

Costs within each of these levels can even range widely, but were estimated to be \$20/cu-yd., \$35/cu-yd., and \$50/cu-yd. for levels 1, 2, and 3, respectively. Additional costs associated with specific projects are listed in Appendix B – Project Cost Estimates.

## New Stormwater Pond

If properly designed, wet retention ponds have controlled outflows to manage discharge rates and are sized to achieve predefined water quality goals. Wet retention ponds treat stormwater through a variety of processes, but primarily through sedimentation. Ponds are most often designed to contain a permanent pool storage depth; it is this permanent pool of water that separates the practice from most other stormwater BMPs, including detention ponds (Figure 10).

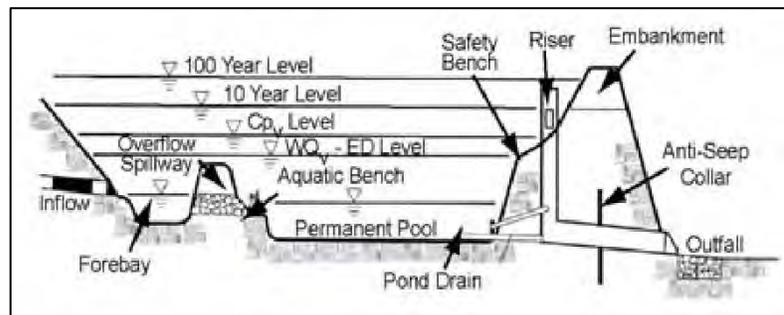
Wet retention pond depth generally ranges from 3-8' deep. If ponds are less than 3' deep, winds can increase mixing through the full water depth and re-suspend sediments, thereby increasing turbidity. Scour may also occur during rain events following dry periods. If more than 8' deep, thermal stratification can occur

creating a layer of low dissolved oxygen near the sediment that can release bound phosphorus. Above the permanent pool depth is the flood depth, which provides water quality treatment directly following storm events. Separating the permanent pool depth and the flood depth is the primary outlet control, which is often designed to control outflow rate. Configurations for the outlet control may include a V-notch or circular weir, multiple orifices, or a multiple-stage weir. Each of these can be configured within a skimmer structure or trash rack to provide additional treatment for larger, floatable items. Above the flood depth is the emergency control structure, which is available to bypass water from the largest rainfall events, such as the 100-year precipitation event. Ponds also often include a pretreatment practice, either a forebay or sedimentation basin adjacent to the pond or storm sewer sumps, hydrodynamic devices, or other basins upstream of the practice.

Outside of sedimentation, other important processes occurring in ponds are nutrient assimilation and evapotranspiration by plants. The addition of shoreline plants to pond designs has increased greatly since the 1980's because of the positive effects these plants were found to have for both water quality purposes and increasing terrestrial and aquatic wildlife habitat. The ability of the pond to regulate discharge rates should also be noted. This can reduce downstream in-channel erosion, thereby decreasing TSS and TP loading from within the channel.

With the multitude of considerations for these practices, ponds must be designed by professional engineers. This report provides a rudimentary description of ponding opportunities and cost estimates for project planning purposes. Ponds proposed in this analysis are designed and simulated within the water quality model WinSLAMM, which takes into account upland pollutant loading, pond bathymetry, and outlet control device(s) to estimate stormwater volume, TSS, and TP retention capacity. The model was run with and without the identified project and the difference in pollutant loading was calculated.

In order to calculate cost-benefit, the cost of each project had to be estimated. All new stormwater ponds were assumed to involve excavation and disposal of soil, installation of inlet and outlet control structures and emergency overflow, land acquisition, erosion control, and vegetation management.



**Figure 10: Schematic of a stormwater retention pond.**

Additionally, project engineering, promotion, administration, construction oversight, and long-term maintenance (including annual inspections and removal of accumulated sediment/debris from the pretreatment area) had to be considered in order to capture the true cost of the effort. Complete pond dredging is not included in the long-term maintenance cost because project life is estimated to be 30 years. Load reduction estimates for these projects are noted in the Catchment Profiles section. Additional costs associated with specific projects are listed in Appendix B – Project Cost Estimates.

## Stormwater Reuse

Some of the major water resource issues today include improving stormwater treatment (quantity and quality), increasing groundwater recharge, and decreasing public water usage. Stormwater reuse is a powerful BMP strategy that can be applied to address each of these on a scale ranging from a single property to an entire neighborhood. Stormwater reuse allows for the utilization of stormwater to supplement potable sources, in applications that do not require water to be at a standard set for consumption. An example of this might be using captured stormwater to irrigate a golf course or recreational fields.

Benefits from this practice are twofold. First, stormwater runoff is given multiple opportunities for treatment. Treatment through settling, filtering, or hydrodynamic separation at the BMP site provides initial treatment of particulates, litter, and other debris. Application of the stormwater as irrigation allows for infiltration through the soil layer and treatment of the dissolved load of pollutants that may have remained. The second benefit is the reduced usage of potable water. As there is no need for highly treated water when irrigating a lawn, the stress placed on water treatment facilities and the water distribution network can be reduced.

The concept for this practice at its smallest scale is that of a rain barrel on a residential property. Runoff from the impervious roof is captured by gutters and diverted to the rain barrel until it is needed for watering the lawn or garden. At a larger scale, runoff from roofs, driveways, sidewalks, and roadways is diverted to roadway catch basins and to the storm sewer network. A cistern or similar containment unit holds water from storm sewers until it is needed for irrigation. These structures can vary in size from tens of gallons to hundreds of thousands of gallons. Stormwater detention and retention ponds are also popular choices as construction and maintenance costs are often much cheaper than underground cisterns.

These practices often require significant capital investment as updates to the local stormwater infrastructure may be needed. Large cisterns, whether made of concrete or plastic, can require high transportation and installation costs. Additional infrastructure may also be necessary, including a foundation to sustain the weight of the cistern (whether above or below ground), pump, and conveyance system. A detailed maintenance plan is also necessary even if other forms of pretreatment (e.g. hydrodynamic device, baffle, etc.) are installed. Lastly, during dry periods potable water may still be needed to supplement stormwater when the containment unit is empty.

The pollutant removal potential of stormwater reuse devices was estimated using the stormwater model WinSLAMM. In order to calculate cost-benefit, the cost of each project had to be estimated. To fully estimate the cost of project installation, labor costs for project outreach, promotion, design, administration, and maintenance over the anticipated life of the practice were considered in addition to actual construction costs. Costs for projects are listed in detail in Appendix B – Project Cost Estimates. Load reduction estimates for these projects are noted in the Catchment Profiles section.

## Catchment Profiles

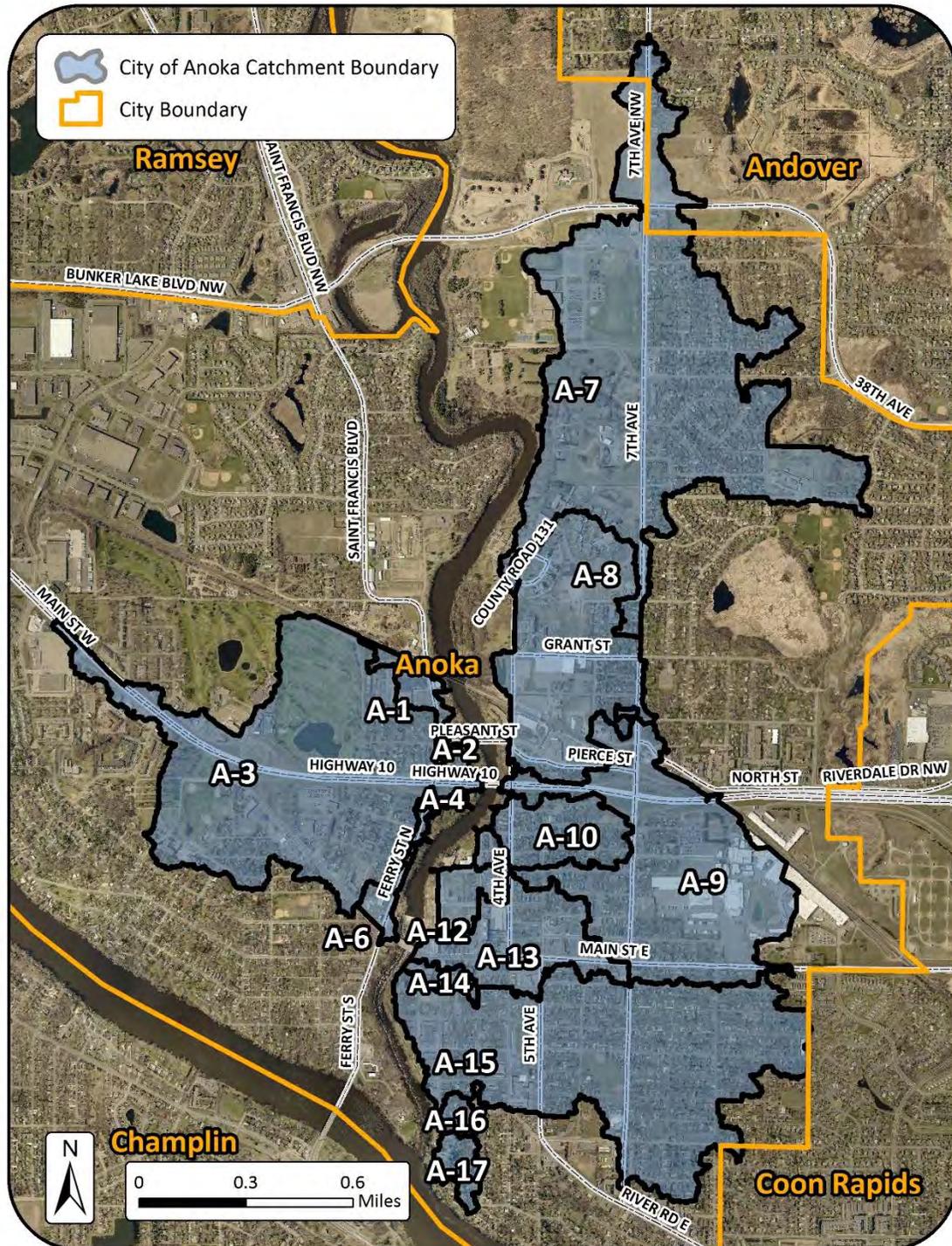


Figure 11: The 1,469-acre drainage area was divided into 17 catchments for this analysis. Catchment profiles on the following pages provide additional information.

## Western Drainage Network

Catchment ID	Page
A-1	35
A-2	41
A-3	45
A-4	53
A-5	56
A-6	59

Existing Network Summary	
Acres	313.2
Dominant Land Cover	Residential
Volume (ac-ft/yr)	208.0
TP (lb/yr)	151.3
TSS (lb/yr)	50,263



### DRAINAGE NETWORK SUMMARY

The western drainage network includes all areas of the City of Anoka draining to the western shores of the Rum River south of the Burlington Northern railroad tracks to approximately Main St. Six catchments lie within this drainage network, each with their own outfall to the Rum River. These outfalls are located at (from north to south) Ferry Street 200' south of the Burlington Northern railroad tracks (Catchment A-1), Maple Avenue (A-2), US-10 (A-3), Maple Lane (A-4), Clay Street (A-5), and Main St. (A-6).

Catchment size varies greatly, from just over two acres to up to 280 acres. Notable areas of the drainage network include the US-10 and US-169 highway corridors, the public golf course, Ward Park, and commercial properties along Main St. and US-169.

### EXISTING STORMWATER TREATMENT

Stormwater runoff generated across the network is, for the most part, quickly intercepted within either municipal, county, or MNDOT storm sewer and conveyed to one of six stormwater outfalls to the Rum River. Nine stormwater treatment devices exist throughout the network which treat stormwater prior to discharge into the Rum River. Most of these treat relatively small drainage areas (<15 acres). Exceptions to this include Ward Park pond, which treats 25 acres of residential streets and parkland, and the Green Haven Golf Course pond, which treats 177 acres of golf course, US-10, parkland, commercial, and residential land uses. Both of these ponds are in Catchment A-3. Additional detail on these ponds and other stormwater BMPs are provided in the Catchment Profiles.

# Catchment A-1

Existing Catchment Summary	
Acres	14.8
Dominant Land Cover	Institutional
Parcels	25
Volume (ac-ft/yr)	12.4
TP (lb/yr)	10.4
TSS (lb/yr)	4,826



**CATCHMENT DESCRIPTION**  
 This catchment drains nearly 15 acres of public-institutional and industrial land uses along Ferry Street between the Burlington Northern railroad tracks and Highway 10. The catchment is highly impervious, predominantly due to the Anoka-Hennepin Education Service Center building and parking lot comprising about 50% of the geographical area of the catchment.

Stormwater generated in Catchment A-1 is directed to a storm sewer network beginning under the parking lot of the Anoka-Hennepin Education Service Center and flowing east to an outfall to the Rum River east of the A1 Recycling Center.

**EXISTING STORMWATER TREATMENT**  
 No existing treatment exists in this catchment beyond street cleaning provided by the City of Anoka two times per year. Present-day stormwater pollutant loading and treatment is summarized in the table below.

<i>Existing Conditions</i>		Base Loading	Treatment	Net Treatment %	Existing Loading
<i>Treatment</i>	Number of BMPs	1			
	BMP Types	Street Cleaning			
	TP (lb/yr)	11.1	0.7	6%	<b>10.4</b>
	TSS (lb/yr)	5,278	452	9%	<b>4,826</b>
	Volume (acre-feet/yr)	12.4	0.0	0%	<b>12.4</b>

**PROPOSED RETROFITS OVERVIEW**  
 As no existing treatment exists in this catchment, in-line treatment along the main storm sewer line was proposed in a hydrodynamic device installed along Ferry St. within the road right-of-way. This unit could treat up to 14.8 acres of the predominantly impervious catchment.

To help reduce peak flows to the storm sewer network (and a potential hydrodynamic device installed along the network), permeable pavement was also proposed for the eastern parking lot of the Anoka-

Hennepin Education Service Center. A rain garden was also proposed to be along Ferry Street to also reduce peak flows as well as to capture TSS and TP.

RETROFIT RECOMMENDATIONS



# Project ID: 1-A

## Ferry St. & Front Ave. Curb-Cut Rain Garden

**Drainage Area** – 2.1 acres

**Location** – On Ferry Street at Front Avenue

**Property Ownership** – Public (City of Anoka)

**Site Specific Information** – One location was identified along Ferry Street on public property for a curb-cut rain garden. This retrofit could treat stormwater pollutants originating from Ferry Street and from surrounding residential properties.



Curb-Cut Rain Garden				
		Cost/Removal Analysis	New Treatment	% Reduction
<b>Treatment</b>	Number of BMPs		1	
	Total Size of BMPs		250 sq-ft	
	TP (lb/yr)	0.5	4.8%	
	TSS (lb/yr)	187	3.9%	
	Volume (acre-feet/yr)	0.5	3.9%	
<b>Cost</b>	Administration & Promotion Costs*		\$1,606	
	Design & Construction Costs**		\$7,376	
	Total Estimated Project Cost (2016)		<b>\$8,982</b>	
	Annual O&M***		\$225	
<b>Efficiency</b>	30-yr Average Cost/lb-TP		<b>\$1,049</b>	
	30-yr Average Cost/1,000lb-TSS		<b>\$2,804</b>	
	30-yr Average Cost/ac-ft Vol.		<b>\$1,090</b>	

\*Indirect Cost: (10 hours at \$73/hour base cost) + (12 hours/BMP at \$73/hour)

\*\*Direct Cost: (\$26/sq-ft for materials and labor) + (12 hours/BMP at \$73/hour for design)

\*\*\*Per BMP: (\$150/year for rehabilitations at years 10 and 20) + (\$75/year for routine maintenance)

# Project ID: 1-B

## Ferry Street Hydrodynamic Device

**Drainage Area** – 14.8 acres

**Location** – Ferry Street

**Property Ownership** – Public

**Site Specific Information** – A hydrodynamic device could be installed on Ferry Street at the outlet of the catchment. A device at this location would be able to accept and treat runoff from the entire catchment.



Hydrodynamic Device				
		Cost/Removal Analysis	New Treatment	% Reduction
Treatment	Number of BMPs		1	
	Total Size of BMPs		10 ft diameter	
	TP (lb/yr)	1.0	9.6%	
	TSS (lb/yr)	584	12.1%	
	Volume (acre-feet/yr)	0.0	0.0%	
Cost	Administration & Promotion Costs*	\$1,752		
	Design & Construction Costs**	\$108,000		
	<b>Total Estimated Project Cost (2016)</b>	<b>\$109,752</b>		
	Annual O&M***	\$630		
Efficiency	30-yr Average Cost/lb-TP	<b>\$4,288</b>		
	30-yr Average Cost/1,000lb-TSS	<b>\$7,343</b>		
	30-yr Average Cost/ac-ft Vol.	<b>N/A</b>		

\*Indirect Cost: (24 hours at \$73/hour)

\*\*Direct Cost: (\$72,000 for materials) + (\$36,000 for labor and installation costs)

\*\*\*Per BMP: (3 cleanings/year)\*(3 hours/cleaning)\*(\$70/hour)

# Project ID: 1-C

## Anoka-Hennepin Education Center Permeable Pavement

**Drainage Area** – 3.8 acres  
**Location** – Eastern parking lot of the Anoka-Hennepin Education Service Center  
**Property Ownership** – Public  
**Site Specific Information** – Permeable pavement is proposed for the eastern parking lot of the Anoka-Hennepin Education Services Center. This practice allows the treatment of a large surface area with minimal impact on the usable space. In order to treat the 3.8-acre drainage area, 54,886 sq.-ft. of permeable pavement is proposed.



Permeable Pavement			
		Cost/Removal Analysis	
		New Treatment	% Reduction
Treatment	Number of BMPs	1	
	Total Size of BMP	54,886 sq-ft	
	TP (lb/yr)	2.9	27.9%
	TSS (lb/yr)	1,325	27.5%
	Volume (acre-feet/yr)	3.5	28.2%
Cost	Administration & Promotion Costs*	\$2,920	
	Design & Construction Costs**	\$549,736	
	<b>Total Estimated Project Cost (2016)</b>	<b>\$552,656</b>	
	Annual O&M***	\$41,165	
Efficiency	30-yr Average Cost/lb-TP	<b>\$20,547</b>	
	30-yr Average Cost/1,000lb-TSS	<b>\$44,971</b>	
	30-yr Average Cost/ac-ft Vol.	<b>\$17,044</b>	

\*Indirect Cost: 40 hours at \$73/hour

\*\*Direct Cost: (\$10/sq-ft for materials and labor) + (12 hours at \$73/hour for design)

\*\*\*(\$0.75/sq-ft for routine maintenance)

# Catchment A-2

Existing Catchment Summary	
Acres	3.7
Dominant Land Cover	Residential
Parcels	16
Volume (acre-feet/yr)	2.0
TP (lb/yr)	2.1
TSS (lb/yr)	678



### CATCHMENT DESCRIPTION

Catchment 2 is bounded by residences on Polk Street NE, 39<sup>th</sup> Avenue NE, Johnson Street NE, and the railroad tracks. 37<sup>th</sup> Avenue NE bisects the catchment from east to west. The catchment is comprised primarily of single family residential properties. There are a few multi-family homes and one commercial property.

All stormwater runoff generated in this catchment flows overland to the south and is collected by catch basins. The stormwater is then conveyed east to the Rum River.

### EXISTING STORMWATER TREATMENT

As part of a roadway reconstruction project in 2015, a subsurface treatment system was installed along the Maple Avenue storm sewer network just upstream of the outfall to the Rum River. This subsurface treatment system consists of a St. Anthony Falls Laboratory (SAFL) Baffle installed within a manhole. In addition to this structural stormwater treatment, the City of Anoka conducts street cleaning two times per year. Present-day stormwater pollutant loading and treatment is summarized in the table below.

	Existing Conditions	Base Loading	Treatment	Net Treatment %	Existing Loading
Treatment	Number of BMPs	2			
	BMP Types	1 Hydrodynamic Device, Street Cleaning			
	TP (lb/yr)	2.5	0.4	16%	<b>2.1</b>
	TSS (lb/yr)	881	203	23%	<b>678</b>
	Volume (acre-feet/yr)	2.0	0.0	0%	<b>2.0</b>

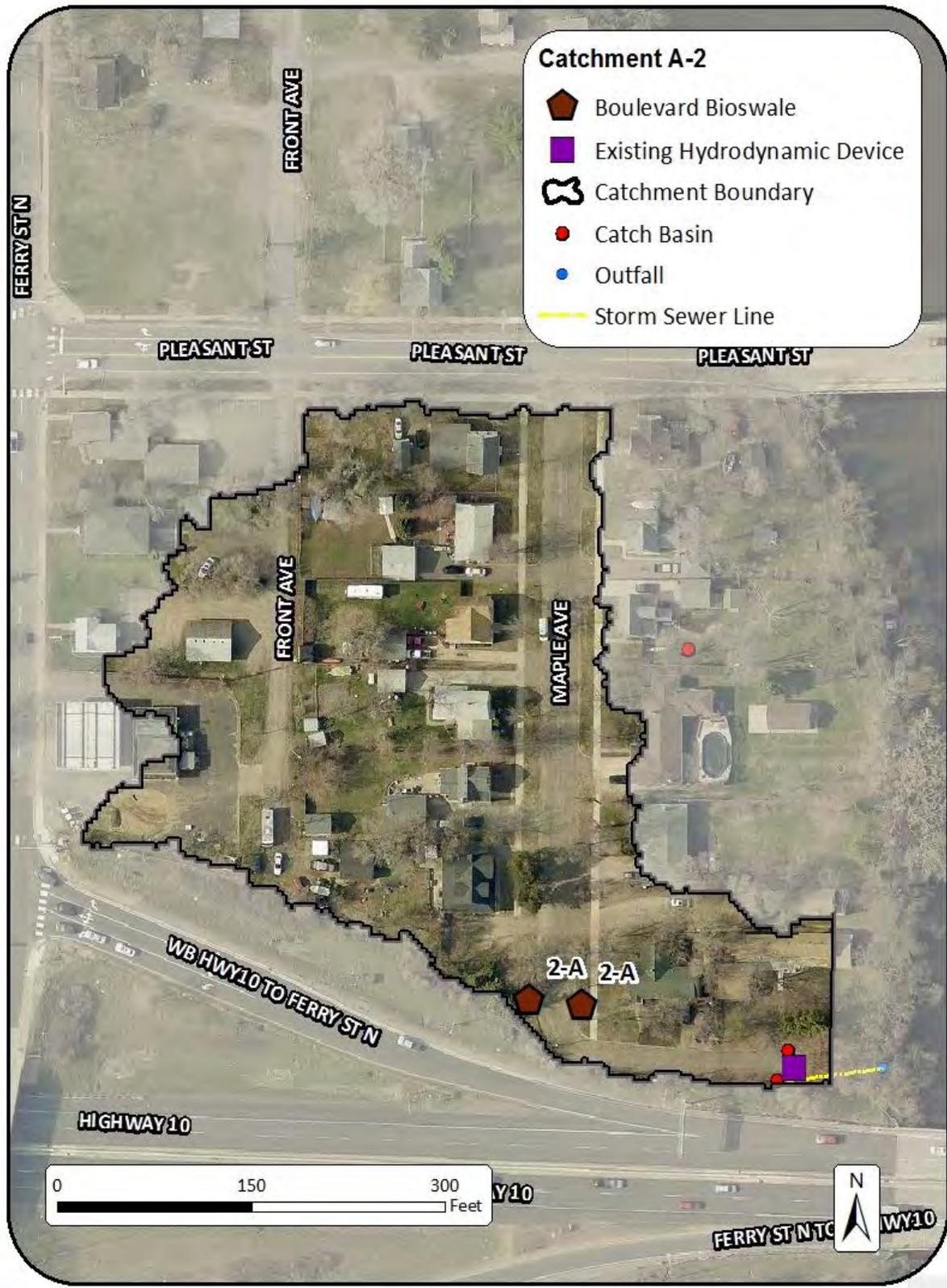
### PROPOSED RETROFITS OVERVIEW

Two bioswales are proposed to supplement the treatment provided by the baffle. Infiltration rates should be sufficient enough to support infiltration practices considering the sandy Hubbard soils throughout the area.

**RETROFITS CONSIDERED BUT REJECTED**

Due to the small size of this catchment and its existing treatment no other retrofits were considered besides small bioretention practices.

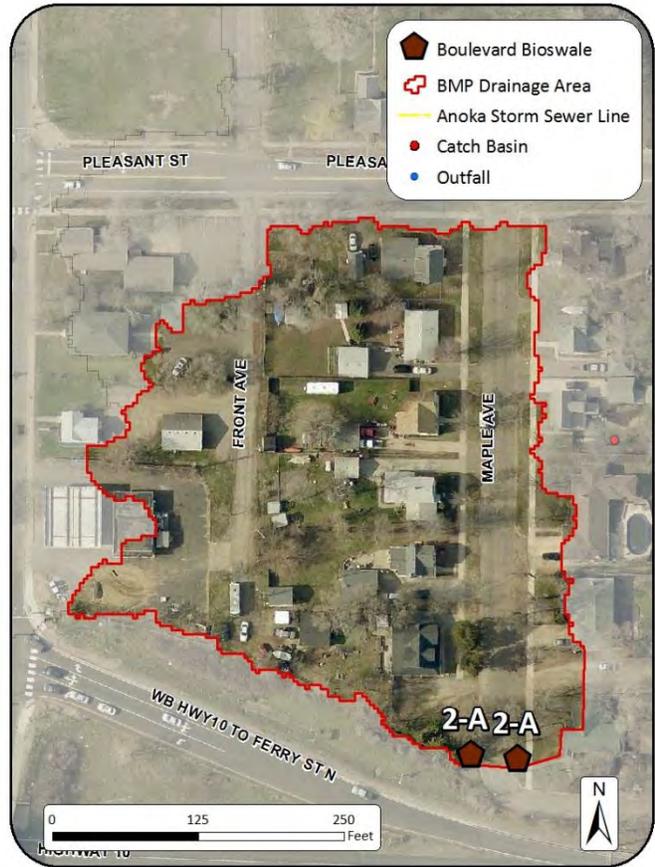
RETROFIT RECOMMENDATIONS



# Project ID: 2-A

## Maple Avenue Boulevard Bioswale

**Drainage Area** – 0.5 acre  
**Location** – At southern end of Maple Avenue  
**Property Ownership** – Public  
**Site Specific Information** – Bioswales are proposed for installation along Maple Avenue to reduce sediment and phosphorus loads. The existing sidewalks along Maple Ave. make boulevard bioswales a viable option. Locations for up to two bioswales are sited, where they will serve to treat runoff from the streets and the surrounding private properties. The table below shows the estimated cost and pollutant removal amounts based on treatment of the 0.5-acre drainage area.



Boulevard Bioswale			
		2.5"/hr Infiltr. Rate	
		New Treatment	% Reduction
Treatment	Number of BMPs	1	
	Total Size of BMPs	80 sq-ft	
	TP (lb/yr)	0.2	7.7%
	TSS (lb/yr)	55	8.2%
	Volume (acre-feet/yr)	0.1	6.5%
Cost	Administration & Promotion Costs*	\$3,650	
	Design & Construction Costs**	\$4,876	
	Total Estimated Project Cost (2016)	<b>\$8,526</b>	
	Annual O&M***	\$225	
Efficiency	30-yr Average Cost/lb-TP	<b>\$3,140</b>	
	30-yr Average Cost/1,000lb-TSS	<b>\$9,202</b>	
	30-yr Average Cost/ac-ft Vol.	<b>\$3,859</b>	

\*Indirect Cost: (50 hours at \$73/hour)

\*\*Direct Cost: (\$50/sq-ft for materials and labor) + (12 hours/BMP at \$73/hour for design)

\*\*\*Per BMP: (\$150/year for 10-year rehabilitation)+ (\$75/year for routine maintenance)

## Catchment A-3

Existing Catchment Summary	
Acres	286.1
Dominant Land Cover	Residential
Parcels	322
Volume (acre-feet/yr)	179.9
TP (lb/yr)	127.4
TSS (lb/yr)	40,532

### CATCHMENT DESCRIPTION

Catchment A-3 contains all of Highway 10 and most of Main Street in the City of Anoka research area west of the Rum River. Highway 10 bisects the catchment from east to west. Within the catchment north of Highway 10 is the public golf course, east of the clubhouse, the Anoka-Hennepin Education Center western parking lot, and approximately 25 acres of single-family residential housing. On the south side of this catchment is parkland, large commercial lots, Franklin Elementary School, and additional single-family residential housing.



Stormwater generated within this catchment flows through various municipal storm sewer networks to a state line running east below Highway 10. This network discharges into the Rum River through a 60" diameter pipe just south of Highway 10.

### EXISTING STORMWATER TREATMENT

Five existing structural BMPs are installed on city-owned property throughout the catchment. On the south side of Ward Park is a depression acting as a pond. Stormwater along Western Street and Forest Avenue is directed towards this depression and overflow appears to only occur overland through the park. A second retention pond is located in the southeastern corner of the golf course. This pond treats 202 acres of the Green Haven Golf Course, Highway 10, Ward Park, and commercial properties along Main Street.

The three remaining city-owned structural BMPs were installed as part of a roadway reconstruction project in 2015. On the northern edge of the catchment, State Avenue was shortened by about 250' south of Greenhaven Road, creating a dead end. In place of the roadway, a swale was installed that treats runoff from State Avenue and Greenhaven Road. This swale discharges west into the Green Haven Golf Course, and likely only during very large storm events due to its ponding depth and small contributing drainage area.

Two SAFL Baffles were also installed in new manholes as part of the 2015 reconstruction projects. These are located along storm sewer lines under Branch Avenue and the alleyway between Wingfield Avenue and Branch Avenue.

A single privately-owned BMP was modeled as part of this analysis. This is a large pond located on the Main Motor Sales Company property adjacent to State Avenue. This pond currently only treats runoff from the Main Motors property and discharges to the municipal storm sewer line running north to Highway 10.

Lastly, street cleaning is provided by the City of Anoka two times per year. Present-day stormwater pollutant loading and treatment is summarized in the table below.

	<i>Existing Conditions</i>	Base Loading	Treatment	Net Treatment %	Existing Loading
<i>Treatment</i>	Number of BMPs	7			
	BMP Types	3 Ponds, 1 Infiltration Basin, 2 HDs, Street Cleaning			
	TP (lb/yr)	228.5	101.1	44%	<b>127.4</b>
	TSS (lb/yr)	88,416	47,884	54%	<b>40,532</b>
	Volume (acre-feet/yr)	181.0	0.0	0%	<b>179.9</b>

#### **PROPOSED RETROFITS OVERVIEW**

A variety of new stormwater treatment practices were proposed to supplement the existing treatment systems as well as to provide new opportunities to land uses that currently discharge untreated to the Rum River. Two BMPs were proposed at the golf course pond. The first project is an IESF bench along the golf course pond. If installed, this device could increase the retention of phosphorus from over 200 acres in the catchment. Secondly, stormwater reuse may also be an option for the golf course pond through using stormwater (in lieu of potable drinking water) to irrigate the grass on the course.

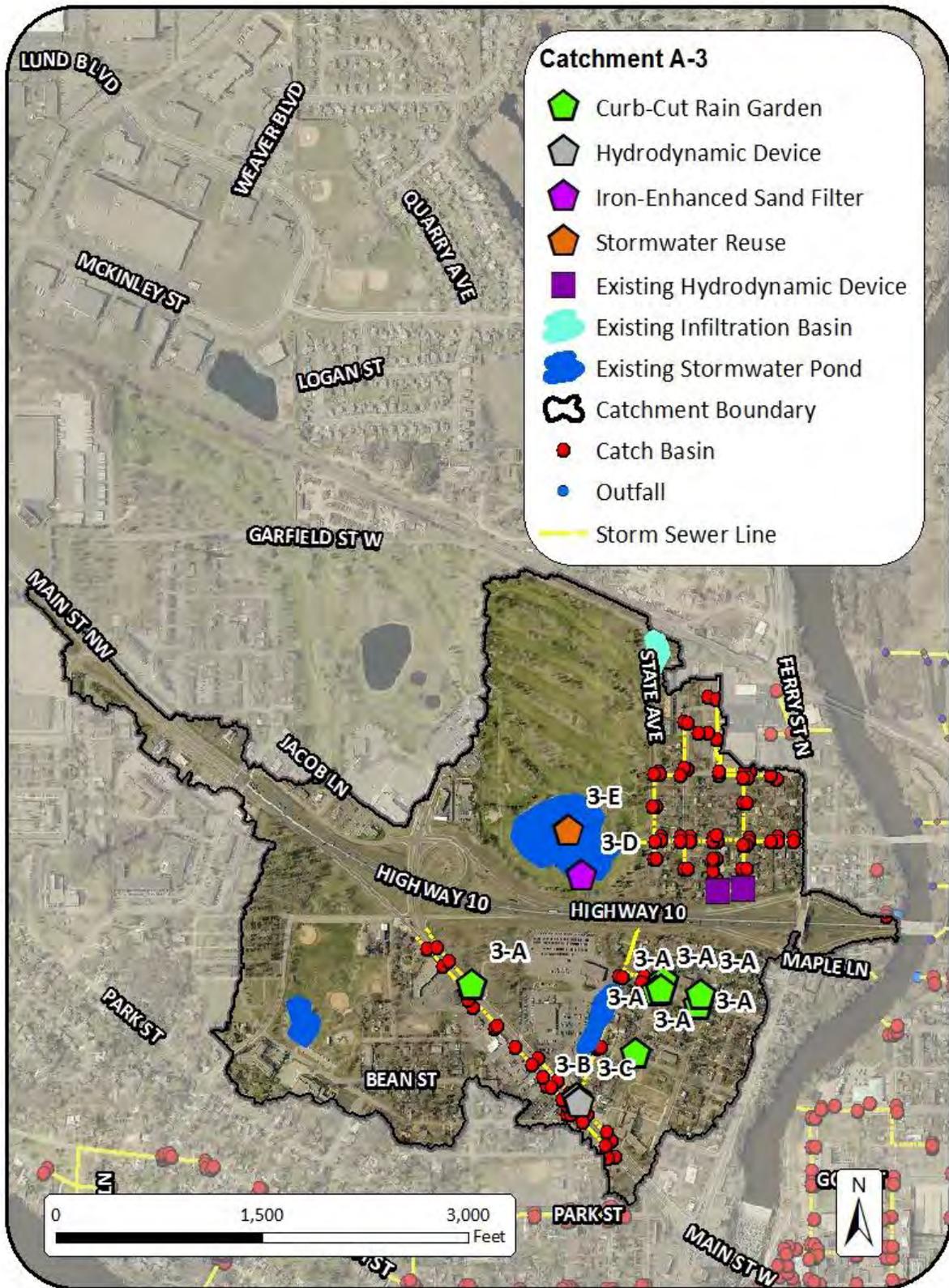
Two hydrodynamic devices are proposed to treat runoff generated along Main Street before it reaches the State Avenue line.

Bioretention practices were also explored throughout the catchment due to sandy soils found throughout the area. Up to seven curb-cut rain gardens were proposed for the residential and commercial areas south of Highway 10.

#### **RETROFITS CONSIDERED BUT REJECTED**

Curb-cut rain garden and boulevard bioswales were considered for the single-family residential housing area east of the golf course but were not proposed as drainage areas to the bioretention basins would be quite small due to the large number of catch basins throughout the area. Additionally, two hydrodynamic devices were proposed to be installed south of the Main St – Highway 10 interchange to treat storm sewer lines along Main Street. However, due to the number of retention ponds in the catchment, with modeling these hydrodynamic devices proved to be ineffective.

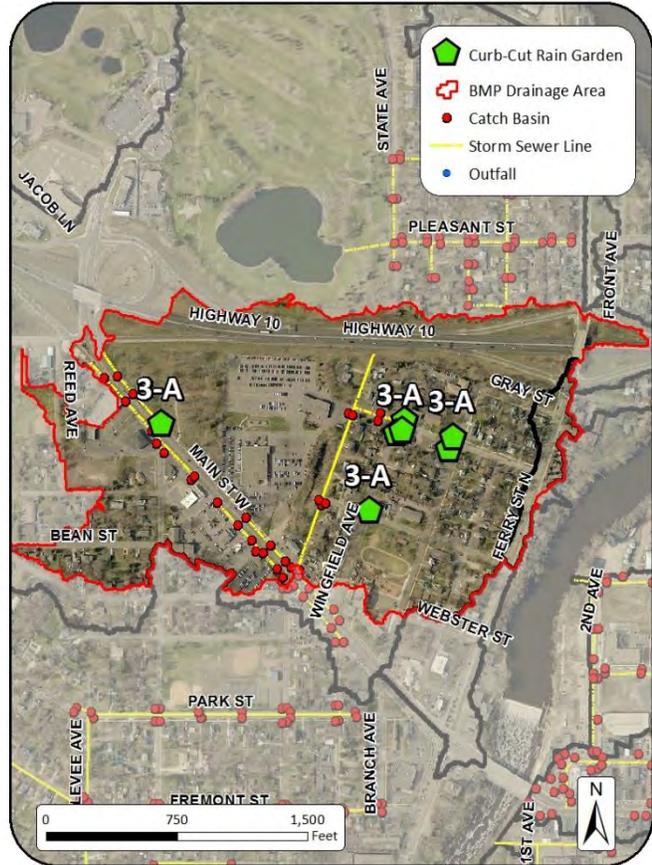
RETROFIT RECOMMENDATIONS



# Project ID: 3-A

## Curb-Cut Rain Gardens

**Drainage Area** – 1.5 - 10.5 acres  
**Location** – Various locations throughout catchment  
**Property Ownership** – Private  
**Site Specific Information** – Single-family lots and a cemetery in the catchment provide various locations for curb-cut rain gardens to treat stormwater pollutants originating from private properties. Considering typical private landowner participation rates, scenarios with one, three, and seven rain gardens were analyzed to treat the contributing drainage areas.



Curb-Cut Rain Garden							
Cost/Removal Analysis		New Treatment	% Reduction	New Treatment	% Reduction	New Treatment	% Reduction
Treatment	Number of BMPs	1		3		7	
	Total Size of BMPs	250	sq-ft	750	sq-ft	1,750	sq-ft
	TP (lb/yr)	0.5	0.4%	1.5	1.2%	3.5	2.7%
	TSS (lb/yr)	157	0.4%	468	1.2%	1,089	2.7%
	Volume (acre-feet/yr)	0.4	0.2%	1.1	0.6%	2.7	1.5%
Cost	Administration & Promotion Costs*	\$8,468		\$10,220		\$13,724	
	Design & Construction Costs**	\$7,376		\$22,128		\$51,632	
	Total Estimated Project Cost (2016)	\$15,844		\$32,348		\$65,356	
	Annual O&M***	\$225		\$675		\$1,575	
Efficiency	30-yr Average Cost/lb-TP	\$1,506		\$1,169		\$1,072	
	30-yr Average Cost/1,000lb-TSS	\$4,797		\$3,746		\$3,447	
	30-yr Average Cost/ac-ft Vol.	\$2,052		\$1,558		\$1,410	

\*Indirect Cost: (104 hours at \$73/hour base cost) + (12 hours/BMP at \$73/hour)  
 \*\*Direct Cost: (\$26/sq-ft for materials and labor) + (12 hours/BMP at \$73/hour for design)  
 \*\*\*Per BMP: (\$150/year for rehabilitations at years 10 and 20) + (\$75/year for routine maintenance)

# Project ID: 3-B

Main St. & State Ave.  
Hydrodynamic Device

**Drainage Area** – 5.0 acres  
**Location** – Northwestern corner of the Main Street and State Avenue intersection  
**Property Ownership** – Public  
**Site Specific Information** – A hydrodynamic device could be installed on Main Street and would accept runoff from areas primarily west of Main St. and the surrounding land uses. It could provide treatment to stormwater prior to discharging into the State Avenue stormwater pipe.



Hydrodynamic Device			
	Cost/Removal Analysis	New Treatment	% Reduction
Treatment	Number of BMPs	1	
	Total Size of BMPs	8 ft diameter	
	TP (lb/yr)	0.5	0.4%
	TSS (lb/yr)	280	0.7%
	Volume (acre-feet/yr)	0.0	0.0%
Cost	Administration & Promotion Costs*	\$1,752	
	Design & Construction Costs**	\$54,000	
	Total Estimated Project Cost (2016)	\$55,752	
	Annual O&M***	\$630	
Efficiency	30-yr Average Cost/lb-TP	\$4,977	
	30-yr Average Cost/1,000lb-TSS	\$8,887	
	30-yr Average Cost/ac-ft Vol.	N/A	

\*Indirect Cost: (24 hours at \$73/hour)

\*\*Direct Cost: (\$36,000 for materials) + (\$18,000 for labor and installation costs)

\*\*\*Per BMP: (3 cleanings/year)\*(3 hours/cleaning)\*(\$70/hour)

# Project ID: 3-C

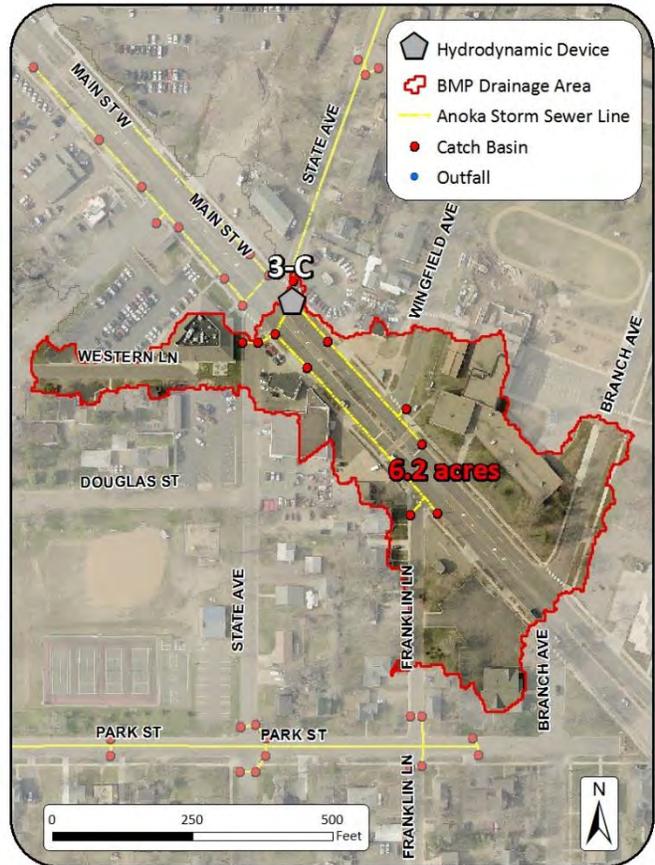
Main St. & State Ave.  
Hydrodynamic Device

**Drainage Area** - 6.2 acres

**Location** – Northeastern corner of the Main Street and State Avenue intersection

**Property Ownership** – Public

**Site Specific Information** – A hydrodynamic device could be installed on Main Street and would accept runoff from the southern portion of Main Street and the surrounding land uses. It could provide stormwater treatment prior to discharging into the State Avenue stormwater pipe.



Hydrodynamic Device			
Cost/Removal Analysis		New Treatment	% Reduction
Treatment	Number of BMPs	1	
	Total Size of BMPs	8 ft diameter	
	TP (lb/yr)	0.6	0.5%
	TSS (lb/yr)	302	0.7%
	Volume (acre-feet/yr)	0.0	0.0%
Cost	Administration & Promotion Costs*	\$1,752	
	Design & Construction Costs**	\$54,000	
	Total Estimated Project Cost (2016)	\$55,752	
	Annual O&M***	\$630	
Efficiency	30-yr Average Cost/lb-TP	\$4,147	
	30-yr Average Cost/1,000lb-TSS	\$8,240	
	30-yr Average Cost/ac-ft Vol.	N/A	

\*Indirect Cost: (24 hours at \$73/hour)

\*\*Direct Cost: (\$36,000 for materials) + (\$18,000 for labor and installation costs)

\*\*\*Per BMP: (3 cleanings/year)\*(3 hours/cleaning)\*(\$70/hour)

# Project ID: 3-D

Golf Course Pond  
IESF Bench

**Drainage Area** – 196.0 acres  
**Location** – South side of Green Haven Golf Course pond  
**Property Ownership** – Public (City of Anoka)  
**Site Specific Information** – An IESF bench is proposed as an improvement to the existing pond Green Haven Golf Course Pond. The pond currently provides treatment through retention and settling. However, the addition of an IESF will increase removal of dissolved phosphorus. The project is proposed on the south shore of the Green Haven Golf Course Pond. The IESF was sized to 14,000 sq.-ft. based on available space between the existing pond and the roadway.



IESF Bench				
		Cost/Removal Analysis	New Treatment	% Reduction
Treatment	Number of BMPs		1	
	Total Size of BMPs		14,000	sq-ft
	TP (lb/yr)	10.4		8.2%
	TSS (lb/yr)	0		0.0%
	Volume (acre-feet/yr)	0.0		0.0%
Cost	Administration & Promotion Costs*		\$5,475	
	Design & Construction Costs**		\$277,480	
	<b>Total Estimated Project Cost (2016)</b>		<b>\$282,955</b>	
	Annual O&M***		\$3,214	
Efficiency	30-yr Average Cost/lb-TP		<b>\$1,216</b>	
	30-yr Average Cost/1,000lb-TSS		N/A	
	30-yr Average Cost/ac-ft Vol.		N/A	

\*Indirect Cost: 75 hours at \$73/hour

\*\*Direct Cost: See Appendix B for detailed cost information

\*\*\*\$10,000/acre for IESF

# Project ID: 3-E

## Golf Course Pond Stormwater Reuse

**Drainage Area** – 196.0 acres  
**Location** – Green Haven Golf Course  
**Property Ownership** – Public (City of Anoka)  
**Site Specific Information** – A stormwater reuse project was proposed for the Green Haven Golf Course Pond. The golf course could reuse the runoff captured in this pond to irrigate approximately 20-acres of the golf course. The pond currently provides storage for approximately 8.5 million gallons of water, and this system could use 500,000 gallons per week. This practice could provide water quality treatment as well as water conservation benefits.



Stormwater Reuse			
<i>Cost/Removal Analysis</i>		New Treatment	% Reduction
<i>Treatment</i>	Number of BMPs	1	
	Total Size of BMPs	500,000	gallons
	TP (lb/yr)	18.2	14.3%
	TSS (lb/yr)	3,409	8.4%
	Volume (acre-feet/yr)	46.4	25.8%
<i>Cost</i>	Administration & Promotion Costs*	\$8,760	
	Design & Construction Costs**	\$600,000	
	<b>Total Estimated Project Cost (2016)</b>	<b>\$608,760</b>	
	Annual O&M***	\$3,000	
<i>Efficiency</i>	30-yr Average Cost/lb-TP	<b>\$1,280</b>	
	30-yr Average Cost/1,000lb-TSS	<b>\$6,833</b>	
	30-yr Average Cost/ac-ft Vol.	<b>\$503</b>	

\*120 hours at \$73/hour  
 \*\*See Appendix B for detailed cost information  
 \*\*\*Includes cleaning of unit and disposal of sediment/debris

## Catchment A-4

Existing Catchment Summary	
Acres	2.2
Dominant Land Cover	Residential
Parcels	11
Volume (acre-feet/yr)	1.3
TP (lb/yr)	1.7
TSS (lb/yr)	573



### CATCHMENT DESCRIPTION

This is the smallest catchment in this analysis, totaling just over two acres. The catchment consists only of drainage to two catch basins at the southeast corner of Maple Lane. The catch basins drain east and discharge directly to the Rum River.

### EXISTING STORMWATER TREATMENT

No treatment currently exists in this catchment other than street cleaning, which is conducted two times per year. Present-day stormwater pollutant loading and treatment is summarized in the table below.

<i>Existing Conditions</i>		Base Loading	Treatment	Net Treatment %	Existing Loading
<i>Treatment</i>	Number of BMPs	1			
	BMP Types	Street Cleaning			
	TP (lb/yr)	1.8	0.1	6%	<b>1.7</b>
	TSS (lb/yr)	618	45	7%	<b>573</b>
	Volume (acre-feet/yr)	1.3	0.0	0%	<b>1.3</b>

### PROPOSED RETROFITS OVERVIEW

A single hydrodynamic device was proposed to treat drainage from the entire catchment.

### RETROFITS CONSIDERED BUT REJECTED

Curb-cut rain gardens were considered in this catchment but were not proposed due to the steep slopes on the 2-3 properties with sufficient drainage areas to warrant a rain garden.

RETROFIT RECOMMENDATIONS



# Project ID: 4-A

## Maple Lane Hydrodynamic Device

**Drainage Area** – 2.2 acres  
**Location** – Maple Lane  
**Property Ownership** – Public  
**Site Specific Information** – A hydrodynamic device could be installed on Maple Lane to accept runoff from the entire catchment. This device could provide treatment before the water discharges into the Rum River.



Hydrodynamic Device				
		Cost/Removal Analysis	New Treatment	% Reduction
Treatment	Number of BMPs		1	
	Total Size of BMPs		6 ft diameter	
	TP (lb/yr)	0.3		17.6%
	TSS (lb/yr)	113		19.7%
	Volume (acre-feet/yr)	0.0		0.0%
Cost	Administration & Promotion Costs*			\$1,752
	Design & Construction Costs**			\$27,000
	Total Estimated Project Cost (2016)			\$28,752
	Annual O&M***			\$630
Efficiency	30-yr Average Cost/lb-TP		\$5,295	
	30-yr Average Cost/1,000lb-TSS		\$14,057	
	30-yr Average Cost/ac-ft Vol.		N/A	

\*Indirect Cost: (24 hours at \$73/hour)

\*\*Direct Cost: (\$18,000 for materials) + (\$9,000 for labor and installation costs)

\*\*\*Per BMP: (3 cleanings/year)\*(3 hours/cleaning)\*(\$70/hour)

## Catchment A-5

Existing Catchment Summary	
Acres	3.7
Dominant Land Cover	Residential
Parcels	21
Volume (acre-feet/yr)	3.1
TP (lb/yr)	3.2
TSS (lb/yr)	1,051

### CATCHMENT DESCRIPTION

This catchment consists primarily of paved surfaces, specifically the Ferry Street/Highway 169 corridor between Highway 10 and Calhoun Street. Overland runoff generated in the catchment is intercepted quickly in catch basins along Ferry Street and discharges into the Rum River from an outfall located just south of Clay Street.



### EXISTING STORMWATER TREATMENT

A hydrodynamic device was installed along Ferry Street by the Minnesota Department of Transportation during a recent reconstruction of Ferry Street/Highway 169. As installed, this device treats the entire catchment.

Street cleaning was only included for the very small amount of municipal roadway located within this catchment. The largest roadway, Ferry Street/Highway 169, is a state-owned highway and was not modeled with municipal street cleaning.

Present-day stormwater pollutant loading and treatment is summarized in the table below.

	Existing Conditions	Base Loading	Treatment	Net Treatment %	Existing Loading
Treatment	Number of BMPs	2			
	BMP Types	1 Hydrodynamic Device, Street Cleaning			
	TP (lb/yr)	3.8	0.6	16%	<b>3.2</b>
	TSS (lb/yr)	1,293	242	19%	<b>1,051</b>
	Volume (acre-feet/yr)	3.1	0.0	0%	<b>3.1</b>

### PROPOSED RETROFITS OVERVIEW

No stormwater retrofits were proposed in this catchment.

**RETROFITS CONSIDERED BUT REJECTED**

Curb-cut rain gardens and boulevard bioswales were considered along Ferry Street but were not proposed due to (1) the lack of boulevard to accommodate a bioswale and (2) the increased cost to divert water through a sidewalk and into a curb-cut rain garden makes the practice cost-prohibitive.

Therefore, the map below was included solely to provide additional detail of the catchment boundary, associated land uses, and streets.

### RETROFIT RECOMMENDATIONS



# Catchment A-6

Existing Catchment Summary	
Acres	8.7
Dominant Land Cover	Commercial
Parcels	28
Volume (acre-feet/yr)	9.3
TP (lb/yr)	6.5
TSS (lb/yr)	2,603



### CATCHMENT DESCRIPTION

Catchment A-6 contains nearly 9 acres of heavily impervious area. The catchment is dominated by commercial properties and the Ferry Street/Highway 169 and Main Street roadways. Runoff generated in this area flows to a storm sewer below Ferry Street/Highway 169 and discharges into the Rum River just north of Main Street.

### EXISTING STORMWATER TREATMENT

A hydrodynamic device was installed by the Minnesota Department of Transportation during a recent reconstruction of Ferry Street/Highway 169. The device is located along the Main Street storm sewer line just east of its intersection with Ferry Street/Highway 169 and treats the entire catchment.

Street cleaning was only included for the small amount of municipal roadways located within this catchment. The largest roadway, Ferry Street/Highway 169, is a state-owned highway and was not modeled with municipal street cleaning.

Present-day stormwater pollutant loading and treatment is summarized in the table below.

<i>Existing Conditions</i>		Base Loading	Treatment	Net Treatment %	Existing Loading
<b>Treatment</b>	Number of BMPs	2			
	BMP Types	1 Hydrodynamic Device, Street Cleaning			
	TP (lb/yr)	7.7	1.2	16%	6.5
	TSS (lb/yr)	3,178	575	18%	2,603
	Volume (acre-feet/yr)	9.3	0.0	0%	9.3

### PROPOSED RETROFITS OVERVIEW

No stormwater retrofits were proposed in this catchment.

### RETROFITS CONSIDERED BUT REJECTED

Curb-cut rain gardens and boulevard bioswales were considered along Ferry Street but were not proposed due to (1) the lack of boulevard to accommodate a bioswale and (2) the increased cost to divert water through a sidewalk and into a curb-cut rain garden makes that practice cost-prohibitive. Permeable pavement was also considered for many of the private parking lots in the catchment but was not considered cost effective due to their small size.

Therefore, the map below was included solely to provide additional detail of the catchment boundary, associated land uses, and streets.

RETROFIT RECOMMENDATIONS



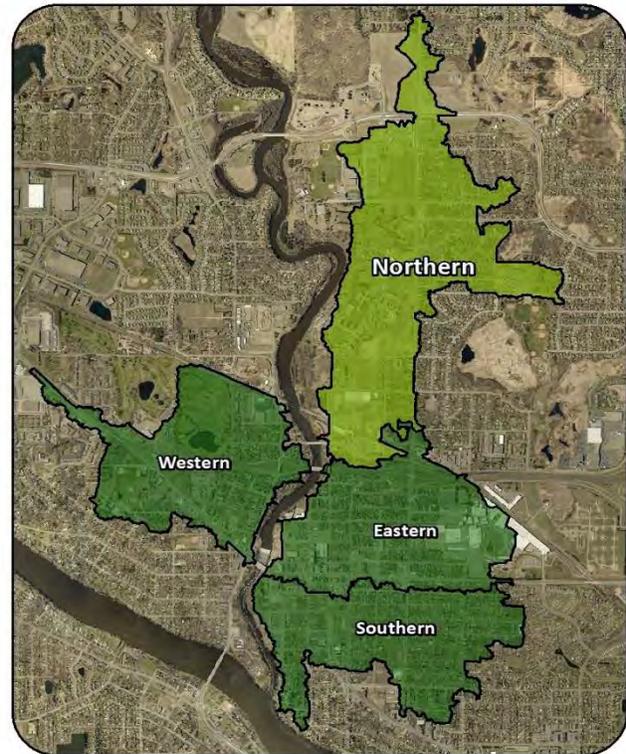
## Northern Drainage Network

Catchment ID	Page
A-7	63
A-8	77

Existing Network Summary	
Acres	525.5
Dominant Land Cover	Residential
Volume (ac-ft/yr)	319.6
TP (lb/yr)	266.2
TSS (lb/yr)	99,514

### DRAINAGE NETWORK SUMMARY

This network comprises most of the research area north of Highway 10 and east of the Rum River. The network is split into two catchments, each with a respective outfall to the Rum River. The northern outfall is located west of the 7<sup>th</sup> Avenue – Bryant Street intersection (Catchment A-7). The southern outfall is located west of the 4<sup>th</sup> Avenue – Grant Street intersection (A-8). This network includes many of the new developments in the city, as well as the Anoka High School and the Anoka Metro Regional Treatment Center. Land use in this network is primarily residential with small lots east of 7<sup>th</sup> Avenue and commercial or public properties with large campuses west of 7<sup>th</sup> Avenue.



### EXISTING STORMWATER TREATMENT

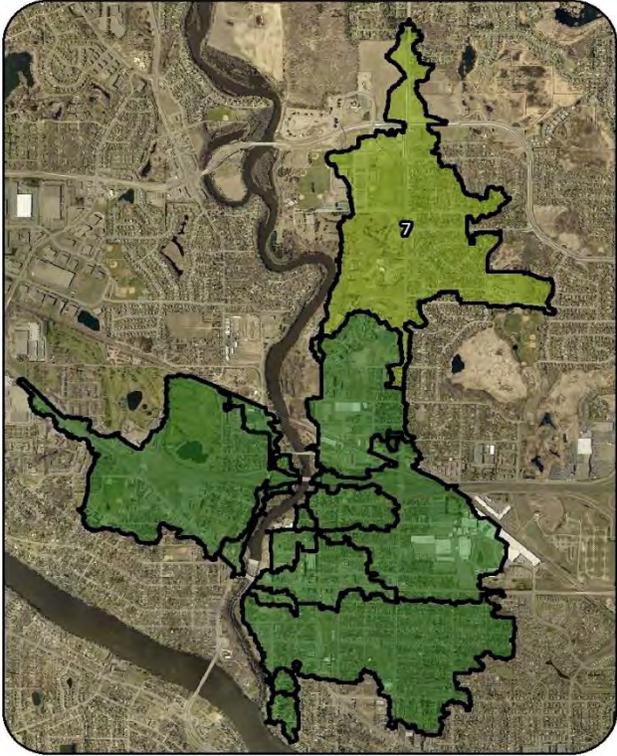
Six stormwater retention ponds are located across the two catchments in this drainage network. Five of these only treat runoff from the properties they were built upon and some adjoining properties. The sixth, a large, city-owned regional pond west of the 4<sup>th</sup> Avenue and Grant Street intersection treats 147 acres of commercial and residential properties in its catchment. Street cleaning is also conducted by the City of Anoka two times annually.

# Catchment A-7

Existing Catchment Summary	
Acres	378.3
Dominant Land Cover	Residential
Parcels	448
Volume (acre-feet/yr)	213.6
TP (lb/yr)	207.4
TSS (lb/yr)	76,598

**CATCHMENT DESCRIPTION**

Catchment A-7 is the northernmost and largest catchment in this analysis. It spans from 145<sup>th</sup> Lane in the north to Garfield Street in the south and includes 378 acres of residential, commercial, and public properties. All stormwater runoff generated within this catchment drains to a single outfall to the Rum River located west of the MNDOT Truck Station at the intersection of 7<sup>th</sup> Avenue and Bryant Avenue.



The area within this catchment is not the only area that drains to the Bryant Avenue stormwater outfall. The area draining to this pipe is actually much larger, an additional 1,600 acres, and includes properties from the Cities of Anoka, Andover, and Coon Rapids. This additional area includes drainage to wetlands along Bunker Lake Boulevard., Riverdale Drive (west of the Riverdale Crossing Shopping Center), and south of Sunny Acres Park. The additional acreage was not included within this analysis as (1) much of the area was outside of the City of Anoka, and (2) stakeholders determined project dollars were better used when dedicated to protecting the Rum River, as opposed to the upstream wetlands. All areas included within this catchment are “downstream” (or do not drain to) of these wetland complexes.

**EXISTING STORMWATER TREATMENT**

This catchment has three ponds that provide treatment. The ponds are located on the Anoka Ice Arena, Anoka High School baseball field, and the Anoka Metro Regional Treatment Center. These ponds treat only the properties they were installed upon. The other catchment-wide stormwater treatment is street cleaning provided by the City of Anoka two times per year. Present-day stormwater pollutant loading and treatment is summarized in the table below.

	<i>Existing Conditions</i>	Base Loading	Treatment	Net Treatment %	Existing Loading
<i>Treatment</i>	Number of BMPs	4			
	BMP Types	3 Ponds, Street Cleaning			
	TP (lb/yr)	233.6	26.2	11%	<b>207.4</b>
	TSS (lb/yr)	90,369	13,771	15%	<b>76,598</b>
	Volume (acre-feet/yr)	214.6	0.9	0%	<b>213.6</b>

### PROPOSED RETROFITS OVERVIEW

Due to the prevalence of sandy, Hubbard soils throughout the residential areas of the catchment, infiltration practices were pursued. Up to 15 curb-cut rain gardens and 14 boulevard bioswales were proposed across the catchment. Campus retrofit opportunities at Wilson Elementary School are proposed which would divert stormwater runoff from paved surfaces to two large infiltration basins. The Anoka High School property was flagged as a location for stormwater reuse. Stormwater from the large paved surfaces at the school, including building roofs, sidewalks, and parking areas, could be diverted to a holding structure to be later used to irrigate the soccer and baseball fields on the property.

Hydrodynamic devices were proposed in two locations. The first would be located along 38<sup>th</sup> Lane between 7<sup>th</sup> Avenue and 8<sup>th</sup> Avenue. The second would be located along 7<sup>th</sup> Avenue east of the Anoka Metro Treatment Center.

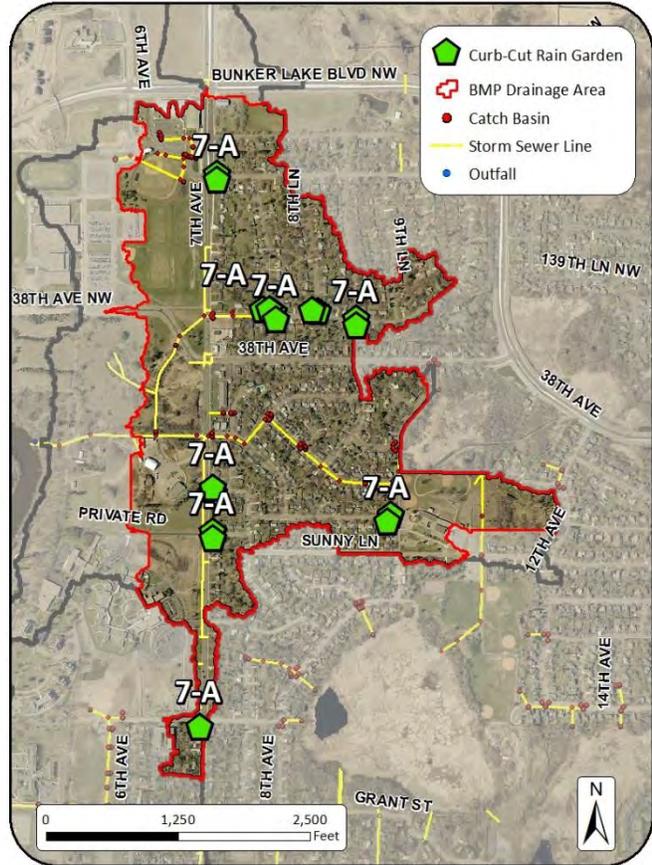
Catchment-wide treatment was proposed through the installation of a new pond west of 7<sup>th</sup> Avenue. This pond could be installed on currently undeveloped, state-owned land. This pond was modeled once with a smaller drainage, accepting water from just the eastern portion of the catchment and modeled with a larger drainage, runoff from almost the entire 378-acre drainage area. To help promote phosphorus retention, an IESF bench could also be included with this pond.



# Project ID: 7-A

## Curb-Cut Rain Gardens

**Drainage Area** – 1.5 – 25.5 acres  
**Location** – Various locations throughout catchment  
**Property Ownership** – Private  
**Site Specific Information** – Single-family lots in the catchment provide various locations for curb-cut rain gardens to treat stormwater pollutants originating from private properties and streets. Considering typical landowner participation rates, scenarios with one, ten, and seventeen rain gardens were analyzed to treat the drainage area.



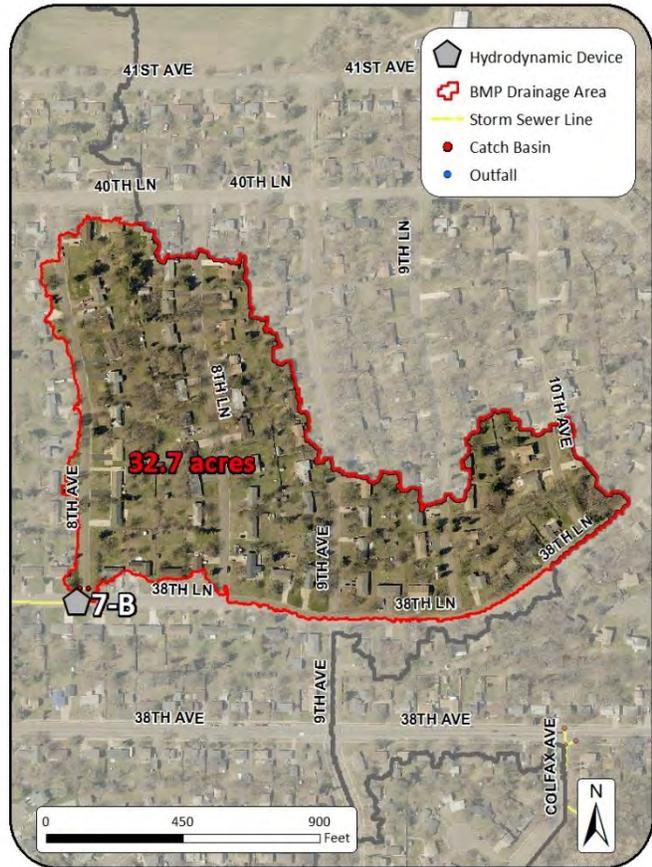
Curb-Cut Rain Garden							
Cost/Removal Analysis		New Treatment	% Reduction	New Treatment	% Reduction	New Treatment	% Reduction
Treatment	Number of BMPs	1		10		17	
	Total Size of BMPs	250	sq-ft	2,500	sq-ft	4,250	sq-ft
	TP (lb/yr)	0.5	0.2%	4.6	2.2%	8.1	3.9%
	TSS (lb/yr)	153	0.2%	1,454	1.9%	2,539	3.3%
	Volume (acre-feet/yr)	0.4	0.2%	3.5	1.7%	6.2	2.9%
Cost	Administration & Promotion Costs*	\$8,468		\$16,352		\$22,484	
	Design & Construction Costs**	\$7,376		\$73,760		\$125,392	
	Total Estimated Project Cost (2016)	\$15,844		\$90,112		\$147,876	
	Annual O&M***	\$225		\$2,250		\$3,825	
Efficiency	30-yr Average Cost/lb-TP	\$1,506		\$1,142		\$1,081	
	30-yr Average Cost/1,000lb-TSS	\$4,922		\$3,613		\$3,448	
	30-yr Average Cost/ac-ft Vol.	\$1,931		\$1,486		\$1,407	

\*Indirect Cost: (104 hours at \$73/hour base cost) + (12 hours/BMP at \$73/hour)  
 \*\*Direct Cost: (\$26/sq-ft for materials and labor) + (12 hours/BMP at \$73/hour for design)  
 \*\*\*Per BMP: (\$150/year for rehabilitations at years 10 and 20) + (\$75/year for routine maintenance)

# Project ID: 7-B

38<sup>th</sup> LN. & 8<sup>th</sup> Ave.  
Hydrodynamic Device

**Drainage Area** – 32.7 acres  
**Location** – 38<sup>th</sup> Lane at 8<sup>th</sup> Avenue  
**Property Ownership** – Public  
**Site Specific Information** – A hydrodynamic device could be installed on 38<sup>th</sup> Lane to accept runoff from residential properties and streets in the northeast portion of the catchment.



Hydrodynamic Device				
		Cost/Removal Analysis	New Treatment	% Reduction
Treatment	Number of BMPs		1	
	Total Size of BMPs		10 ft diameter	
	TP (lb/yr)	1.2		0.6%
	TSS (lb/yr)	491		0.6%
	Volume (acre-feet/yr)	0.0		0.0%
Cost	Administration & Promotion Costs*			\$1,752
	Design & Construction Costs**			\$108,000
	Total Estimated Project Cost (2016)			\$109,752
	Annual O&M***			\$630
Efficiency	30-yr Average Cost/lb-TP		\$3,574	
	30-yr Average Cost/1,000lb-TSS		\$8,734	
	30-yr Average Cost/ac-ft Vol.		N/A	

\*Indirect Cost: (24 hours at \$73/hour)

\*\*Direct Cost: (\$72,000 for materials) + (\$36,000 for labor and installation costs)

\*\*\*Per BMP: (3 cleanings/year)\*(3 hours/cleaning)\*(\$70/hour)

# Project ID: 7-C

7<sup>th</sup> Avenue  
Hydrodynamic Device

**Drainage Area** – 14.5 acres  
**Location** – 7<sup>th</sup> Avenue  
**Property Ownership** – Public  
**Site Specific Information** – A hydrodynamic device could be installed on 7<sup>th</sup> Avenue between Hull Road and Sunny Lane. This device would accept runoff from residential properties and from 7<sup>th</sup> Avenue.



Hydrodynamic Device				
		Cost/Removal Analysis	New Treatment	% Reduction
Treatment	Number of BMPs		1	
	Total Size of BMPs		10 ft diameter	
	TP (lb/yr)	0.8	0.4%	
	TSS (lb/yr)	383	0.5%	
	Volume (acre-feet/yr)	0.0	0.0%	
Cost	Administration & Promotion Costs*	\$1,752		
	Design & Construction Costs**	\$108,000		
	<b>Total Estimated Project Cost (2016)</b>	<b>\$109,752</b>		
	Annual O&M***	\$630		
Efficiency	30-yr Average Cost/lb-TP	<b>\$5,361</b>		
	30-yr Average Cost/1,000lb-TSS	<b>\$11,197</b>		
	30-yr Average Cost/ac-ft Vol.	<b>N/A</b>		

\*Indirect Cost: (24 hours at \$73/hour)

\*\*Direct Cost: (\$72,000 for materials) + (\$36,000 for labor and installation costs)

\*\*\*Per BMP: (3 cleanings/year)\*(3 hours/cleaning)\*(\$70/hour)

# Project ID: 7-D

## Colfax Ave. & Blackoaks Ln. Infiltration Basin

**Drainage Area** – 22.2 acres

**Location** – NW side of Wilson Elementary School

**Property Ownership** – Public

**Site Specific Information** – An infiltration basin is proposed for the northwest corner of Wilson Elementary School where open space is available between baseball fields and a walking path. This project would involve “daylighting” the storm sewer line to the north (line runs east-west) and directing it to the proposed infiltration basin. The feasibility of this project is dependent on further soil testing to determine the infiltration capacity in this area (e.g. soil composition and separation from the water table) and further examination of the wetland complex to the south to determine the frequency with which that complex contributes flood water to the storm sewer line that would discharge to the proposed basin.



Infiltration Basin			
Cost/Removal Analysis		New Treatment	% Reduction
Treatment	Ponding Depth of BMP	1 foot	
	Total Size of BMP	5,000 sq-ft	
	TP (lb/yr)	9.6	5%
	TSS (lb/yr)	3,256	4%
	Volume (acre-feet/yr)	8.1	4%
Cost	Administration & Promotion Costs*	\$2,920	
	Design & Construction Costs**	\$115,876	
	<b>Total Estimated Project Cost (2016)</b>	<b>\$118,796</b>	
	Annual O&M***	\$225	
Efficiency	30-yr Average Cost/lb-TP	<b>\$436</b>	
	30-yr Average Cost/1,000lb-TSS	<b>\$1,285</b>	
	30-yr Average Cost/ac-ft Vol.	<b>\$515</b>	

\*Indirect Cost: 40 hours at \$73/hour

\*\*Direct Cost: (\$20/sq-ft for materials and labor) + (12 hours at \$73/hour for design) + \$15,000 for construction costs relating to daylighting stormwater pipe

\*\*\*(\$150/year for rehabilitations at years 10 and 20) + (\$75/year for routine maintenance)

# Project ID: 7-E

## Sunny Lane Infiltration Basin

**Drainage Area** – 2.7 acres  
**Location** – SE side of Wilson Elementary School  
**Property Ownership** – Public  
**Site Specific Information** –An infiltration basin is proposed for the southeast corner of Wilson Elementary School adjacent to the main school parking lot. Open space is available between the parking lot and the road for the installation of this practice. This basin would accept stormwater from the elementary school property and Sunny Lane. A rain garden at this location would require an inlet that allows runoff to pass under the existing sidewalk.



Infiltration Basin				
		Cost/Removal Analysis	New Treatment	% Reduction
Treatment	Ponding Depth of BMP	1 foot		
	Total Size of BMP	700 sq-ft		
	TP (lb/yr)	1.7		1%
	TSS (lb/yr)	676		1%
	Volume (acre-feet/yr)	1.8		1%
Cost	Administration & Promotion Costs*	\$2,920		
	Design & Construction Costs**	\$19,876		
	Total Estimated Project Cost (2016)	<b>\$22,796</b>		
	Annual O&M***	\$225		
Efficiency	30-yr Average Cost/lb-TP	<b>\$579</b>		
	30-yr Average Cost/1,000lb-TSS	<b>\$1,457</b>		
	30-yr Average Cost/ac-ft Vol.	<b>\$547</b>		

\*Indirect Cost: 40 hours at \$73/hour

\*\*Direct Cost: (\$20/sq-ft for materials and labor) + (12 hours at \$73/hour for design)

+ \$5,000 for rain garden inlet under existing sidewalk

\*\*\*(\$150/year for rehabilitations at years 10 and 20) + (\$75/year for routine maintenance)

# Project ID: 7-F

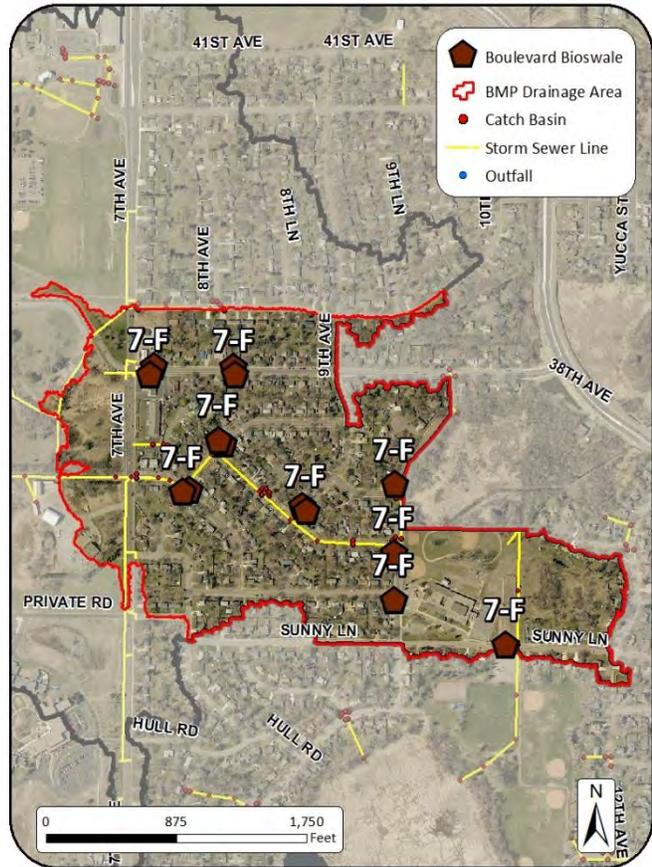
## Boulevard Bioswales

**Drainage Area** – 0.5 acre

**Location** – Various locations in SE portion of catchment

**Property Ownership** – Public

**Site Specific Information** – Bioswales are proposed for installation in various locations in the southeast portion of the catchment to accept runoff from residential and commercial properties. Locations for up to 14 bioswales are sited within the catchment. The table below shows the estimated cost and pollutant removal based on treatment of a 0.5-acre contributing drainage area.



Boulevard Bioswale			
		2.5"/hr Infiltr. Rate	
		New Treatment	% Reduction
<b>Cost/Removal Analysis</b>			
<b>Treatment</b>	Number of BMPs	1	
	Total Size of BMPs	80 sq-ft	
	TP (lb/yr)	0.2	0.1%
	TSS (lb/yr)	61	0.1%
	Volume (acre-feet/yr)	0.1	0.1%
<b>Cost</b>	Administration & Promotion Costs*	\$3,650	
	Design & Construction Costs**	\$4,876	
	Total Estimated Project Cost (2016)	<b>\$8,526</b>	
	Annual O&M***	\$225	
<b>Efficiency</b>	30-yr Average Cost/lb-TP	<b>\$3,264</b>	
	30-yr Average Cost/1,000lb-TSS	<b>\$8,352</b>	
	30-yr Average Cost/ac-ft Vol.	<b>\$3,704</b>	

\*Indirect Cost: (50 hours at \$73/hour)

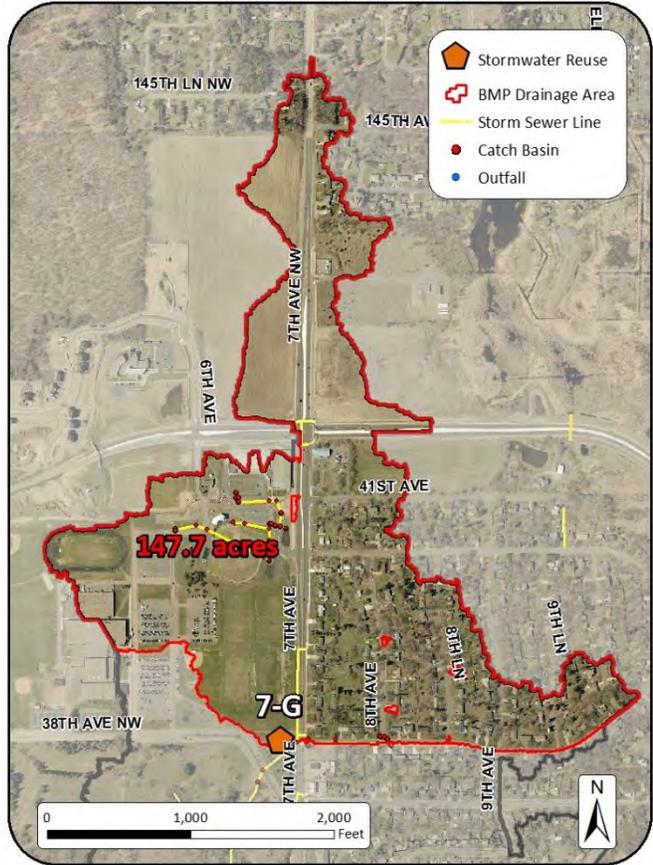
\*\*Direct Cost: (\$50/sq-ft for materials and labor) + (12 hours/BMP at \$73/hour for design)

\*\*\*Per BMP: (\$150/year for 10-year rehabilitation)+ (\$75/year for routine maintenance)

# Project ID: 7-G

38<sup>th</sup> Ave. & 7<sup>th</sup> Ave.  
Stormwater Reuse

**Drainage Area** – 147.7 acres  
**Location** –Interchange of 38<sup>th</sup> Avenue NW and 7<sup>th</sup> Avenue  
**Property Ownership** – Public  
**Site Specific Information** – A water reuse system has been proposed for the southeastern corner of Anoka High School. An irrigation system could reuse the rainfall captured in this system which would provide water quality treatment as well as water conservation benefits. The proposed 500,000-gallon cistern would capture water from the northern portion of the catchment. The captured water could then be reused on approximately 20 acres of sports fields at Anoka High School.



Stormwater Reuse			
Cost/Removal Analysis		New Treatment	% Reduction
Treatment	Number of BMPs	1	
	Total Size of BMPs	500,000	gallons
	TP (lb/yr)	17.5	8.4%
	TSS (lb/yr)	5,987	7.8%
	Volume (acre-feet/yr)	18.7	8.8%
Cost	Administration & Promotion Costs*	\$8,760	
	Design & Construction Costs**	\$950,000	
	<b>Total Estimated Project Cost (2016)</b>	<b>\$958,760</b>	
	Annual O&M***	\$3,000	
Efficiency	30-yr Average Cost/lb-TP	<b>\$1,998</b>	
	30-yr Average Cost/1,000lb-TSS	<b>\$5,839</b>	
	30-yr Average Cost/ac-ft Vol.	<b>\$1,869</b>	

\*120 hours at \$73/hour

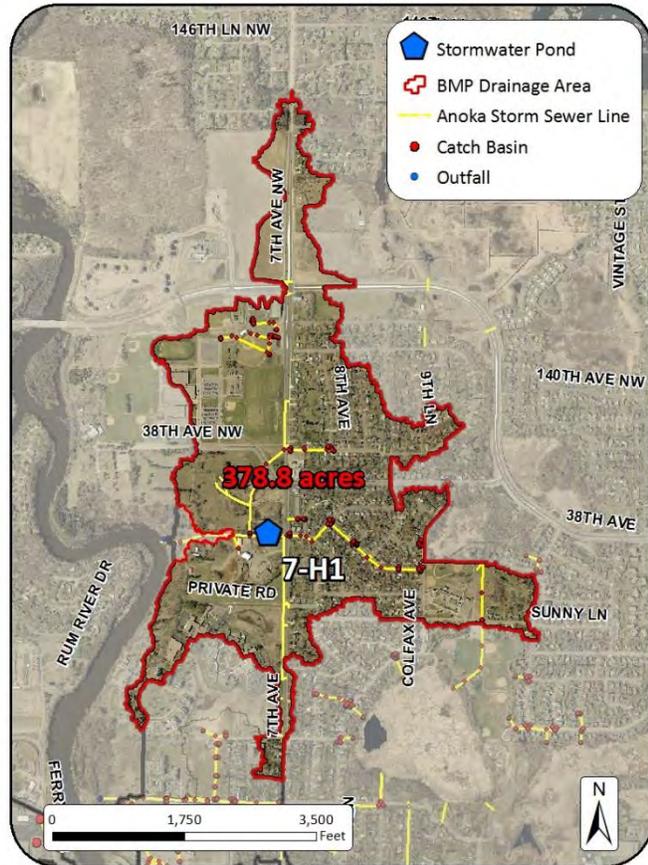
\*\*See Appendix B for detailed cost information

\*\*\*Includes cleaning of unit and disposal of sediment/debris

# Project ID: 7-H1

7<sup>th</sup> Avenue.  
New Pond

**Drainage Area** – 378.8 acres  
**Location** – West side of 7<sup>th</sup> Avenue  
**Property Ownership** – Public (State of Minnesota)  
**Site Specific Information** – A new pond is proposed for public property on the western side of 7<sup>th</sup> Avenue. One proposed scenario would be for the installation of a large pond that would accept water from almost the entire catchment. Currently, water from the catchment flows through a large storm sewer line and then into the Rum River. The proposed pond would receive water from the storm sewer line, providing additional treatment to the whole catchment.



New Pond				
		Cost/Removal Analysis	New Treatment	% Reduction
Treatment	Number of BMPs		1	
	Total Size of BMPs		5.5 acres	
	TP (lb/yr)	111.6	53.8%	
	TSS (lb/yr)	54,558	71.2%	
	Volume (acre-feet/yr)	0.9	0.4%	
Cost	Administration & Promotion Costs*	\$7,300		
	Design & Construction Costs**	\$794,838		
	<b>Total Estimated Project Cost (2015)</b>	<b>\$802,138</b>		
	Annual O&M***	\$5,500		
Efficiency	30-yr Average Cost/lb-TP	<b>\$289</b>		
	30-yr Average Cost/1,000lb-TSS	<b>\$591</b>		
	30-yr Average Cost/ac-ft Vol.	<b>N/A</b>		

\*Indirect Cost: 100 hours at \$73/hour  
 \*\*Direct Cost: See Appendix B for detailed cost information  
 \*\*\*\$1,000/acre - Annual inspection and sediment/debris removal from pretreatment area

# Project ID: 7-H2

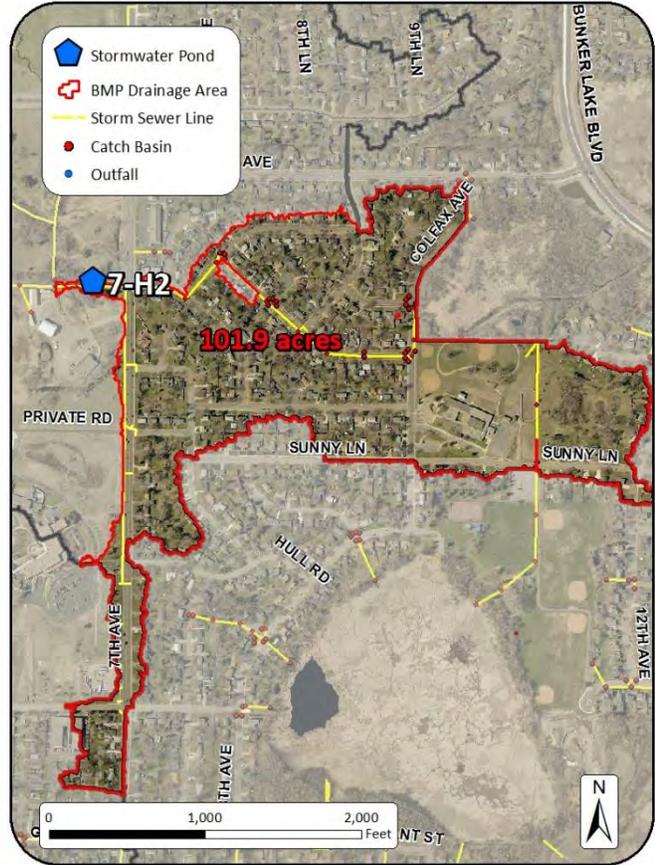
## 7<sup>th</sup> Avenue. New Pond

**Drainage Area** – 101.9 acres

**Location** – West side of 7<sup>th</sup> Avenue

**Property Ownership** – Public (State of Minnesota)

**Site Specific Information** – A new pond is proposed for public property on the western side of 7<sup>th</sup> Avenue. This scenario includes a smaller pond that would accept water from the eastern portion of the catchment and provide additional treatment to water from approximately a quarter of the catchment.



New Pond				
		Cost/Removal Analysis	New Treatment	% Reduction
Treatment	Number of BMPs		1	
	Total Size of BMPs		1.8 acres	
	TP (lb/yr)		31.5	15.2%
	TSS (lb/yr)		13,452	17.6%
	Volume (acre-feet/yr)		0.4	0.2%
Cost	Administration & Promotion Costs*		\$7,300	
	Design & Construction Costs**		\$353,184	
	Total Estimated Project Cost (2015)		<b>\$360,484</b>	
	Annual O&M***		\$1,800	
Efficiency	30-yr Average Cost/lb-TP		<b>\$439</b>	
	30-yr Average Cost/1,000lb-TSS		<b>\$1,027</b>	
	30-yr Average Cost/ac-ft Vol.		<b>N/A</b>	

\*Indirect Cost: 100 hours at \$73/hour

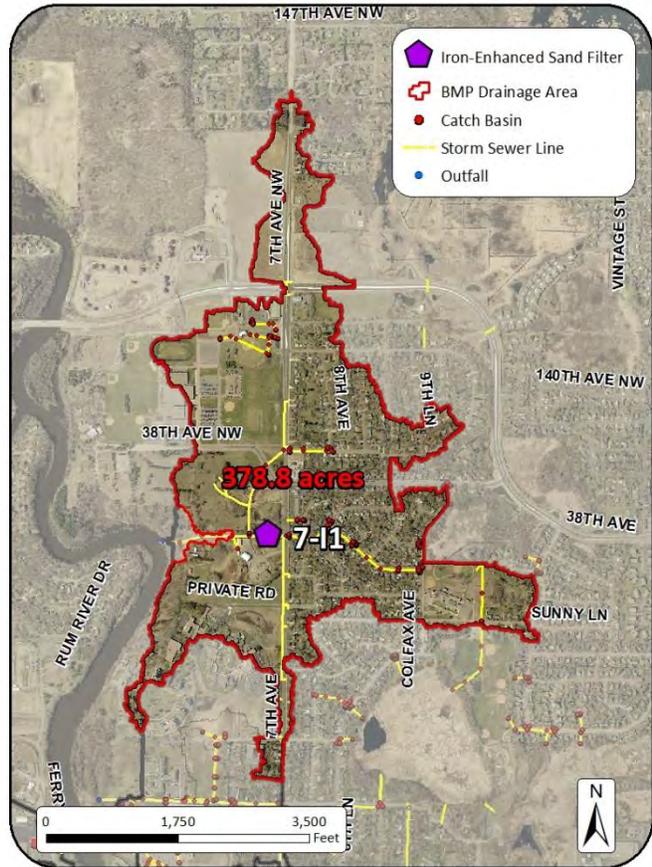
\*\*Direct Cost: See Appendix B for detailed cost information

\*\*\*\$1,000/acre - Annual inspection and sediment/debris removal from pretreatment area

# Project ID: 7-I1

7<sup>th</sup> Avenue.  
IESF Bench

**Drainage Area** – 378.8 acres  
**Location** –West side of 7<sup>th</sup> Avenue  
**Property Ownership** – Public (State of Minnesota)  
**Site Specific Information** – An IESF bench is proposed as an improvement to the proposed pond with the larger drainage area (i.e. Project ID 7-H1). The pond would provide treatment through retention and settling. However, the addition of an IESF will increase removal of dissolved phosphorus. The IESF was sized to 20,000 sq.-ft. based on available space and the proposed size of the new pond.



IESF Bench				
		Cost/Removal Analysis	New Treatment	% Reduction
Treatment	Number of BMPs		1	
	Total Size of BMPs		20,000	sq-ft
	TP (lb/yr)		26.6	12.8%
	TSS (lb/yr)		0	0.0%
	Volume (acre-feet/yr)		0.0	0.0%
Cost	Administration & Promotion Costs*			\$5,475
	Design & Construction Costs**			\$575,516
	<b>Total Estimated Project Cost (2016)</b>			<b>\$580,991</b>
	Annual O&M***			\$4,591
Efficiency	30-yr Average Cost/lb-TP			\$902
	30-yr Average Cost/1,000lb-TSS			N/A
	30-yr Average Cost/ac-ft Vol.			N/A

\*Indirect Cost: 75 hours at \$73/hour  
 \*\*Direct Cost: See Appendix B for detailed cost information  
 \*\*\*\$10,000/acre for IESF

# Project ID: 7-I2

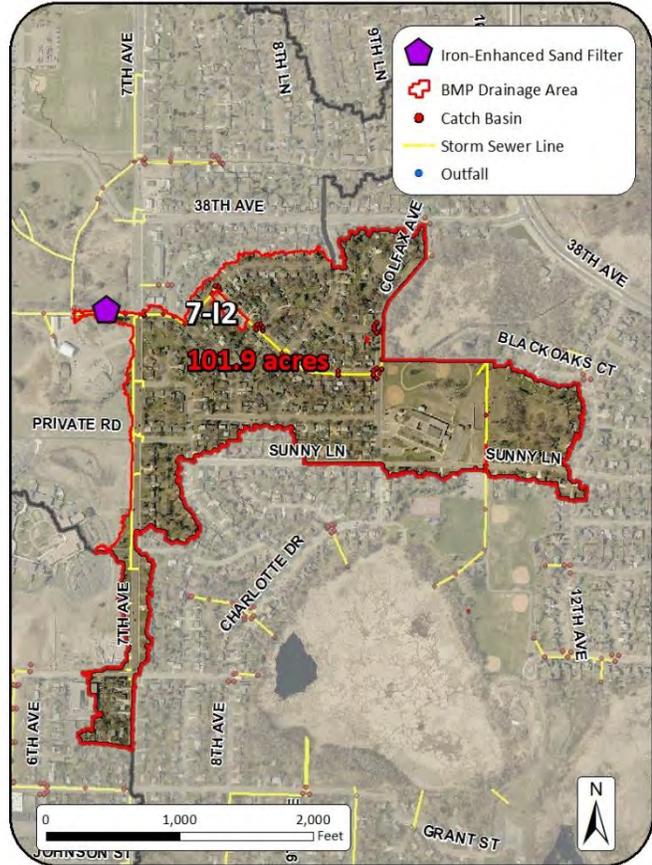
7<sup>th</sup> Avenue.  
IESF Bench

**Drainage Area** – 101.9 acres

**Location** –West side of 7<sup>th</sup> Avenue

**Property Ownership** – Public (State of Minnesota)

**Site Specific Information** – An IESF bench is proposed as an improvement to the proposed pond with the smaller drainage area (i.e. Project ID 7-H2). The pond would provide treatment through retention and settling. However, the addition of an IESF will increase removal of dissolved phosphorus. The IESF was sized to 8,000 sq.-ft. based on available space and the proposed size of the new pond.



IESF Bench				
		Cost/Removal Analysis	New Treatment	% Reduction
Treatment	Number of BMPs		1	
	Total Size of BMPs		8,000	sq-ft
	TP (lb/yr)		7.2	3.5%
	TSS (lb/yr)		0	0.0%
	Volume (acre-feet/yr)		0.0	0.0%
Cost	Administration & Promotion Costs*			\$5,475
	Design & Construction Costs**			\$300,400
	Total Estimated Project Cost (2016)			<b>\$305,875</b>
	Annual O&M***			\$1,837
Efficiency	30-yr Average Cost/lb-TP		<b>\$1,669</b>	
	30-yr Average Cost/1,000lb-TSS		<b>N/A</b>	
	30-yr Average Cost/ac-ft Vol.		<b>N/A</b>	

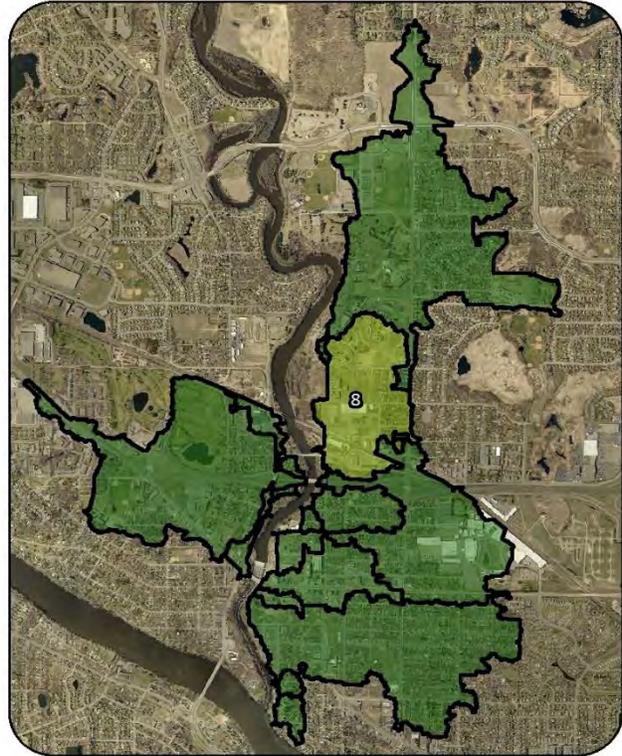
\*Indirect Cost: 75 hours at \$73/hour

\*\*Direct Cost: See Appendix B for detailed cost information

\*\*\*\$10,000/acre for IESF

# Catchment A-8

Existing Catchment Summary	
Acres	147.0
Dominant Land Cover	Residential
Parcels	163
Volume (acre-feet/yr)	106.0
TP (lb/yr)	58.8
TSS (lb/yr)	22,916



### CATCHMENT DESCRIPTION

The southern of the two catchments in the northern drainage network is Catchment A-8. This catchment is bounded by the Anoka Metro Regional Treatment Center and county offices to the north, 7<sup>th</sup> Avenue to the east, and US-10 to the south. Runoff generated within the catchment flows through municipal storm sewer lines to a retention pond west of the 4<sup>th</sup> Avenue and Grant Street intersection. This pond treats the entire 147-acre catchment, and discharges directly into the Rum River 300 ft. west of the pond.

### EXISTING STORMWATER TREATMENT

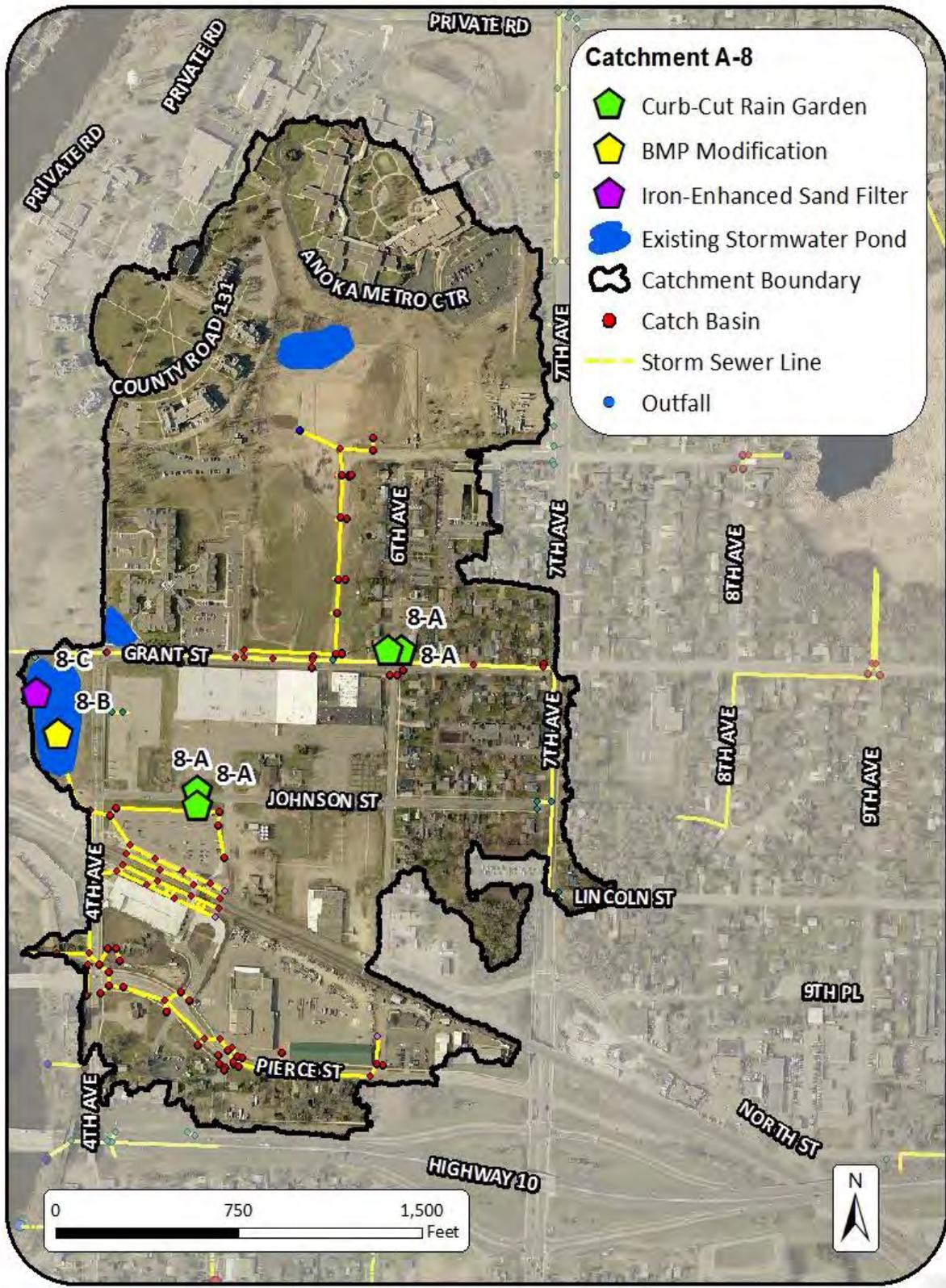
Most stormwater treatment in this catchment is supplied by the 4<sup>th</sup> Avenue and Grant Street. municipal retention pond. Upstream of this pond are two other retention ponds. The first is located on a City of Anoka development property on Garfield Street. The second pond is located on the Volunteers of America’s Homestead of Anoka apartment complex. Each of these ponds treats only the property it was installed upon. Outside of the 4<sup>th</sup> Avenue and Grant Street retention pond, the only other catchment-wide treatment is provided by the City of Anoka in the form of street cleaning two times per year. Present-day stormwater pollutant loading and treatment are summarized in the table below.

<i>Existing Conditions</i>		Base Loading	Treatment	Net Treatment %	Existing Loading
<b>Treatment</b>	Number of BMPs	4			
	BMP Types	3 Ponds, Street Cleaning			
	TP (lb/yr)	101.5	42.7	42%	<b>58.8</b>
	TSS (lb/yr)	48,067	25,151	52%	<b>22,916</b>
	Volume (acre-feet/yr)	107.0	1.1	1%	<b>106.0</b>

### PROPOSED RETROFITS OVERVIEW

Proposed stormwater retrofit practices were focused on improving treatment within the catchments largest existing structure, the 4<sup>th</sup> Avenue and Grant Street municipal retention pond. The first proposed practice looks to modify the pond by increasing its storage capacity. This would be done to improve

treatment of the existing landscape and to better prepare the pond for accommodating runoff from future development. The second practice would add an IESF bench along the western banks of the pond, increasing TP retention through the pond system. Upstream of the regional municipal pond, up to four curb-cut rain garden were proposed. These were proposed to supplement treatment provided by the pond in residential and commercial areas with soils that are conducive to infiltration practices.



# Project ID: 8-A

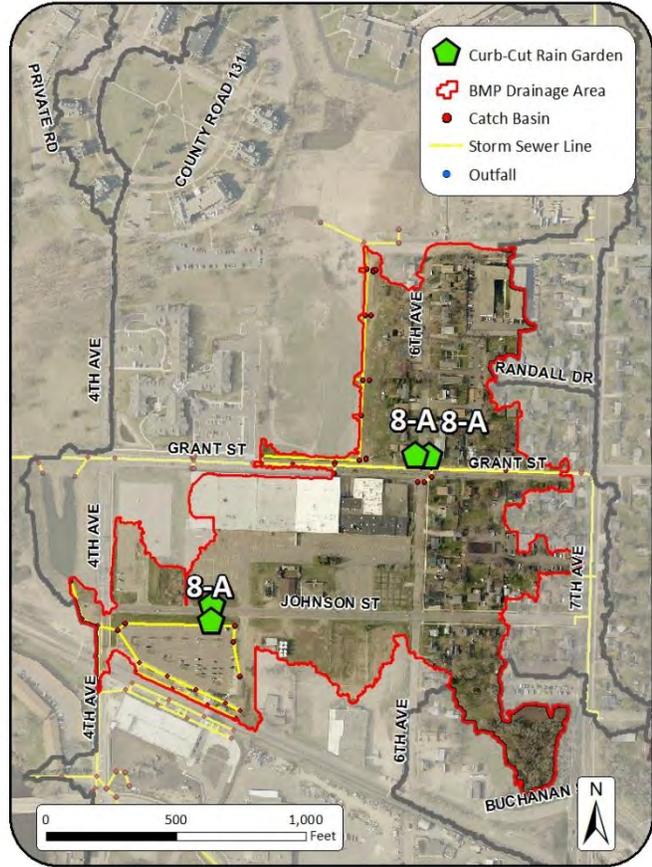
## Curb-Cut Rain Gardens

**Drainage Area** – 1.5 – 6.0 acres

**Location** – Various locations throughout catchment

**Property Ownership** – Private

**Site Specific Information** – Various locations for curb-cut rain gardens are proposed on residential and light industrial properties to treat stormwater pollutants. Considering private landowner participation rates, scenarios were run with two rain gardens placed on light industrial properties and two placed on residential properties.



Curb Cut Rain Garden					
Cost/Removal Analysis		New Treatment	% Reduction	New Treatment	% Reduction
<b>Treatment</b>	Number of BMPs	2		2	
	Land Use	LI		MDRNA	
	Total Size of BMPs	500	sq-ft	500	sq-ft
	TP (lb/yr)	0.8	1.4%	0.7	1.2%
	TSS (lb/yr)	301	1.3%	190	0.8%
	Volume (acre-feet/yr)	1.1	1.0%	0.7	0.7%
<b>Cost</b>	Administration & Promotion Costs*	\$2,482		\$2,482	
	Design & Construction Costs**	\$14,752		\$14,752	
	<b>Total Estimated Project Cost (2016)</b>	<b>\$17,234</b>		<b>\$17,234</b>	
	Annual O&M***	\$450		\$450	
<b>Efficiency</b>	30-yr Average Cost/lb-TP	\$1,281		\$1,464	
	30-yr Average Cost/1,000lb-TSS	\$3,404		\$5,392	
	30-yr Average Cost/ac-ft Vol.	\$931		\$1,394	

\*Indirect Cost: (10 hours at \$73/hour base cost) + (12 hours/BMP at \$73/hour)

\*\*Direct Cost: (\$26/sq-ft for materials and labor) + (12 hours/BMP at \$73/hour for design)

\*\*\*Per BMP: (\$150/year for rehabilitations at years 10 and 20) + (\$75/year for routine maintenance)

# Project ID: 8-B

## 4<sup>th</sup> Ave. & Grant St. Pond Modification

**Drainage Area** – 147.1 acres  
**Location** – 4<sup>th</sup> Ave. and Grant St.  
**Property Ownership** – Public  
**Site Specific Information** – A modification is proposed for the pond at 4<sup>th</sup> Avenue and Grant Street. This pond currently treats water from the entire catchment. Excavating 12,000 cubic yards of material would increase the size of the pond and improve the treatment efficiency. The price of the pond modification is shown below with three different management levels based on the contamination level of the excavated soil.



BMP Modification									
Cost/Removal Analysis		New Treatment		% Reduction		New Treatment		% Reduction	
Treatment	Pond Management Level	1		2		3			
	Amount of Soil Excavated	12,000 cu-yards		12,000 cu-yards		12,000 cu-yards			
	TP (lb/yr)	10.5	17.9%	10.5	17.9%	10.5	17.9%		
	TSS (lb/yr)	6,443	28.1%	6,443	28.1%	6,443	28.1%		
	Volume (acre-feet/yr)	0.0	0.0%	0.0	0.0%	0.0	0.0%		
Cost	Administration & Promotion Costs*	\$5,840		\$5,840		\$5,840			
	Design & Construction Costs**	\$325,000		\$505,000		\$685,000			
	<b>Total Estimated Project Cost (2016)</b>	<b>\$330,840</b>		<b>\$510,840</b>		<b>\$690,840</b>			
	Annual O&M***	\$1,300		\$1,300		\$1,300			
Efficiency	30-yr Average Cost/lb-TP	\$1,174		\$1,746		\$2,317			
	30-yr Average Cost/1,000lb-TSS	\$1,913		\$2,845		\$3,776			
	30-yr Average Cost/ac-ft Vol.	N/A		N/A		N/A			

\*Indirect Cost: 80 hours at \$73/hour

\*\*Direct Cost: See Appendix B for detailed cost information

\*\*\*\$1,000/acre of pond surface area - Annual inspection and sediment/debris removal from pretreatment area

# Project ID: 8-C

4<sup>th</sup> Ave. & Grant St.  
IESF Bench

**Drainage Area** – 147.1 acres  
**Location** – 4<sup>th</sup> Ave. and Grant St.  
**Property Ownership** – Public  
**Site Specific Information** – An IESF bench is proposed as an improvement to the existing pond at 4<sup>th</sup> Avenue and Grant Street. The pond provides treatment through retention and settling. However, the addition of an IESF Pond Bench will increase removal of dissolved phosphorus. The IESF was sized to 7,000 sq.-ft. based on available space and the size of the existing pond.



IESF Bench				
		Cost/Removal Analysis	New Treatment	% Reduction
Treatment	Number of BMPs		1	
	Total Size of BMPs		7,000 sq-ft	
	TP (lb/yr)	7.2	12.2%	
	TSS (lb/yr)	0	0.0%	
	Volume (acre-feet/yr)	0.0	0.0%	
Cost	Administration & Promotion Costs*		\$5,475	
	Design & Construction Costs**		\$277,480	
	<b>Total Estimated Project Cost (2016)</b>		<b>\$282,955</b>	
	Annual O&M***		\$1,607	
Efficiency	30-yr Average Cost/lb-TP		<b>\$1,534</b>	
	30-yr Average Cost/1,000lb-TSS		N/A	
	30-yr Average Cost/ac-ft Vol.		N/A	

\*Indirect Cost: 75 hours at \$73/hour  
 \*\*Direct Cost: See Appendix B for detailed cost information  
 \*\*\*\$10,000/acre for IESF

## Eastern Drainage Network

Catchment ID	Page
A-9	84
A-10	92
A-11	100
A-12	103
A-13	106

Existing Network Summary	
Acres	327.1
Dominant Land Cover	Residential
Volume (ac-ft/yr)	265.5
TP (lb/yr)	247
TSS (lb/yr)	104,999

### DRAINAGE NETWORK SUMMARY

The eastern drainage network includes all areas draining to the Rum River between US-10 and Main Street. The network has five major outfalls to the Rum River. Each of these outfalls has an upstream drainage area which was identified as a catchment and provided with a unique catchment name. These include (from north to south) US-10 (Catchment A-9), Taylor Street (A-10), Polk Street (A-11), Harrison Street (A-12), and Main Street (A-13).

### EXISTING STORMWATER TREATMENT

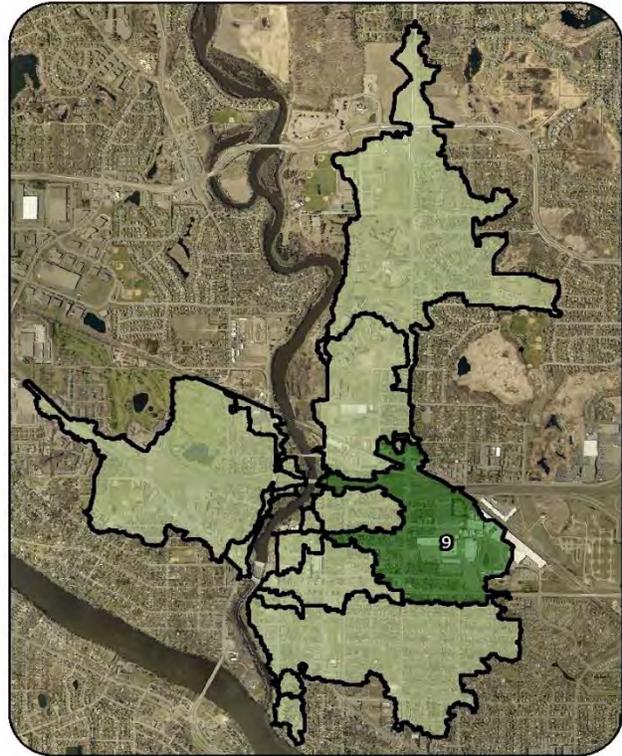
Existing treatment in this network is comprised primarily of subsurface treatment systems at the three smaller outfalls to the Rum River on Taylor Street, Polk Street, and Harrison Street. Each of these were installed during recent roadway projects. On the larger industrial properties in Catchment A-9 are stormwater retention ponds which provide treatment to portions of the industrial buildings and parking lots.

Street cleaning is also conducted by the City of Anoka two times monthly in the downtown region (A-12 and A-13) and two times annually in the rest of the drainage area.



## Catchment A-9

Existing Catchment Summary	
Acres	196.7
Dominant Land Cover	Industrial
Parcels	332
Volume (acre-feet/yr)	165.8
TP (lb/yr)	165.3
TSS (lb/yr)	72,929



### CATCHMENT DESCRIPTION

Catchment A-9 is characterized by all of the geographic area flowing to storm sewer pipes along the US-10 highway corridor. This includes runoff from municipal and county storm sewer pipes from as far south as Main Street. The catchment includes the large industrial facilities for companies such as Pentair and the Federal Cartridge Corporation, commercial properties along Main Street and 7<sup>th</sup> Avenue, and residential properties on and adjacent to 7<sup>th</sup> Avenue between Main Street and Lincoln Street.

### EXISTING STORMWATER TREATMENT

Only two structural BMPs were identified in this analysis for Catchment A-9, and both are located on industrial parcels in the eastern portion of the catchment. The first (the southern pond) treats nearly 20 acres of the Pentair property. The second (the northern pond) treats primarily parking lot runoff from the Federal Cartridge Corporation. The only form of catchment-wide treatment is provided by the City of Anoka in the form street cleaning two times annually. Present-day stormwater pollutant loading and treatment is summarized in the table below.

	Existing Conditions	Base Loading	Treatment	Net Treatment %	Existing Loading
Treatment	Number of BMPs	3			
	BMP Types	2 Ponds, Street Cleaning			
	TP (lb/yr)	181.9	16.6	9%	<b>165.3</b>
	TSS (lb/yr)	85,163	12,234	14%	<b>72,929</b>
	Volume (acre-feet/yr)	166.0	0.2	0%	<b>165.8</b>

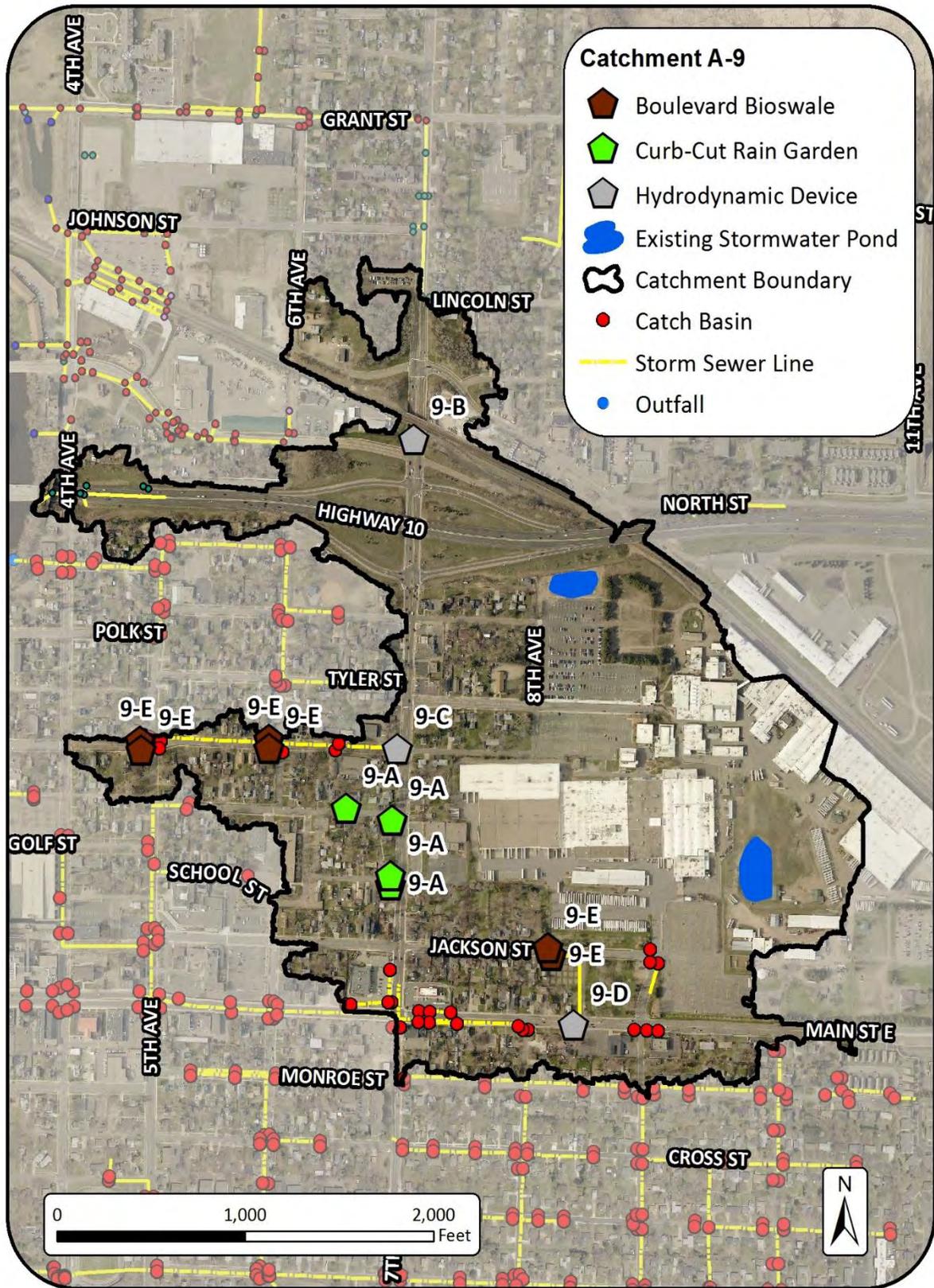
### PROPOSED RETROFITS OVERVIEW

Surface and subsurface BMPs were proposed to treat stormwater prior to reaching the Rum River. These practices could include three hydrodynamic devices, curb-cut rain gardens, boulevard bioswales, and an infiltration basin. The curb-cut rain gardens, boulevard bioswales, and the infiltration basin were all proposed in residential neighborhoods with sandy soils favoring infiltration practices. Hydrodynamic

devices were proposed along or adjacent to major roadways (specifically 7<sup>th</sup> Avenue and Main Street) to treat commercial and highway runoff.

**RETROFITS CONSIDERED BUT REJECTED**

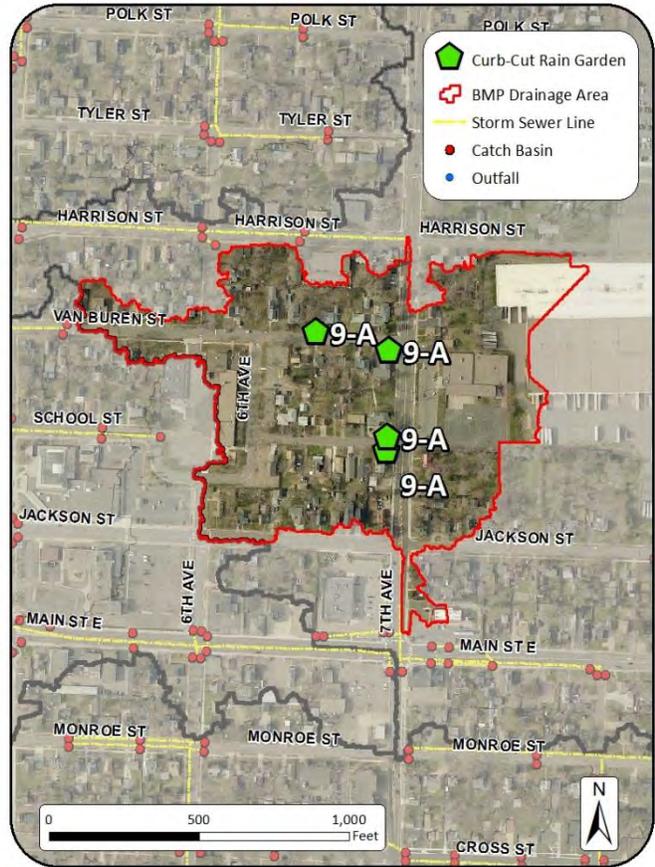
Large, regional treatment was explored in and along the US-10 corridor. This included diverting and/or “daylighting” stormwater into large open spaces along the interstate, specifically within the US-10 – 7<sup>th</sup> Avenue interchange and Rudy Johnson Park south of the interstate. Practices were deemed infeasible as there was not enough room within the open spaces of the corridor to daylight deep county and state storm sewer pipes.



# Project ID: 9-A

## Curb-Cut Rain Gardens

**Drainage Area** – 1.5-6.0 acres  
**Location** – Various locations in residential areas of catchment  
**Property Ownership** – Public  
**Site Specific Information**-Various locations for curb-cut rain gardens are proposed in residential areas to treat stormwater pollutants originating from streets and single-family residences. Considering typical landowner participation rates, scenarios with one, two, and four rain gardens were analyzed.



Curb-Cut Rain Garden									
Cost/Removal Analysis		New Treatment		% Reduction		New Treatment		% Reduction	
<b>Treatment</b>	Number of BMPs	1		2		4			
	Total Size of BMPs	250 sq-ft		500 sq-ft		1,000 sq-ft			
	TP (lb/yr)	0.5	0.3%	1.0	0.6%	2.0	1.2%		
	TSS (lb/yr)	155	0.2%	313	0.4%	623	0.9%		
	Volume (acre-feet/yr)	0.4	0.2%	0.8	0.5%	1.5	0.9%		
<b>Cost</b>	Administration & Promotion Costs*	\$8,468		\$9,344		\$11,096			
	Design & Construction Costs**	\$7,376		\$14,752		\$29,504			
	Total Estimated Project Cost (2016)	\$15,844		\$24,096		\$40,600			
	Annual O&M***	\$225		\$450		\$900			
<b>Efficiency</b>	30-yr Average Cost/lb-TP	\$1,506		\$1,253		\$1,127			
	30-yr Average Cost/1,000lb-TSS	\$4,859		\$4,004		\$3,617			
	30-yr Average Cost/ac-ft Vol.	\$1,931		\$1,605		\$1,465			

\*Indirect Cost: (104 hours at \$73/hour base cost) + (12 hours/BMP at \$73/hour)  
 \*\*Direct Cost: (\$26/sq-ft for materials and labor) + (12 hours/BMP at \$73/hour for design)  
 \*\*\*Per BMP: (\$150/year for rehabilitations at years 10 and 20) + (\$75/year for routine maintenance)

# Project ID: 9-B

7<sup>th</sup> Ave. & Pierce St.  
Hydrodynamic Device

**Drainage Area** – 13.1 acres  
**Location** – 7<sup>th</sup> Avenue and Pierce Street  
**Property Ownership** – Public  
**Site Specific Information**-A hydrodynamic device is proposed for the 7<sup>th</sup> Avenue and Highway 10 interchange. The device would accept runoff from the northern section of the catchment, which includes residential, industrial, freeway, and open land uses.



Hydrodynamic Device			
Cost/Removal Analysis		New Treatment	% Reduction
Treatment	Number of BMPs	1	
	Total Size of BMPs	10 ft diameter	
	TP (lb/yr)	1.2	0.7%
	TSS (lb/yr)	686	0.9%
	Volume (acre-feet/yr)	0.0	0.0%
Cost	Administration & Promotion Costs*	\$1,752	
	Design & Construction Costs**	\$108,000	
	<b>Total Estimated Project Cost (2016)</b>	<b>\$109,752</b>	
	Annual O&M***	\$630	
Efficiency	30-yr Average Cost/lb-TP	\$3,574	
	30-yr Average Cost/1,000lb-TSS	\$6,251	
	30-yr Average Cost/ac-ft Vol.	N/A	

\*Indirect Cost: (24 hours at \$73/hour)

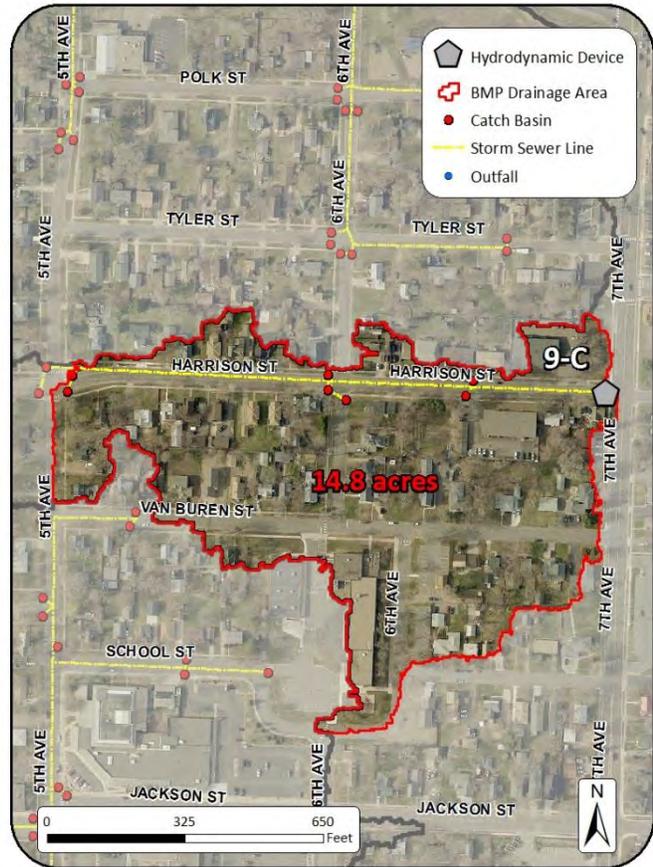
\*\*Direct Cost: (\$72,000 for materials) + (\$36,000 for labor and installation costs)

\*\*\*Per BMP: (3 cleanings/year)\*(3 hours/cleaning)\*(\$70/hour)

# Project ID: 9-C

7<sup>th</sup> Ave. & Harrison St.  
Hydrodynamic Device

**Drainage Area** – 14.8 acres  
**Location** – 7<sup>th</sup> Avenue and Harrison Street  
**Property Ownership** – Public  
**Site Specific Information**-A hydrodynamic device is proposed for the intersection of 7<sup>th</sup> Avenue and Harrison Street. The device would accept runoff from the western section of the catchment, which is composed of residential properties.



Hydrodynamic Device			
		New Treatment	% Reduction
<b>Cost/Removal Analysis</b>			
<b>Treatment</b>	Number of BMPs	1	
	Total Size of BMPs	10 ft diameter	
	TP (lb/yr)	1.0	0.6%
	TSS (lb/yr)	407	0.6%
	Volume (acre-feet/yr)	0.0	0.0%
<b>Cost</b>	Administration & Promotion Costs*	\$1,752	
	Design & Construction Costs**	\$108,000	
	Total Estimated Project Cost (2016)	<b>\$109,752</b>	
	Annual O&M***	\$630	
<b>Efficiency</b>	30-yr Average Cost/lb-TP	<b>\$4,288</b>	
	30-yr Average Cost/1,000lb-TSS	<b>\$10,537</b>	
	30-yr Average Cost/ac-ft Vol.	<b>N/A</b>	

\*Indirect Cost: (24 hours at \$73/hour)

\*\*Direct Cost: (\$72,000 for materials) + (\$36,000 for labor and installation costs)

\*\*\*Per BMP: (3 cleanings/year)\*(3 hours/cleaning)\*(\$70/hour)

## Project ID: 9-D

Main St. & 8 1/2 Ave.  
Hydrodynamic Device

**Drainage Area** – 51.0 acres  
**Location** – Main Street and 8 ½ Avenue  
**Property Ownership** – Public  
**Site Specific Information**-A hydrodynamic device is proposed for the intersection of Main Street and 8 ½ Avenue. The device would accept runoff from light industrial and residential areas in the eastern portion of the catchment.



Hydrodynamic Device			
		New Treatment	% Reduction
<b>Cost/Removal Analysis</b>			
<b>Treatment</b>	Number of BMPs	1	
	Total Size of BMPs	10 ft diameter	
	TP (lb/yr)	1.1	0.7%
	TSS (lb/yr)	777	1.1%
	Volume (acre-feet/yr)	0.0	0.0%
<b>Cost</b>	Administration & Promotion Costs*	\$1,752	
	Design & Construction Costs**	\$108,000	
	Total Estimated Project Cost (2016)	\$109,752	
	Annual O&M***	\$630	
<b>Efficiency</b>	30-yr Average Cost/lb-TP	\$3,899	
	30-yr Average Cost/1,000lb-TSS	\$5,519	
	30-yr Average Cost/ac-ft Vol.	N/A	

\*Indirect Cost: (24 hours at \$73/hour)

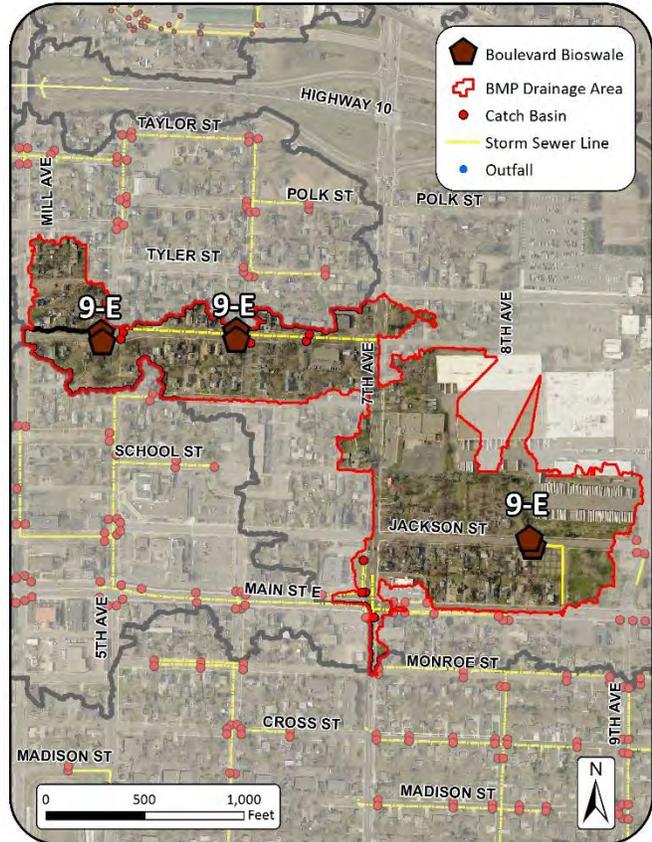
\*\*Direct Cost: (\$72,000 for materials) + (\$36,000 for labor and installation costs)

\*\*\*Per BMP: (3 cleanings/year)\*(3 hours/cleaning)\*(\$70/hour)

# Project ID: 9-E

## Boulevard Bioswales

**Drainage Area** – 0.5 acre  
**Location** – Throughout catchment  
**Property Ownership** – Public  
**Site Specific Information** – Bioswales are proposed for installation throughout the catchment. Locations for up to six bioswales are sited, where they will serve to treat runoff from residential properties. The table below shows the estimated cost and pollutant removal amounts based on treatment of a 0.5-acre drainage area.



Boulevard Bioswale			
		2.5"/hr Infiltr. Rate	
		New Treatment	% Reduction
Treatment	Number of BMPs	1	
	Total Size of BMPs	80 sq-ft	
	TP (lb/yr)	0.2	0.1%
	TSS (lb/yr)	112	0.2%
	Volume (acre-feet/yr)	0.2	0.1%
Cost	Administration & Promotion Costs*	\$3,650	
	Design & Construction Costs**	\$4,876	
	Total Estimated Project Cost (2016)	\$8,526	
	Annual O&M***	\$225	
Efficiency	30-yr Average Cost/lb-TP	\$2,131	
	30-yr Average Cost/1,000lb-TSS	\$4,561	
	30-yr Average Cost/ac-ft Vol.	\$2,482	

\*Indirect Cost: (50 hours at \$73/hour)

\*\*Direct Cost: (\$50/sq-ft for materials and labor) + (12 hours/BMP at \$73/hour for design)

\*\*\*Per BMP: (\$150/year for 10-year rehabilitation)+ (\$75/year for routine maintenance)

## Catchment A-10

Existing Catchment Summary	
Acres	42.0
Dominant Land Cover	Residential
Parcels	150
Volume (acre-feet/yr)	20.4
TP (lb/yr)	21.9
TSS (lb/yr)	7,209



### CATCHMENT DESCRIPTION

Catchment A-10 includes portions of the City of Anoka south of US-10, west of 7<sup>th</sup> Avenue, and north of Harrison Street. All area within the catchment drains to a single outfall located west of the Water Avenue and Taylor Street intersection. Land use in the catchment is predominantly single family residential, with parcels of parkland (Rudy Johnson Park), institutional, and multi-family residential housing.

### EXISTING STORMWATER TREATMENT

Runoff generated within the catchment is quickly intercepted in the city storm sewer network and routed to a single subsurface treatment device installed at the intersection of Water Avenue and Taylor Street. This device provides treatment to virtually the entire 42-acre catchment. Stormwater leaving this device is discharge into the Rum River directly west of the device location. In addition to this hydrodynamic device, street cleaning is performed two times per year by the City of Anoka. Present-day stormwater pollutant loading and treatment is summarized in the table below.

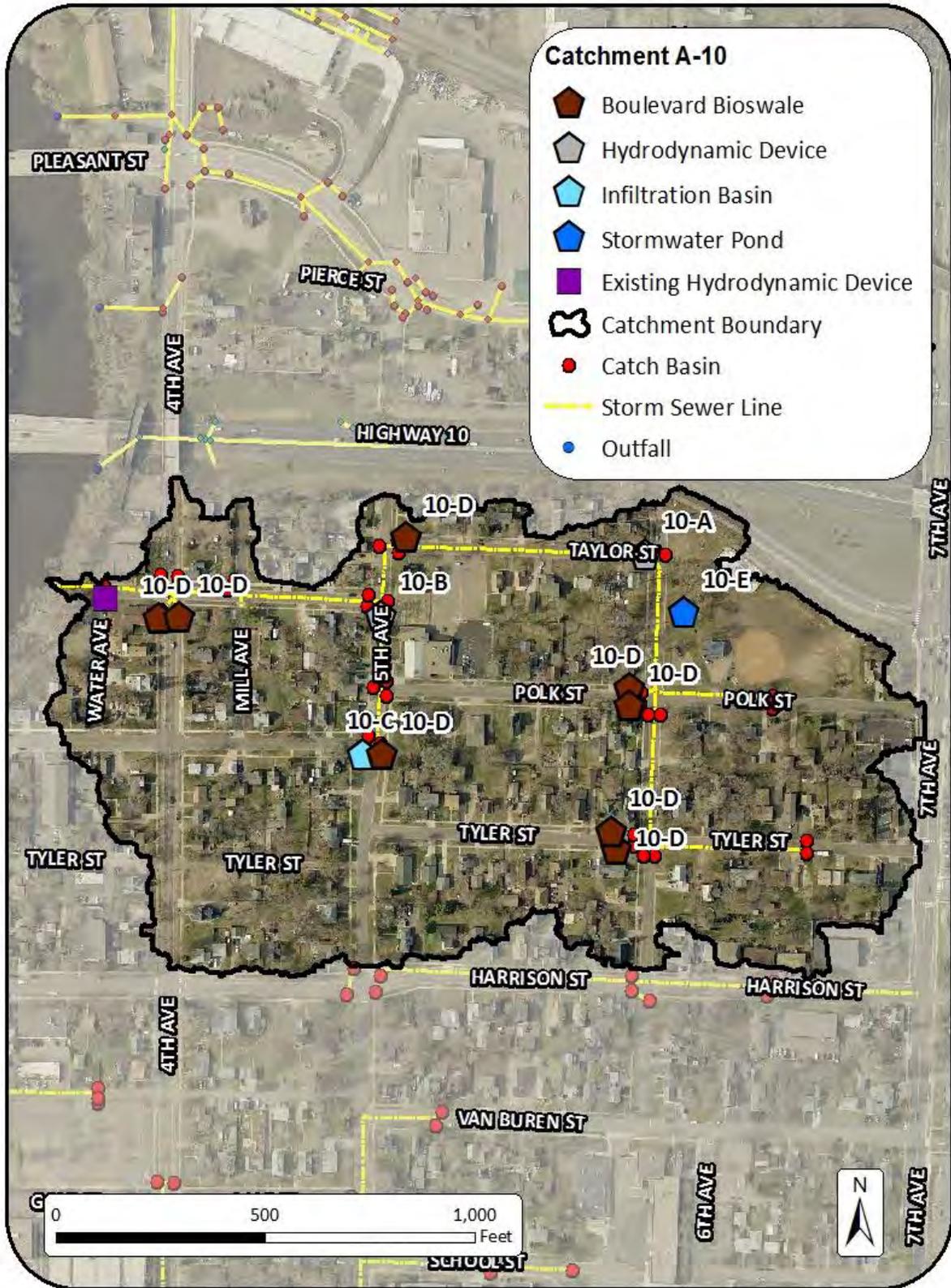
	Existing Conditions	Base Loading	Treatment	Net Treatment %	Existing Loading
Treatment	Number of BMPs	2			
	BMP Types	1 Hydrodynamic Device, Street Cleaning			
	TP (lb/yr)	25.0	3.1	12%	21.9
	TSS (lb/yr)	8,604	1,395	16%	7,209
	Volume (acre-feet/yr)	20.4	0.0	0%	20.4

### PROPOSED RETROFITS OVERVIEW

Retrofits proposed in Catchment A-10 would supplement treatment already provided by the hydrodynamic device located near the outfall to the Rum River. Most proposed practices look to infiltrate water at the surface, thereby reducing the peak discharge at the hydrodynamic device downstream and increasing pollutant retention. These practices include up to 8 boulevard bioswales, and an infiltration basin. There is also a new pond proposed in Rudy Johnson Park. Additional

subsurface hydrodynamic devices were also proposed to reduce the pollutant load to the downstream device and increase catchment-wide pollutant retention.

RETROFIT RECOMMENDATIONS



# Project ID: 10-A

6<sup>th</sup> Ave. & Taylor St.  
Hydrodynamic Device

**Drainage Area** – 17.5 acres  
**Location** – 6<sup>th</sup> Avenue and Taylor Street  
**Property Ownership** – Public  
**Site Specific Information**-A hydrodynamic device is proposed for the intersection of 6<sup>th</sup> Avenue and Taylor Street. The device would accept runoff from the eastern section of the catchment, which is composed of a park, residential properties and institutional land uses.



Hydrodynamic Device				
		Cost/Removal Analysis	New Treatment	% Reduction
Treatment	Number of BMPs		1	
	Total Size of BMPs		10 ft diameter	
	TP (lb/yr)	0.5		2.3%
	TSS (lb/yr)	211		2.9%
	Volume (acre-feet/yr)	0.0		0.0%
Cost	Administration & Promotion Costs*			\$1,752
	Design & Construction Costs**			\$108,000
	Total Estimated Project Cost (2016)			\$109,752
	Annual O&M***			\$630
Efficiency	30-yr Average Cost/lb-TP		\$8,577	
	30-yr Average Cost/1,000lb-TSS		\$20,324	
	30-yr Average Cost/ac-ft Vol.		N/A	

\*Indirect Cost: (24 hours at \$73/hour)

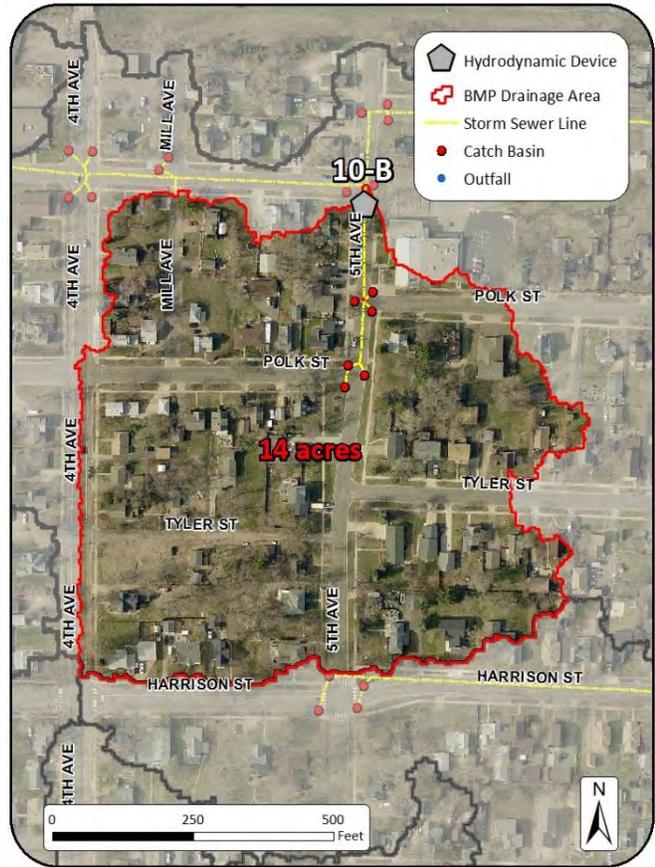
\*\*Direct Cost: (\$72,000 for materials) + (\$36,000 for labor and installation costs)

\*\*\*Per BMP: (3 cleanings/year)\*(3 hours/cleaning)\*(\$70/hour)

# Project ID: 10-B

5<sup>th</sup> Ave. & Taylor St.  
Hydrodynamic Device

**Drainage Area** – 14.0 acres  
**Location** – 5<sup>th</sup> Avenue and Taylor Street  
**Property Ownership** – Public  
**Site Specific Information**-A hydrodynamic device is proposed for the intersection of 5<sup>th</sup> Avenue and Taylor Street. The device would accept runoff from predominately residential land uses.



Hydrodynamic Device			
		New Treatment	% Reduction
<b>Cost/Removal Analysis</b>			
<b>Treatment</b>	Number of BMPs	1	
	Total Size of BMPs	10 ft diameter	
	TP (lb/yr)	0.5	2.3%
	TSS (lb/yr)	195	2.7%
	Volume (acre-feet/yr)	0.0	0.0%
<b>Cost</b>	Administration & Promotion Costs*	\$1,752	
	Design & Construction Costs**	\$108,000	
	Total Estimated Project Cost (2016)	<b>\$109,752</b>	
	Annual O&M***	\$630	
<b>Efficiency</b>	30-yr Average Cost/lb-TP	<b>\$8,577</b>	
	30-yr Average Cost/1,000lb-TSS	<b>\$21,992</b>	
	30-yr Average Cost/ac-ft Vol.	<b>N/A</b>	

\*Indirect Cost: (24 hours at \$73/hour)

\*\*Direct Cost: (\$72,000 for materials) + (\$36,000 for labor and installation costs)

\*\*\*Per BMP: (3 cleanings/year)\*(3 hours/cleaning)\*(\$70/hour)

# Project ID: 10-C

5<sup>th</sup> Ave. & Polk St.  
Infiltration Basin

**Drainage Area** – 5.9 acres  
**Location** – 5<sup>th</sup> Avenue and Polk Street  
**Property Ownership** – Public  
**Site Specific Information** – An infiltration basin is proposed for the southwest corner of the 5<sup>th</sup> Avenue and Polk Street intersection. Open space is available between the parking lot and the road for the installation of this practice. This basin would accept stormwater from residential properties.



Infiltration Basin				
		Cost/Removal Analysis	New Treatment	% Reduction
Treatment	Ponding Depth of BMP	1 foot		
	Total Size of BMP	2,000 sq-ft		
	TP (lb/yr)	2.6	12%	
	TSS (lb/yr)	808	11%	
	Volume (acre-feet/yr)	2.1	10%	
Cost	Administration & Promotion Costs*	\$2,920		
	Design & Construction Costs**	\$40,876		
	Total Estimated Project Cost (2016)	<b>\$43,796</b>		
	Annual O&M***	\$225		
Efficiency	30-yr Average Cost/lb-TP	<b>\$648</b>		
	30-yr Average Cost/1,000lb-TSS	<b>\$2,085</b>		
	30-yr Average Cost/ac-ft Vol.	<b>\$803</b>		

\*Indirect Cost: 40 hours at \$73/hour

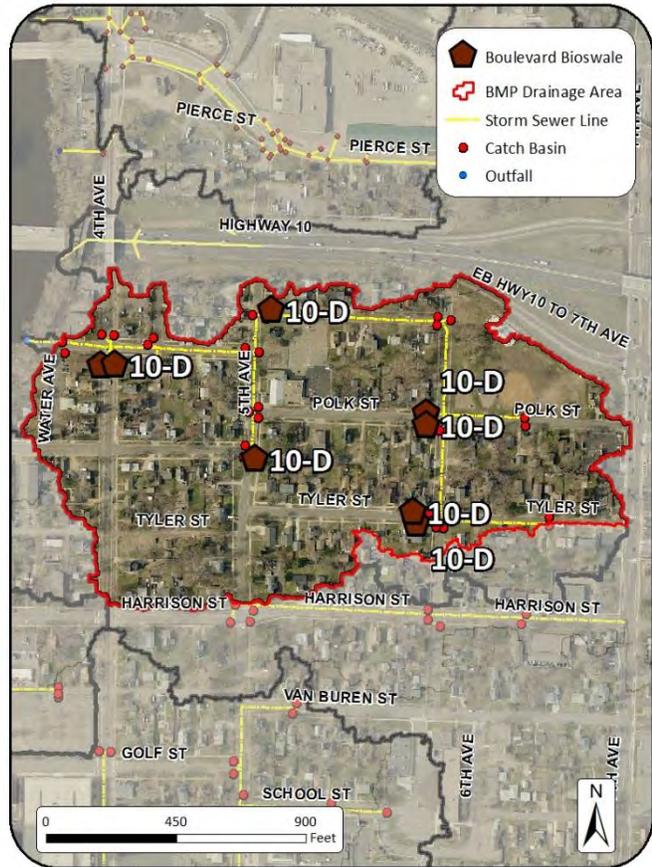
\*\*Direct Cost: (\$20/sq-ft for materials and labor) + (12 hours at \$73/hour for design)

\*\*\*(\$150/year for rehabilitations at years 10 and 20) + (\$75/year for routine maintenance)

# Project ID: 10-D

## Boulevard Bioswales

**Drainage Area** – 0.5 acre  
**Location** – Throughout catchment  
**Property Ownership** – Public  
**Site Specific Information** – Bioswales are proposed for installation throughout the catchment. Locations for up to eight bioswales are sited, where they will serve to treat runoff from residential properties. The table below shows the estimated cost and pollutant removal amounts based on treatment of a 0.5-acre drainage area.



Boulevard Bioswale			
<i>Cost/Removal Analysis</i>		2.5"/hr Infil. Rate	
		New Treatment	% Reduction
<b>Treatment</b>	Number of BMPs	1	
	Total Size of BMPs	80 sq-ft	
	TP (lb/yr)	0.1	0.7%
	TSS (lb/yr)	52	0.7%
	Volume (acre-feet/yr)	0.1	0.6%
<b>Cost</b>	Administration & Promotion Costs*	\$3,650	
	Design & Construction Costs**	\$4,876	
	Total Estimated Project Cost (2016)	<b>\$8,526</b>	
	Annual O&M***	\$225	
<b>Efficiency</b>	30-yr Average Cost/lb-TP	<b>\$3,427</b>	
	30-yr Average Cost/1,000lb-TSS	<b>\$9,853</b>	
	30-yr Average Cost/ac-ft Vol.	<b>\$4,302</b>	

\*Indirect Cost: (50 hours at \$73/hour)

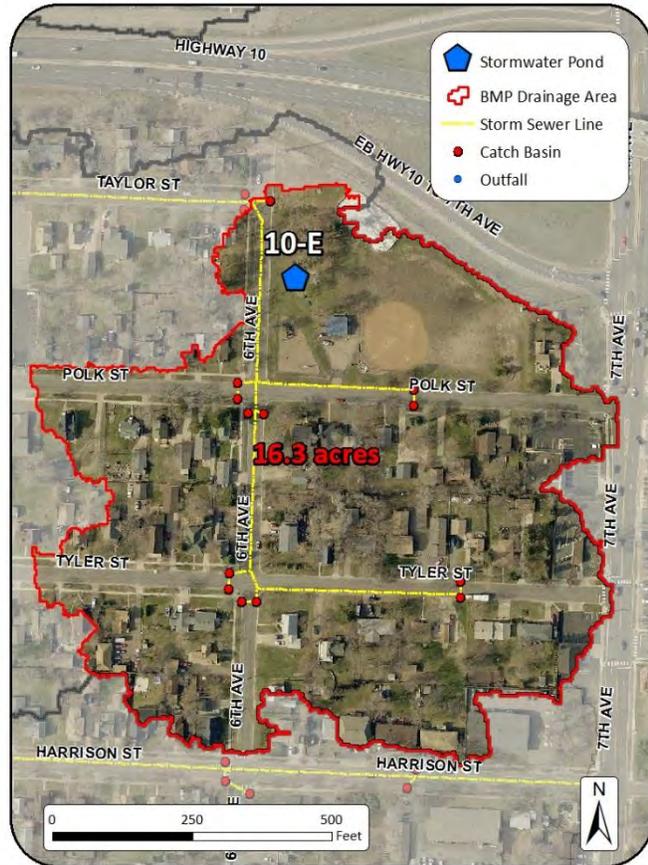
\*\*Direct Cost: (\$50/sq-ft for materials and labor) + (12 hours/BMP at \$73/hour for design)

\*\*\*Per BMP: (\$150/year for 10-year rehabilitation)+ (\$75/year for routine maintenance)

# Project ID: 10-E

Rudy Johnson Park  
New Pond

**Drainage Area** – 16.3 acre  
**Location** – 6<sup>th</sup> Avenue and Taylor Street  
**Property Ownership** – Public  
**Site Specific Information** – A new pond is proposed for the northwest corner of Rudy Johnson Park. The pond would accept runoff from primarily residential properties. It will provide additional treatment to the catchment by allowing TSS and TP to settle out. The storm sewer line that runs north-south along 6<sup>th</sup> Ave. could be redirected into the proposed pond.



New Pond			
		<i>Cost/Removal Analysis</i>	
		New Treatment	% Reduction
Treatment	Number of BMPs	1	
	Total Size of BMPs	0.3 acres	
	TP (lb/yr)	4.0	18.3%
	TSS (lb/yr)	1,712	23.7%
	Volume (acre-feet/yr)	0.1	0.3%
Cost	Administration & Promotion Costs*	\$7,300	
	Design & Construction Costs**	\$232,625	
	Total Estimated Project Cost (2016)	\$239,925	
	Annual O&M***	\$300	
Efficiency	30-yr Average Cost/lb-TP	\$2,074	
	30-yr Average Cost/1,000lb-TSS	\$4,847	
	30-yr Average Cost/ac-ft Vol.	N/A	

\*Indirect Cost: 100 hours at \$73/hour

\*\*Direct Cost: See Appendix B for detailed cost information

\*\*\*\$1,000/acre - Annual inspection and sediment/debris removal from pretreatment area

## Catchment A-11

Existing Catchment Summary	
Acres	4.9
Dominant Land Cover	Residential
Parcels	22
Volume (acre-feet/yr)	2.8
TP (lb/yr)	2.5
TSS (lb/yr)	806

### CATCHMENT DESCRIPTION

Catchment A-11 is the smallest catchment east of the Rum River, and includes all of the geographic area draining to the Polk Street outfall. This outfall only receives water draining to the storm sewer network at this intersection. Land use in the catchment is only residential, but includes both single family homes and multifamily units.



### EXISTING STORMWATER TREATMENT

A single hydrodynamic device treats most of this catchment, and is located at the intersection of Polk Street and 3<sup>rd</sup> Avenue. In addition to this hydrodynamic device, street cleaning is performed two times per year by the City of Anoka. Present-day stormwater pollutant loading and treatment is summarized in the table below.

	Existing Conditions	Base Loading	Treatment	Net Treatment %	Existing Loading
Treatment	Number of BMPs	2			
	BMP Types	1 Hydrodynamic Device, Street Cleaning			
	TP (lb/yr)	3.1	0.6	19%	2.5
	TSS (lb/yr)	1,084	278	26%	806
	Volume (acre-feet/yr)	2.8	0.0	0%	2.8

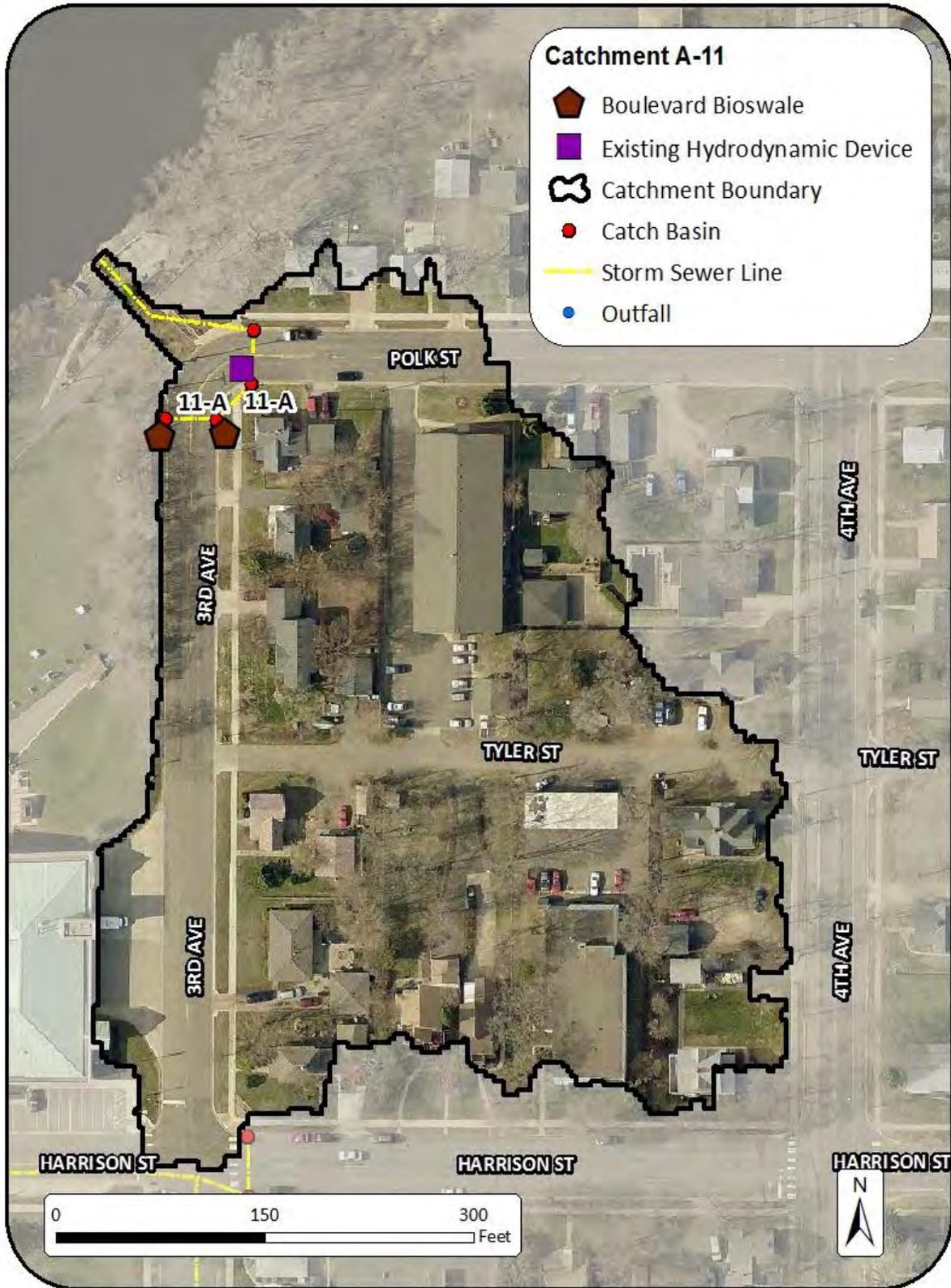
### PROPOSED RETROFITS OVERVIEW

Two boulevard bioswales were proposed along 3<sup>rd</sup> Avenue to increase pollutant retention upstream of the hydrodynamic device.

### RETROFITS CONSIDERED BUT REJECTED

Additional bioretention opportunities were explored throughout the catchment but drainage areas to the practices were too small to warrant the installation costs.

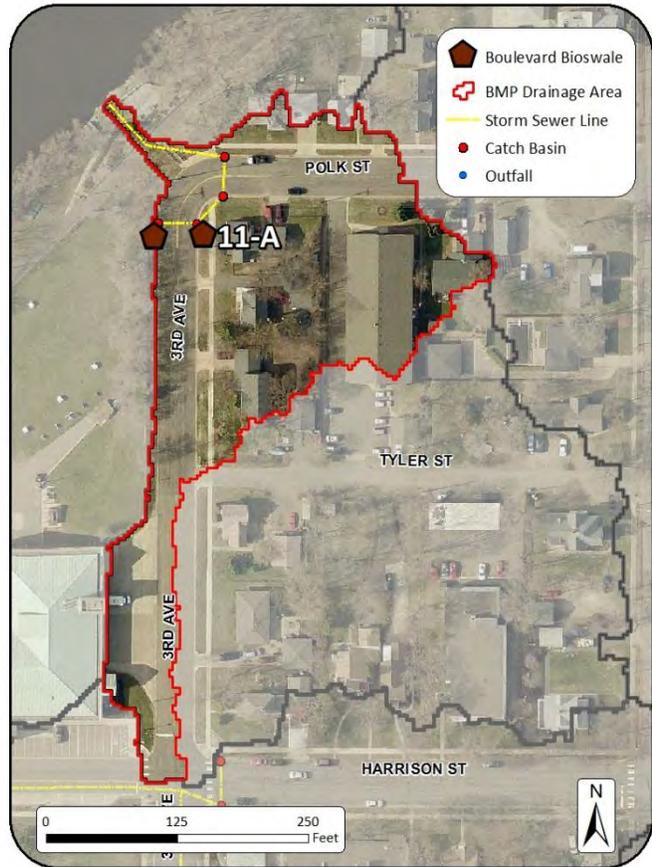
RETROFIT RECOMMENDATIONS



# Project ID: 11-A

3<sup>rd</sup> Avenue  
Boulevard Bioswales

**Drainage Area** – 0.5 acres  
**Location** – 3<sup>rd</sup> Avenue  
**Property Ownership** – Public  
**Site Specific Information** – Bioswales are proposed for installation, preferably at the northern end of 3<sup>rd</sup> Avenue. Locations for two bioswales are sited, where they will serve to treat runoff from residential properties. The table below shows the estimated cost and pollutant removal amounts based on treatment of a 0.5-acre drainage area.



Boulevard Bioswale			
Cost/Removal Analysis		2.5"/hr Infil. Rate	
		New Treatment	% Reduction
Treatment	Number of BMPs	1	
	Total Size of BMPs	80 sq-ft	
	TP (lb/yr)	0.1	5.8%
	TSS (lb/yr)	49	6.1%
	Volume (acre-feet/yr)	0.1	4.9%
Cost	Administration & Promotion Costs*	\$3,650	
	Design & Construction Costs**	\$4,876	
	Total Estimated Project Cost (2016)	<b>\$8,526</b>	
	Annual O&M***	\$225	
Efficiency	30-yr Average Cost/lb-TP	<b>\$3,523</b>	
	30-yr Average Cost/1,000lb-TSS	<b>\$10,342</b>	
	30-yr Average Cost/ac-ft Vol.	<b>\$3,717</b>	

\*Indirect Cost: (50 hours at \$73/hour)

\*\*Direct Cost: (\$50/sq-ft for materials and labor) + (12 hours/BMP at \$73/hour for design)

\*\*\*Per BMP: (\$150/year for 10-year rehabilitation)+ (\$75/year for routine maintenance)

# Catchment A-12

Existing Catchment Summary	
Acres	17.6
Dominant Land Cover	Commercial
Parcels	145
Volume (acre-feet/yr)	12.4
TP (lb/yr)	9.0
TSS (lb/yr)	3,427



### CATCHMENT DESCRIPTION

Catchment A-12 includes portions of Harrison Street, Golf Street, 2<sup>nd</sup> Avenue, and 3<sup>rd</sup> Avenue in downtown Anoka. Stormwater runoff generated on the commercial, institutional, and multi-family residential properties of the catchment is quickly intercepted by municipal storm sewers and directed to a subsurface treatment device west of the intersection of 2<sup>nd</sup> Avenue and Harrison Street. Once stormwater leaves this device it is almost immediately discharged to the Rum River.

### EXISTING STORMWATER TREATMENT

The hydrodynamic device located just west of the 2<sup>nd</sup> Avenue and Harrison Street intersection was installed during a recent roadway reconstruction and treats the entire 17.6-acre catchment. The only other form of stormwater treatment in the catchment is street cleaning, provided by the City of Anoka two times per month. Present-day stormwater pollutant loading and treatment is summarized in the table below.

	Existing Conditions	Base Loading	Treatment	Net Treatment %	Existing Loading
Treatment	Number of BMPs	2			
	BMP Types	1 Hydrodynamic Device, Street Cleaning			
	TP (lb/yr)	11.4	2.4	21%	9.0
	TSS (lb/yr)	4,694	1,267	27%	3,427
	Volume (acre-feet/yr)	12.4	0.0	0%	12.4

### PROPOSED RETROFITS OVERVIEW

No retrofits were proposed in this catchment.

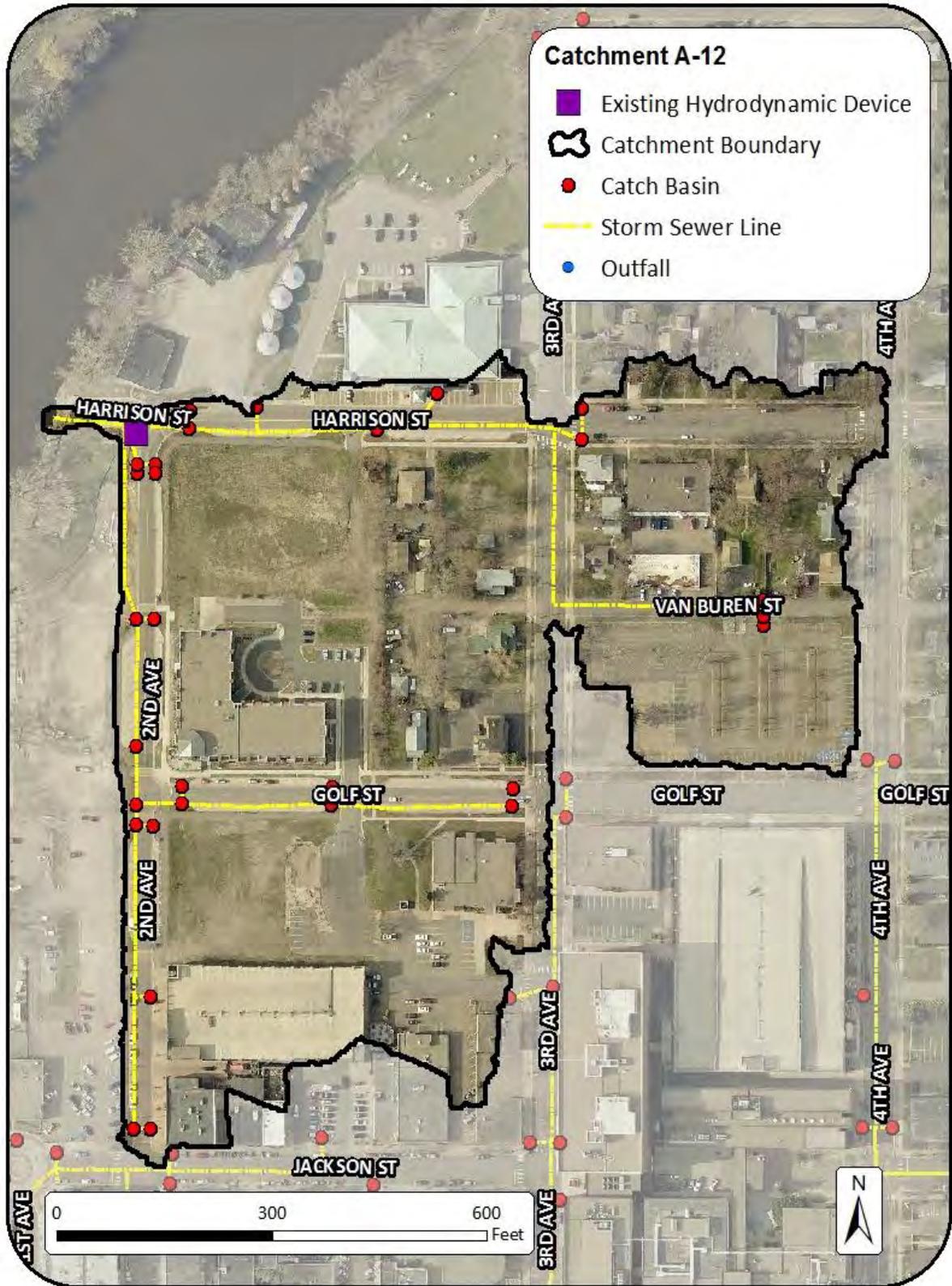
### RETROFITS CONSIDERED BUT REJECTED

Permeable pavement was considered for the county-owned property between 3<sup>rd</sup> Avenue and 4<sup>th</sup> Avenue north of Golf Street. The practice was removed from consideration during conversations with City officials as the County intends to use this parking lot for future building development, not as its current use for street-level parking.

Bioretention practices, including curb-cut rain gardens and boulevard bioswales, were considered to supplement treatment provided by the hydrodynamic device and to reduce peak flows. These were not proposed as a retrofit option as the number of surface catch basins meant that drainage areas to each basin were too small to make the project cost-effective.

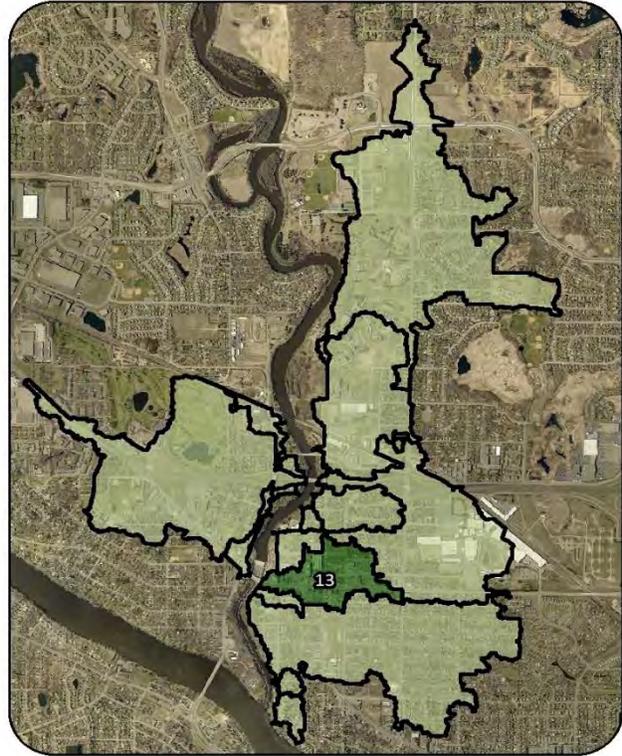
Therefore, the map below was included solely to provide additional detail of the catchment boundary, associated land uses, and streets.

RETROFIT RECOMMENDATIONS



## Catchment A-13

Existing Catchment Summary	
Acres	65.8
Dominant Land Cover	Commercial
Parcels	214
Volume (acre-feet/yr)	6.3
TP (lb/yr)	4.3
TSS (lb/yr)	1,971



### CATCHMENT DESCRIPTION

Catchment A-13 is the southernmost catchment in the eastern drainage network. It includes most of downtown Anoka, and is the most heavily-paved catchment in this analysis. Land use in the catchment is predominantly commercial and institutional. Publically-owned properties in this catchment include both the Anoka County Government Center and portions of the Anoka City Hall.

### EXISTING STORMWATER TREATMENT

Stormwater runoff generated within the catchment flows to municipal and county storm sewers, eventually discharging into the Rum River south of Main Street. No catchment-wide treatment is available besides street cleaning, performed by the City of Anoka two times per month. Two small infiltration basins are located on the Anoka Middle School property, but only treat runoff from the school buildings and parking lot. Present-day stormwater pollutant loading and treatment is summarized in the table below.

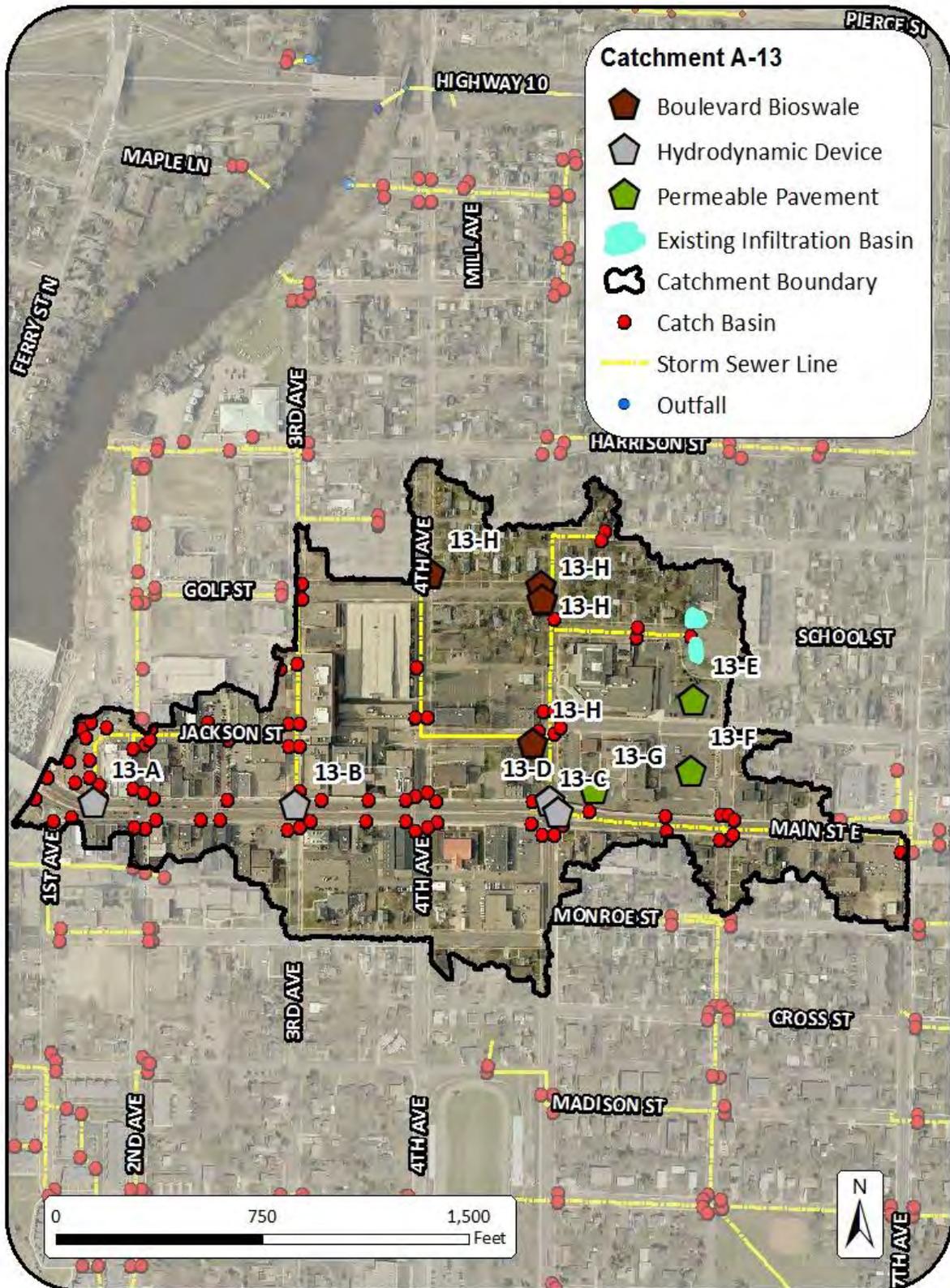
	Existing Conditions	Base Loading	Treatment	Net Treatment %	Existing Loading
Treatment	Number of BMPs	3			
	BMP Types	2 Infiltration Basins, Street Cleaning			
	TP (lb/yr)	54.5	6.2	11%	<b>48.3</b>
	TSS (lb/yr)	24,065	3,437	14%	<b>20,628</b>
	Volume (acre-feet/yr)	65.3	1.2	2%	<b>64.1</b>

### PROPOSED RETROFITS OVERVIEW

Four hydrodynamic devices were proposed to treat storm sewer lines along Main Street, 5<sup>th</sup> Avenue, 3<sup>rd</sup> Avenue, and the Anoka City Hall. These devices were proposed in locations with drainage areas less than 10 acres to reduce resuspension from high peak flows. Bioretention practices were also proposed in the form of boulevard bioswales (up to four).

Permeable pavement was also proposed on three parking lots on the St. Steven's Church and School properties. This practice would look to increase volume, TSS, and TP retention prior to discharge into the Rum River.

RETROFIT RECOMMENDATIONS



**Project ID: 13-A**  
 Main St. & 1st Ave.  
 Hydrodynamic Device

**Drainage Area** – 4.6 acres  
**Location** – Main Street and 1<sup>st</sup> Avenue  
**Property Ownership** – Public  
**Site Specific Information** – A hydrodynamic device could be installed at the intersection of Main Street and 1st Avenue. This device would accept runoff from the commercial properties and would provide additional treatment just before the catchment discharges into the Rum River.



Hydrodynamic Device			
Cost/Removal Analysis		New Treatment	% Reduction
Treatment	Number of BMPs	1	
	Total Size of BMPs	8 ft diameter	
	TP (lb/yr)	0.5	1.0%
	TSS (lb/yr)	272	1.3%
	Volume (acre-feet/yr)	0.0	0.0%
Cost	Administration & Promotion Costs*	\$1,752	
	Design & Construction Costs**	\$54,000	
	Total Estimated Project Cost (2016)	\$55,752	
	Annual O&M***	\$630	
Efficiency	30-yr Average Cost/lb-TP	\$4,977	
	30-yr Average Cost/1,000lb-TSS	\$9,149	
	30-yr Average Cost/ac-ft Vol.	N/A	

\*Indirect Cost: (24 hours at \$73/hour)

\*\*Direct Cost: (\$36,000 for materials) + (\$18,000 for labor and installation costs)

\*\*\*Per BMP: (3 cleanings/year)\*(3 hours/cleaning)\*(\$70/hour)

# Project ID: 13-B

Main St. & 3<sup>rd</sup> Ave.  
Hydrodynamic Device

**Drainage Area** – 6.4 acres  
**Location** – Main Street and 3<sup>rd</sup> Avenue  
**Property Ownership** – Public  
**Site Specific Information** – A hydrodynamic device is proposed at the intersection of Main Street and 3<sup>rd</sup> Avenue. This device would accept runoff from the Anoka County Government Center.



Hydrodynamic Device			
	Cost/Removal Analysis	New Treatment	% Reduction
Treatment	Number of BMPs		1
	Total Size of BMPs		8 ft diameter
	TP (lb/yr)	0.5	1.0%
	TSS (lb/yr)	285	1.4%
	Volume (acre-feet/yr)	0.0	0.0%
Cost	Administration & Promotion Costs*		\$1,752
	Design & Construction Costs**		\$54,000
	Total Estimated Project Cost (2016)		\$55,752
	Annual O&M***		\$630
Efficiency	30-yr Average Cost/lb-TP		\$4,977
	30-yr Average Cost/1,000lb-TSS		\$8,731
	30-yr Average Cost/ac-ft Vol.		N/A

\*Indirect Cost: (24 hours at \$73/hour)

\*\*Direct Cost: (\$36,000 for materials) + (\$18,000 for labor and installation costs)

\*\*\*Per BMP: (3 cleanings/year)\*(3 hours/cleaning)\*(\$70/hour)

# Project ID: 13-C

Main St. & 5<sup>th</sup> Ave.  
Hydrodynamic Device

**Drainage Area** – 9.9 acres  
**Location** – Main Street and 5<sup>th</sup> Avenue  
**Property Ownership** – Public  
**Site Specific Information** – A hydrodynamic device is proposed for Main Street at 5<sup>th</sup> Avenue to accept runoff from the eastern portion of the catchment. This portion of the catchment is composed of a school property, residential properties, and commercial properties.



Hydrodynamic Device			
		Cost/Removal Analysis	
		New Treatment	% Reduction
Treatment	Number of BMPs	1	
	Total Size of BMPs	10 ft diameter	
	TP (lb/yr)	0.9	1.9%
	TSS (lb/yr)	427	2.1%
	Volume (acre-feet/yr)	0.0	0.0%
Cost	Administration & Promotion Costs*	\$1,752	
	Design & Construction Costs**	\$108,000	
	Total Estimated Project Cost (2016)	\$109,752	
	Annual O&M***	\$630	
Efficiency	30-yr Average Cost/lb-TP	\$4,765	
	30-yr Average Cost/1,000lb-TSS	\$10,043	
	30-yr Average Cost/ac-ft Vol.	N/A	

\*Indirect Cost: (24 hours at \$73/hour)

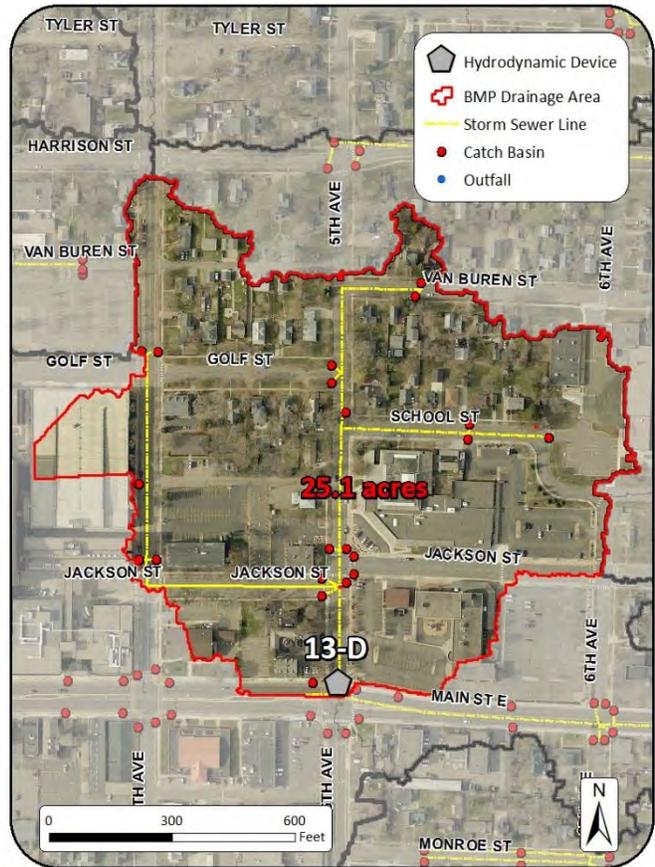
\*\*Direct Cost: (\$36,000 for materials) + (\$18,000 for labor and installation costs)

\*\*\*Per BMP: (3 cleanings/year)\*(3 hours/cleaning)\*(\$70/hour)

# Project ID: 13-D

## 5<sup>th</sup> Ave. & Main St. Hydrodynamic Device

**Drainage Area** – 25.1 acres  
**Location** – 5<sup>th</sup> Avenue and Main Street  
**Property Ownership** – Public  
**Site Specific Information** – A hydrodynamic device is proposed for 5<sup>th</sup> Avenue at Main Street to accept runoff from the northern portion of the catchment. This portion of the catchment is composed of a school property, residential properties, and commercial properties.



Hydrodynamic Device				
		Cost/Removal Analysis	New Treatment	% Reduction
<b>Treatment</b>	Number of BMPs		1	
	Total Size of BMPs		10 ft diameter	
	TP (lb/yr)	1.4	2.9%	
	TSS (lb/yr)	644	3.1%	
	Volume (acre-feet/yr)	0.0	0.0%	
<b>Cost</b>	Administration & Promotion Costs*	\$1,752		
	Design & Construction Costs**	\$108,000		
	<b>Total Estimated Project Cost (2016)</b>	<b>\$109,752</b>		
	Annual O&M***	\$630		
<b>Efficiency</b>	30-yr Average Cost/lb-TP	<b>\$3,063</b>		
	30-yr Average Cost/1,000lb-TSS	<b>\$6,659</b>		
	30-yr Average Cost/ac-ft Vol.	<b>N/A</b>		

\*Indirect Cost: (24 hours at \$73/hour)

\*\*Direct Cost: (\$36,000 for materials) + (\$18,000 for labor and installation costs)

\*\*\*Per BMP: (3 cleanings/year)\*(3 hours/cleaning)\*(\$70/hour)

# Project ID: 13-E

## St. Stephen's Catholic Church. Permeable Pavement

**Drainage Area** – 1.1 acres  
**Location** – Jackson Street and School Street  
**Property Ownership** – Private  
**Site Specific Information** – Permeable pavement is proposed for the parking lot of St. Stephen's Catholic Church. This could be a favorable option as permeable pavement allows for the treatment of a large surface area with minimal impact on the usable space. In order to treat the 1.1-acre drainage area, 15,900 sq.-ft. of permeable pavement is proposed.



Permeable Pavement				
		Cost/Removal Analysis	New Treatment	% Reduction
Treatment	Number of BMPs		1	
	Total Size of BMP		15,900 sq-ft	
	TP (lb/yr)	0.9		8.7%
	TSS (lb/yr)	320		6.6%
	Volume (acre-feet/yr)	0.9		7.3%
Cost	Administration & Promotion Costs*		\$2,920	
	Design & Construction Costs**		\$159,876	
	<b>Total Estimated Project Cost (2016)</b>		<b>\$162,796</b>	
	Annual O&M***		\$11,925	
Efficiency	30-yr Average Cost/lb-TP		<b>\$19,279</b>	
	30-yr Average Cost/1,000lb-TSS		<b>\$54,224</b>	
	30-yr Average Cost/ac-ft Vol.		<b>\$19,279</b>	

\*Indirect Cost: 40 hours at \$73/hour

\*\*Direct Cost: (\$10/sq-ft for materials and labor) + (12 hours at \$73/hour for design)

\*\*\*(\$0.75/sq-ft for routine maintenance)

# Project ID: 13-F

## St. Stephen's Catholic School Permeable Pavement

**Drainage Area** – 1.9 acres  
**Location** – Jackson Street and 6<sup>th</sup> Avenue  
**Property Ownership** – Private  
**Site Specific Information** – Permeable pavement is proposed for the eastern parking lot of St. Stephen's Catholic School. This could be a favorable option as permeable pavement allows for the treatment of a large surface area with minimal impact on the usable space. In order to treat the 1.9-acre drainage area, 27,900 sq.-ft. of permeable pavement is proposed.



Permeable Pavement				
		Cost/Removal Analysis	New Treatment	% Reduction
Treatment	Number of BMPs		1	
	Total Size of BMP		27,900 sq-ft	
	TP (lb/yr)		1.6	15.4%
	TSS (lb/yr)		562	11.6%
	Volume (acre-feet/yr)		1.6	12.9%
Cost	Administration & Promotion Costs*			\$2,920
	Design & Construction Costs**			\$279,876
	Total Estimated Project Cost (2016)			<b>\$282,796</b>
	Annual O&M***			\$20,925
Efficiency	30-yr Average Cost/lb-TP			<b>\$18,970</b>
	30-yr Average Cost/1,000lb-TSS			<b>\$54,006</b>
	30-yr Average Cost/ac-ft Vol.			<b>\$18,970</b>

\*Indirect Cost: 40 hours at \$73/hour

\*\*Direct Cost: (\$10/sq-ft for materials and labor) + (12 hours at \$73/hour for design)

\*\*\*(\$0.75/sq-ft for routine maintenance)

# Project ID: 13-G

## St. Stephen's Catholic School Permeable Pavement

**Drainage Area** – 2.3 acres  
**Location** – Jackson Street and 6<sup>th</sup> Avenue  
**Property Ownership** – Private  
**Site Specific Information** – Permeable pavement is proposed for the western parking lot of St. Stephen's Catholic School. This could be a favorable option as permeable pavement allows for the treatment of a large surface area with minimal impact on the usable space. In order to treat the 2.3-acre drainage area, 34,000 sq.-ft. of permeable pavement is proposed.



Permeable Pavement			
Cost/Removal Analysis		New Treatment	% Reduction
<b>Treatment</b>	Number of BMPs	1	
	Total Size of BMP	34,000	sq-ft
	TP (lb/yr)	1.9	18.3%
	TSS (lb/yr)	672	13.9%
	Volume (acre-feet/yr)	1.9	15.3%
<b>Cost</b>	Administration & Promotion Costs*	\$2,920	
	Design & Construction Costs**	\$340,876	
	<b>Total Estimated Project Cost (2016)</b>	<b>\$343,796</b>	
	Annual O&M***	\$25,500	
<b>Efficiency</b>	30-yr Average Cost/lb-TP	<b>\$19,453</b>	
	30-yr Average Cost/1,000lb-TSS	<b>\$55,000</b>	
	30-yr Average Cost/ac-ft Vol.	<b>\$19,453</b>	

\*Indirect Cost: 40 hours at \$73/hour

\*\*Direct Cost: (\$10/sq-ft for materials and labor) + (12 hours at \$73/hour for design)

\*\*\*(\$0.75/sq-ft for routine maintenance)

# Project ID: 13-H

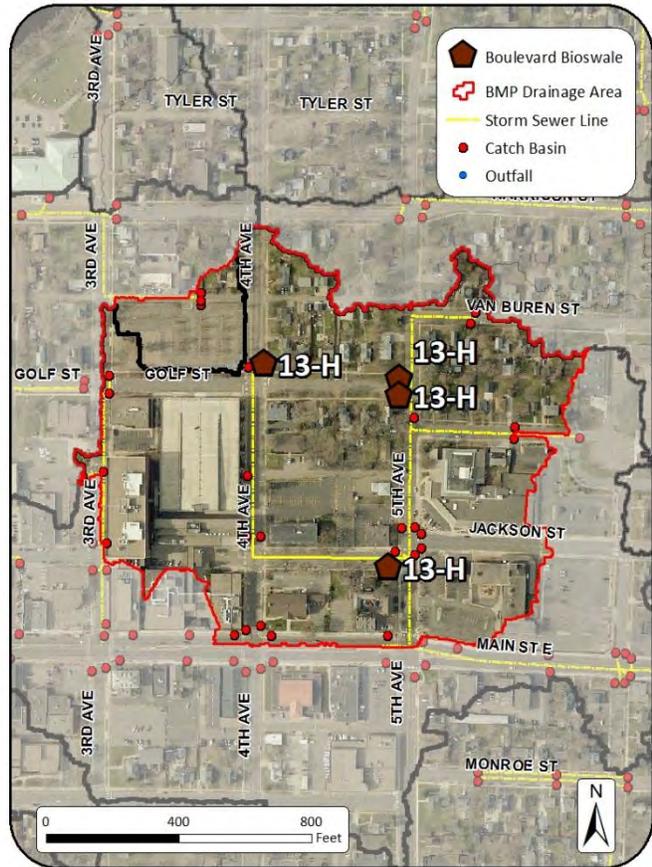
## Boulevard Bioswales

**Drainage Area** – 0.5 acres

**Location** – Various locations throughout catchment

**Property Ownership** – Public

**Site Specific Information** – Boulevard bioswales are proposed for installation, preferably in the northern portion of the catchment. Locations for up to four bioswales are sited, where they will serve to treat runoff primarily from residential properties. The table below shows the estimated cost and pollutant removal amounts based on treatment of a 0.5-acre drainage area.



Boulevard Bioswale			
		2.5"/hr Infiltr. Rate	
		New Treatment	% Reduction
Treatment	Number of BMPs	1	
	Total Size of BMPs	80 sq-ft	
	TP (lb/yr)	0.1	1.0%
	TSS (lb/yr)	22	0.5%
	Volume (acre-feet/yr)	0.1	0.8%
Cost	Administration & Promotion Costs*	\$3,650	
	Design & Construction Costs**	\$4,876	
	<b>Total Estimated Project Cost (2016)</b>	<b>\$8,526</b>	
	Annual O&M***	\$225	
Efficiency	30-yr Average Cost/lb-TP	<b>\$5,092</b>	
	30-yr Average Cost/1,000lb-TSS	<b>\$23,072</b>	
	30-yr Average Cost/ac-ft Vol.	<b>\$5,092</b>	

\*Indirect Cost: (50 hours at \$73/hour)

\*\*Direct Cost: (\$50/sq-ft for materials and labor) + (12 hours/BMP at \$73/hour for design)

\*\*\*Per BMP: (\$150/year for 10-year rehabilitation)+ (\$75/year for routine maintenance)

# Southern Drainage Network

Catchment ID	Page
A-14	118
A-15	122
A-16	126
A-17	130

Existing Network Summary	
Acres	302.7
Dominant Land Cover	Residential
Volume (ac-ft/yr)	148.2
TP (lb/yr)	142.9
TSS (lb/yr)	44,377



### **DRAINAGE NETWORK SUMMARY**

The southern drainage network consists of catchments A-14, A-15, A-16, and A-17. These catchments comprise all areas in the City of Anoka draining to the Rum River south of Main Street. The four Rum River outfalls are located west of 1<sup>st</sup> Avenue about 200’ south of Main Street (A-14) and at Adam’s Street (A-15), Washington Street (A-16), and Oakwood Drive (A-17). The southern drainage network is predominantly residential housing unlike the other three drainage networks, which have a much larger variety of land uses.

### **EXISTING STORMWATER TREATMENT**

The only form of network-wide treatment is street cleaning performed by the City of Anoka twice monthly in Catchment A-14 and two times annually in Catchment A-15, A-16, and A-17. Only two other forms of treatment exist in the network. The first is a treatment system in Catchment A-15 at 2<sup>nd</sup> Avenue and Adams Street which includes a series of sedimentation chambers as well as a retention pond.

## Catchment A-14

Existing Catchment Summary	
Acres	7.8
Dominant Land Cover	Commercial
Parcels	45
Volume (acre-feet/yr)	8.3
TP (lb/yr)	6.4
TSS (lb/yr)	2,636

### CATCHMENT DESCRIPTION

Catchment A-14 includes areas of downtown Anoka south of Main Street along 1<sup>st</sup> Avenue, 2<sup>nd</sup> Avenue, 3<sup>rd</sup> Avenue, and Monroe Street. The catchment includes all geographic area draining to an outfall along the Rum River about 200' south of Main Street. Stormwater runoff is primarily overland east of 2<sup>nd</sup> Avenue, but is then collected through a series of municipal storm sewer pipes, and discharged at the Rum River outfall west of 1<sup>st</sup> Avenue.



### EXISTING STORMWATER TREATMENT

No stormwater treatment exists in this catchment besides street cleaning, conducted two times per month by the City of Anoka. Present-day stormwater pollutant loading and treatment is summarized in the table below.

<i>Existing Conditions</i>		Base Loading	Treatment	Net Treatment %	Existing Loading
<b>Treatment</b>	<b>Number of BMPs</b>	1			
	<b>BMP Types</b>	Street Cleaning			
	<b>TP (lb/yr)</b>	7.2	0.8	11%	<b>6.4</b>
	<b>TSS (lb/yr)</b>	3,108	472	15%	<b>2,636</b>
	<b>Volume (acre-feet/yr)</b>	8.3	0.0	0%	<b>8.3</b>

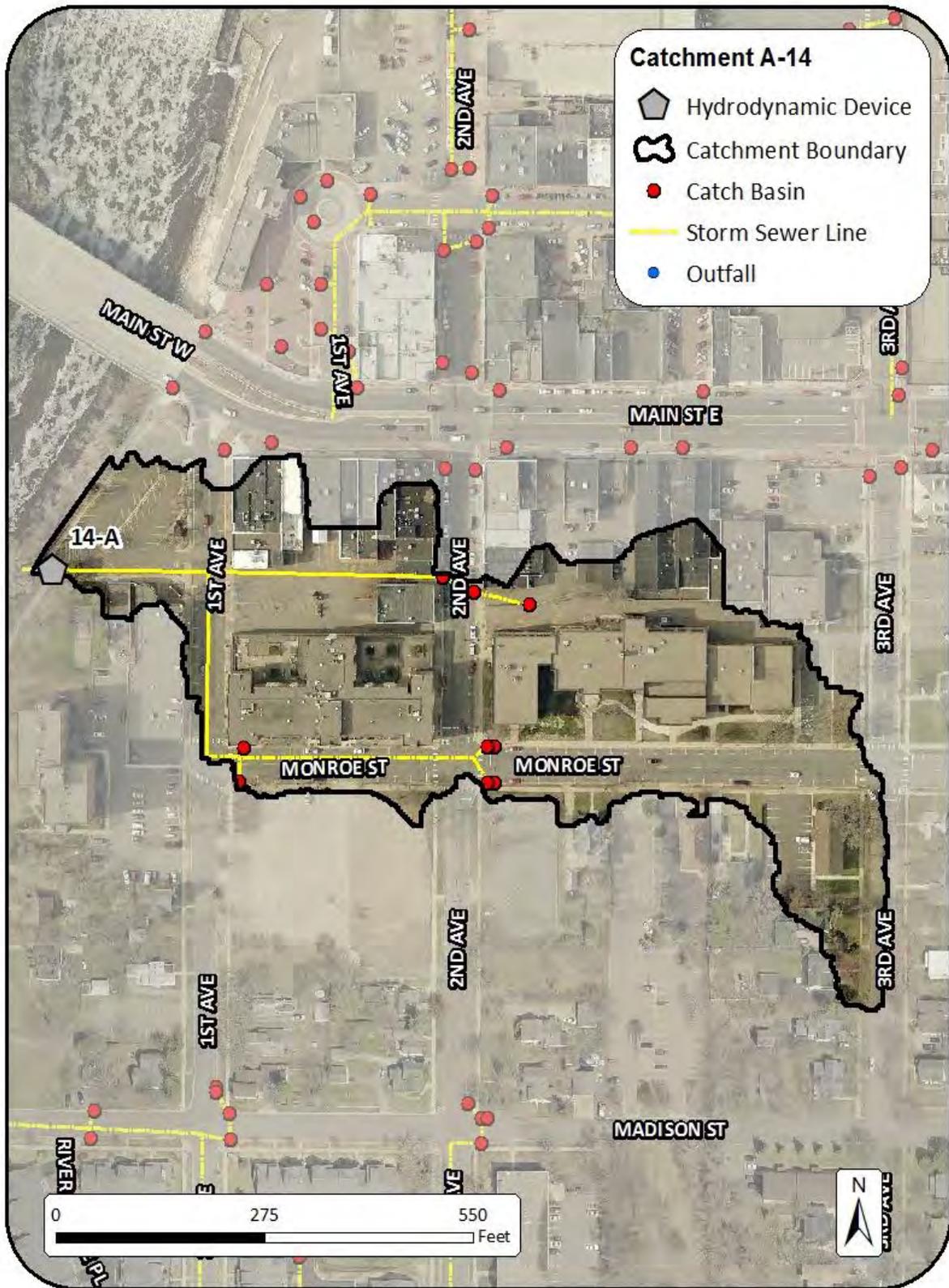
### PROPOSED RETROFITS OVERVIEW

A single hydrodynamic device was proposed upstream of the outfall to the Rum River. If properly designed and installed, this structure should be able to treat nearly all of the surficial area of this catchment.

**RETROFITS CONSIDERED BUT REJECTED**

Bioretention practices, specifically boulevard bioswales, were considered but were not proposed as insufficient space exists within boulevards of this catchment to accommodate a practice. Due to the limited space, subsurface practices were instead proposed.

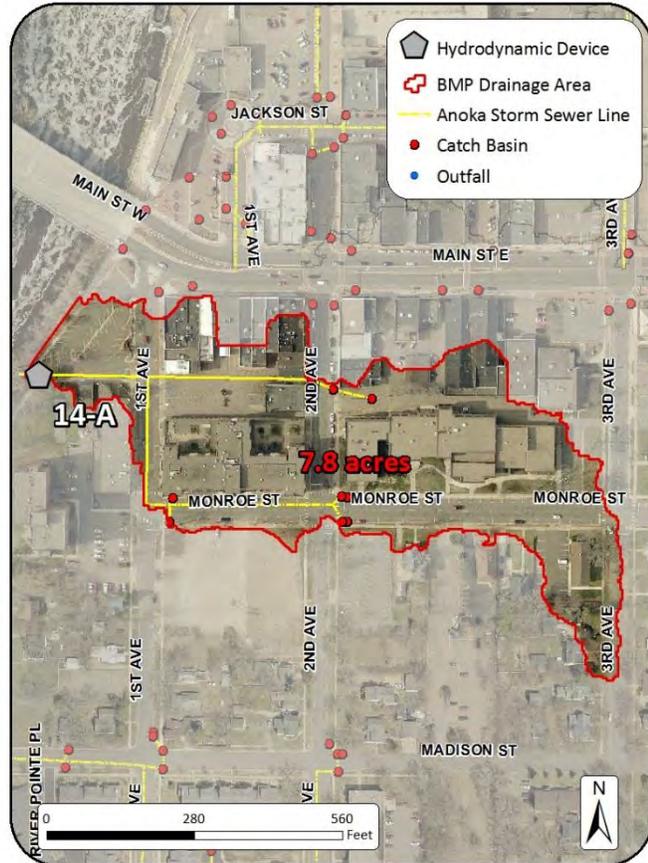
### RETROFIT RECOMMENDATIONS



# Project ID: 14-A

1<sup>st</sup> Avenue.  
Hydrodynamic Device

**Drainage Area** – 7.8 acres  
**Location** – Parking lot off 1<sup>st</sup> Avenue  
**Property Ownership** – Public  
**Site Specific Information** – A hydrodynamic device is proposed for the parking lot west of 1<sup>st</sup> Avenue and south of Main Street. This device would accept and treat runoff from the entire catchment.



Hydrodynamic Device				
		Cost/Removal Analysis	New Treatment	% Reduction
Treatment	Number of BMPs		1	
	Total Size of BMPs		10 ft diameter	
	TP (lb/yr)	0.8		12.5%
	TSS (lb/yr)	385		14.6%
	Volume (acre-feet/yr)	0.0		0.0%
Cost	Administration & Promotion Costs*			\$1,752
	Design & Construction Costs**			\$108,000
	Total Estimated Project Cost (2016)			\$109,752
	Annual O&M***			\$630
Efficiency	30-yr Average Cost/lb-TP		\$5,361	
	30-yr Average Cost/1,000lb-TSS		\$11,139	
	30-yr Average Cost/ac-ft Vol.		N/A	

\*Indirect Cost: (24 hours at \$73/hour)

\*\*Direct Cost: (\$72,000 for materials) + (\$36,000 for labor and installation costs)

\*\*\*Per BMP: (3 cleanings/year)\*(3 hours/cleaning)\*(\$70/hour)

## Catchment A-15

Existing Catchment Summary	
Acres	275.9
Dominant Land Cover	Residential
Parcels	845
Volume (acre-feet/yr)	131.8
TP (lb/yr)	125.3
TSS (lb/yr)	38,609

### CATCHMENT DESCRIPTION

Catchment A-15 is the largest catchment in the southern drainage network, extending from the Coon Rapids municipal boundary in the east to the Rum River in the west and from Main Street in the north to Southview Road in the south. The catchment is predominantly single-family residential, but includes larger publically-owned parcels such as the Anoka High School football field, Middle School for the Arts, and Aquatic Center and privately owned multifamily developments.



Stormwater runoff generated within the catchment is collected quickly from street catch basins and conveyed to the Rum River. The catchment includes areas of downtown Anoka south of Main St. along 1<sup>st</sup> Avenue, 2<sup>nd</sup> Avenue, 3<sup>rd</sup> Avenue, and Monroe Street. The catchment includes all geographic areas draining to an outfall along the Rum River about 200' south of Main Street. Stormwater runoff is primarily overland east of 2<sup>nd</sup> Avenue, but is then collected through a series of municipal storm sewer pipes, and discharged at the Rum River outfall west of 1<sup>st</sup> Avenue.

### EXISTING STORMWATER TREATMENT

Stormwater runoff generated within the catchment is collected quickly from roadway catch basins and conveyed to a stormwater treatment system on Adams Street west of 2<sup>nd</sup> Avenue. Upon entering the system stormwater is first passed through a grit chamber, which is a series of baffles and trash racks acting as sedimentation cells. Once through this structure stormwater is discharged into a retention pond, which subsequently outlets into the Rum River. The only other form of stormwater treatment in this catchment is street cleaning, conducted two times per year by the City of Anoka. Present-day stormwater pollutant loading and treatment is summarized in the table below.

	<i>Existing Conditions</i>	Base Loading	Treatment	Net Treatment %	Existing Loading
<b>Treatment</b>	<b>Number of BMPs</b>	5			
	<b>BMP Types</b>	3 Hydrodynamic Devices, 1 Pond, Street Cleaning			
	<b>TP (lb/yr)</b>	163.3	38.0	23%	<b>125.3</b>
	<b>TSS (lb/yr)</b>	54,890	16,281	30%	<b>38,609</b>
	<b>Volume (acre-feet/yr)</b>	134.6	2.8	2%	<b>131.8</b>

**PROPOSED RETROFITS OVERVIEW**

Infiltration practices were pursued in areas outside of the Drinking Water Supply Management Areas. Up to ten curb-cut rain gardens were proposed in the residential neighborhood east of 5<sup>th</sup> Avenue and south of Jefferson Street. This neighborhood was chosen due to its sandy soils, relatively small slopes, and older infrastructure. Recent roadway improvements to the north increased the density of catch basins, which can make curb-cut rain garden projects less beneficial by decreasing potential drainage areas.

A pair of hydrodynamic devices were proposed along tertiary storm sewer lines on 5<sup>th</sup> Avenue and Jefferson Street. Drainage areas to each of these devices were kept below ten acres to limit peak stormwater volume discharge to each device as high flows can promote the resuspension of accumulated sediment.

**RETROFITS CONSIDERED BUT REJECTED**

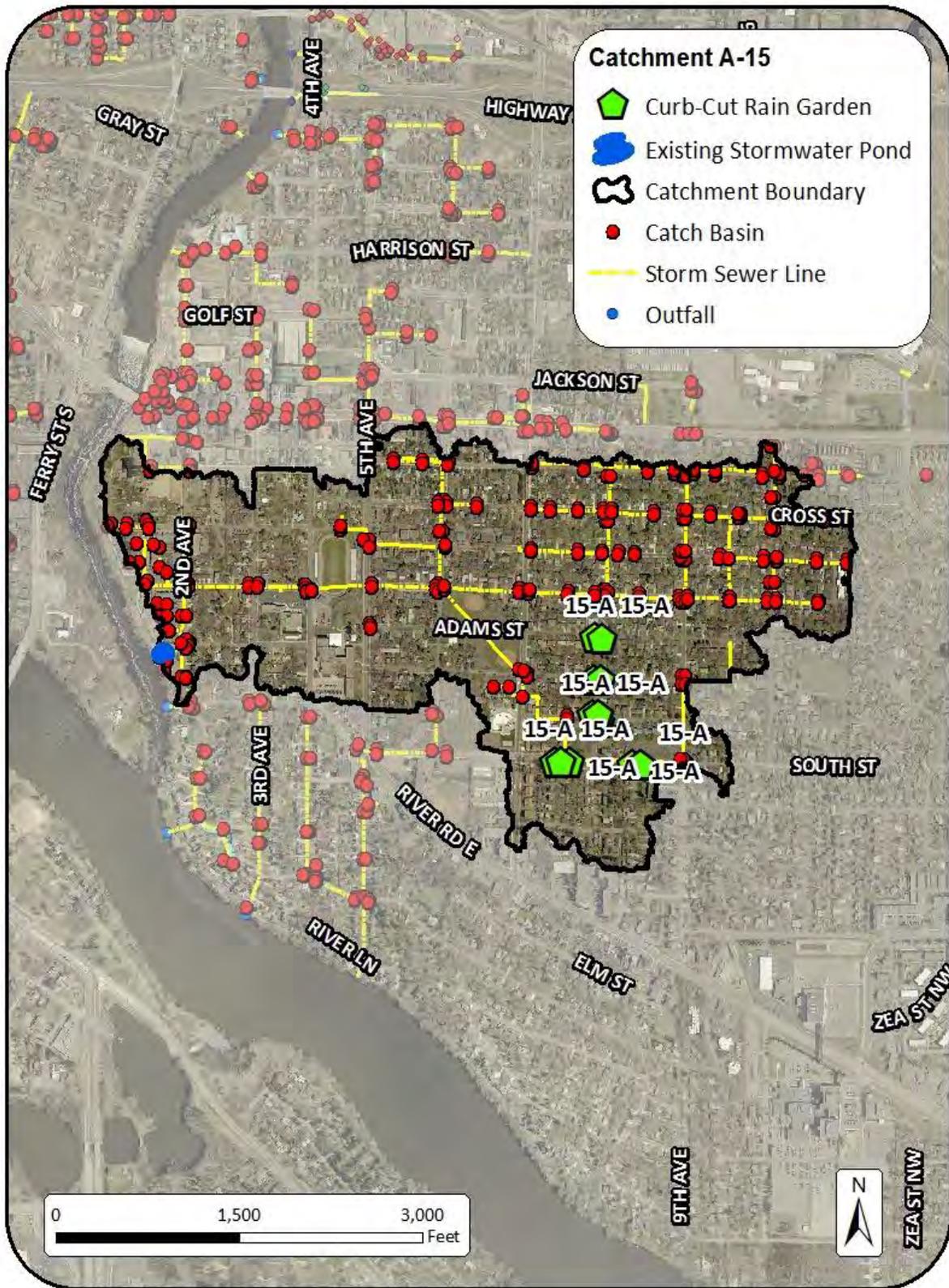
Permeable pavement opportunities sited at public, school, and church properties throughout the Adams Street catchment were removed due to the risk of contamination to local groundwater resources. The Minnesota Department of Health Wellhead Protection Area (WHPA) throughout most of the Adams Street catchment has a high risk for aquifer vulnerability. Because long-term paved parking areas can be sources for heavy metals, hydrocarbons, and road salt this location was removed as a potential area for an infiltration practice such as permeable pavement.

Similarly, underground infiltration practices located at two city-owned properties (the baseball fields west of 7<sup>th</sup> Avenue and north of Brisbin Street, and the open green space east of 7<sup>th</sup> Avenue and north of South Street) were removed from consideration because of their location relative to the WHPA within an area of high groundwater vulnerability.

A pair of hydrodynamic devices were also proposed along tertiary storm sewer lines on 5<sup>th</sup> Avenue and Jefferson Street. Drainage areas to each of these devices were kept below ten acres to limit peak stormwater volume discharge to each device as high flows can promote the resuspension of accumulated sediment. However, after modeling these devices showed to remove minimal TP and TSS.

Lastly, a stormwater reuse practice on the high school football field was also excluded from consideration as increased infiltration at this site from repurposed stormwater would likely require filtering and tertiary treatment that would deem the practice cost-prohibitive. Because this practice also lies within the Emergency Response Area (area where time of travel for infiltrated water from the ground surface to the aquifer is within 1 year) the installation of any infiltration practice is not recommended.

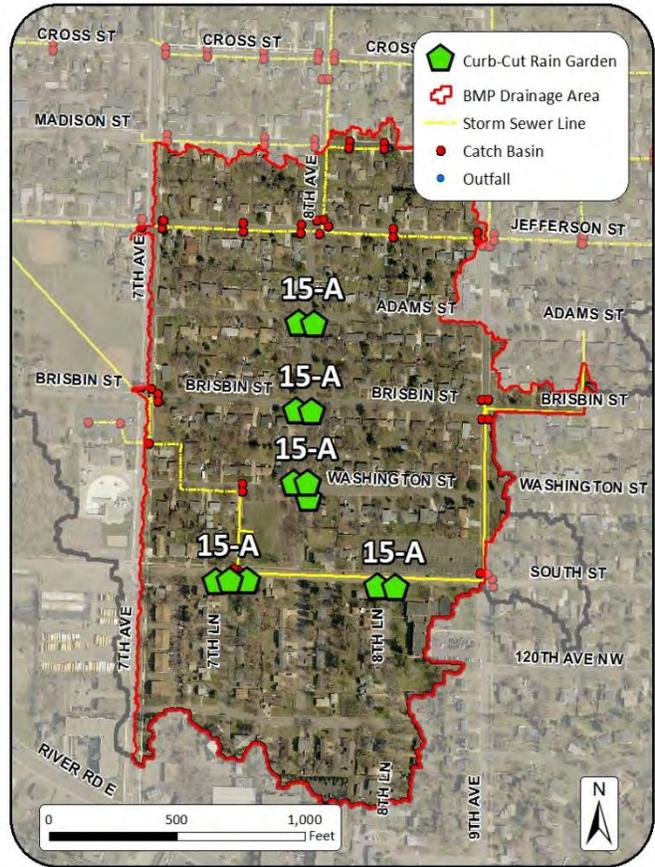
### RETROFIT RECOMMENDATIONS



# Project ID: 15-A

## Curb-Cut Rain Gardens

**Drainage Area** – 1.5 – 15 acres  
**Location** – Various locations in southeastern portion of catchment  
**Property Ownership** – Private  
**Site Specific Information** – Single-family lots in the catchment provide various locations for curb-cut rain gardens to treat stormwater pollutants originating from private property. Considering typical landowner participation rates, scenarios with one, five, and ten rain gardens were analyzed to treat the drainage area.



Curb-Cut Rain Garden									
<i>Cost/Removal Analysis</i>		New Treatment		% Reduction		New Treatment		% Reduction	
Treatment	Number of BMPs	1		5		10			
	Total Size of BMPs	250	sq-ft	1,250	sq-ft	2,500	sq-ft		
	TP (lb/yr)	0.4	0.4%	2.2	1.8%	4.4	3.5%		
	TSS (lb/yr)	135	0.3%	671	1.7%	1,343	3.5%		
	Volume (acre-feet/yr)	0.4	0.3%	1.9	1.4%	3.7	2.8%		
Cost	Administration & Promotion Costs*	\$8,468		\$11,972		\$16,352			
	Design & Construction Costs**	\$7,376		\$36,880		\$73,760			
	<b>Total Estimated Project Cost (2016)</b>	<b>\$15,844</b>		<b>\$48,852</b>		<b>\$90,112</b>			
	Annual O&M***	\$225		\$1,125		\$2,250			
Efficiency	30-yr Average Cost/lb-TP	<b>\$1,883</b>		<b>\$1,252</b>		<b>\$1,194</b>			
	30-yr Average Cost/1,000lb-TSS	<b>\$5,579</b>		<b>\$4,103</b>		<b>\$3,912</b>			
	30-yr Average Cost/ac-ft Vol.	<b>\$1,931</b>		<b>\$1,480</b>		<b>\$1,413</b>			

\*Indirect Cost: (104 hours at \$73/hour base cost) + (12 hours/BMP at \$73/hour)  
 \*\*Direct Cost: (\$26/sq-ft for materials and labor) + (12 hours/BMP at \$73/hour for design)  
 \*\*\*Per BMP: (\$150/year for rehabilitations at years 10 and 20) + (\$75/year for routine maintenance)

## Catchment A-16

Existing Catchment Summary	
Acres	6.7
Dominant Land Cover	Residential
Parcels	19
Volume (acre-feet/yr)	2.8
TP (lb/yr)	3.8
TSS (lb/yr)	1,066



### CATCHMENT DESCRIPTION

Catchment A-16 is defined by all of the geographical area draining stormwater to the Washington Street outfall. This outfall collects stormwater from a single storm sewer line located at the intersection of Oakwood Drive and Washington Street and discharges it into the Rum River 150' west of the intersection. This catchment is the smallest in the southern network and provides drainage from less than 20 single family residential properties. Soils within the historic Rum River floodplain (along and west of Oakwood Drive) are sandy loams, while soils east of Oakwood Drive are predominantly coarse and sandy.

### EXISTING STORMWATER TREATMENT

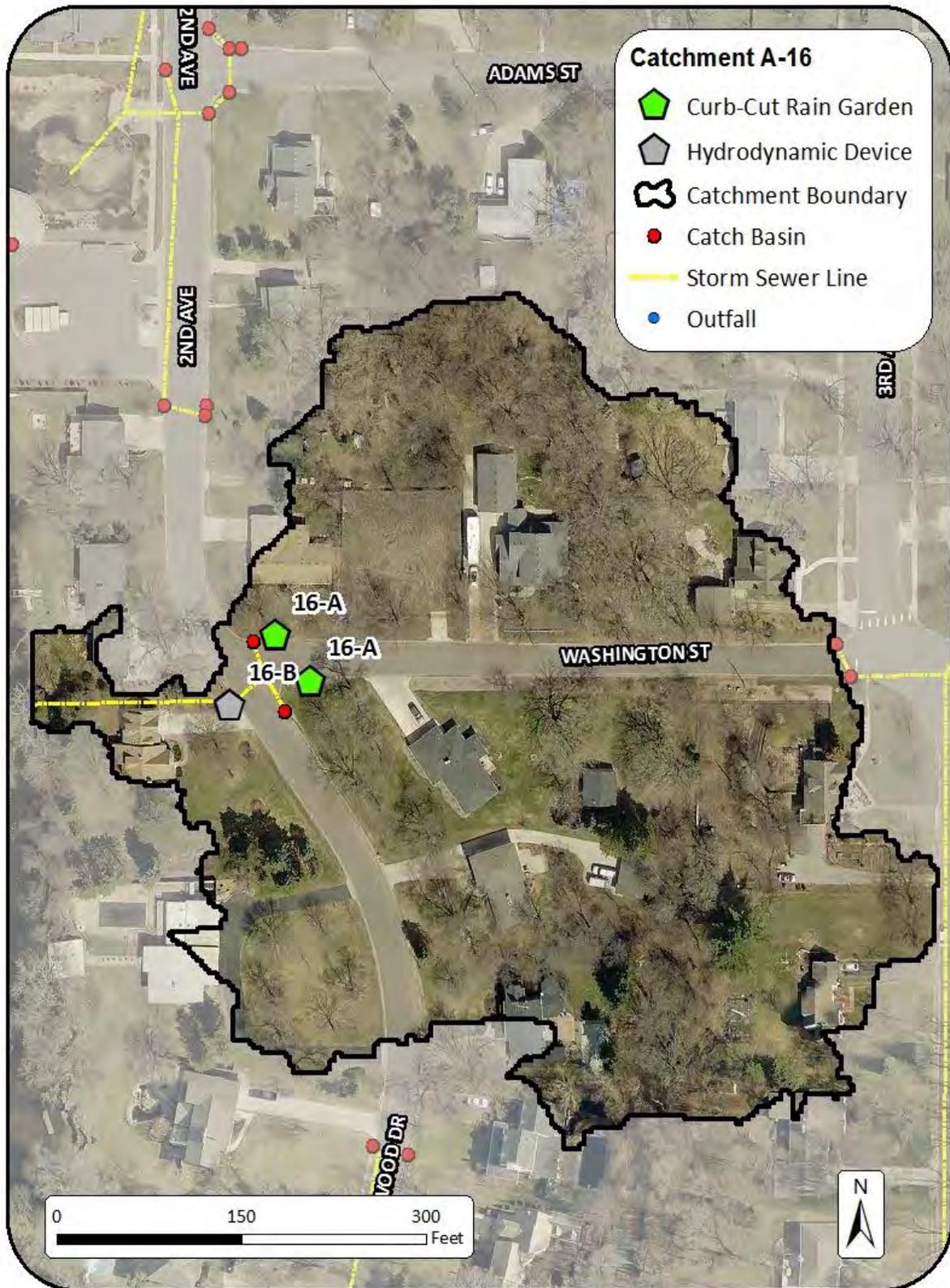
The only form of stormwater treatment in this catchment is street cleaning, conducted two times per year by the City of Anoka. Present-day stormwater pollutant loading and treatment is summarized in the table below.

	Existing Conditions	Base Loading	Treatment	Net Treatment %	Existing Loading
Treatment	Number of BMPs	1			
	BMP Types	Street Cleaning			
	TP (lb/yr)	4.1	0.3	7%	3.8
	TSS (lb/yr)	1,208	142	12%	1,066
	Volume (acre-feet/yr)	2.8	0.0	0%	2.8

### PROPOSED RETROFITS OVERVIEW

A hydrodynamic device and a pair of curb-cut rain gardens are proposed to provide treatment to stormwater prior to discharge to the Rum River. The curb-cut rain gardens are proposed just upstream of catch basins to maximize drainage area to each basin. The hydrodynamic device should be installed such that it treats all catch basins at the Oakwood Drive and Washington Street intersection.

RETROFIT RECOMMENDATIONS



# Project ID: 16-A

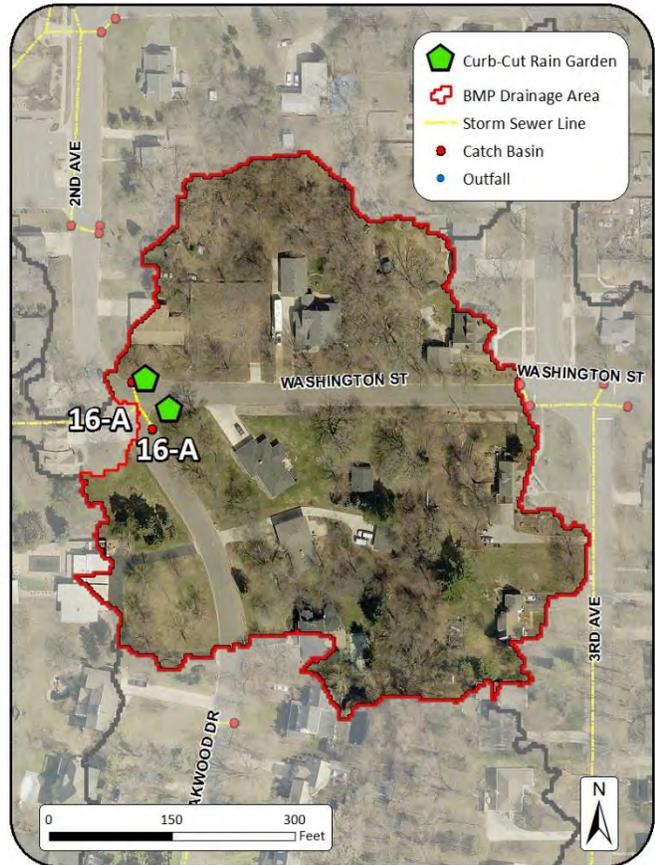
## Washington St. Curb-Cut Rain Gardens

**Drainage Area** – 1.5 – 3 acres

**Location** – Washington Street and Oakwood Drive

**Property Ownership** – Private

**Site Specific Information** – Single-family lots in the catchment provide locations for curb-cut rain gardens to treat stormwater pollutants originating from private property. Preferably the rain gardens would be placed on private properties at the western end of Washington Street at Oakwood Drive in order to treat a larger drainage area. Considering typical landowner participation rates, scenarios with one and two rain gardens were analyzed to treat the drainage area.



Curb Cut Rain Garden					
Cost/Removal Analysis		New Treatment		% Reduction	
Treatment	Number of BMPs	1		2	
	Total Size of BMPs	250 sq-ft		500 sq-ft	
	TP (lb/yr)	0.5	13.2%	1.0	26.3%
	TSS (lb/yr)	157	14.7%	315	29.5%
	Volume (acre-feet/yr)	0.4	13.9%	0.8	27.8%
Cost	Administration & Promotion Costs*	\$1,606		\$2,482	
	Design & Construction Costs**	\$7,376		\$14,752	
	Total Estimated Project Cost (2016)	\$8,982		\$17,234	
	Annual O&M***	\$225		\$450	
Efficiency	30-yr Average Cost/lb-TP	\$1,049		\$1,024	
	30-yr Average Cost/1,000lb-TSS	\$3,340		\$3,252	
	30-yr Average Cost/ac-ft Vol.	\$1,369		\$1,339	

\*Indirect Cost: (10 hours at \$73/hour base cost) + (12 hours/BMP at \$73/hour)

\*\*Direct Cost: (\$26/sq-ft for materials and labor) + (12 hours/BMP at \$73/hour for design)

\*\*\*Per BMP: (\$150/year for rehabilitations at years 10 and 20) + (\$75/year for routine maintenance)

# Project ID: 16-B

Oakwood Dr. & Washington St.  
Hydrodynamic Device

**Drainage Area** – 6.3 acres  
**Location** –Oakwood Drive and Washington Street  
**Property Ownership** – Public  
**Site Specific Information** – A hydrodynamic device is proposed for Oakwood Drive at Washington Street. A device at this location would capture and treat runoff from almost the entire catchment. The catchment is composed of all residential properties.



## Hydrodynamic Device

		Cost/Removal Analysis	New Treatment	% Reduction
Treatment	Number of BMPs		1	
	Total Size of BMPs		10 ft diameter	
	TP (lb/yr)	0.4		10.5%
	TSS (lb/yr)	163		15.3%
	Volume (acre-feet/yr)	0.0		0.0%
Cost	Administration & Promotion Costs*			\$1,752
	Design & Construction Costs**			\$108,000
	<b>Total Estimated Project Cost (2016)</b>			<b>\$109,752</b>
	Annual O&M***			\$630
Efficiency	30-yr Average Cost/lb-TP		\$10,721	
	30-yr Average Cost/1,000lb-TSS		\$26,309	
	30-yr Average Cost/ac-ft Vol.		N/A	

\*Indirect Cost: (24 hours at \$73/hour)

\*\*Direct Cost: (\$72,000 for materials) + (\$36,000 for labor and installation costs)

\*\*\*Per BMP: (3 cleanings/year)\*(3 hours/cleaning)\*(\$70/hour)

## Catchment A-17

Existing Catchment Summary	
Acres	12.5
Dominant Land Cover	Residential
Parcels	32
Volume (acre-feet/yr)	5.3
TP (lb/yr)	7.4
TSS (lb/yr)	2,066



### CATCHMENT DESCRIPTION

Catchment A-17 is the southernmost catchment in this analysis. Stormwater generated within the catchment drains to municipal storm sewer lines along Oakwood Drive and Oakwood Lane and is conveyed to an outfall which discharges near the confluence of the Rum River with the Mississippi River. Land use within the catchment is solely single family residential. Soils transition from coarse and sandy Hubbard soils in the east to silty loam Becker soils in the west.

### EXISTING STORMWATER TREATMENT

The only existing BMP in this catchment is street cleaning, which is conducted two times per year by the City of Anoka. Present-day stormwater pollutant loading and treatment is summarized in the table below.

<i>Existing Conditions</i>		Base Loading	Treatment	Net Treatment %	Existing Loading
<i>Treatment</i>	Number of BMPs	1			
	BMP Types	Street Cleaning			
	TP (lb/yr)	8.0	0.6	8%	<b>7.4</b>
	TSS (lb/yr)	2,334	268	11%	<b>2,066</b>
	Volume (acre-feet/yr)	5.3	0.0	0%	<b>5.3</b>

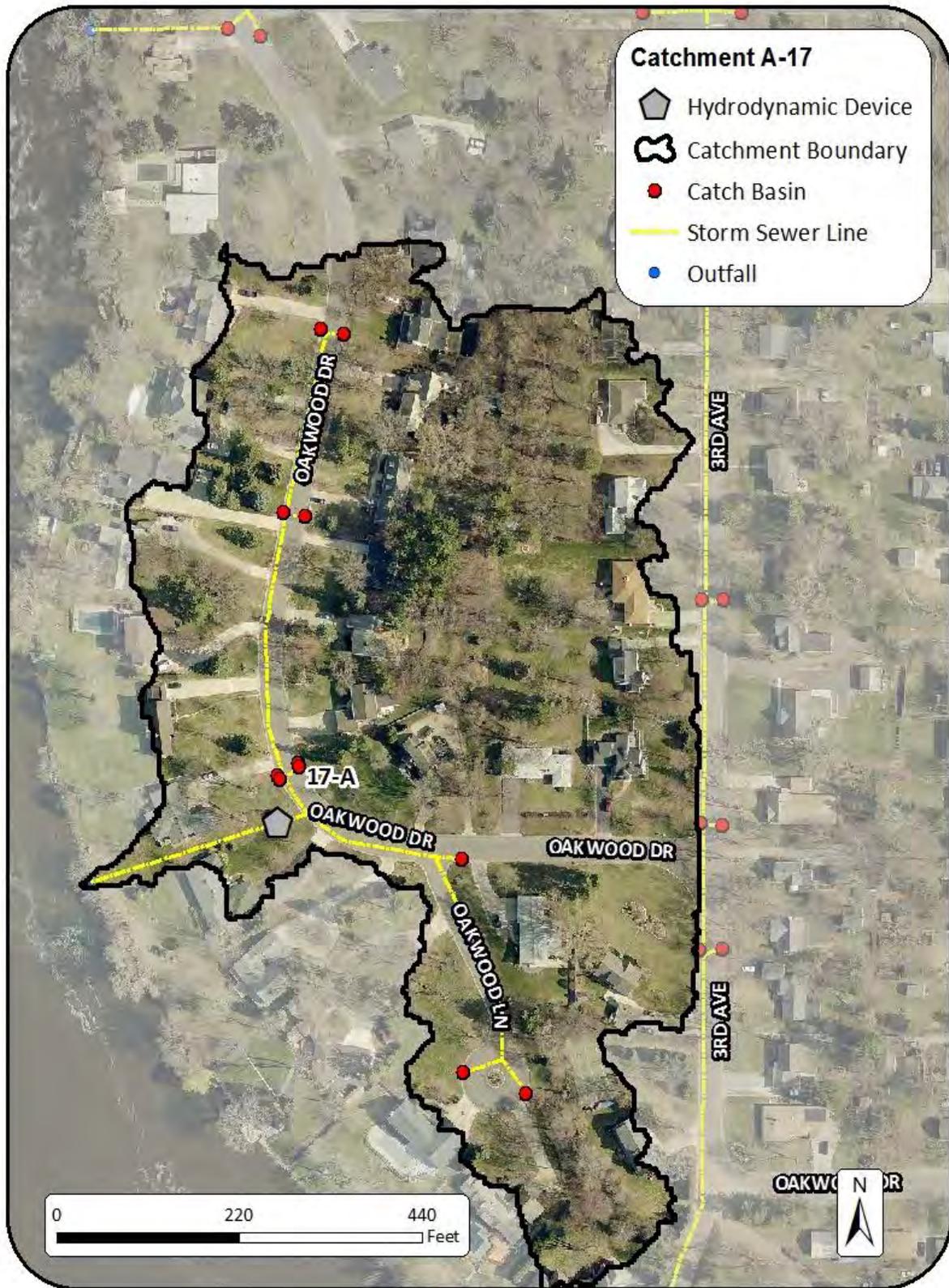
### PROPOSED RETROFITS OVERVIEW

A single hydrodynamic device was proposed along the Oakwood Drive storm sewer line. Installation of this device should try to include drainage from each of the catch basins within Catchment A-17 along Oakwood Drive.

**RETROFITS CONSIDERED BUT REJECTED**

Bioretention basins, specifically curb-cut rain gardens, were considered in this catchment but were not proposed as the drainage area to each basin was not enough to offset the cost of installation, making the practice cost-prohibitive.

### RETROFIT RECOMMENDATIONS



# Project ID: 17-A

## Oakwood Drive Hydrodynamic Device

**Drainage Area** – 11.9 acres  
**Location** –Oakwood Drive and Oakwood Lane  
**Property Ownership** – Public  
**Site Specific Information** – A hydrodynamic device is proposed for Oakwood Drive. A device at this location would capture and treat runoff from almost the entire catchment. The catchment is composed of all residential properties.



Hydrodynamic Device				
		Cost/Removal Analysis	New Treatment	% Reduction
Treatment	Number of BMPs		1	
	Total Size of BMPs		10 ft diameter	
	TP (lb/yr)		0.6	8.1%
	TSS (lb/yr)		244	11.8%
	Volume (acre-feet/yr)		0.0	0.0%
Cost	Administration & Promotion Costs*			\$1,752
	Design & Construction Costs**			\$108,000
	Total Estimated Project Cost (2016)			\$109,752
	Annual O&M***			\$630
Efficiency	30-yr Average Cost/lb-TP		\$7,147	
	30-yr Average Cost/1,000lb-TSS		\$17,575	
	30-yr Average Cost/ac-ft Vol.		N/A	

\*Indirect Cost: (24 hours at \$73/hour)

\*\*Direct Cost: (\$72,000 for materials) + (\$36,000 for labor and installation costs)

\*\*\*Per BMP: (3 cleanings/year)\*(3 hours/cleaning)\*(\$70/hour)

## References

- Erickson, A.J., and J.S. Gulliver. 2010. *Performance Assessment of an Iron-Enhanced Sand Filtration Trench for Capturing Dissolved Phosphorus*. University of Minnesota St. Anthony Falls Laboratory Engineering, Environmental and Geophysical Fluid Dynamics Project Report No. 549. Prepared for the City of Prior Lake, Prior Lake, MN.
- Minnesota Pollution Control Agency (MPCA). 2014. *Design Criteria for Stormwater Ponds*. Web.
- New York City Environmental Protection. 2013. *NYC Green Infrastructure 2013 Annual Report*. 36 pp.
- Schueler, T. and A. Kitchell. 2005. *Methods to Develop Restoration Plans for Small Urban Watersheds. Manual 2, Urban Subwatershed Restoration Manual Series*. Center for Watershed Protection. Ellicott City, MD.
- Schueler, T., D. Hirschman, M. Novotney, and J. Zielinski. 2007. *Urban Stormwater Retrofit Practices. Manual 3, Urban Subwatershed Restoration Manual Series*. Center for Watershed Protection. Ellicott City, MD.
- Weiss, P.T., J.S. Gulliver, A.J. Erickson. 2005. *The Cost and Effectiveness of Stormwater Management Practices*. Minnesota Department of Transportation.

## Appendix A – Modeling Methods

The following sections include WinSLAMM model details for each type of best management practice modeled for this analysis.

### WinSLAMM

Pollutant and volume reductions were estimated using the stormwater model Source Load and Management Model for Windows (WinSLAMM). WinSLAMM uses an abundance of stormwater data from the Upper-Midwest and elsewhere to quantify runoff volumes and pollutant loads from urban areas. It has detailed accounting of pollutant loading from various land uses, and allows the user to build a model “landscape”. WinSLAMM uses rainfall and temperature data from a typical year (1959 data from Minneapolis for this analysis), routing stormwater through the user’s model for each storm. WinSLAMM version 10.2.0 was used for this analysis to estimate volume and pollutant loading and reductions. Additional inputs for WinSLAMM are provided in Table 10.

**Table 10: General WinSLAMM Model Inputs (i.e. Current File Data)**

Parameter	File/Method
Land use acreage	ArcMap, Metropolitan Council 2010 Land Use
Precipitation/Temperature Data	Minneapolis 1959 – best approximation of a typical year
Winter season	Included in model. Winter dates are 11-4 to 3-13.
Pollutant probability distribution	WI_GEO01.ppd
Runoff coefficient file	WI_SL06 Dec06.rsv
Particulate solids concentration file	WI_AVG01.psc
Particle residue delivery file	WI_DLV01.prr
Street delivery files	WI files for each land use

# Existing Conditions

Existing stormwater BMPs were included in the WinSLAMM model for which information was available from the state (MNDOT), county (Anoka County), and the City of Anoka. The practices listed below were included in the existing conditions model.

## Infiltration Basin

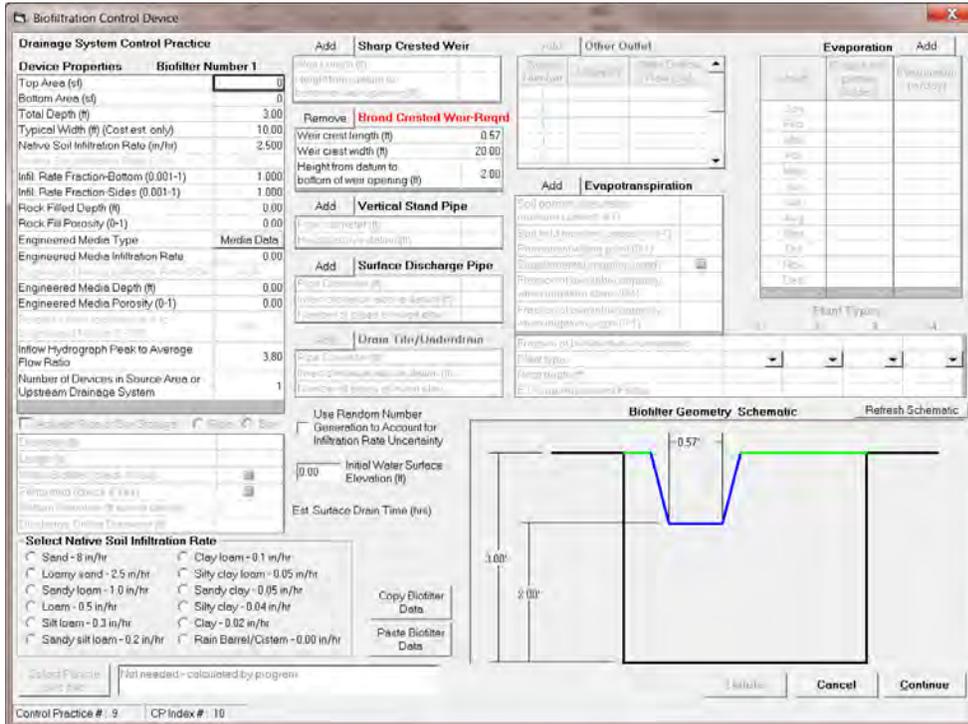


Figure 12: Infiltration Basin at Greenhaven Road in A-3 (WinSLAMM).

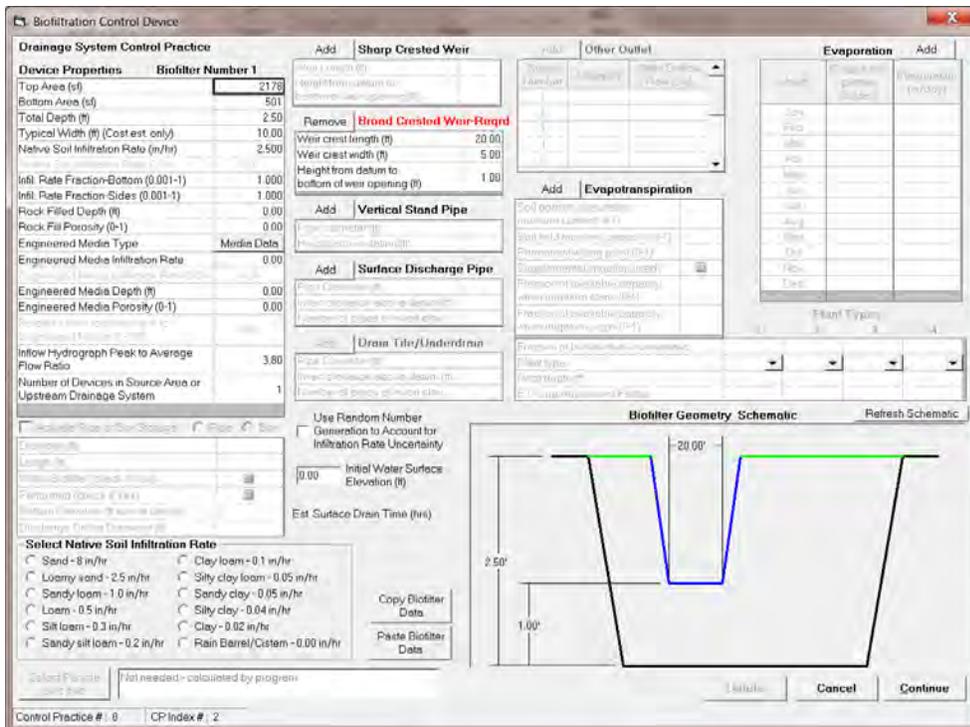


Figure 13: Infiltration Basin at Anoka Middle School for the Arts (Northern Basin) in A-13 (WinSLAMM).

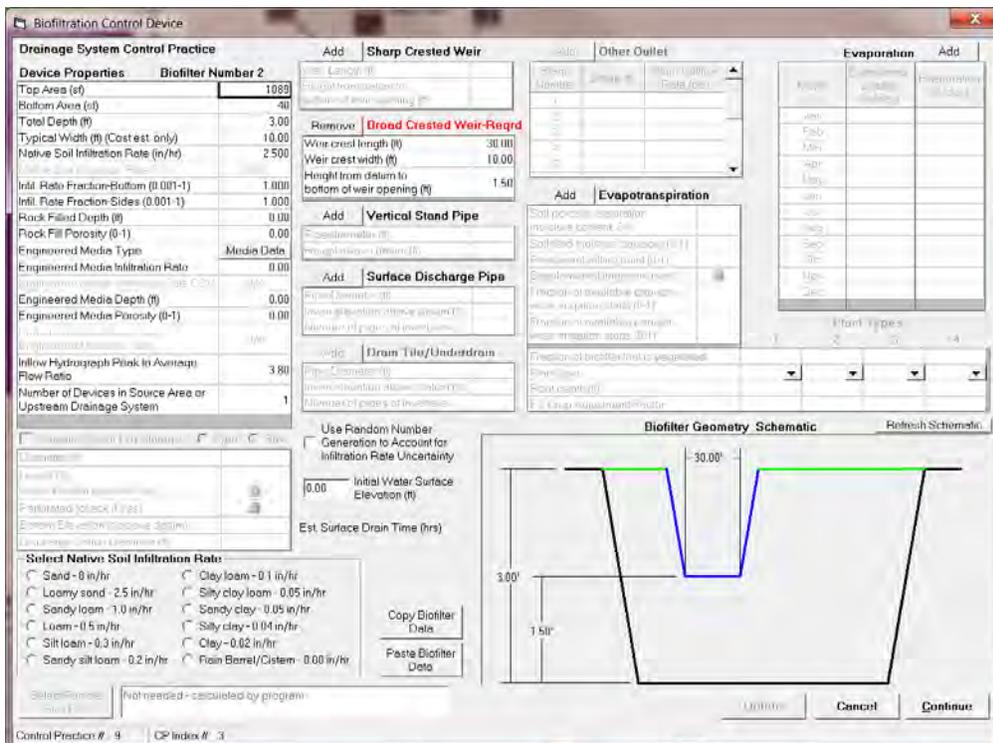


Figure 14: Infiltration Basin at Anoka Middle School for the Arts (Southern Basin) in A-13 (WinSLAMM).

### Hydrodynamic Device

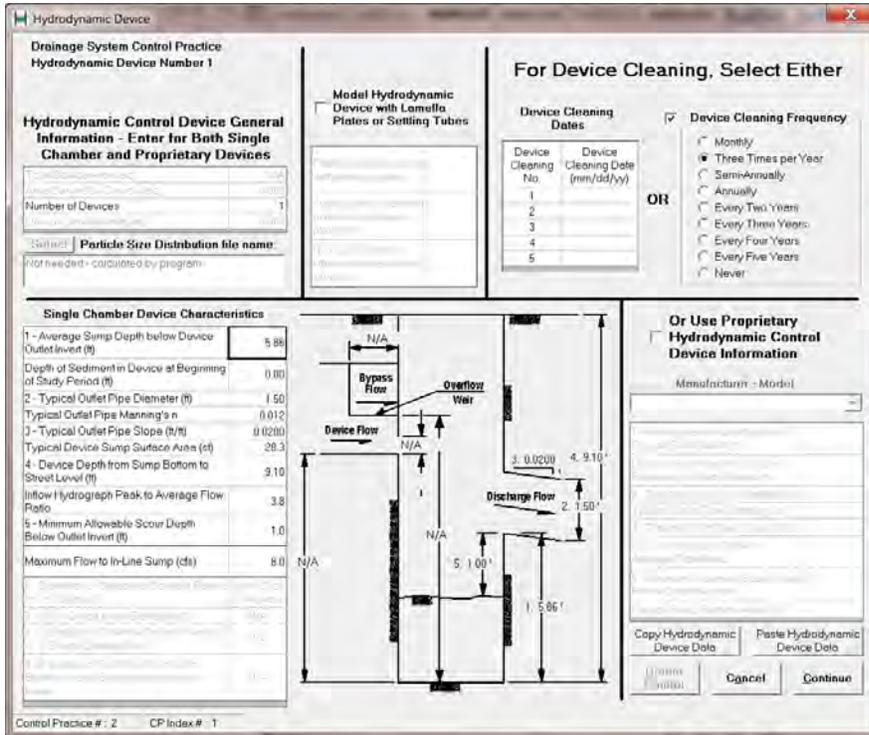


Figure 15: Hydrodynamic Device at Maple Avenue in A-2 (WinSLAMM).

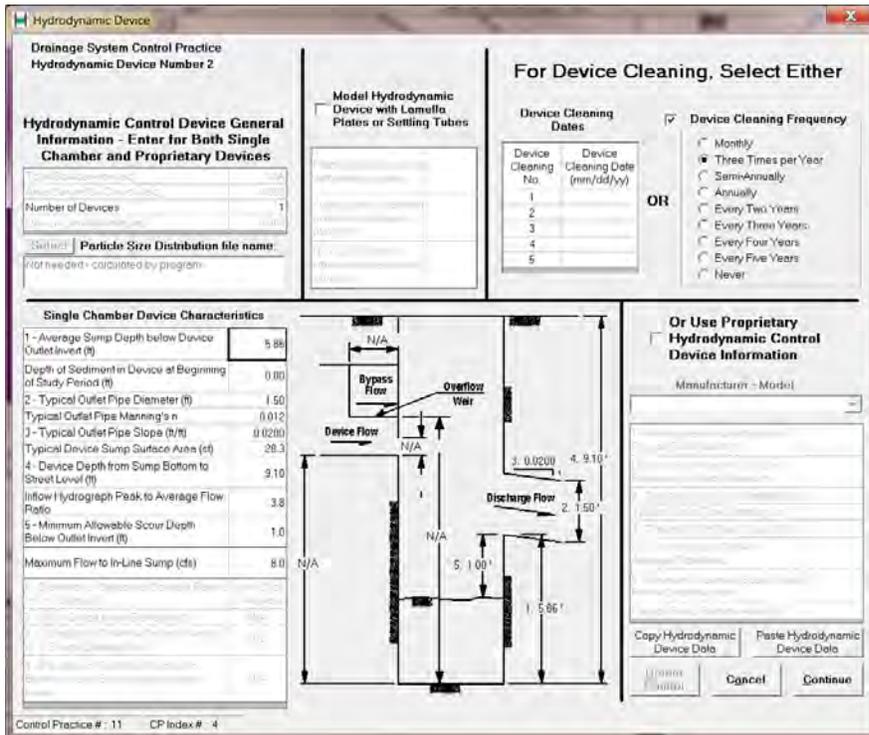


Figure 16: Hydrodynamic Device at Branch Avenue in A-3 (WinSLAMM).

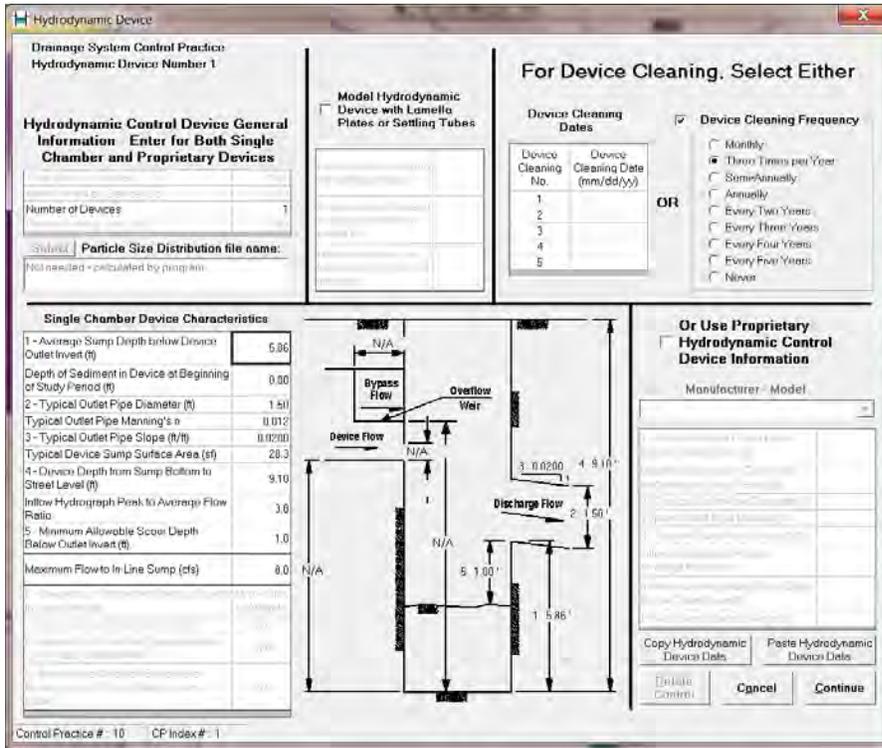


Figure 17: Hydrodynamic Device at Wingfield Alley in A-3 (WinSLAMM).

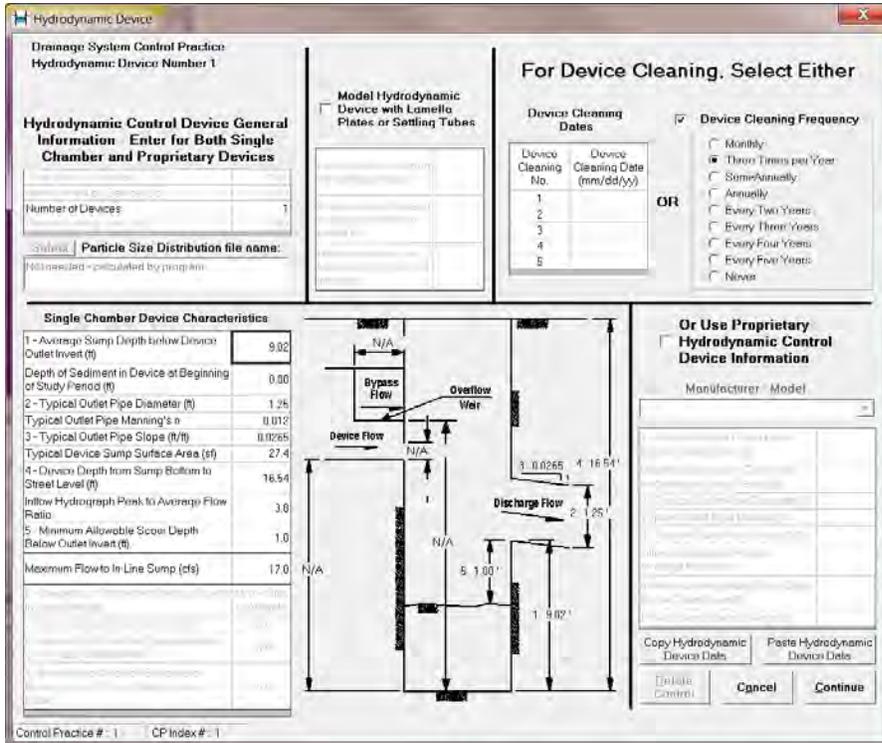


Figure 18: Hydrodynamic Device at Ferry Street in A-5 (WinSLAMM).

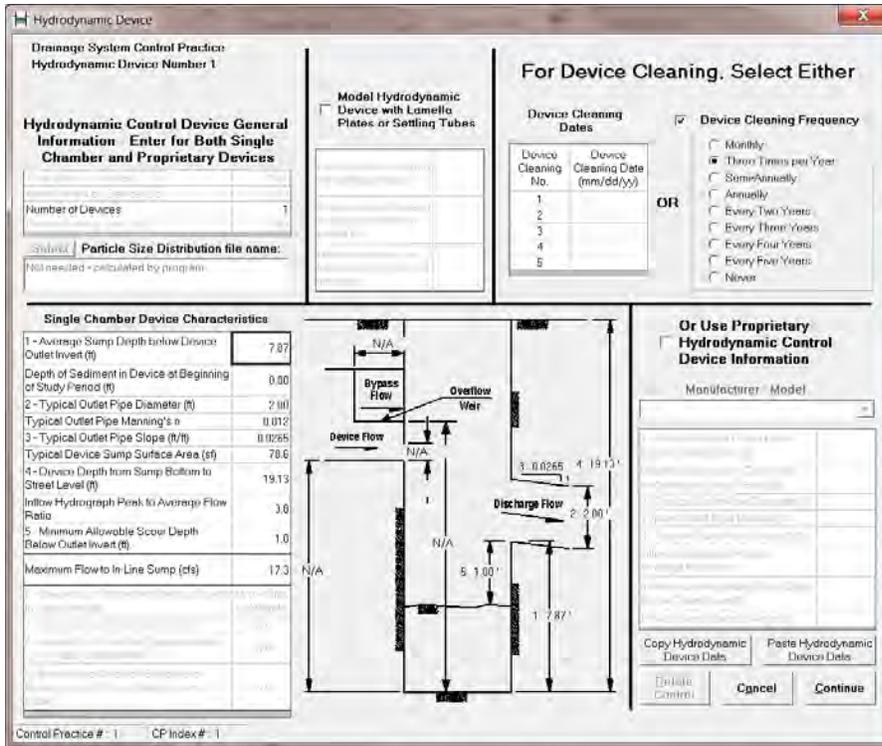


Figure 19: Hydrodynamic Device at Main Street in A-6 (WinSLAMM).

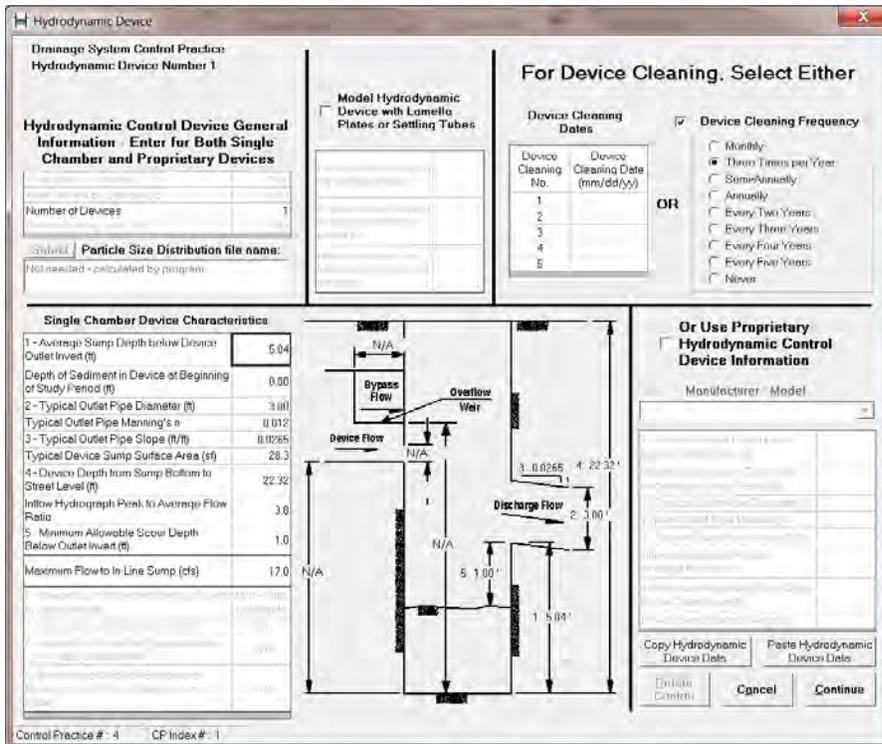


Figure 20: Hydrodynamic Device at Water Avenue and Taylor Street in A-10 (WinSLAMM).

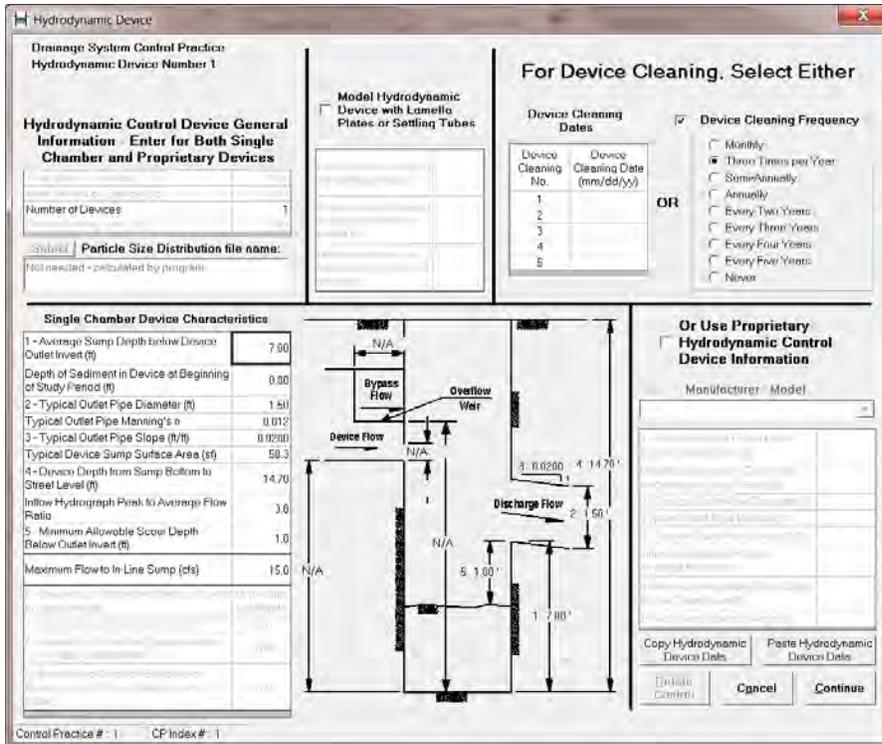


Figure 21: Hydrodynamic Device at Polk Street and 3<sup>rd</sup> Avenue in A-11 (WinSLAMM).

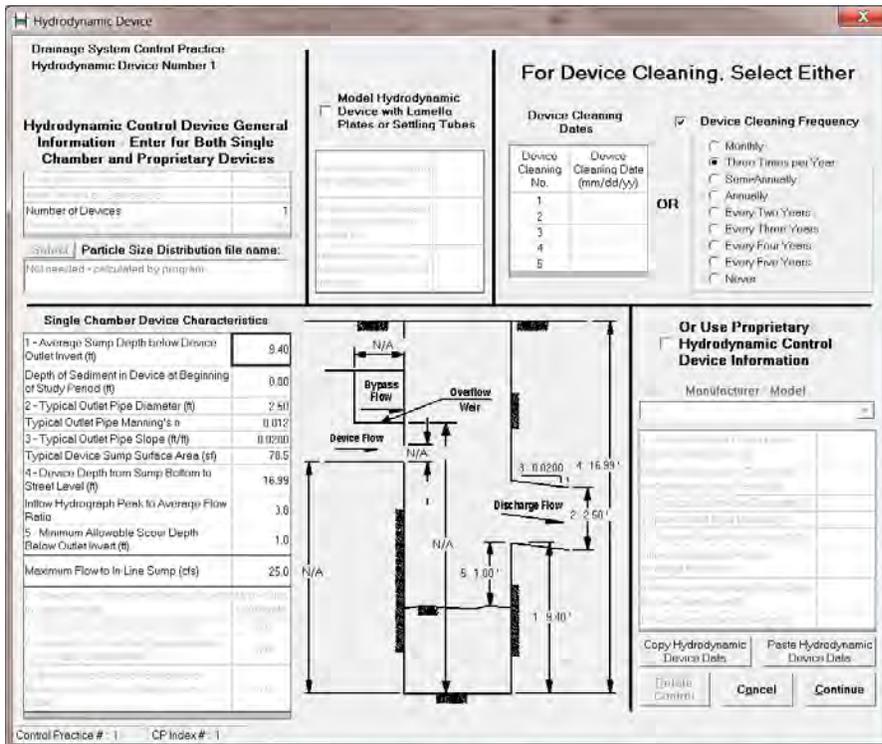


Figure 22: Hydrodynamic Device at Harrison Street and 2<sup>nd</sup> Avenue in A-12 (WinSLAMM).

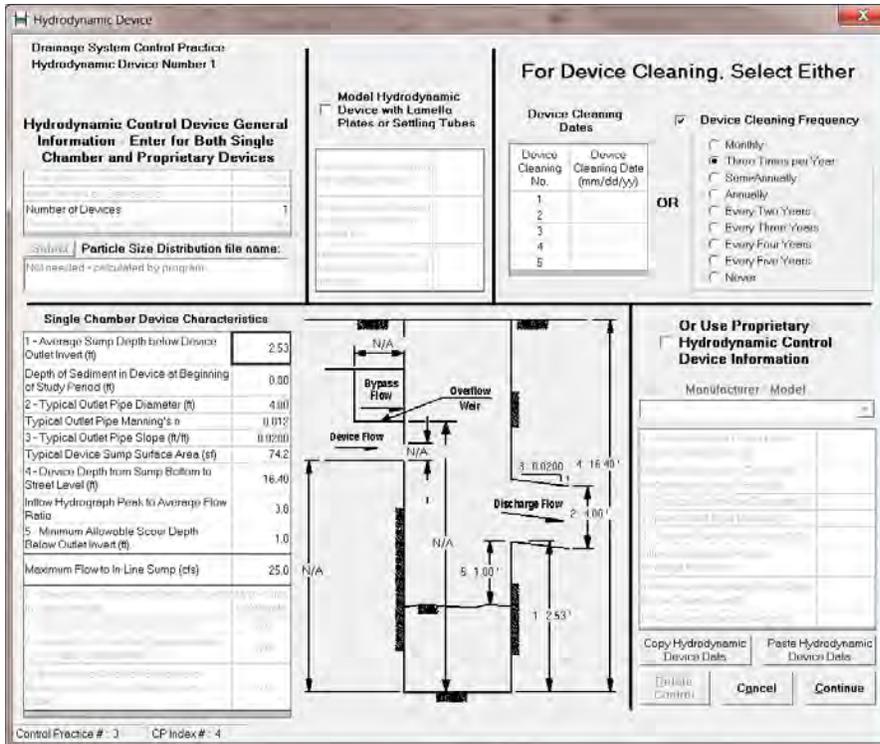


Figure 23: Hydrodynamic Device (1 of 3) at Adams Street and 2<sup>nd</sup> Avenue in A-15 (WinSLAMM).

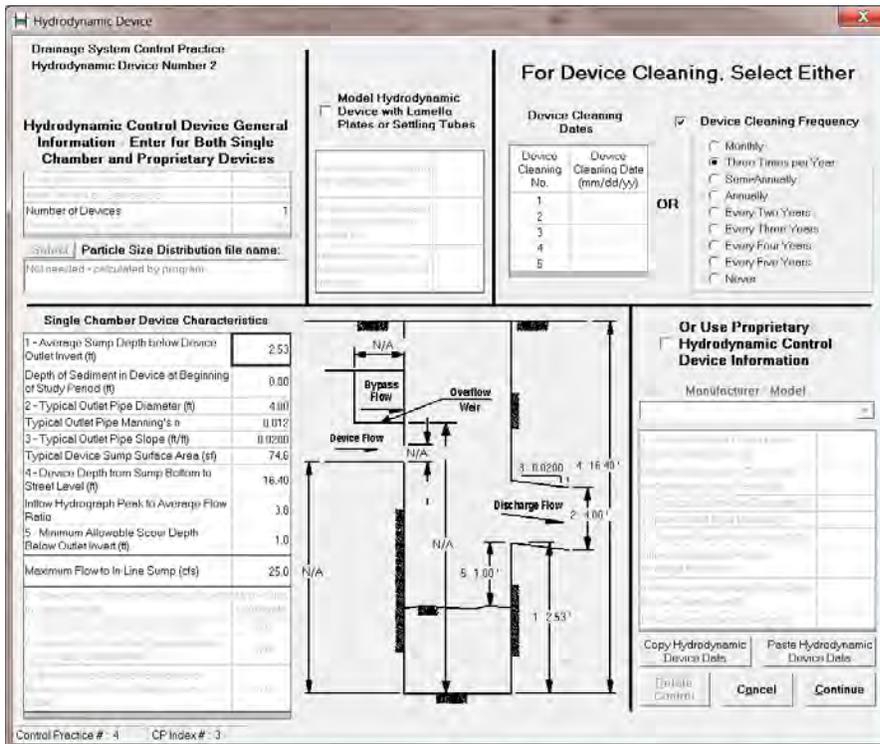


Figure 24: Hydrodynamic Device (2 of 3) at Adams Street and 2<sup>nd</sup> Avenue in A-15 (WinSLAMM).

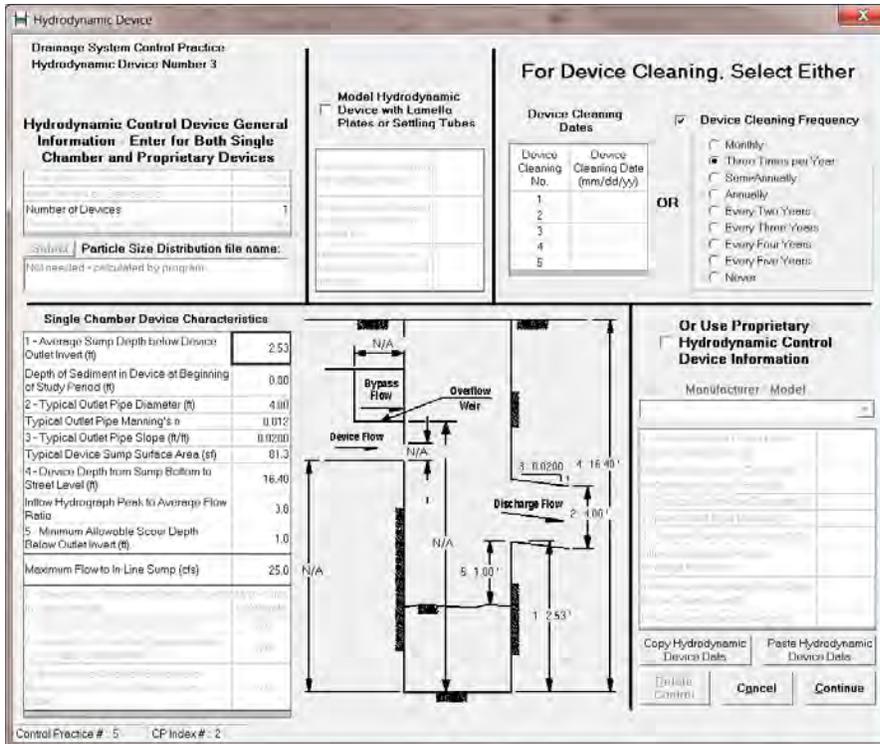


Figure 25: Hydrodynamic Device (3 of 3) at Adams Street and 2<sup>nd</sup> Avenue in A-15 (WinSLAMM).

Ponds

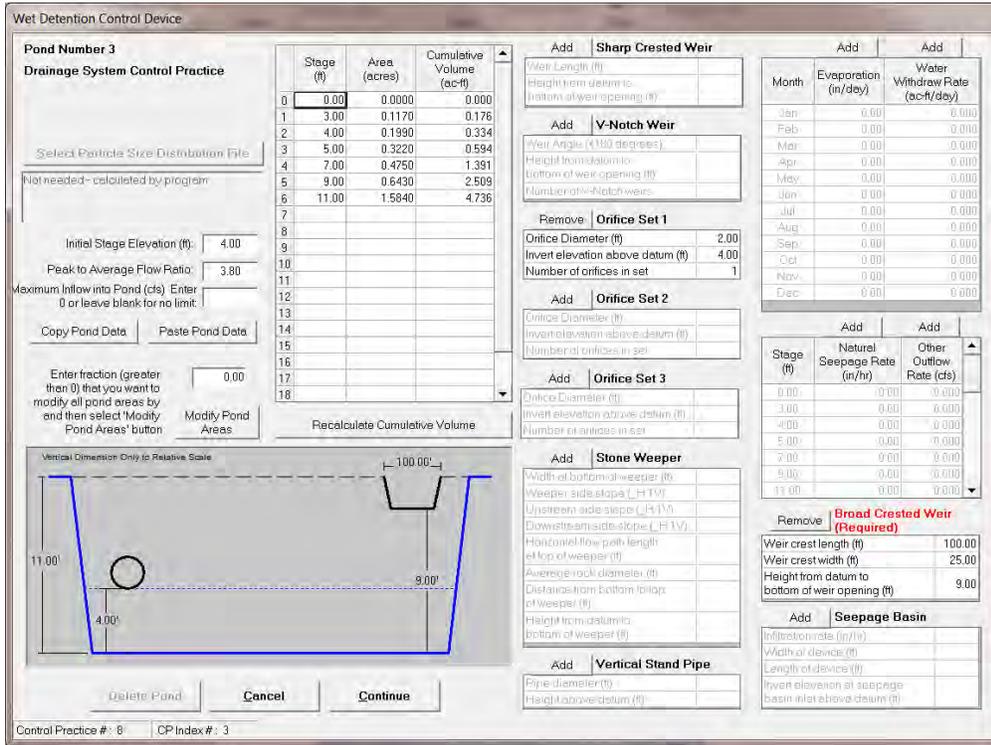


Figure 26: Stormwater Pond at Car Dealership in A-3 (WinSLAMM).

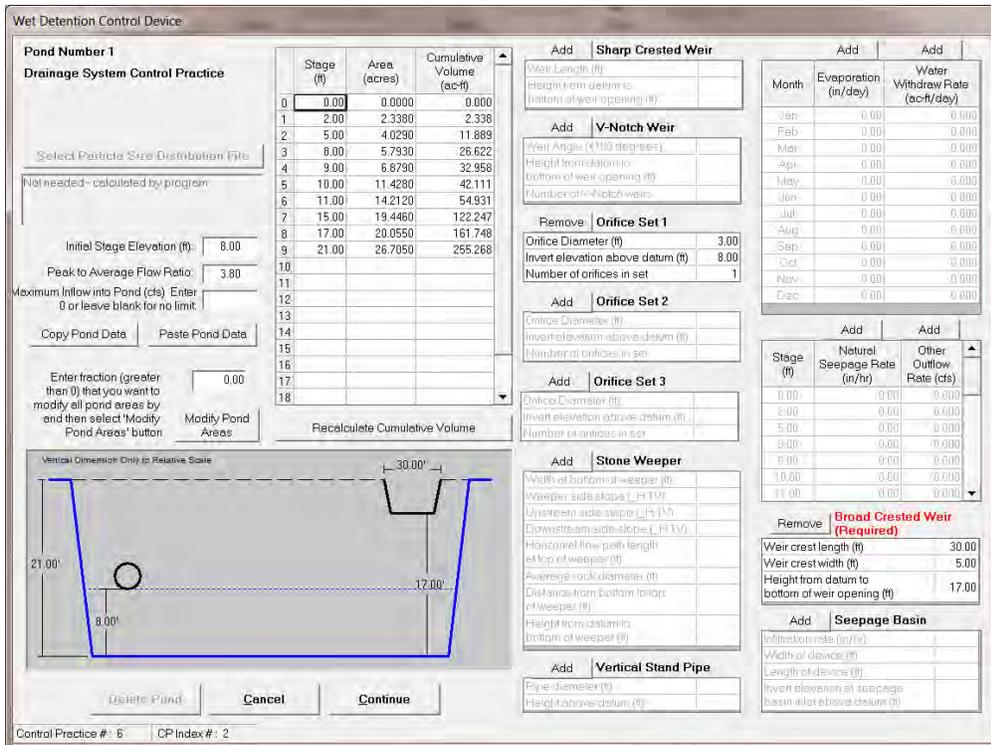


Figure 27: Stormwater Pond at Green Haven Golf Course in A-3 (WinSLAMM).

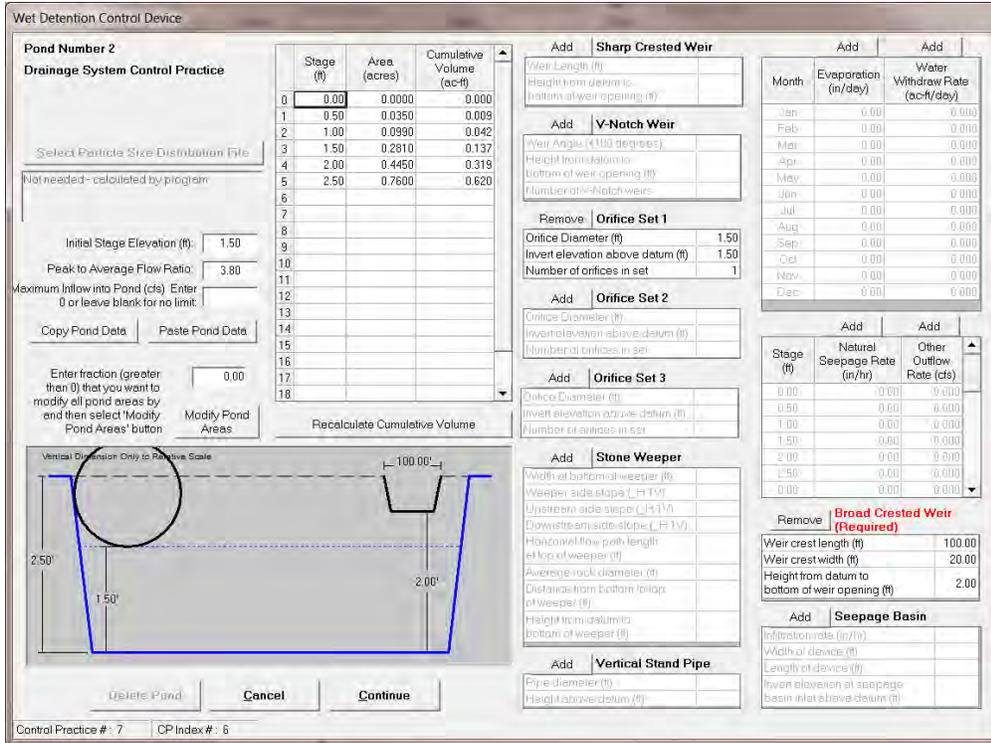


Figure 28: Stormwater Pond at Ward Park in A-3 (WinSLAMM).

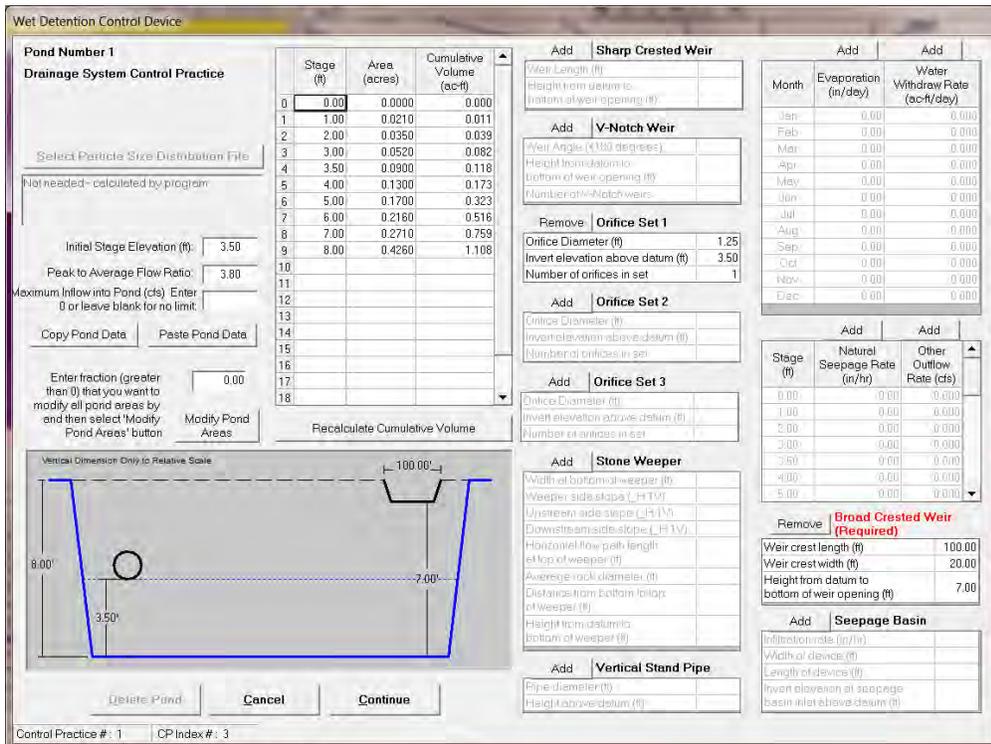


Figure 29: Stormwater Pond at 7<sup>th</sup> Avenue (NW) in A-7 (WinSLAMM).

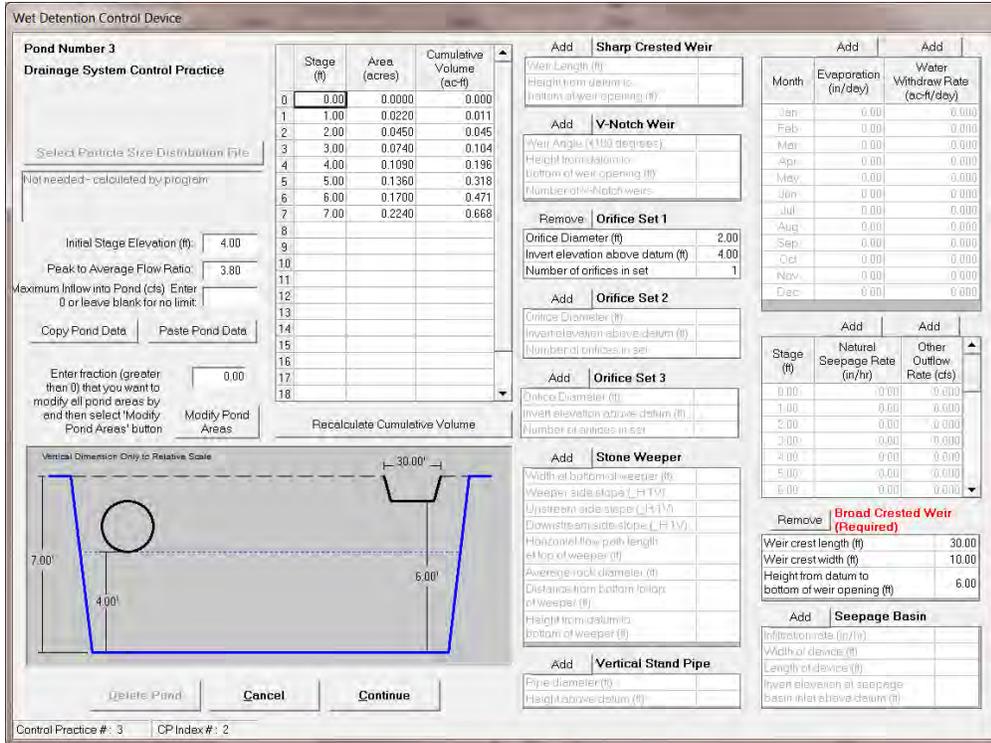


Figure 30: Stormwater Pond at 7<sup>th</sup> Avenue (SW) in A-7 (WinSLAMM).

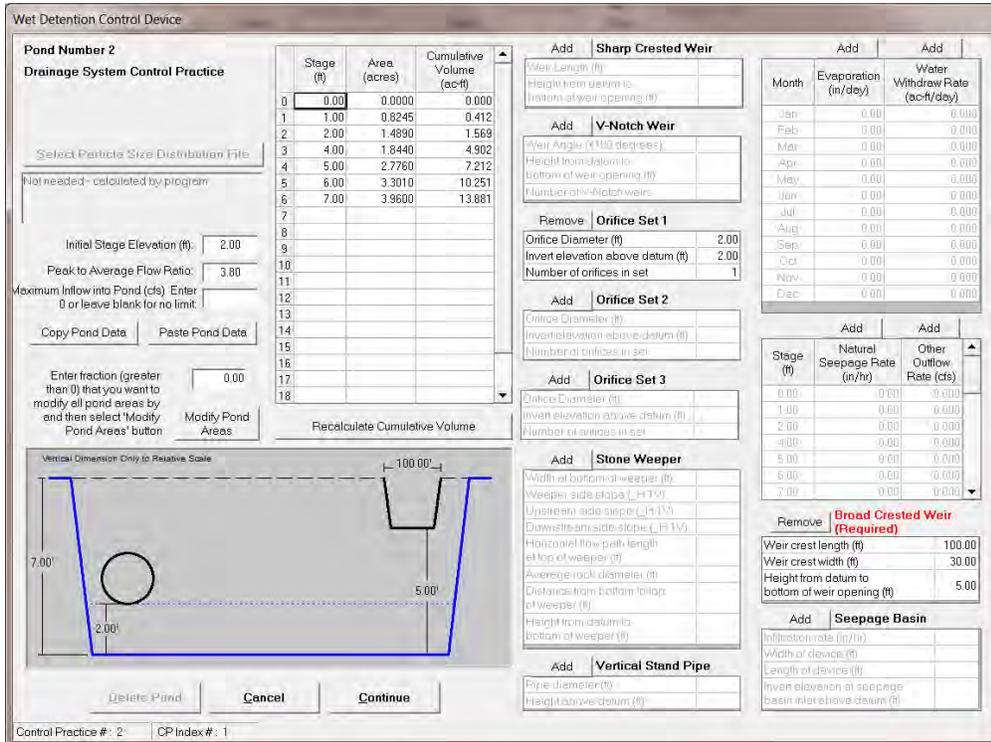


Figure 31: Stormwater Pond at Anoka Regional Treatment Center in A-7 (WinSLAMM).

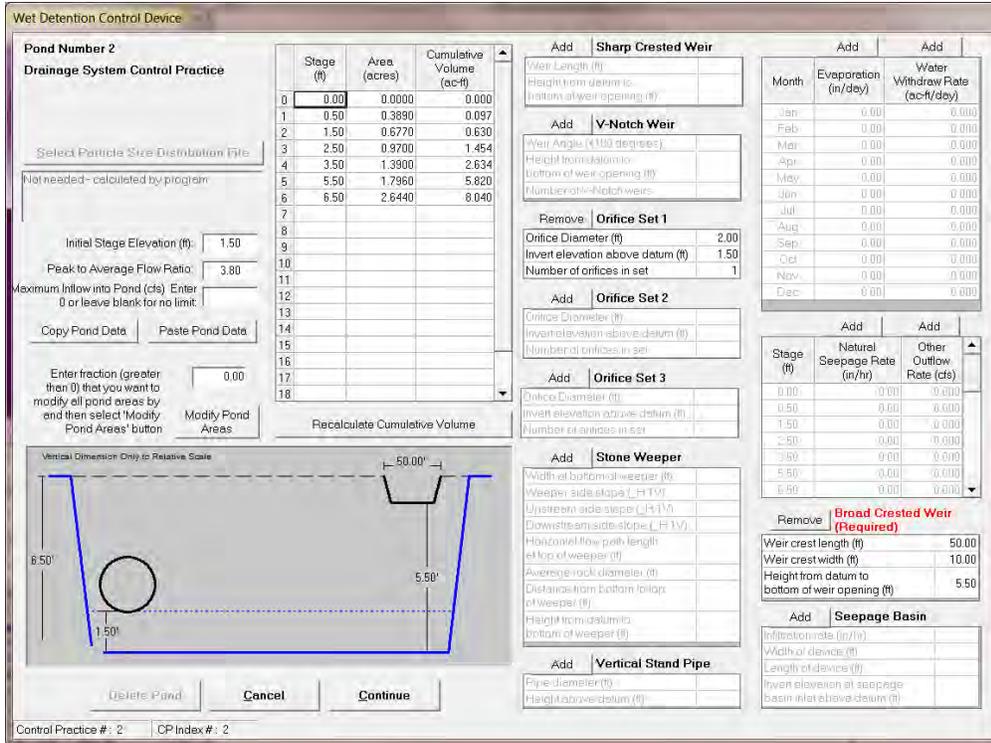


Figure 32: Stormwater Pond at Anoka Development in A-8 (WinSLAMM).

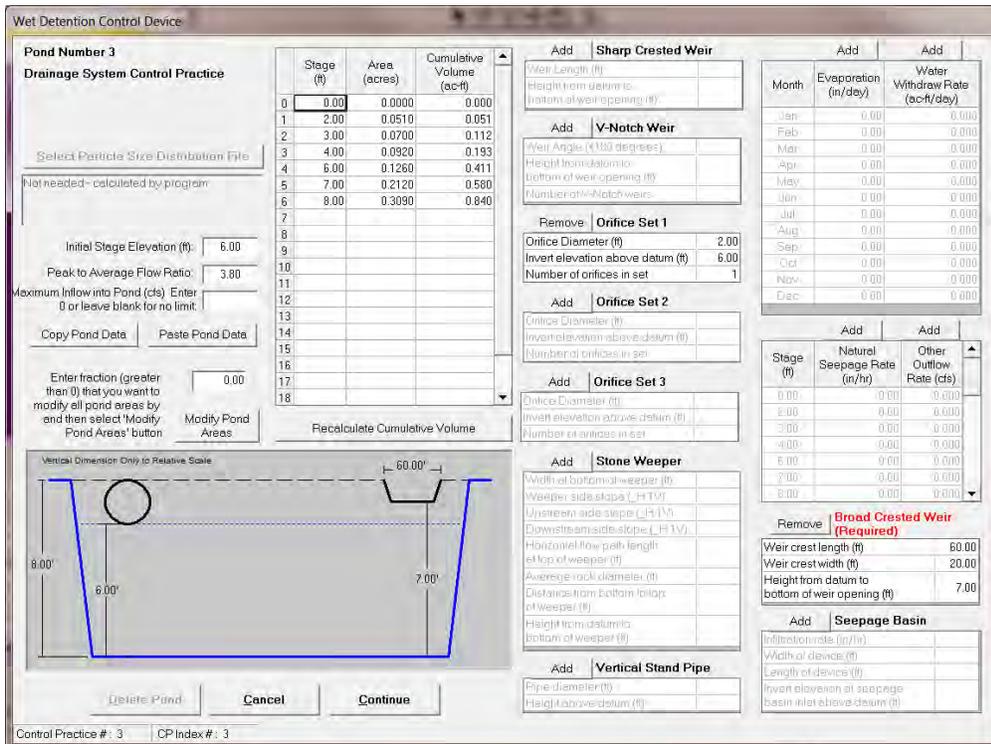


Figure 33: Stormwater Pond at The Homestead at Anoka in A-8 (WinSLAMM).

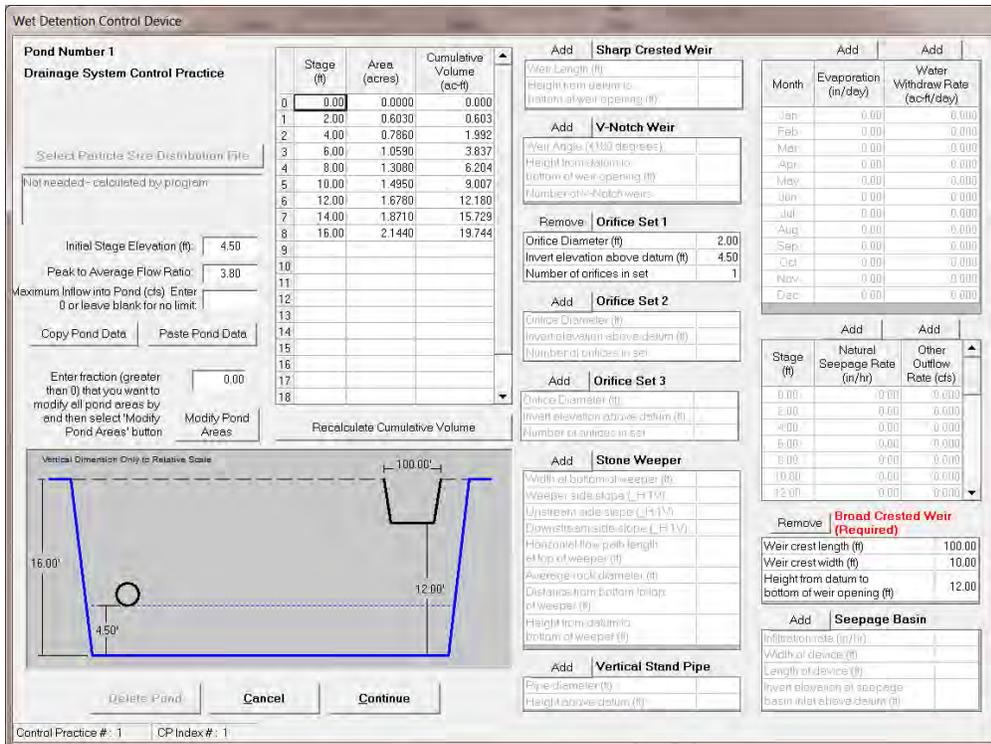


Figure 34: Stormwater Pond at 4<sup>th</sup> Avenue and Grant Street in A-8 (WinSLAMM).

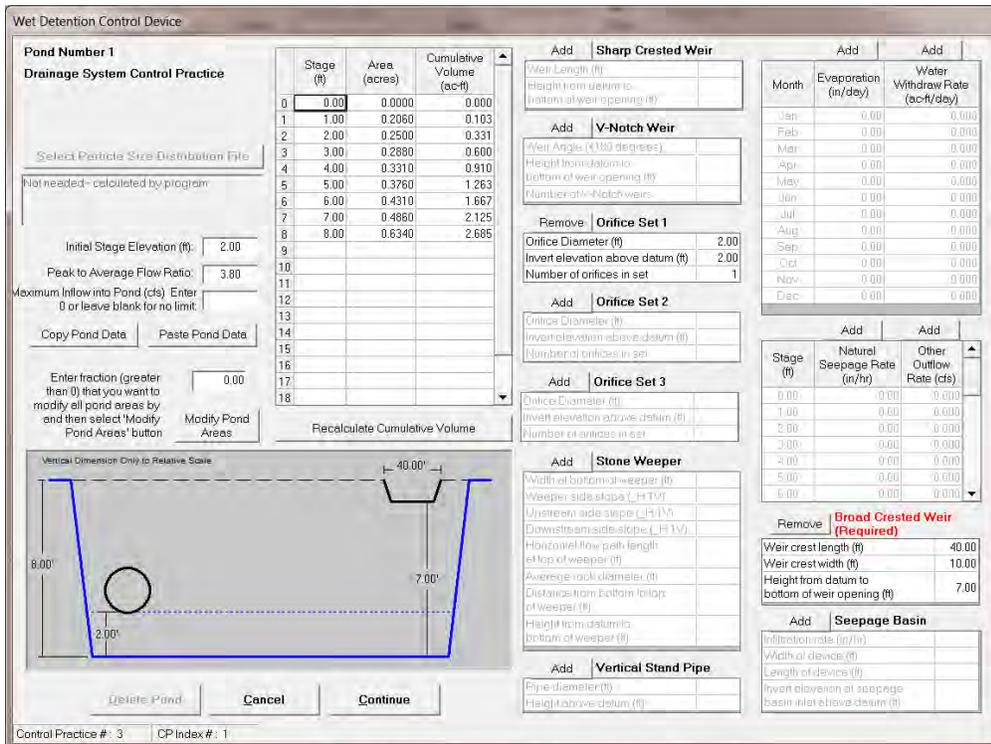


Figure 35: Stormwater Pond at Federal Cartridge Corporation parking lot in A-9 (WinSLAMM).

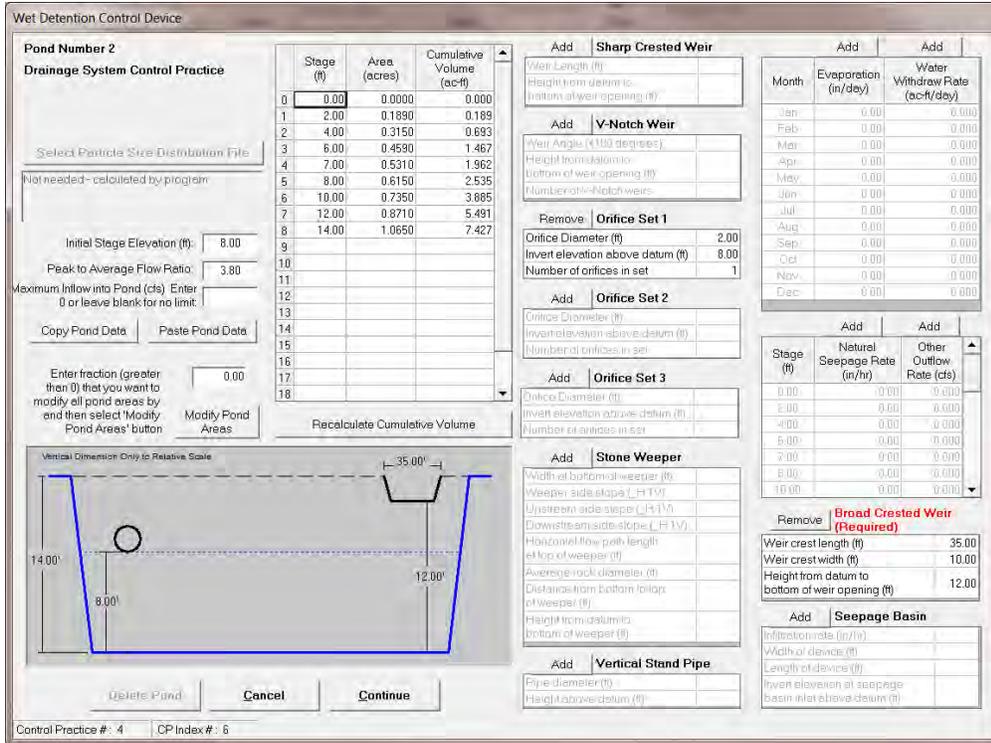


Figure 36: Stormwater Pond at Pentair Property in A-9 (WinSLAMM).

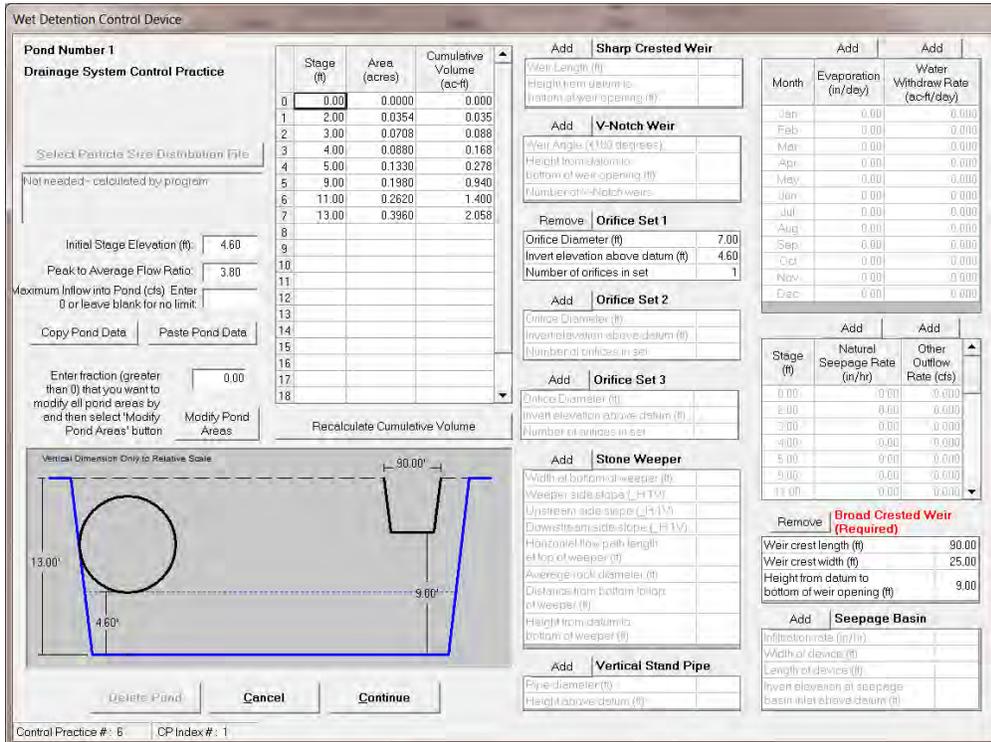


Figure 37: Stormwater Pond at Adams Street and 2<sup>nd</sup> Avenue in A-15 (WinSLAMM).

### Street Cleaning

Street Cleaning Control Device

Land Use: Medium Density Res. No Alleys Total Area: 0.157 acres  
 Source Area: Streets 1

First Source Area Control Practice

Select  Street Cleaning Dates OR  Street Cleaning Frequency

Line Number	Street Cleaning Date	Street Cleaning Frequency
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

7 Passes per Week  
 5 Passes per Week  
 4 Passes per Week  
 3 Passes per Week  
 2 Passes per Week  
 One Pass per Week  
 One Pass Every Two Weeks  
 One Pass Every Four Weeks  
 One Pass Every Eight Weeks  
 One Pass Every Twelve Weeks  
 Two Passes per Year (Spring and Fall)  
 One Pass Each Spring

Model Run Start Date: 01/02/59 Model Run End Date: 12/28/59

Final cleaning period ending date (MM/DD/YY):

Selected Particle Size Distribution file name:  
 Not needed - calculated by program

Type of Street Cleaner  
 Mechanical Broom Cleaner  
 Vacuum Assisted Cleaner

Street Cleaner Productivity  
 1. Coefficients based on street texture, parking density and parking controls  
 2. Other (specify equation coefficients)  
 Equation coefficient M (slope, M<1) 0.44  
 Equation coefficient B (intercept, B>1) 245

Parking Densities  
 1. None  
 2. Light  
 3. Medium  
 4. Extensive (short term)  
 5. Extensive (long term)

Are Parking Controls Imposed?  
 Yes  No

Copy Cleaning Data Paste Cleaning Data Delete Control Cancel Edits Clear Continue

Control Practice #: 2 Land Use #: 1 Source Area #: 37

Figure 38: Street cleaning parameters used in A-1 to A-11 and in A-15 to A-17 (WinSLAMM).

Street Cleaning Control Device

Land Use: Multi Family Residential Total Area: 0.060 acres  
 Source Area: Streets 1

First Source Area Control Practice

Select  Street Cleaning Dates OR  Street Cleaning Frequency

Line Number	Street Cleaning Date	Street Cleaning Frequency
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

7 Passes per Week  
 5 Passes per Week  
 4 Passes per Week  
 3 Passes per Week  
 2 Passes per Week  
 One Pass per Week  
 One Pass Every Two Weeks  
 One Pass Every Four Weeks  
 One Pass Every Eight Weeks  
 One Pass Every Twelve Weeks  
 Two Passes per Year (Spring and Fall)  
 One Pass Each Spring

Model Run Start Date: 01/02/59 Model Run End Date: 12/28/59

Final cleaning period ending date (MM/DD/YY):

Selected Particle Size Distribution file name:  
 Not needed - calculated by program

Type of Street Cleaner  
 Mechanical Broom Cleaner  
 Vacuum Assisted Cleaner

Street Cleaner Productivity  
 1. Coefficients based on street texture, parking density and parking controls  
 2. Other (specify equation coefficients)  
 Equation coefficient M (slope, M<1) 0.44  
 Equation coefficient B (intercept, B>1) 245

Parking Densities  
 1. None  
 2. Light  
 3. Medium  
 4. Extensive (short term)  
 5. Extensive (long term)

Are Parking Controls Imposed?  
 Yes  No

Copy Cleaning Data Paste Cleaning Data Delete Control Cancel Edits Clear Continue

Control Practice #: 67 Land Use #: 24 Source Area #: 37

Figure 39: Street cleaning parameters used in A-12 to A-14 (WinSLAMM).

# Proposed Conditions

## Curb-Cut Rain Garden

Curb-cut rain gardens were modeled as drainage area control practices within WinSLAMM. Each was modeled without an underdrain based on available soil information. If based on soil tests it is determined that an underdrain would be necessary, then estimated reductions for volume, TP, and TSS will be lower.

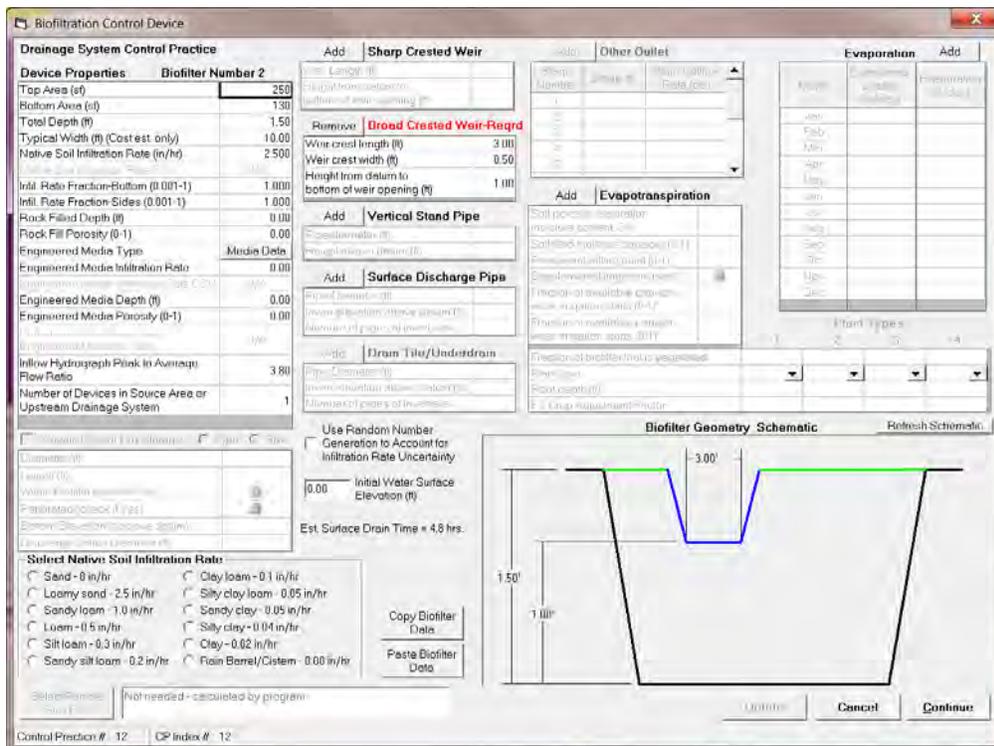


Figure 40: Curb-cut Rain Garden (WinSLAMM)



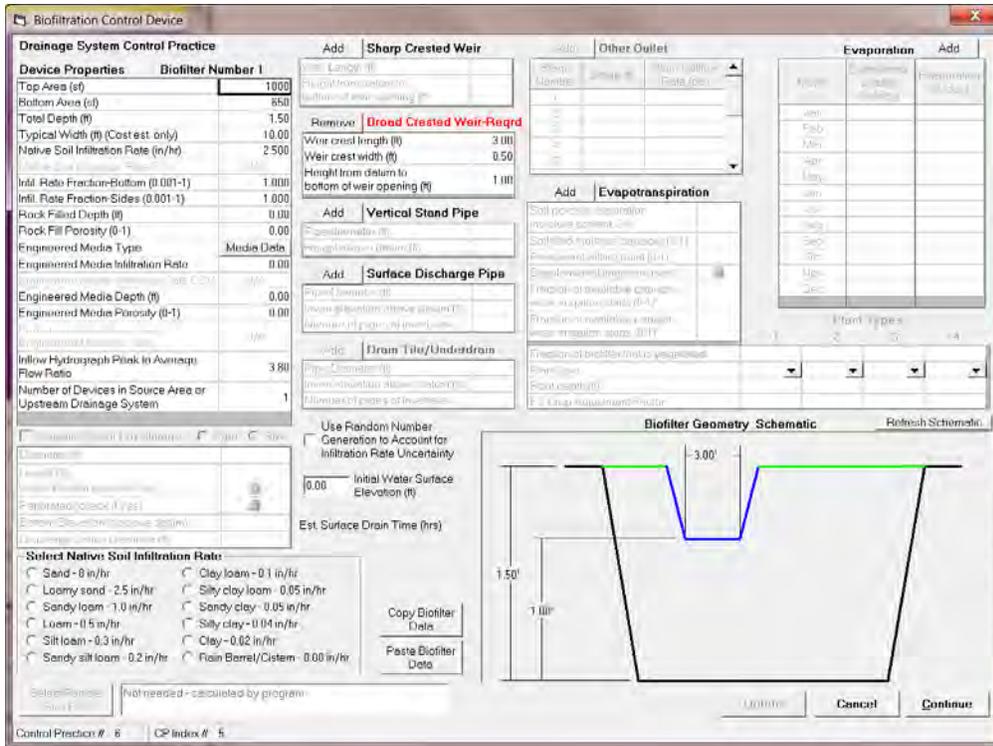


Figure 43: Infiltration Basin (1,000 sq.-ft.) in A-9 (WinSLAMM).

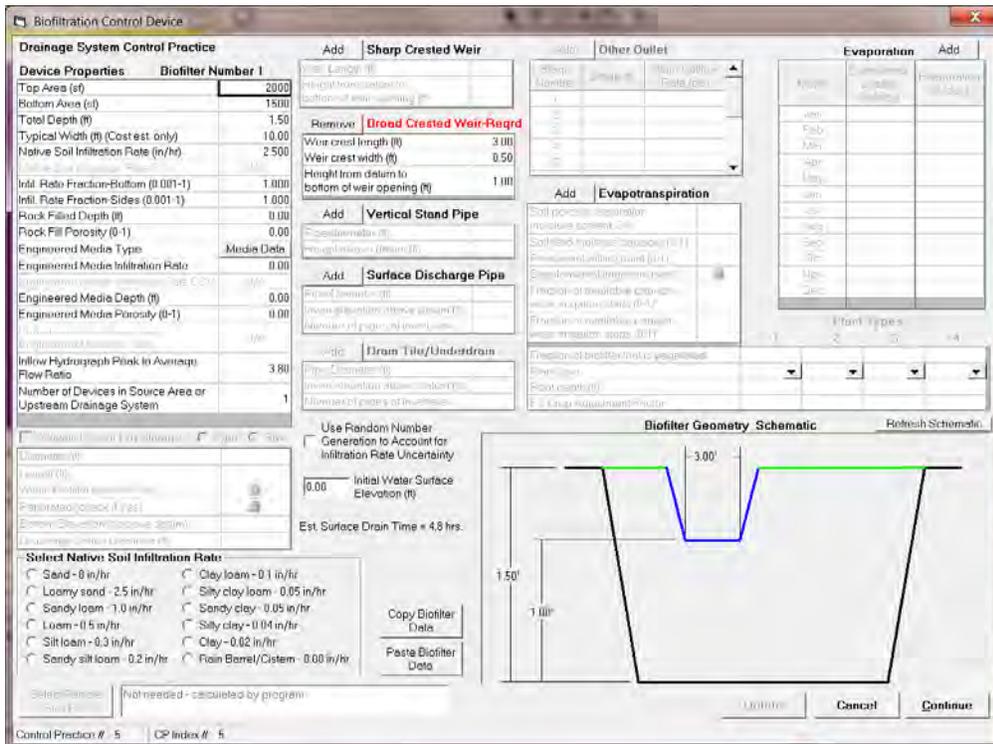
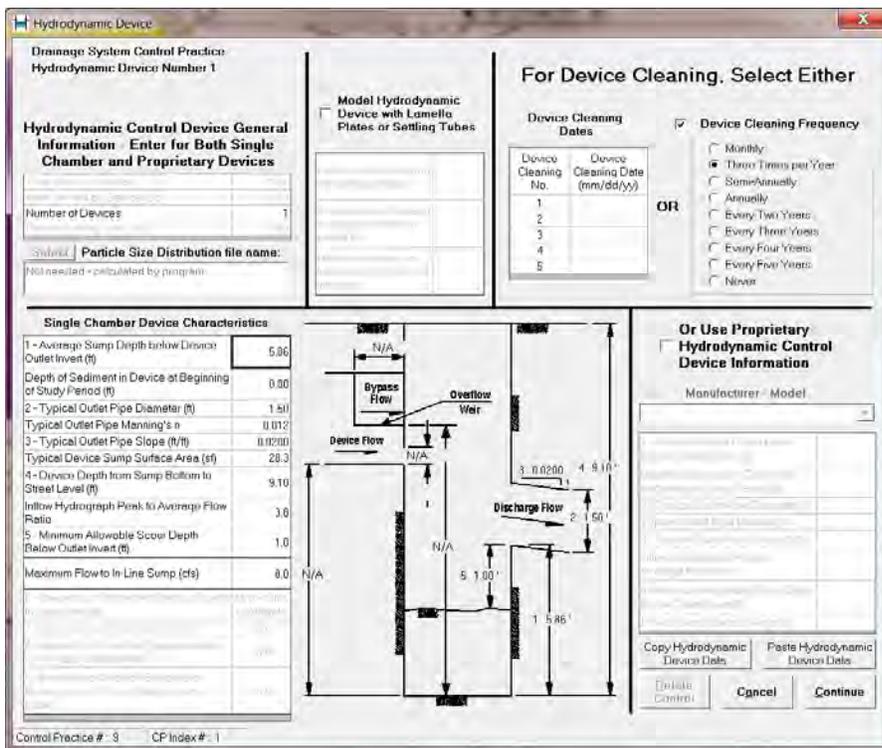


Figure 44: Infiltration Basin (2,000 sq.-ft.) in A-10 (WinSLAMM).

### Hydrodynamic Device

**Table 11: Hydrodynamic Device Sizing Criteria**

Drainage Area (acres)	Peak Q (cfs)	Hydrodynamic Device Diameter (ft)
1	1.97	4
2	3.90	6
3	5.83	6
4	7.77	6
5	9.72	8
6	11.68	8
7	13.65	8
≥8	15.63	10



**Figure 45: Hydrodynamic Device - 6' diameter (WinSLAMM).**

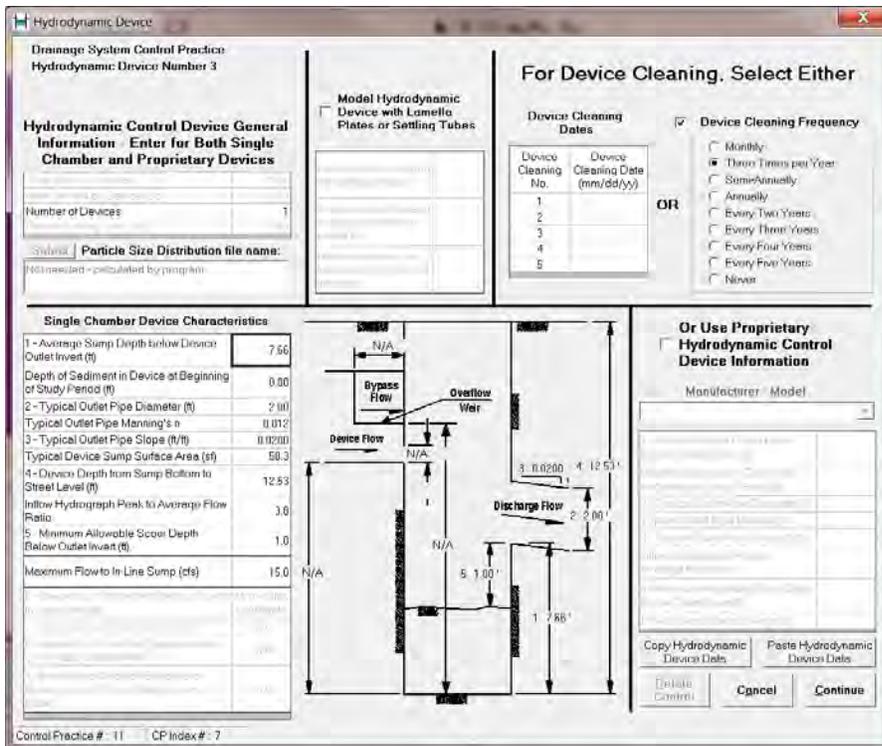


Figure 46: Hydrodynamic Device - 8' diameter (WinSLAMM).

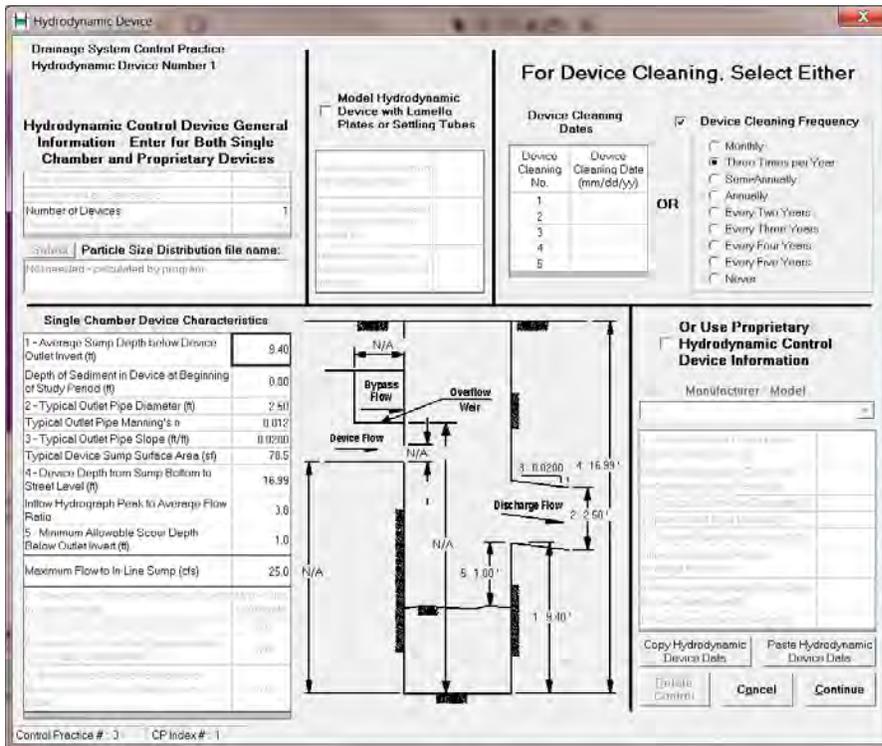


Figure 47: Hydrodynamic Device - 10' diameter (WinSLAMM).

### Ponds

Ponds were proposed in the landscape where sufficient drainage area could sustain a permanent pool of water. Ponds were proposed following guidance from the Minnesota Pollution Control Agency, in which depths are equal to or less than 8-10' to prohibit stratification and at least 1,800 cu-ft. of pond storage is available for each acre of drainage area.

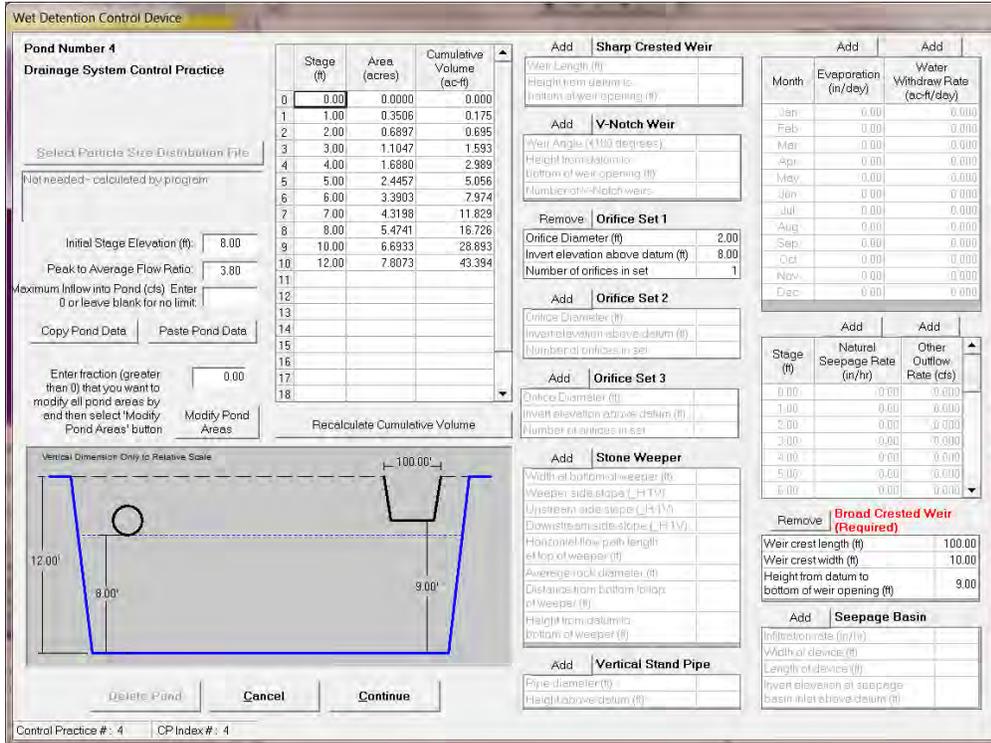


Figure 48: Stormwater Pond (Larger Drainage) at A-7(WinSLAMM).

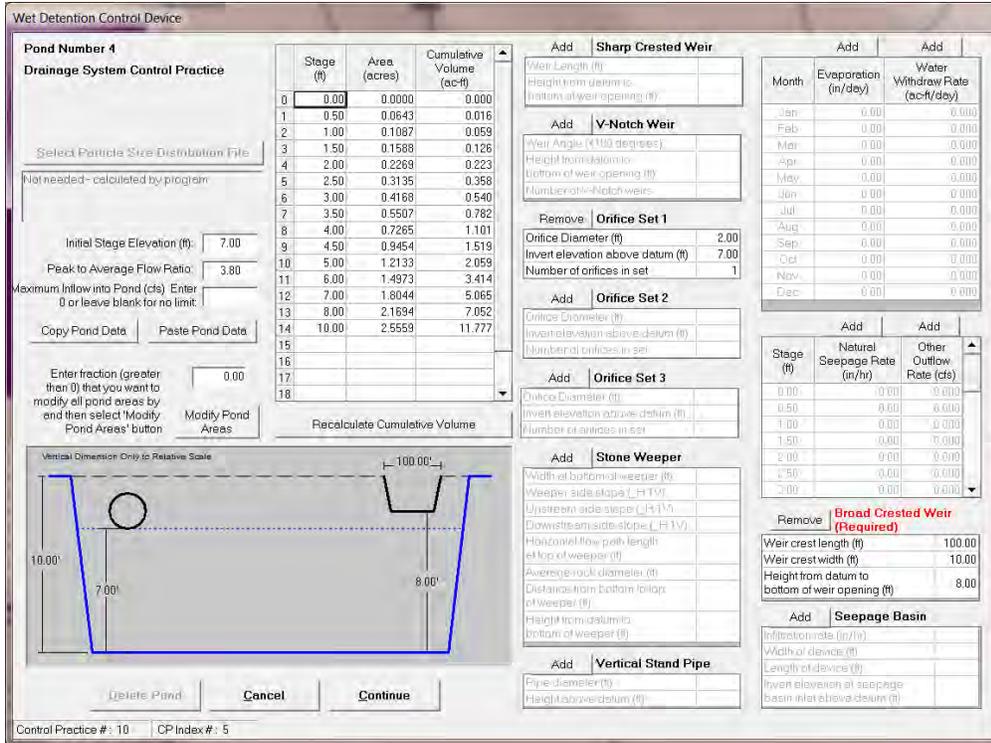


Figure 49: Stormwater Pond (Smaller Drainage) at A-7 (WinSLAMM).

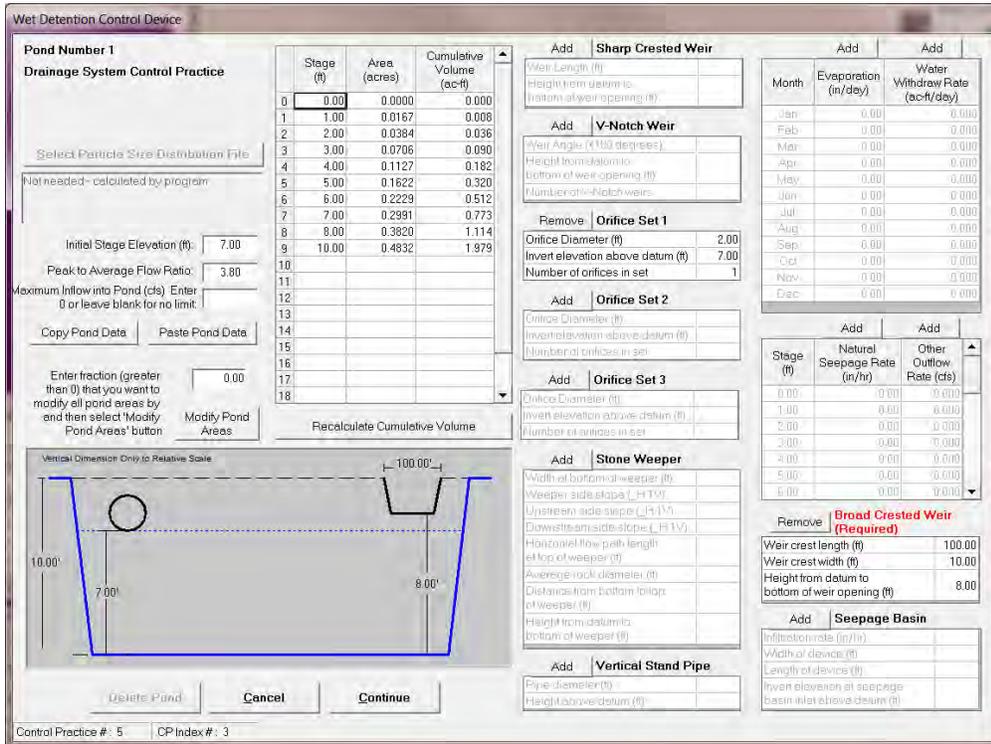


Figure 50: Stormwater Pond at Rudy Johnson Park at A-10 (WinSLAMM).

### Iron Enhanced Sand Filter

Wet ponds, by design, allow for sediments and other bound pollutants to drop out of suspension. This practice, though, often allows dissolved pollutants to advect through the system untreated. Iron-enhanced sand filters (IESF) can be retrofitted to or installed with wet ponds to treat this dissolved load.

During a storm event, the pond increases from its permanent-pond stage to its flood stage. The IESF is designed to accept input from the wet pond during storm events, allowing for infiltration of water through its iron rich media, where dissolved pollutants (particularly dissolved phosphorus (DP)) adsorb to the iron filings. DP is then retained within the media while the stormwater can seep into an underdrain. Lastly, the underdrain discharges downstream of the wet pond. IESFs can be installed without ponds, although it is recommended that some form of pretreatment is available to remove sediment, which can deposit within the pore space of the filter and clog the practice over time.

There is currently no drainage practice input for these features in WinSLAMM. As they behave similarly to a bioretention cell, they can be modeled as such. But, as they often operate in tandem with stormwater ponds, estimating when and how much water and pollutants they will receive can be problematic. WinSLAMM was utilized to estimate what percentage of the stormflow could be treated by the filter. Stormflow input into the practice is most dependent upon the volume which can be passed through the system's underdrains. Stormflow treated by the device is a function of total area, depth, infiltration rate, and engineered media characteristics.

Field tests of installed sand trenches conducted by the University of Minnesota concluded that a sand media mixed with 5% iron filings is capable of retaining 80% (or more) of the DP load of stormwater flowing through the media (Erickson and Gulliver, 2010). Thus, DP retention by the IESF can be estimated by the equation,

$$P_{RET} = 0.8 * [P_{IN}] * q_S$$

where  $P_{RET}$  is the DP load removed by the IESF,  $[P_{IN}]$  is the concentration of the DP input, and  $q_S$  is the volume of stormflow passing through the IESF.  $q_S$  is a function of the storm event duration and intensity, stormwater pond storage (if in-line with a pond), and IESF storage volume (bottom area, top area, and depth). The 0.8 multiplier assumes the IESF removes 80% of the DP load.

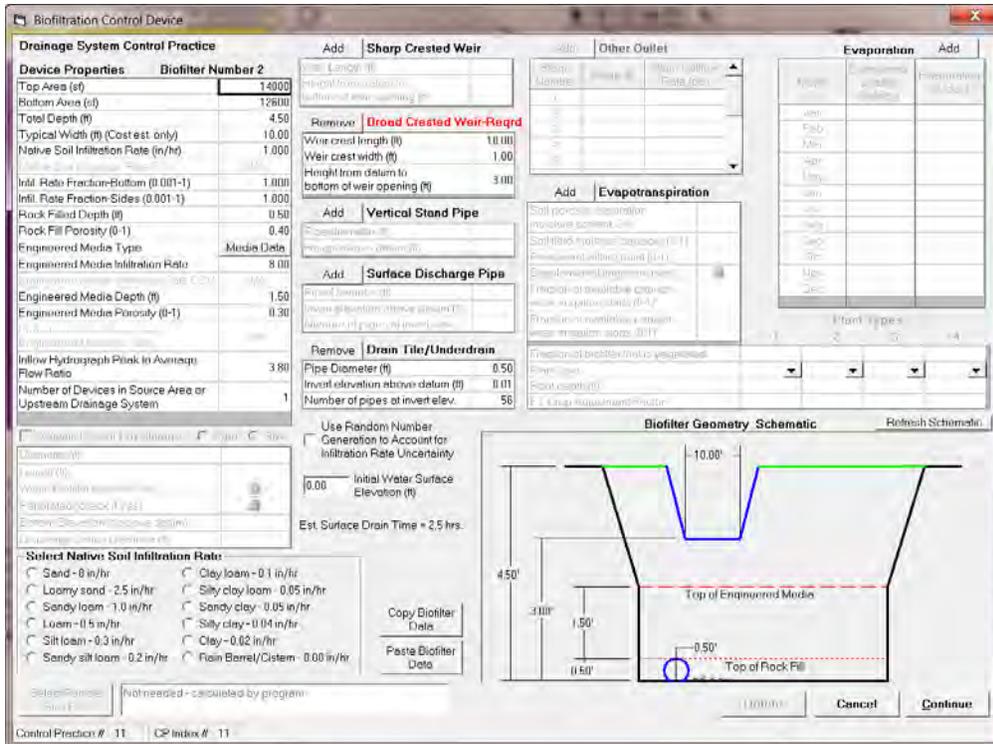


Figure 51: Iron Enhanced Sand Filter Pond Bench at Golf Course Pond in A-3 (WinSLAMM).

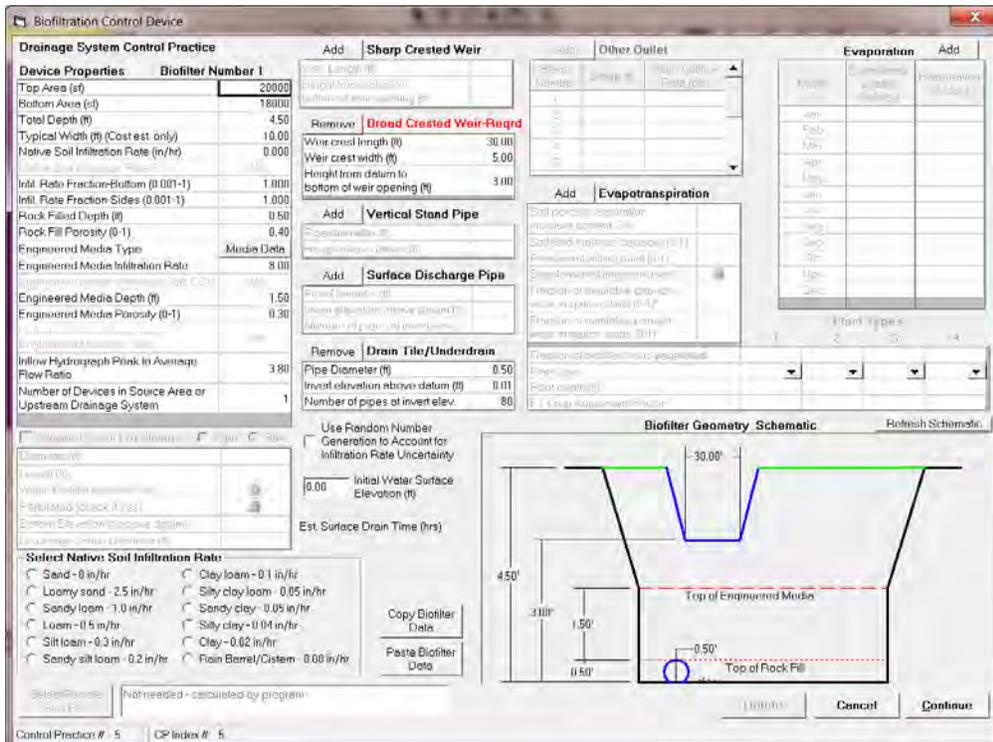


Figure 52: Iron Enhanced Sand Filter Pond Bench at proposed larger drainage pond in A-7 (WinSLAMM).

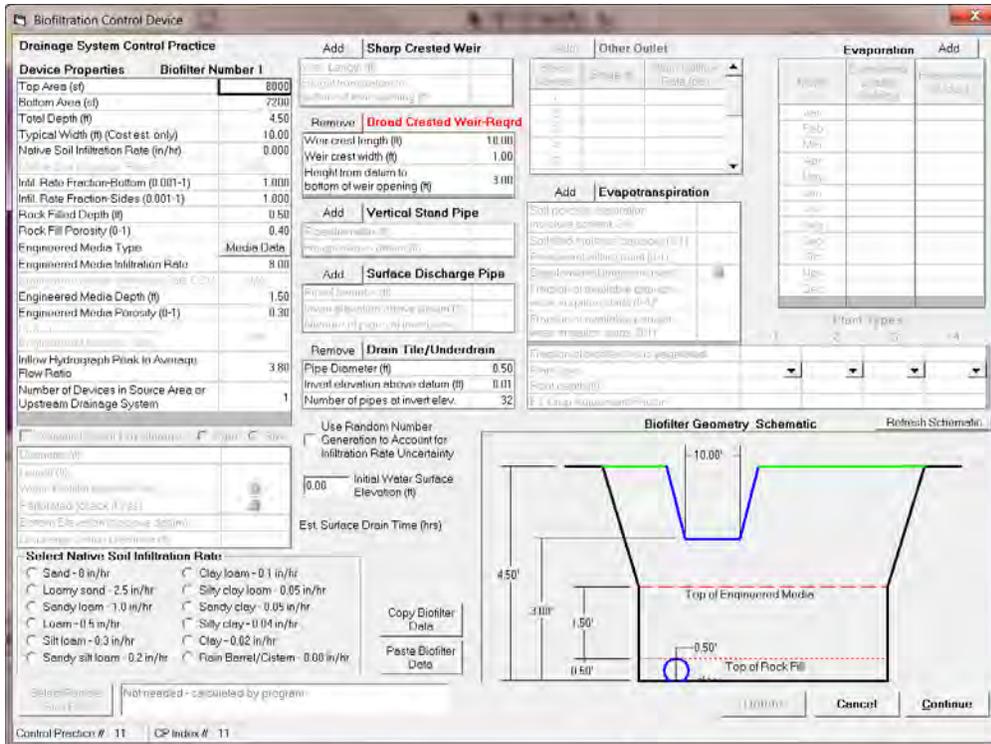


Figure 53: Iron Enhanced Sand Filter Pond Bench at the proposed smaller drainage pond in A-7 (WinSLAMM).

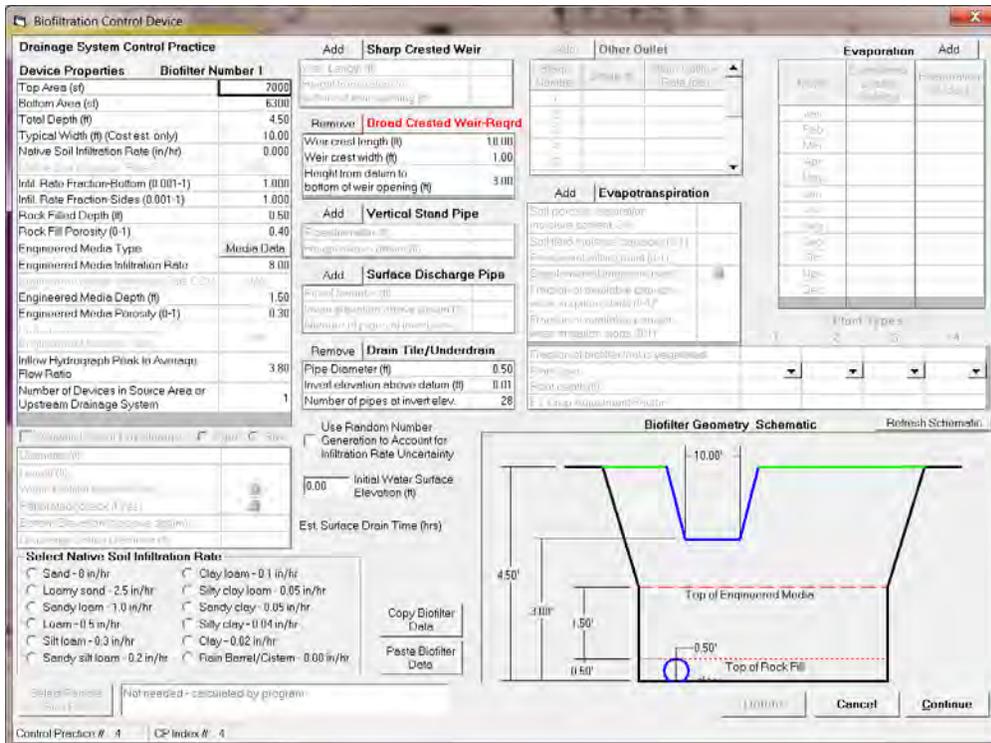


Figure 54: Iron Enhanced Sand Filter Pond Bench at 4th Avenue and Grant Street Pond in A-8 (WinSLAMM).

### Permeable Pavement

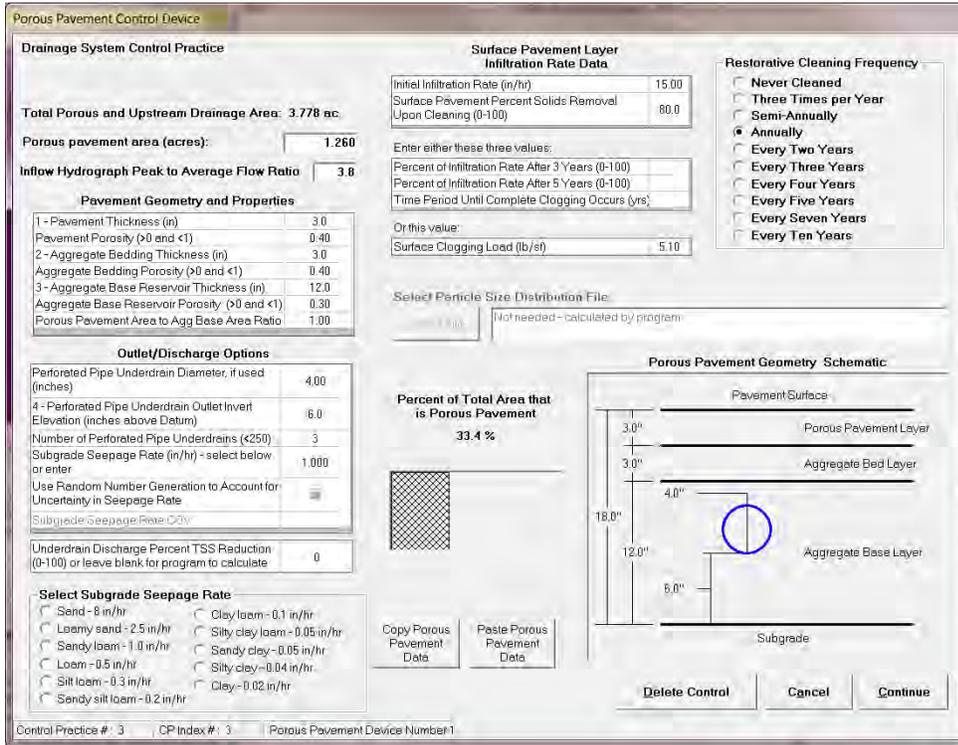


Figure 55: Permeable Pavement in A-1 (WinSLAMM).

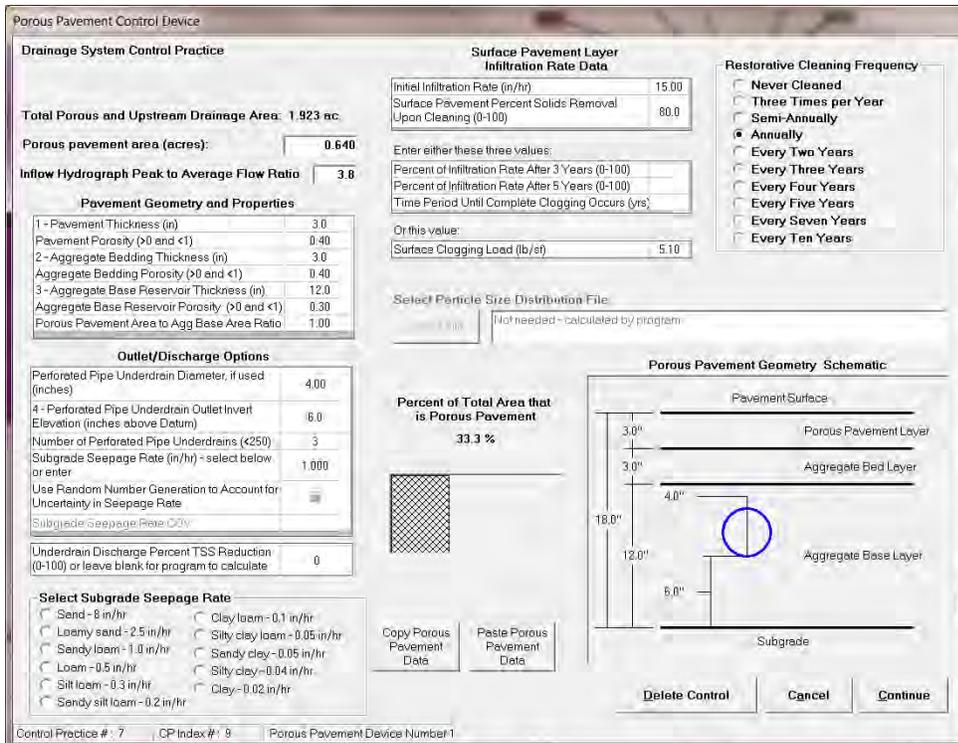


Figure 56: Permeable Pavement at St. Stephen’s Catholic School eastern parking lot in A-13 (WinSLAMM).

**Porous Pavement Control Device**

**Drainage System Control Practice**

Total Porous and Upstream Drainage Area: **1.095 ac.**

Porous pavement area (acres): **0.365**

Inflow Hydrograph Peak to Average Flow Ratio: **3.8**

**Pavement Geometry and Properties**

1 - Pavement Thickness (in)	3.0
Pavement Porosity (>0 and <1)	0.40
2 - Aggregate Bedding Thickness (in)	3.0
Aggregate Bedding Porosity (>0 and <1)	0.40
3 - Aggregate Base Reservoir Thickness (in)	12.0
Aggregate Base Reservoir Porosity (>0 and <1)	0.30
Porous Pavement Area to Agg Base Area Ratio	1.00

**Outlet/Discharge Options**

Perforated Pipe Underdrain Diameter, if used (inches)	4.00
4 - Perforated Pipe Underdrain Outlet Invert Elevation (inches above Datum)	6.0
Number of Perforated Pipe Underdrains (x250)	3
Subgrade Seepage Rate (in/hr) - select below or enter	1.000
Use Random Number Generation to Account for Uncertainty in Seepage Rate	<input type="checkbox"/>
Subgrade Seepage Rate COV	
Underdrain Discharge Percent TSS Reduction (0-100) or leave blank for program to calculate	0

**Select Subgrade Seepage Rate**

<input type="checkbox"/> Sand - 8 in/hr	<input type="checkbox"/> Clay loam - 0.1 in/hr
<input type="checkbox"/> Loamy sand - 2.5 in/hr	<input type="checkbox"/> Silty clay loam - 0.05 in/hr
<input type="checkbox"/> Sandy loam - 1.0 in/hr	<input type="checkbox"/> Sandy clay - 0.05 in/hr
<input type="checkbox"/> Loam - 0.5 in/hr	<input type="checkbox"/> Silty clay - 0.04 in/hr
<input type="checkbox"/> Silt loam - 0.3 in/hr	<input type="checkbox"/> Clay - 0.02 in/hr
<input type="checkbox"/> Sandy silt loam - 0.2 in/hr	

**Surface Pavement Layer Infiltration Rate Data**

Initial Infiltration Rate (in/hr)	15.00
Surface Pavement Percent Solids Removal Upon Cleaning (0-100)	80.0

Enter either these three values:

Percent of Infiltration Rate After 3 Years (0-100)	
Percent of Infiltration Rate After 5 Years (0-100)	
Time Period Until Complete Clogging Occurs (yrs)	

Or this value:

Surface Clogging Load (lb/ft)	5.10
-------------------------------	------

Select Particle Size Distribution File:  (Not needed - calculated by program)

**Restorative Cleaning Frequency**

- Never Cleaned
- Three Times per Year
- Semi-Annually
- Annually
- Every Two Years
- Every Three Years
- Every Four Years
- Every Five Years
- Every Seven Years
- Every Ten Years

**Porous Pavement Geometry Schematic**

Percent of Total Area that is Porous Pavement: **33.3 %**

Buttons: Copy Porous Pavement Data, Paste Porous Pavement Data, Delete Control, Cancel, Continue

Control Practice #: 7 | CP Index #: 5 | Porous Pavement Device Number: 1

Figure 57: Permeable Pavement at St. Stephen’s Catholic Church Parking Lot in A-13 (WinSLAMM).

**Porous Pavement Control Device**

**Drainage System Control Practice**

Total Porous and Upstream Drainage Area: **2.331 ac.**

Porous pavement area (acres): **0.780**

Inflow Hydrograph Peak to Average Flow Ratio: **3.8**

**Pavement Geometry and Properties**

1 - Pavement Thickness (in)	3.0
Pavement Porosity (>0 and <1)	0.40
2 - Aggregate Bedding Thickness (in)	3.0
Aggregate Bedding Porosity (>0 and <1)	0.40
3 - Aggregate Base Reservoir Thickness (in)	12.0
Aggregate Base Reservoir Porosity (>0 and <1)	0.30
Porous Pavement Area to Agg Base Area Ratio	1.00

**Outlet/Discharge Options**

Perforated Pipe Underdrain Diameter, if used (inches)	4.00
4 - Perforated Pipe Underdrain Outlet Invert Elevation (inches above Datum)	6.0
Number of Perforated Pipe Underdrains (x250)	3
Subgrade Seepage Rate (in/hr) - select below or enter	1.000
Use Random Number Generation to Account for Uncertainty in Seepage Rate	<input type="checkbox"/>
Subgrade Seepage Rate COV	
Underdrain Discharge Percent TSS Reduction (0-100) or leave blank for program to calculate	0

**Select Subgrade Seepage Rate**

<input type="checkbox"/> Sand - 8 in/hr	<input type="checkbox"/> Clay loam - 0.1 in/hr
<input type="checkbox"/> Loamy sand - 2.5 in/hr	<input type="checkbox"/> Silty clay loam - 0.05 in/hr
<input type="checkbox"/> Sandy loam - 1.0 in/hr	<input type="checkbox"/> Sandy clay - 0.05 in/hr
<input type="checkbox"/> Loam - 0.5 in/hr	<input type="checkbox"/> Silty clay - 0.04 in/hr
<input type="checkbox"/> Silt loam - 0.3 in/hr	<input type="checkbox"/> Clay - 0.02 in/hr
<input type="checkbox"/> Sandy silt loam - 0.2 in/hr	

**Surface Pavement Layer Infiltration Rate Data**

Initial Infiltration Rate (in/hr)	15.00
Surface Pavement Percent Solids Removal Upon Cleaning (0-100)	80.0

Enter either these three values:

Percent of Infiltration Rate After 3 Years (0-100)	
Percent of Infiltration Rate After 5 Years (0-100)	
Time Period Until Complete Clogging Occurs (yrs)	

Or this value:

Surface Clogging Load (lb/ft)	5.10
-------------------------------	------

Select Particle Size Distribution File:  (Not needed - calculated by program)

**Restorative Cleaning Frequency**

- Never Cleaned
- Three Times per Year
- Semi-Annually
- Annually
- Every Two Years
- Every Three Years
- Every Four Years
- Every Five Years
- Every Seven Years
- Every Ten Years

**Porous Pavement Geometry Schematic**

Percent of Total Area that is Porous Pavement: **33.5 %**

Buttons: Copy Porous Pavement Data, Paste Porous Pavement Data, Delete Control, Cancel, Continue

Control Practice #: 7 | CP Index #: 6 | Porous Pavement Device Number: 1

Figure 58: Permeable Pavement at St. Stephen’s Catholic School western parking lot in A-13 (WinSLAMM).

### Stormwater Reuse

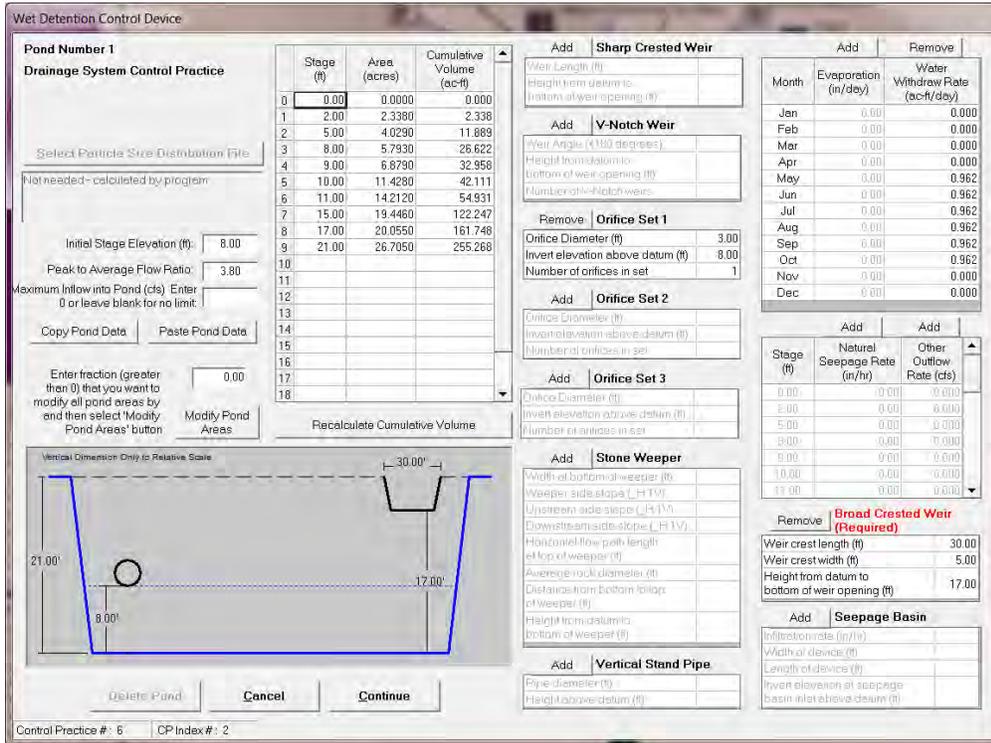


Figure 59: Stormwater Reuse at Green Haven Golf Course Pond in A-3 (WinSLAMM).

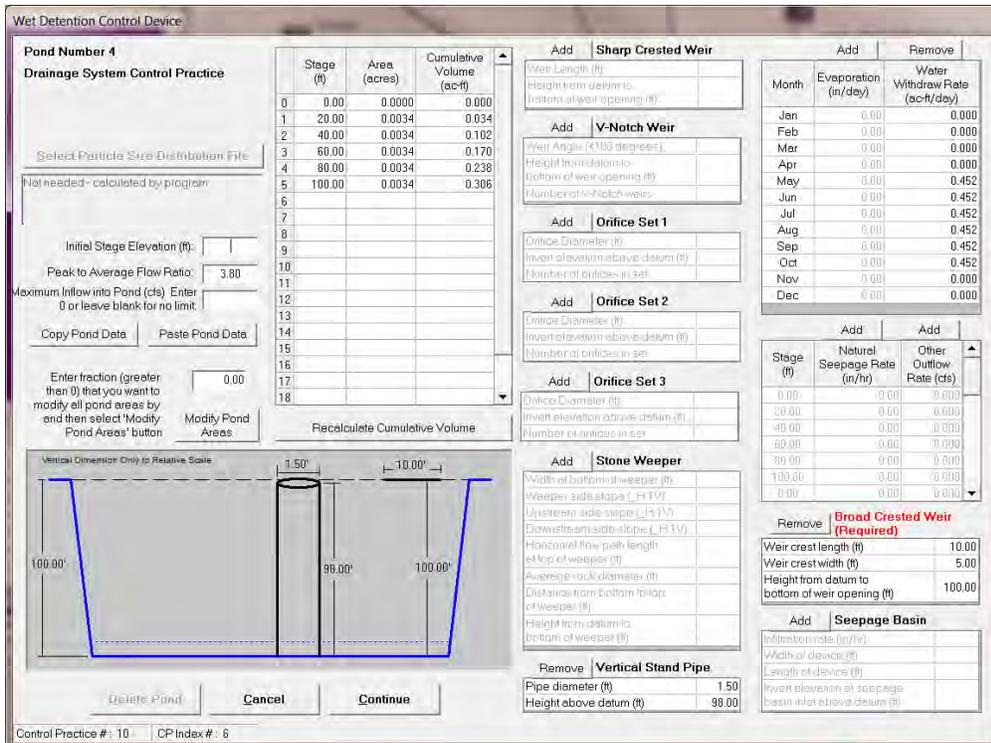


Figure 60: Stormwater Reuse in A-7 (WinSLAMM).

### Boulevard Bioswale

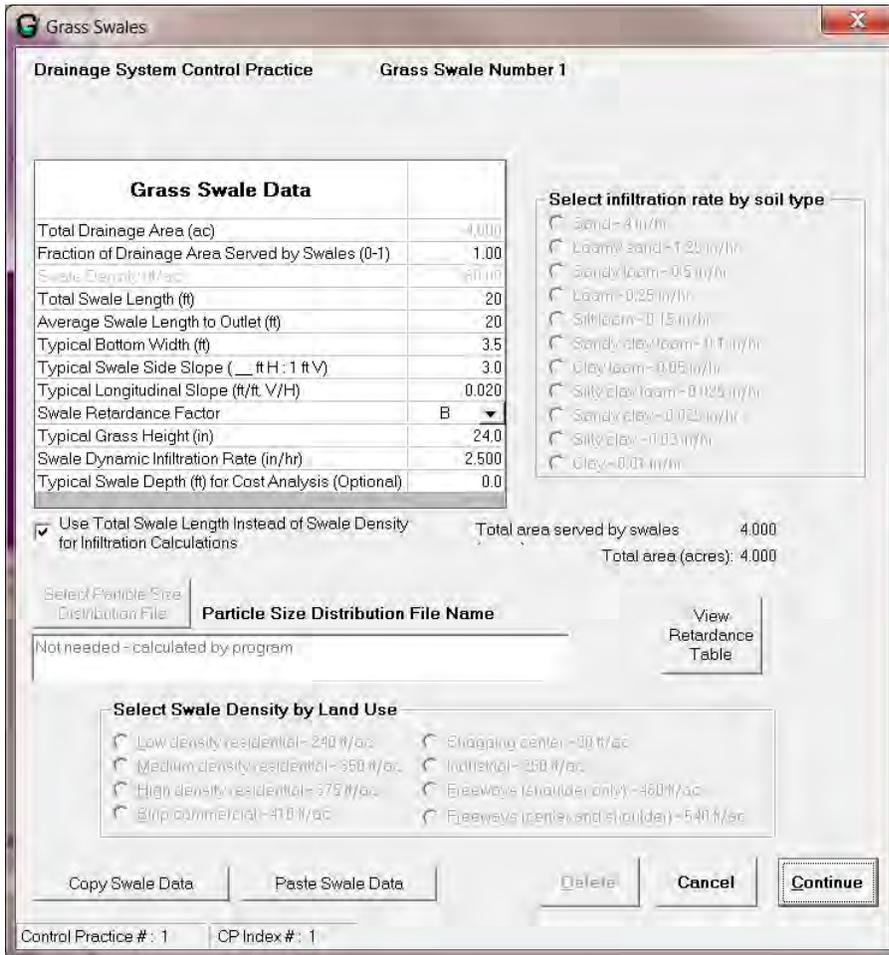


Figure 61: Boulevard Bioswale – not site specific (WinSLAMM).

## Appendix B – Project Cost Estimates

### Introduction

The ‘Cost Estimates’ section on page 10 explains the elements of cost that were considered and the amounts and assumptions that were used. In addition, each project type concludes with budget assumptions listed in the footnotes. This appendix is a compilation of tables that shows in greater detail the calculations made and quantities used to arrive at the cost estimates for practices where the information provided elsewhere in the document is insufficient to reconstruct the budget. This section includes ponds, iron enhanced sand filters, and stormwater reuse.

### Ponds

**Table 12: Catchment A-7 – New Pond (Smaller Drainage)**

Activity	Units	Unit Price	Quantity	Unit Price
Design	Each	\$ 25,000.00	1	\$ 25,000.00
Mobilization	Each	\$ 10,000.00	1	\$ 10,000.00
Site Prep	Each	\$ 10,000.00	1	\$ 10,000.00
Excavation	cu-yards	\$ 12.50	11,455	\$ 143,183.75
Outlet Control Structure	Each	\$ 10,000.00	1	\$ 10,000.00
Existing Infrastructure Retrofit	Each	\$ 50,000.00	1	\$ 50,000.00
Site Restoration/Revegetation	Each	\$ 5,000.00	1	\$ 5,000.00
Property Purchase		\$ 100,000.00	1	\$ 100,000.00
Total for project =				\$ 353,183.75

**Table 13: Catchment A-7 – New Pond (Larger Drainage)**

Activity	Units	Unit Price	Quantity	Unit Price
Design	Each	\$ 25,000.00	1	\$ 25,000.00
Mobilization	Each	\$ 10,000.00	1	\$ 10,000.00
Site Prep	Each	\$ 10,000.00	1	\$ 10,000.00
Excavation	cu-yards	\$ 12.50	46,787	\$ 584,837.50
Outlet Control Structure	Each	\$ 10,000.00	1	\$ 10,000.00
Existing Infrastructure Retrofit	Each	\$ 50,000.00	1	\$ 50,000.00
Site Restoration/Revegetation	Each	\$ 5,000.00	1	\$ 5,000.00
Property Purchase		\$ 100,000.00	1	\$ 100,000.00
Total for project =				\$ 794,837.50

**Table 14: Catchment A-8 – Pond Modification at 4<sup>th</sup> Avenue and Grant Street Pond**

Activity	Units	Unit Price	Quantity	Unit Price
Feasibility Study and Project Design	Each	\$ 15,000.00	1	\$ 15,000.00
Mobilization	Each	\$ 10,000.00	1	\$ 10,000.00
Site Prep	Each	\$ 10,000.00	1	\$ 10,000.00
Brush Removal	Each	\$ 15,000.00	1	\$ 15,000.00
Sediment Testing	Each	\$ 10,000.00	1	\$ 10,000.00
Existing Infrastructure Retrofit	Each	\$ 5,000.00	1	\$ 5,000.00
Outlet Control Structure	Each	\$ 10,000.00	1	\$ 10,000.00
Site Restoration	Each	\$ 10,000.00	1	\$ 10,000.00
Project Total Before Excavation =				\$ 85,000.00

Activity	Management Levels		
	1	2	3
Soil To Excavate (cu-yds)	12,000	12,000	12,000
Cost To Excavate (\$/cu-yd)	\$20	\$35	\$50
Cost To Excavate (Total \$)	\$240,000	\$420,000	\$600,000
Other Construction Costs (\$)	\$85,000	\$85,000	\$85,000
Total Project Cost (\$)	\$325,000	\$505,000	\$685,000

**Table 15: Catchment A-10 – New Pond at Rudy Johnson Park**

Activity	Units	Unit Price	Quantity	Unit Price
Design	Each	\$ 25,000.00	1	\$ 25,000.00
Mobilization	Each	\$ 10,000.00	1	\$ 10,000.00
Site Prep	Each	\$ 10,000.00	1	\$ 10,000.00
Excavation	cu-yards	\$ 12.50	1,810	\$ 22,625.00
Outlet Control Structure	Each	\$ 10,000.00	1	\$ 10,000.00
Existing Infrastructure Retrofit	Each	\$ 50,000.00	1	\$ 50,000.00
Site Restoration/Revegetation	Each	\$ 5,000.00	1	\$ 5,000.00
Property Purchase		\$ 100,000.00	1	\$ 100,000.00
Total for project =				\$ 232,625.00

## Iron Enhanced Sand Filters

**Table 16: Catchment A-3 – IESF Pond Bench at Green Haven Golf Course Pond**

Activity	Units	Unit Price	Quantity	Unit Price
Design/Bidding/Construction Oversight	Each	\$ 40,000.00	1	\$ 40,000.00
Mobilization	Each	\$ 20,000.00	1	\$ 20,000.00
Land Acquisition (owned by City of Anoka)	acres	\$ -	0	\$ -
Clearing, Removal of Existing Infrastructure, and Pond Dewatering	Each	\$ 12,000.00	1	\$ 12,000.00
Common Excavation & Disposal	cu-yards	\$ 40.00	2,074	\$ 82,960.00
IESF Materials and Installation	sq-ft	\$ 17.00	14,000	\$ 238,000.00
Outlet/Inlet Control Structures	Each	\$ 30,000.00	1	\$ 30,000.00
Site Restoration	Each	\$ 15,000.00	1	\$ 15,000.00
Total for project =				\$ 437,960.00

**Table 17: Catchment A-7 – IESF Pond Bench (Smaller Drainage Pond)**

Activity	Units	Unit Price	Quantity	Unit Price
Design/Bidding/Construction Oversight	Each	\$ 40,000.00	1	\$ 40,000.00
Mobilization	Each	\$ 20,000.00	1	\$ 20,000.00
Land Acquisition (owned by State of Minnesota)	acres	\$ -	0	\$ -
Clearing, Removal of Existing Infrastructure, and Pond Dewatering	Each	\$ 12,000.00	1	\$ 12,000.00
Common Excavation & Disposal	cu-yards	\$ 40.00	1,185	\$ 47,400.00
IESF Materials and Installation	sq-ft	\$ 17.00	8,000	\$ 136,000.00
Outlet/Inlet Control Structures	Each	\$ 30,000.00	1	\$ 30,000.00
Site Restoration	Each	\$ 15,000.00	1	\$ 15,000.00
Total for project =				\$ 300,400.00

**Table 18: Catchment A-7 – IESF Pond Bench (Larger Drainage Pond)**

Activity	Units	Unit Price	Quantity	Unit Price
Design/Bidding/Construction Oversight	Each	\$ 40,000.00	1	\$ 40,000.00
Mobilization	Each	\$ 20,000.00	1	\$ 20,000.00
Land Acquisition (owned by State of Minnesota)	acres	\$ -	0	\$ -
Clearing, Removal of Existing Infrastructure, and Pond Dewatering	Each	\$ 12,000.00	1	\$ 12,000.00
Common Excavation & Disposal	cu-yards	\$ 40.00	2,963	\$ 118,516.00
IESF Materials and Installation	sq-ft	\$ 17.00	20,000	\$ 340,000.00
Outlet/Inlet Control Structures	Each	\$ 30,000.00	1	\$ 30,000.00
Site Restoration	Each	\$ 15,000.00	1	\$ 15,000.00
Total for project =				\$ 575,516.00

**Table 19: Catchment A-8 – IESF at 4<sup>th</sup> Avenue and Grant Street.**

Activity	Units	Unit Price	Quantity	Unit Price
Design/Bidding/Construction Oversight	Each	\$ 40,000.00	1	\$ 40,000.00
Mobilization	Each	\$ 20,000.00	1	\$ 20,000.00
Land Acquisition (owned by City of Anoka)	acres	\$ -	0	\$ -
Clearing, Removal of Existing Infrastructure, and Pond Dewatering	Each	\$ 12,000.00	1	\$ 12,000.00
Common Excavation & Disposal	cu-yards	\$ 40.00	1,037	\$ 41,480.00
IESF Materials and Installation	sq-ft	\$ 17.00	7,000	\$ 119,000.00
Outlet/Inlet Control Structures	Each	\$ 30,000.00	1	\$ 30,000.00
Site Restoration	Each	\$ 15,000.00	1	\$ 15,000.00
Total for project =				\$ 277,480.00

### Stormwater Reuse

**Table 20: Catchment A-3 –Stormwater Reuse at Green Haven Golf Course Pond**

Activity	Price
Project Planning	\$ 30,000.00
Easement	\$ 45,000.00
Design, Surveying and Permitting	\$ 85,000.00
Construction Oversight	\$ 30,000.00
Monitoring	\$ 20,000.00
Construction	\$ 390,000.00
Total for project =	
	\$ 600,000.00

**Table 21: Catchment A-7– Stormwater Reuse System**

Activity	Price
Project Planning	\$ 30,000.00
Easements	\$ 75,000.00
Design, Surveying and Permitting	\$ 85,000.00
Construction Oversight	\$ 40,000.00
Monitoring	\$ 20,000.00
Cisterns	\$ 250,000.00
Construction	\$ 450,000.00
Total for project =	
	\$ 950,000.00

## Appendix C – Volume Reduction Ranking Tables

### Introduction

Volume reduction was not identified as a primary reduction target during the scoping phase of this project. This section is intended to serve as a quick reference if questions related to volume reduction arise. Projects are ranked based on cost per acre-foot of volume reduced.

**Table 22: Cost-effectiveness of retrofits with respect to volume reduction. Projects 1 - 16. TP and TSS reductions are also shown. For more information on each project refer to either the Catchment Profile or BMP Descriptions pages in this report. Volume and pollutant reduction benefits cannot be summed with other projects that provide treatment for the same source area.**

Project Rank	Project ID	Page Number	Retrofit Type	Retrofit Location	Catchment	TP Reduction (lb/yr)	TSS Reduction (lb/yr)	Volume Reduction (ac-ft/yr)	Probable Project Cost	Estimated Annual Operations & Maintenance	Estimated cost/ ac-ft Vol./year (30-year) <sup>1</sup>
1	3-E	52	Stomwater Reuse	Green Haven Golf Course Pond	A-3	18.2	3,409	46.4	\$608,760.00	\$3,000.00	\$503.00
2	7-D	69	Infiltration Basin	Colfax Ave. and Blackoaks Ln.	A-7	9.6	3,256	8.1	\$118,796.00	\$225.00	\$515.00
3	7-E	70	Infiltration Basin	Sunny Ln.	A-7	1.7	676	1.8	\$22,796.00	\$225.00	\$547.00
4	10-C	97	Infiltration Basin	5th Ave. and Polk St.	A-10	2.6	808	2.1	\$43,796.00	\$225.00	\$803.00
5	8-A	80	Curb-Cut Rain Garden	Various locations in catchment	A-8	0.7-0.8	190-301	0.7-1.1	\$17,234.00	\$450.00	\$931-\$1,394
6	1-A	38	Curb-Cut Rain Garden	Ferry St. and Front Ave.	A-1	0.5	187	0.5	\$8,982.00	\$225.00	\$1,090.00
7	16-A	128	Curb-Cut Rain Garden	Washington St.	A-16	0.5-1.0	157-315	0.4-0.8	\$8,982-\$17,234	\$225-\$450	\$1,339-\$1,369
8	7-A	66	Curb-Cut Rain Garden	Various locations in catchment	A-7	0.5-8.1	153-2,539	0.4-6.2	\$15,844-\$147,876	\$225-\$3,825	\$1,407-\$1,931
9	3-A	48	Curb-Cut Rain Garden	Various locations in catchment	A-3	0.5-3.5	157-1,089	0.4-2.7	\$15,844-\$65,356	\$225-\$1,575	\$1,410-\$2,052
10	15-A	125	Curb-Cut Rain Garden	Various locations in catchment	A-15	0.4-4.4	135-1,343	0.4-3.7	\$15,844-\$90,112	\$225-\$2,250	\$1,413-\$1,931
11	9-A	87	Curb-Cut Rain Garden	Various locations in catchment	A-9	0.5-2.0	155-623	0.4-1.5	\$15,844-\$40,600	\$225-\$900	\$1,465-\$1,931
12	7-G	72	Stomwater Reuse	38th Ave. and 7th Ave.	A-7	17.5	5,987	18.7	\$958,760.00	\$3,000.00	\$1,869.00
13	9-E	91	Boulevard Bioswale	Various locations in catchment	A-9	0.2	112	0.2	\$8,526.00	\$225.00	\$2,482.00
14	7-F	71	Boulevard Bioswale	Various locations in catchment	A-7	0.2	61	0.1	\$8,526.00	\$225.00	\$3,704.00
15	11-A	102	Boulevard Bioswale	3rd Ave.	A-11	0.1	49	0.1	\$8,526.00	\$225.00	\$3,717.00
16	2-A	44	Boulevard Bioswale	Maple Ave.	A-2	0.2	55	0.1	\$8,526.00	\$225.00	\$3,859.00

<sup>1</sup> [(Probable Project Cost) + 30\*(Annual O&M)] / [30\*(Annual Volume Reduction)]

**Table 23: Cost-effectiveness of retrofits with respect to volume reduction. Projects 17 - 32. TP and TSS reductions are also shown. For more information on each project refer to either the Catchment Profile or BMP Descriptions pages in this report. Volume and pollutant reduction benefits cannot be summed with other projects that provide treatment for the same source area.**

Project Rank	Project ID	Page Number	Retrofit Type	Retrofit Location	Catchment	TP Reduction (lb/yr)	TSS Reduction (lb/yr)	Volume Reduction (ac-ft/yr)	Probable Project Cost	Estimated Annual Operations & Maintenance	Estimated cost/ ac-ft Vol./year (30-year) <sup>1</sup>
17	10-D	98	Boulevard Bioswale	Various locations in catchment	A-10	0.1	52	0.1	\$8,526.00	\$225.00	\$4,302.00
18	13-H	116	Boulevard Bioswale	Various locations in catchment	A-13	0.1	22	0.1	\$8,526.00	\$225.00	\$5,092.00
19	1-C	40	Permeable Pavement	Anoka-Hennepin Education Center	A-1	2.9	1,325	3.5	\$552,656.00	\$41,165.00	\$17,044.00
20	13-F	114	Permeable Pavement	St. Stephen's Catholic School	A-13	1.6	562	1.6	\$282,796.00	\$20,925.00	\$18,970.00
21	13-E	113	Permeable Pavement	St. Stephen's Catholic Church	A-13	0.9	320	0.9	\$162,796.00	\$11,925.00	\$19,279.00
22	13-G	115	Permeable Pavement	St. Stephen's Catholic School	A-13	1.9	672	1.9	\$343,796.00	\$25,500.00	\$19,453.00
48	1-B	39	Hydrodynamic Device	Ferry St.	A-1	1	584	0	\$109,752.00	\$630.00	N/A
48	3-B	49	Hydrodynamic Device	Main St. and State Ave.	A-3	0.5	280	0	\$55,752.00	\$630.00	N/A
48	3-C	50	Hydrodynamic Device	Main St. and State Ave.	A-3	0.6	302	0	\$55,752.00	\$630.00	N/A
48	3-D	51	IESF Bench	Green Haven Golf Course Pond	A-3	10.4	0	0	\$282,955.00	\$3,214.00	N/A
48	4-A	55	Hydrodynamic Device	Maple Ln.	A-4	0.3	113	0	\$28,752.00	\$630.00	N/A
48	7-B	67	Hydrodynamic Device	38th Ln. and 8th Ave.	A-7	1.2	491	0	\$109,752.00	\$630.00	N/A
48	7-C	68	Hydrodynamic Device	7th Ave.	A-7	0.8	383	0	\$109,752.00	\$630.00	N/A
48	7-H1	73	New Pond	7th Ave.	A-7	111.6	54,558	0.9	\$802,138.00	\$5,500.00	N/A
48	7-H2	74	New Pond	7th Ave.	A-7	31.5	13,452	0.4	\$360,484.00	\$1,800.00	N/A
48	7-I1	75	IESF Bench	7th Ave.	A-7	26.6	0	0	\$580,991.00	\$4,591.00	N/A

<sup>1</sup> [(Probable Project Cost) + 30\*(Annual O&M)] / [30\*(Annual Volume Reduction)]

**Table 24: Cost-effectiveness of retrofits with respect to volume reduction. Projects 33 – 48. TP and TSS reductions are also shown. For more information on each project refer to either the Catchment Profile or BMP Descriptions pages in this report. Volume and pollutant reduction benefits cannot be summed with other projects that provide treatment for the same source area.**

Project Rank	Project ID	Page Number	Retrofit Type	Retrofit Location	Catchment	TP Reduction (lb/yr)	TSS Reduction (lb/yr)	Volume Reduction (ac-ft/yr)	Probable Project Cost	Estimated Annual Operations & Maintenance	Estimated cost/ ac-ft Vol./year (30-year) <sup>1</sup>
48	7-I2	76	IESF Bench	7th Ave.	A-7	7.2	0	0	\$305,875.00	\$1,837.00	N/A
48	8-B	81	Pond Modification	4th Ave. and Grant St.	A-8	10.5	6,443	0	\$330,840-\$690,840	\$1,300.00	N/A
48	8-C	82	IESF Bench	4th Ave. and Grant St.	A-8	7.2	0	0	\$282,955.00	\$1,607.00	N/A
48	9-B	88	Hydrodynamic Device	7th Ave. and Pierce St.	A-9	1.2	686	0	\$109,752.00	\$630.00	N/A
48	9-C	89	Hydrodynamic Device	7th Ave. and Harrison St.	A-9	1	407	0	\$109,752.00	\$630.00	N/A
48	9-D	90	Hydrodynamic Device	Main St. and 8 1/2 Ave.	A-9	1.1	777	0	\$109,752.00	\$630.00	N/A
48	10-A	95	Hydrodynamic Device	6th Ave. and Taylor St.	A-10	0.5	211	0	\$109,752.00	\$630.00	N/A
48	10-B	96	Hydrodynamic Device	5th Ave. and Taylor St.	A-10	0.5	195	0	\$109,752.00	\$630.00	N/A
48	10-E	99	New Pond	Rudy Johnson Park	A-10	4	1,712	0.1	\$239,925.00	\$300.00	N/A
48	13-A	109	Hydrodynamic Device	Main St. and 1st Ave.	A-13	0.5	272	0	\$55,752.00	\$630.00	N/A
48	13-B	110	Hydrodynamic Device	Main St. and 3rd Ave.	A-13	0.5	285	0	\$55,752.00	\$630.00	N/A
48	13-C	111	Hydrodynamic Device	Main St. and 5th Ave.	A-13	0.9	427	0	\$109,752.00	\$630.00	N/A
48	13-D	112	Hydrodynamic Device	5th Ave. and Main St.	A-13	1.4	644	0	\$109,752.00	\$630.00	N/A
48	14-A	121	Hydrodynamic Device	Parking lot off 1st Ave.	A-14	0.8	385	0	\$109,752.00	\$630.00	N/A
48	16-B	129	Hydrodynamic Device	Oakwood Dr. and Washington St.	A-16	0.4	163	0	\$109,752.00	\$630.00	N/A
48	17-A	133	Hydrodynamic Device	Oakwood Dr.	A-17	0.6	244	0	\$109,752.00	\$630.00	N/A

<sup>1</sup> [(Probable Project Cost) + 30\*(Annual O&M)] / [30\*(Annual Volume Reduction)]

## Appendix D – Soil Information

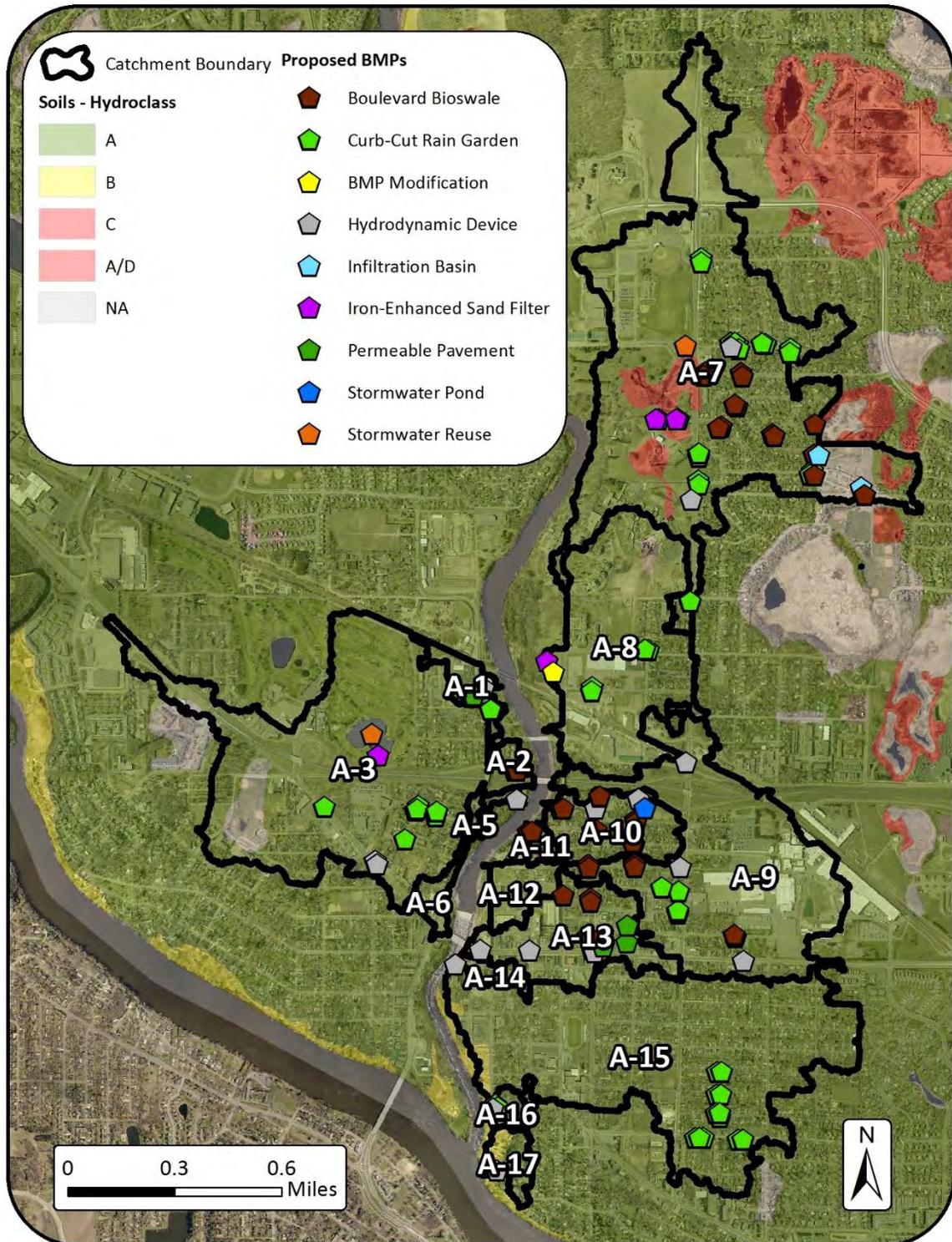


Figure 62: Soil hydroclass and proposed retrofit locations in the City of Anoka.

## Appendix E – Wellhead Protection Areas

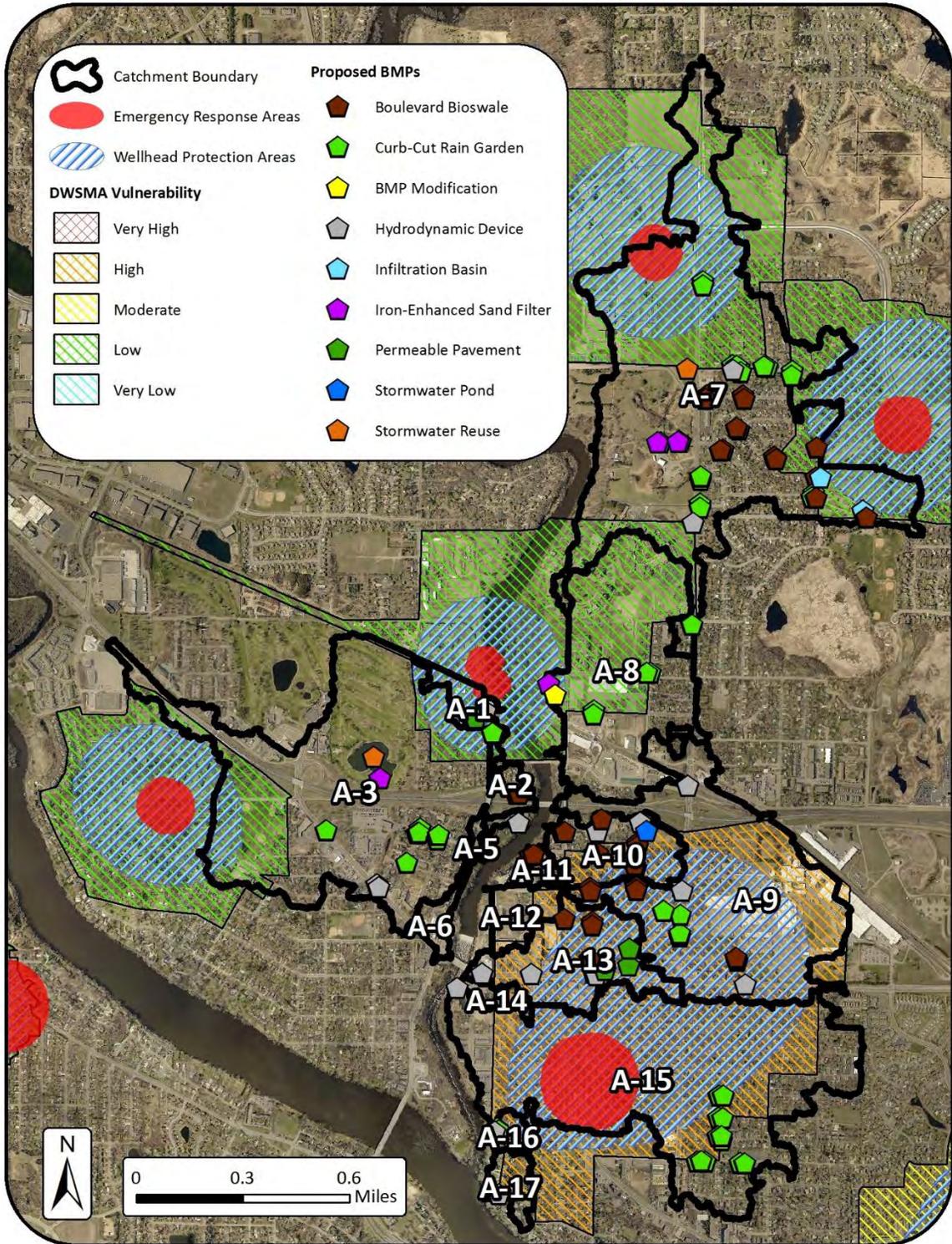


Figure 63: Wellhead protection areas and proposed retrofit locations in the City of Anoka.

# APPENDIX D



**LOWER RUM RIVER WATERSHED MANAGEMENT ORGANIZATION**  
**ANDOVER - ANOKA - RAMSEY**  
2015 First Avenue • Anoka, MN 55303

---

January 18, 2019

Mr. Ben Nelson  
City of Anoka  
2015 First Avenue  
Anoka, MN 55303

Subject: LRRWMO Permit #2018-22 ~ Anoka Infiltration Credits ~ Anoka

Dear Mr. Nelson,

The LRRWMO, at its January 17, 2019 meeting, addressed the permit indicated above.

The Board has taken action to authorize the creation of excess volume retention credits as detailed in the enclosed Barr Engineering memorandum dated January 16, 2019.

If you have any questions regarding this process, please contact Mr. Obermeyer of Barr Engineering.

Sincerely,



Todd Haas  
Chair

Attachments: Approved Permit 18-22  
Barr Engineering Memo

cc: LRRWMO  
Bob Obermeyer, Barr Engineering

# Lower Rum River Watershed Management Organization ("LRRWMO")

**Andover—Anoka—Ramsey**  
2015 First Avenue • Anoka, MN 55303

## PERMIT APPLICATION

Permit # <u>18-22</u>
-----------------------

The \$100.00 application fee and the \$700.00 escrow deposit must accompany this permit application. Applications for projects involving wetlands and/or involving a Wetland Replacement Plans must include an additional \$75 application fee plus an escrow deposit as determined in accordance with Attachment D.

Permits are to be processed at the same time as the site plan, preliminary plat or other city land use or building application submitted to the city in which the work or project is located.

The permit and supporting documentation must be submitted to the LRRWMO by the **THIRD THURSDAY OF THE MONTH TO BE ON THE FOLLOWING REGULARLY SCHEDULED MONTHLY LRRWMO MEETING AGENDA. A PERMIT NUMBER WILL NOT BE ASSIGNED UNTIL CITY AUTHORIZATION IS RECEIVED.**

**Project Name:** Anoka Infiltration Credits

**Address/Location:** Multipliable Project Locations within City Limits

**Project Description/Purpose:** Infiltration Credits for Volume Control/Retention

<b>Ben Nelson</b>	
Name of Applicant (Site Owner or Property Owner)	
<u>2015 First Avenue</u>	
Address	
<u>Anoka, MN 55303</u>	
City, State, Zip	
<u>763-576-2980</u>	
Phone	Fax
<u>bnelson@ci.anoka.mn.us</u>	
Email	

<b>Ben Nelson</b>	<b>City of Anoka</b>
Applicant's Contact	Organization Name
<u>2015 First Avenue</u>	
Address	
<u>Anoka, MN 55303</u>	
City, State, Zip	
<u>763-576-2980</u>	
Phone	Fax
<u>bnelson@ci.anoka.mn.us</u>	
Email	

### Submittal Requirements

Complete applications are to be submitted as per attachments A (Permit Requirements), B (Office Procedure), C (LRRWMO Permit Standards). Projects involving wetlands and/or involving a Wetland Replacement Plan have special notice requirements and require submittal of four copies (4) and an electronic copy of all wetland-related submittal materials.

### **PROJECT SUBMITTALS (check all that apply):**

- |  |
|--|
| <input type="checkbox"/> <b>GRADING PLAN:</b> Including existing and proposed contours and boundaries of all wetlands and surface waters.        |
| <input type="checkbox"/> <b>STORM SEWER/ DRAINAGE PLAN:</b> Including all permanent drainage features and all permanent water quality features.  |
| <input type="checkbox"/> <b>STORM DRAINAGE CALCULATIONS:</b> Design computations as required by the LRRWMO (see attachment C).                   |
| <input type="checkbox"/> <b>EROSION CONTROL PLAN:</b> Including all temporary measures proposed to retain all sediment on site.                  |
| <input type="checkbox"/> <b>MITIGATION PLAN*/WETLAND DETERMINATION:</b> Quality level of mitigated wetland(s) shall be determined by the LRRWMO. |
| <input type="checkbox"/> <b>REQUEST FOR EXEMPTION UNDER THE WETLAND CONSERVATION ACT (WCA)</b>   |
| <input checked="" type="checkbox"/> <b>OTHER</b> <u>Memo</u>   |

*\*NOTE: Four copies of permit submittals are required for projects involving wetland replacement plans.*

# Lower Rum River Watershed Management Organization ("LRRWMO")

**Andover—Anoka—Ramsey**  
2015 First Avenue • Anoka, MN 55303

START OF PROJECT: n/a

EST. COMPLETION DATE: n/a

APPROVAL DATE: 1/17/19

**By signing this Permit Application, the undersigned consents and agrees on behalf of the Applicant that:**

1. The permit application fee is non-refundable. Escrow deposits will be held by the LRRWMO until the project has been completed and all conditions of issuance of the permit are satisfied. The Applicant is responsible for all expenses incurred by the LRRWMO in the processing, administration and enforcement of the permit application and permit. The escrow deposit will be used to reimburse the LRRWMO for all expenses incurred by the LRRWMO in processing, administering and enforcing the permit application and permit, including engineering, legal and other consultant costs. If such expenses exceed the escrow deposit, the LRRWMO will bill the Applicant or Permittee for such excess amount and payment will be due within twenty (20) days of mailing the invoice. Timely payment of such invoices is a condition of all permits and work may be stopped on the project for failure to make payments when due.
2. The undersigned, its agents, principal, assigns and/or representatives (hereinafter "Permittee") shall abide by all the standard conditions and special terms and conditions of the LRRWMO.
3. Any work that violates the terms of the permit may result in the LRRWMO or the City in which the work is being done immediately causing the work on the project relating to the permit to cease and desist. All work on the project shall cease until the permit conditions are met and approved by the LRRWMO and/or the City in which the work is being done.
4. The Permittee agrees to be bound by the terms of the LRRWMO permit requirements, final permit, standard conditions, and special conditions required by the LRRWMO for approval of the permit. The undersigned has the authority to bind the permit holder, the owner of the property and/or any entity performing work on the property pursuant to the terms of LRRWMO permit, and shall be responsible for complying with terms of the LRRWMO permit.

"I certify that I have thoroughly read and understand the above information."

	12-21-2018		
Signature of property owner or designated Agent (no agent without a letter of authority)	Date	Signature of applicant if different from property owner	Date

Ben Nelson	
Print Signer's name	Print Signer's name

<b>Application Acknowledged by City:</b> 	Anoka	12-21-2018
Name of City Official	City	Date

SIGNATURE OF LRRWMO CHAIRMAN: \*\* 

**\*\*NOTE: Subject to conditions recommended by Bob Obermeyer, Barr Engineering (see attached)**

PERMIT IS NOT VALID IF PROJECT HAS NOT STARTED WITHIN ONE YEAR FROM DATE OF APPROVAL

# Lower Rum River Watershed Management Organization

**Andover–Anoka–Ramsey**  
**2015 First Avenue; Anoka, MN 55303**

---

**To:** Lower Rum River Water Management Organization  
**From:** Barr Engineering Company  
**Date:** Revised January 16, 2019  
**Re:** Permit #2018-22: Anoka Infiltration Credits: Anoka

A LRRWMO permit application has been received for the review and comment of the City of Anoka's plan to create a bank for volume retention credits for compliance with LRRWMO requirements. The Kwik Trip project, Permit #2018-15, because of the fuel distribution proposed, the Minnesota Pollution Control Agency and LRRWMO criteria prohibits on-site volume retention by infiltration. The City of Anoka (City) has identified, in correspondence dated December 21, 2018, four projects that did not require a permit from the LRRWMO however on-site basins for stormwater management were constructed. Permits from the LRRWMO were not required for these projects since three were road reconstruction that did not trigger the one acre increase in impervious area and the other was a parking lot mill and overlay that does not require a permit. The constructed on-site basins therefore have excess retention volume available for banking. These sites are; 1) Tyler Street Alley, 2) City Hall North Parking Lot, 3) Sunny Acres Park and 4) State Avenue Reconstruction Project. The City is requesting that the volume credits be banked and used for future projects where volume retention because of site constraints cannot be provided on-site. This is similar to the commitment made by the City of Ramsey for projects in the Town Center that were located within a Drinking Water Supply Management Area (DWSMA) and would provide the volume retention required for these projects with a future municipal project. Anoka's December 21<sup>st</sup> submittal and e-mail correspondence dated January 16, 2019 from Hakanson Anderson identifies that approximately 10,933 cubic-feet of excess volume retention would be available for banking.

If acceptable to the LRRWMO and prior to establishment of these credits, it is recommended that as-built drawings for these areas including documentation showing the basins are functioning as approved are provided to the LRRWMO.

**LOWER RUM RIVER WATERSHED MANAGEMENT ORGANIZATION**  
**ANDOVER - ANOKA - RAMSEY**  
2015 First Avenue • Anoka, MN 55303

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January 18, 2019

Mr. Steven Lowe [slowe@kwiktrip.com](mailto:slowe@kwiktrip.com)  
Kwik Trip, Inc.  
1626 Oak Street  
La Crosse, WI 54603-2308

Subject: LRRWMO Permit #2018-15 ~ Kwik Trip 1017 ~ Anoka

Dear Mr. Lowe,

The LRRWMO, at its January 17, 2019 meeting, addressed the permit indicated above.

The Board has taken action to approve the referenced permit application, subject to the seven (7) conditions, as detailed in the attached Barr Engineering memorandum dated January 10, 2019.

If you have any questions regarding this process, please contact Mr. Obermeyer of Barr Engineering.

Sincerely,



Todd Haas  
Chair

Attachment: Approved Permit Application 18-15  
Barr Engineering Memo 1/10/19

cc: Joseph Radach, Carlson McCain [jradach@carlsonmccain.com](mailto:jradach@carlsonmccain.com)  
Ben Nelson, City of Anoka  
LRRWMO

# Lower Rum River Watershed Management Organization ("LRRWMO")

**Andover—Anoka—Ramsey**  
2015 First Avenue • Anoka, MN 55303

## PERMIT APPLICATION

Permit # 18-15

The \$100.00 application fee and the \$700.00 escrow deposit must accompany this permit application. Applications for projects involving wetlands and/or involving a Wetland Replacement Plans must include an additional \$75 application fee plus an escrow deposit as determined in accordance with Attachment D.

Permits are to be processed at the same time as the site plan, preliminary plat or other city land use or building application submitted to the city in which the work or project is located.

The permit and supporting documentation must be submitted to the LRRWMO by the **THIRD THURSDAY OF THE MONTH TO BE ON THE FOLLOWING REGULARLY SCHEDULED MONTHLY LRRWMO MEETING AGENDA. A PERMIT NUMBER WILL NOT BE ASSIGNED UNTIL CITY AUTHORIZATION IS RECEIVED.**

**Project Name:** KWIK TRIP 1017  
**Address/Location:** NWC OF 7<sup>TH</sup> AVENUE + BUCHANAN STREET  
**Project Description/Purpose:** CONSTRUCTION OF NEW 9,210 S.E CONVENIENCE STORE / CARWASH + FUELING ISLAND -

STEVEN LOWE - KWIK TRIP, INC.  
**Name of Applicant (Site Owner or Property Owner)**  
1626 OAK ST  
**Address**  
LA CROSSE, WI 54602  
**City, State, Zip**  
608-793-5954  
**Phone**                      **Fax**  
slowe@kwiktrip.com  
**Email**

**Applicant's Contact**                      **Organization Name**  
**Address**  
**City, State, Zip**  
**Phone**                      **Fax**  
**Email**

**Submittal Requirements**

Complete applications are to be submitted as per attachments A (Permit Requirements), B (Office Procedure), C (LRRWMO Permit Standards). Projects involving wetlands and/or involving a Wetland Replacement Plan have special notice requirements and require submittal of four copies (4) and an electronic copy of all wetland-related submittal materials.

**PROJECT SUBMITTALS (check all that apply):**

- GRADING PLAN:** Including existing and proposed contours and boundaries of all wetlands and surface waters.
- STORM SEWER/ DRAINAGE PLAN:** Including all permanent drainage features and all permanent water quality features.
- STORM DRAINAGE CALCULATIONS:** Design computations as required by the LRRWMO (see attachment C).
- EROSION CONTROL PLAN:** Including all temporary measures proposed to retain all sediment on site.
- MITIGATION PLAN\*/WETLAND DETERMINATION:** Quality level of mitigated wetland(s) shall be determined by the LRRWMO.
- REQUEST FOR EXEMPTION UNDER THE WETLAND CONSERVATION ACT (WCA)**
- OTHER**

*\*NOTE: Four copies of permit submittals are required for projects involving wetland replacement plans.*

# Lower Rum River Watershed Management Organization ("LRRWMO")

**Andover—Anoka—Ramsey**  
2015 First Avenue • Anoka, MN 55303

START OF PROJECT: 7/22/2019

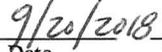
EST. COMPLETION DATE: 11/29/2019

APPROVAL DATE: 1/17/2019

**By signing this Permit Application, the undersigned consents and agrees on behalf of the Applicant that:**

1. The permit application fee is non-refundable. Escrow deposits will be held by the LRRWMO until the project has been completed and all conditions of issuance of the permit are satisfied. The Applicant is responsible for all expenses incurred by the LRRWMO in the processing, administration and enforcement of the permit application and permit. The escrow deposit will be used to reimburse the LRRWMO for all expenses incurred by the LRRWMO in processing, administering and enforcing the permit application and permit, including engineering, legal and other consultant costs. If such expenses exceed the escrow deposit, the LRRWMO will bill the Applicant or Permittee for such excess amount and payment will be due within twenty (20) days of mailing the invoice. Timely payment of such invoices is a condition of all permits and work may be stopped on the project for failure to make payments when due.
2. The undersigned, its agents, principal, assigns and/or representatives (hereinafter "Permittee") shall abide by all the standard conditions and special terms and conditions of the LRRWMO.
3. Any work that violates the terms of the permit may result in the LRRWMO or the City in which the work is being done immediately causing the work on the project relating to the permit to cease and desist. All work on the project shall cease until the permit conditions are met and approved by the LRRWMO and/or the City in which the work is being done.
4. The Permittee agrees to be bound by the terms of the LRRWMO permit requirements, final permit, standard conditions, and special conditions required by the LRRWMO for approval of the permit. The undersigned has the authority to bind the permit holder, the owner of the property and/or any entity performing work on the property pursuant to the terms of LRRWMO permit, and shall be responsible for complying with terms of the LRRWMO permit.

"I certify that I have thoroughly read and understand the above information."

	<u>9/20/2018</u>		Date
Signature of property owner or designated Agent (no agent without a letter of authority)	Date	Signature of applicant if different from property owner	Date

<u>STEVEN I. LOWE</u>	<u>Anoka</u>
Print Signer's name	Print Signer's name

**Application Acknowledged by City:**  Anoka 9/28/18  
Name of City Official City Date

SIGNATURE OF LRRWMO CHAIRMAN: \*\* 

**\*\*NOTE: Subject to conditions recommended by Bob Obermeyer, Barr Engineering (see attached)**

PERMIT IS NOT VALID IF PROJECT HAS NOT STARTED WITHIN ONE YEAR FROM DATE OF APPROVAL

# Lower Rum River Watershed Management Organization

**Andover–Anoka–Ramsey**  
**2015 First Avenue; Anoka, MN 55303**

---

**To:** Lower Rum River Water Management Organization  
**From:** Barr Engineering Company  
**Date:** January 10, 2019  
**Re:** Permit #2018-15: Kwik Trip: Anoka



We have received plans and a LRRWMO permit application for the construction of a Kwik Trip convenience store, car wash, and fueling station to be located in the northwest corner of 7<sup>th</sup> avenue and Buchanan Street in Anoka. The 4.1 acre site is currently undeveloped.

Because of the fuel distribution proposed, the Minnesota Pollution Control Agency and LRRWMO criteria prohibits on-site volume retention by infiltration. The City of Anoka (City) has stated, in correspondence dated December 21, 2018, that four constructed volume retention areas on projects approved by the LRRWMO once constructed have excess retention volume available. These site are; 1) Tyler Street Alley, 2) City Hall North Parking Lot, 3) Sunny Acres Park and 4) State Avenue Reconstruction Project. The City is requesting that the additional volume credits be banked and used for this and future projects where volume retention because of site constraints cannot be provided on-site. This is similar to the commitment made by the City of Ramsey for projects in the Town Center that were located within a Drinking Water Supply Management Area (DWSMA). Ramsey committed to provide the volume retention required for these projects with a future municipal project. Anoka's December 21<sup>st</sup> submittal identifies that approximately 3,795 cubic-feet of excess volume retention would be available for banking. Permit #2018-22 would establish this bank if approved by the LRRWMO.

For the Kwik Trip project, a volume retention required from 1-inch of runoff from the 2.23 acres (97,139 square feet) of proposed site impervious area is 8,095 cubic feet. An on-site lined stormwater basin is to be constructed to provide water quality management and rate control. The results of a P8 model indicates that the basin will provide an annual removal efficiency of 60% for total phosphorous and 90.5% annual removal efficiency of total suspended solids, complying with LRRWMO criteria.

The following table summarizes the existing and proposed discharges from the site the 2, 10, and 100-year frequency storm events leaving the site:

<b>Frequency</b>	<b>Existing Discharge c.f.s.</b>	<b>Proposed Discharge c.f.s</b>
2-Year	<1.0	<1.0
10-Year	1.0	<1.0
100-Year	5.6	2.6

The HydroCAD model shows the calculated 100-year frequency flood elevation of the proposed on-site basin as 870.6 M.S.L. The plans show the proposed finish floor elevation of the store as 876.0 M.S.L. and the car wash as 875.3 M.S.L. The required 2 feet of separation between the flood elevation of a basin and the finished floor elevation of riparian structures is met.

Silt fence at the limits of construction and a rock construction entrance are shown to be installed for erosion control during construction.

It is our recommendation that the LRRWMO approve of the permit for this project subject to the following conditions:

1. Erosion control measures need to be installed prior to the commencement of construction.
2. Upon completion of construction and restoration of disturbed areas, the permit applicant is responsible for the removal of all erosion control measures installed throughout the construction site.
3. To minimize the potential of material from leaving the site and being tracked onto the roadway, a rock filter dike being a minimum of two feet in height and having side slopes of 4:1 must be constructed at the entryway onto the site. The rock filter dike will provide an erosion control facility and also enable construction traffic to enter the site.
4. Street sweeping must be undertaken and completed on an as needed basis.
5. Compliance with the storm water management requirements of the Lower Rum River Watershed Management Organization are to be administered for this project by the City of Anoka.
6. The city of Anoka must provide documentation to the LRRWMO that the retention volume of 8,095 cubic feet required of this project to comply with LRRWMO criteria has been provided within two years (2021) of the issuance of this permit.
7. In all cases where the doing by the permittee of anything authorized by this permit shall involve the taking, using, or damaging of any property, rights or interests of any other person or persons, or of any publicly owned lands or improvements or interests, the permittee; before proceeding; shall obtain the written consent of all persons, agencies, or authorities concerned, and shall acquire all necessary property rights and interest.



# **SEWER CONNECTION POLICY**

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## **Purpose**

This policy sets forth the guidelines for properties that are replacing or repairing existing subsurface sewage treatment systems (SSTS).

## **Connection to City Sewer Required**

Connection to the city sanitary service is required in the following circumstances when the cost of connection to the city sanitary service does not exceed 150% of the cost of installation of a new SSTS:

- When a residence is expanded to include new kitchen facilities, bathroom(s), and/or bedroom(s).
- When an SSTS is being replaced.
- When an SSTS is failing.
- When there is an immediate threat to health, safety and welfare from a failing SSTS.
- When a commercial property has a failing SSTS, unless connection is premature due to city plans or the need for a city project.

## **Determination of Connection**

The City Public Services Department in consultation with the person authorized by the City to administer and enforce SSTS regulations shall determine the feasibility and need for connection to the city sanitary system. The decision shall be recorded in writing and shall be mailed to the property owner.

## **Appeal of Decision**

The decision of staff can be appealed to the City Council.

## **Financial Assistance**

Financial Assistance for connecting to the city sewer system is available in accordance with the Utility Service Repair Assessment Policy.

## CHAPTER 38; ENVIRONMENTAL

### ARTICLE III. Subsurface Sewage Treatment Systems (SSTS)\*

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\*State law references--Individual sewage treatment systems, Minn. Stats. § 115.55 et seq.; local ordinances regulating individual sewage treatment systems, Minn. Stats. § 115.55, subd. 2.  
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#### **Section 38-91. Purpose, Applicability, and Structure.**

- (a) Purpose: The purpose and intent of this article is to establish standards for the design, location, construction, operation, and maintenance of Subsurface Sewage Treatment Systems. For the purposes of this Article, “Subsurface Sewage Treatment System” or “System”(both of which referred to interchangeably herein as “SSTS”) means a sewage treatment system, or part thereof, that uses subsurface soil treatment and disposal, or a holding tank, serving a dwelling, other establishment, or a group thereof.
- (b) Applicability. This ordinance shall apply to those sites or facilities that are licensed, permitted or otherwise regulated by City Ordinance. The sewer provisions of this ordinance shall also apply to any premises in the City that are not served by a sewage treatment system permitted by the Minnesota Pollution Control Agency.
- (c) Authority. This ordinance is adopted pursuant to the authorization and requirements contained in Minnesota Statutes Chapters 145.A.05; 115.55, and Minnesota Rules Chapter 7082.

#### **Section 38-92. General Provisions.**

- (a) Treatment Required. All sewage generated, in unsewered areas, shall be treated and dispersed by an approved SSTS or a system permitted by the Minnesota Pollution Control Agency.
- (b) Administrative Policy and Procedures. The provisions of Chapter 1, Article II of the City Code apply to the administration and enforcement of this Article, unless otherwise expressly provided for in this Article.
- (c) Administration. This Article shall be administered by the Anoka City Building Inspections Department, or its designee. The term “Department,” where used in this ordinance shall mean the Anoka City Building Inspections Department and/or its designee.
- (d) Compliance. No person shall cause or permit the location, construction, alteration, extension, conversion, operation or maintenance of an SSTS, except in full compliance with the provisions of this Article.
- (e) Conditions. Violations of any condition imposed by the City on a license, permit or variance, shall be subject to the penalty provisions set forth in this Article.
- (f) Site Evaluation, System Design, Construction, Inspection, and Servicing. Site evaluation, and System design, construction, inspection and System services shall be performed by Minnesota Pollution Control Agency licensed SSTS businesses or qualified employees of local governments, or persons exempt from licensing pursuant to Minnesota Rules 7083.0700. For lots platted after April 1, 1996, a design shall evaluate and locate space for a second soil treatment area.
- (g) Inspection. No part of an SSTS shall be covered until it has been inspected and approved by the Department. If any part of the System is covered before being inspected and approved as herein provided, it shall be uncovered upon the direction of the Department. The Department shall cause such inspections as are necessary to determine compliance with this Article. It shall be the responsibility of the permittee to notify the Department that the System is ready for inspection. If

the integrity of the System is threatened by adverse weather if left open, and the Department is unable to conduct an inspection, the permittee may, after receiving permission from the Department, document compliance with this Article by photographic means that show said compliance and submit that evidence to the Department prior to final approval being sought.

- (h) Compliance Inspection Required. An SSTS compliance inspection is required:
  - (1) For a new or replacement SSTS.
  - (2) When altering an existing structure to add a bedroom.
  - (3) When a parcel having an existing System undergoes development, subdivision or split.
- (i) Imminent Public Health and Safety Threat; Failing System; and Surface Discharge.
  - (1) An SSTS which poses an imminent threat to public health and safety shall be immediately abated according to instructions by the Department and be brought into compliance with this Article in accordance with a schedule established by the Department, which schedule shall not exceed ten (10) months.
  - (2) A failing System, or an SSTS that is not protective of the groundwater, shall be brought into compliance within twenty-four (24) months after receiving notice from the Department.
  - (3) An SSTS discharging raw or partially treated wastewater to ground surface or surface water is prohibited unless permitted under the National Pollution Discharge Elimination System (NPDES).
- (j) Conflict Resolution. For SSTS systems regulated under this Article, conflicts and other technical disputes over new construction, replacement and existing Systems will be managed in accordance with Anoka City Code.
- (k) Septic Tank Maintenance. The owner of a sewage (septic) tank, or tanks, shall regularly, but not less frequently than every three (3) years (unless approved by the Department due to limited use), inspect the tank(s) and measure the accumulations of sludge and scum. If the System is pumped, measurement is not needed. The owner shall remove and sanitarily dispose of septage whenever the top of the sludge layer is less than twelve (12) inches below the bottom of the outlet baffle or the bottom of the scum layer is less than three (3) inches above the outlet baffle. Removal of septage shall include complete removal of sludge and scum.
- (l) Non-Complying Systems. Existing Systems which are non-complying, but not an imminent health or safety threat, failing, or discharging to surface, may continue in use so long as the use is not changed or expanded. If the use changes or is expanded, the non-complying elements of the existing System must be brought into compliance.
- (m) Non-Complying Work. New SSTS construction that is non-compliant, or other work on a System that is non-complying, must be brought into compliance with this Article in accordance with a schedule established by the Department, which schedule shall not exceed seven (7) days unless the Department finds extenuating circumstances.
- (n) Change in Use. A Certificate of Compliance may be voided if, subsequent to the issuance of the certificate, the use of the premises or condition of the System has been changed or altered.
- (o) Setback Reduction. Where conditions prevent the construction, necessary alteration and/or repair of an SSTS on an existing developed parcel of real property, the Department may reduce property line and building setbacks and System sizing requirements, provided said reduction does not endanger or unreasonably infringe on adjacent properties and with the concurrence of the affected properties.

- (p) Floodplain. An SSTS shall not be located in a floodway or floodplain. Location within the flood fringe is permitted provided that the design complies with this Article and all of the rules and statutes incorporated by reference.
- (q) Class V Injection Wells. All owners of new or replacement SSTS that are considered to be Class V injection wells, as defined in the Code of Federal Regulations, title 40, part 144, are required by the Federal Government to submit SSTS inventory information to the Environmental Protection Agency (EPA).

**Section 38-93. Standards adopted.**

- (a) Minnesota Rules Adopted. Minnesota Rules, Chapters 7080 and 7081 that are in effect on the date of passage of this Article, related to SSTS, are hereby adopted by reference and made a part of this ordinance as if fully set forth herein.
- (b) Rules Amended. The rules adopted in Section 38-93(a) are amended as follows:
  - 1. Compliance Inspection – 15 Percent Vertical Separation Reduction. Minnesota Rules 7080.1500 Subp. 4D is amended to allow fifteen (15) percent reduction of vertical separation (separation distance no less than 30.6 inches) which may be determined to be compliant for existing Systems to account for settling and variable interpretation of soil characteristics.
- (c) Holding Tanks. Holding tanks may be allowed for the following applications: as replacement to a failing existing System, an SSTS that poses an imminent threat to public health and safety, or for an existing lot in which an SSTS cannot feasibly be installed and the Department finds extenuating circumstances.
- (d) System Abandonment. An SSTS, or component thereof, that is no longer intended to be used, must be abandoned in accordance with the adopted standards of this Article.

**Section 38-94. Permits.**

- (a) Permit Required. No person shall cause or allow the location, construction, alteration, extension, conversion, or modification of any SSTS without first obtaining a permit for such work from the Department. No person shall construct, alter, extend, convert, or modify any structure that is or will utilize an SSTS without first obtaining a permit.
  - (1) All work performed on an SSTS shall be done by an appropriately licensed business, qualified employees or persons exempt from licensing. Permit applications shall be submitted by the person doing the SSTS construction, repairs and maintenance on forms provided by the Department, and accompanied by required site and design date, and permit fees.
  - (2) Permits shall only be issued to the person doing the SSTS construction, repairs and/or maintenance.
  - (3) Permit applications for new and replacement SSTS shall include a management plan for the owner that includes a schedule for septic tank maintenance.
  - (4) A permit is not required for minor repairs or replacement of damaged or deteriorated components that do not alter the original function, change the treatment capacity, change the location of System components, or otherwise change the original System's design, layout or function.
- (b) Operating permit. An operating permit shall be required of all owners of new holding tanks, Type IV and V systems; MSTs and other SSTS that the Department has determined requires operational oversight.

- (1) Application. Application for an operating permit shall be made on a form provided by the Department.
- (2) Holding Tanks. The owner of holding tanks installed after the effective date of this Article shall provide the Department with a copy of a contract with a licensed sewage maintenance business for monitoring and removal of holding tank contents.

**State law reference--**Time limits to approve or deny written requests relating to septic system, MS. § 15.99.

**Section 38-95.** Violations and penalties.

- (a) Misdemeanor. Any person who fails to comply with the provisions of this Article may be charged with a misdemeanor, and upon conviction thereof, be subject to the penalties for such an offense as provided by law. Each day during or on which a violation occurs or continues shall constitute a separate offense.
- (b) Injunctive Relief. In the event of a violation or a threat of a violation of this Article, the Department may institute appropriate actions or proceedings to include injunctive relief to prevent, restrain, correct, or abate such violations or threatened violations; and the City attorney may institute a civil action.
- (c) Civil Action. In the event of a violation of this ordinance, the City may institute appropriate actions or proceedings to include injunctive relief to prevent, restrain, correct, or abate such violations, or threatened violations, and the City attorney may institute such action.

**State law reference--**Licensing of septic tank contractors, Minn. Stats. § 115.56.

**Section 38-96.** Fees.

Fees for permits required under this section shall be according to a fee schedule adopted by ordinance of the City Council.

**Section 38-97.** Unlawful Discharges.

- (a) Discharge of human and animal wastes. It shall be unlawful for any person to place, deposit, or permit to be deposited in any unsanitary manner on public or private property within the city, or in any area under the jurisdiction of the city, any human or animal excrement, garbage, or objectionable waste.
- (b) Discharges to natural outlets. It shall be unlawful to discharge to any natural outlet within the city, or in any area under the jurisdiction of the city, any wastewater or other polluted waters.

**Section 38-98.** Required Connection to Public Sewer.

- (a) Connection to sewer system required. The owner of all houses, buildings, or properties used for human occupancy, employment, recreation, or other purposes, situated within the city and abutting any street, alley, or right-of-way in which there is now located or may in the future be located a public sanitary sewer of the city, is hereby required, at the owner's expense, to install suitable toilet facilities therein, and to connect such facilities directly with the proper public sewer in accordance with the provisions of this Article within one year after the date of due notice to do so.
  1. At such time as a public sewer becomes available to a property served by a nonconforming private sewage treatment system, a direct connection shall be made to the public sewer within thirty (30) days.
  2. At such time as a public sewer becomes available to a property served by a conforming

private sewage treatment system, a direct connection shall be made to the public sewer when a replacement private sewer system is required or upon site development.

3. Failure to connect to public system. If such connection is not made pursuant to this Article, the city shall enter into a contract with a licensed contractor to have the connection made, and the cost shall be assessed to the property taxes, unless authorized by the City Council to do otherwise.
- (b) Private systems permitted. Where a public sewer is not available under Section 38-97 (c) of this Article, the building sewer shall be connected to a private sewage treatment system as regulated by this Article and the State Plumbing code.

**State law reference--**Inspections, Minn. Stats. § 115.55, subd. 5.

**Section 38-99 through 38-129. Reserved.**

**4715.0310 USE OF PUBLIC SEWER AND WATER SYSTEMS REQUIRED.**

If a public sewer is accessible in a street or alley to a building or premises and the connection is feasible, liquid wastes from any plumbing system in that building must be discharged into the public sewer unless otherwise prohibited by this code or a local ordinance.

If a public water supply system is accessible, the water distribution system must be connected to it unless otherwise permitted by the administrative authority. A water well taken out of service because a person is connecting to a public water supply must either be maintained for a use such as irrigation, or sealed and abandoned in accordance with the Minnesota Water Well Construction Code. (Minnesota Rules, chapter 4725)

If either a public sewer or water supply system or both are not available, an individual water supply or sewage disposal system, or both, conforming to the published standards of the administrative authority must be provided.

Every building must have its own independent connection with a public or private sewer, except that a group of buildings may be connected to one or more manholes which are constructed on the premises, and connected to a public or private sewer. These manholes must conform to the standards set by the local sewer authority.

**Statutory Authority:** *MS s 16B.61; 326.37 to 326.45; 326B.106; 326B.43 to 326B.49*

**History:** *9 SR 1557; 15 SR 76; L 2007 c 140 art 4 s 61; art 6 s 15; art 13 s 4*

**Published Electronically:** *May 14, 2012*



**Minnesota Pollution Control Agency**

520 Lafayette Road North  
St. Paul, MN 55155-4194

# MS4 SWPPP Application for Reauthorization

for the NPDES/SDS General Small Municipal Separate Storm Sewer System (MS4) Permit MNR040000 reissued with an effective date of August 1, 2013 Stormwater Pollution Prevention Program (SWPPP) Document

Doc Type: Permit Application

**Instructions:** This application is for authorization to discharge stormwater associated with Municipal Separate Storm Sewer Systems (MS4s) under the National Pollutant Discharge Elimination System/State Disposal System (NPDES/SDS) Permit Program. **No fee** is required with the submittal of this application. Please refer to "Example" for detailed instructions found on the Minnesota Pollution Control Agency (MPCA) MS4 website at <http://www.pca.state.mn.us/ms4>.

**Submittal:** This MS4 SWPPP Application for Reauthorization form must be submitted electronically via e-mail to the MPCA at [ms4permitprogram.pca@state.mn.us](mailto:ms4permitprogram.pca@state.mn.us) from the person that is duly authorized to certify this form. All questions with an asterisk (\*) are required fields. All applications will be returned if required fields are not completed.

**Questions:** Contact Claudia Hochstein at 651-757-2881 or [claudia.hochstein@state.mn.us](mailto:claudia.hochstein@state.mn.us), Dan Miller at 651-757-2246 or [daniel.miller@state.mn.us](mailto:daniel.miller@state.mn.us), or call toll-free at 800-657-3864.

## General Contact Information (\*Required fields)

### MS4 Owner (with ownership or operational responsibility, or control of the MS4)

\*MS4 permittee name: City of Anoka \*County: Anoka  
*(city, county, municipality, government agency or other entity)*  
\*Mailing address: 2015 First Avenue North  
\*City: Anoka \*State: MN \*Zip code: 55303  
\*Phone (including area code): 763-576-2781 \*E-mail: glee@ci.anoka.mn.us

### MS4 General contact (with Stormwater Pollution Prevention Program [SWPPP] implementation responsibility)

\*Last name: Lee \*First name: Greg  
*(department head, MS4 coordinator, consultant, etc.)*  
\*Title: Public Services Director  
\*Mailing address: 2015 First Avenue North  
\*City: Anoka \*State: MN \*Zip code: 55303  
\*Phone (including area code): 763-576-2781 \*E-mail: glee@ci.anoka.mn.us

### Preparer information (complete if SWPPP application is prepared by a party other than MS4 General contact)

Last name: Nelson First name: Shane  
*(department head, MS4 coordinator, consultant, etc.)*  
Title: Water Resource Engineer  
Mailing address: 3601 Thurston Ave  
City: Anoka State: MN Zip code: 55303  
Phone (including area code): 763-852-0479 E-mail: shanen@haa-inc.com

## Verification

1. I seek to continue discharging stormwater associated with a small MS4 after the effective date of this Permit, and shall submit this MS4 SWPPP Application for Reauthorization form, in accordance with the schedule in Appendix A, Table 1, with the SWPPP document completed in accordance with the Permit (Part II.D.).  Yes
2. I have read and understand the NPDES/SDS MS4 General Permit and certify that we intend to comply with all requirements of the Permit.  Yes

## Certification (All fields are required)

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- Yes - I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted.

*I certify that based on my inquiry of the person, or persons, who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.*

*I am aware that there are significant penalties for submitting false information, including the possibility of civil and criminal penalties.*

This certification is required by Minn. Stat. §§ 7001.0070 and 7001.0540. The authorized person with overall, MS4 legal responsibility must certify the application (principal executive officer or a ranking elected official).

By typing my name in the following box, I certify the above statements to be true and correct, to the best of my knowledge, and that this information can be used for the purpose of processing my application.

Name: Greg Lee  
*(This document has been electronically signed)*

Title: Public Services Director Date (mm/dd/yyyy): 11/27/2013

Mailing address: 2015 First Avenue North

City: Anoka State: MN Zip code: 55303

Phone (including area code): 763-576-2781 E-mail: glee@ci.anoka.mn.us

**Note:** *The application will not be processed without certification.*

# Stormwater Pollution Prevention Program Document

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## I. Partnerships: (Part II.D.1)

- A. List the **regulated small MS4(s)** with which you have established a partnership in order to satisfy one or more requirements of this Permit. Indicate which Minimum Control Measure (MCM) requirements or other program components that each partnership helps to accomplish (List all that apply). Check the box below if you currently have no established partnerships with other regulated MS4s. If you have more than five partnerships, hit the tab key after the last line to generate a new row.

No partnerships with regulated small MS4s

Name and description of partnership	MCM/Other permit requirements involved

- B. If you have additional information that you would like to communicate about your partnerships with other regulated small MS4(s), provide it in the space below, or include an attachment to the SWPPP Document, with the following file naming convention: *MS4NameHere\_Partnerships*.

## II. Description of Regulatory Mechanisms: (Part II.D.2)

### Illicit discharges

- A. Do you have a regulatory mechanism(s) that effectively prohibits non-stormwater discharges into your small MS4, except those non-stormwater discharges authorized under the Permit (Part III.D.3.b.)?  Yes  No

1. If **yes**:

- a. Check which *type* of regulatory mechanism(s) your organization has (check all that apply):

- Ordinance                       Contract language  
 Policy/Standards                 Permits  
 Rules

Other, explain: The City has several ordinance provisions which effectively prohibit illicit discharges. In addition, the City has developed a Standard Operating Procedure for responding to suspected illicit discharges.

- b. Provide either a direct link to the mechanism selected above or attach it as an electronic document to this form; or if your regulatory mechanism is either an Ordinance or a Rule, you may provide a citation:

Citation:

*Anoka City Code; Chapter 38; Environmental; Article II. Nuisances*

*Anoka City Code; Chapter 38; Environmental; Article III. Individual Septic Treatment System*

*Anoka City Code; Chapter 66; Utilities; Article III. Solid Waste Collection and Disposal*

Direct link:

Check here if attaching an electronic copy of your regulatory mechanism, with the following file naming convention: *MS4NameHere\_IDDEreg*.

2. If **no**:

Describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date

permit coverage is extended, this permit requirement is met:

*Although the City has existing ordinance provisions which may be used to prohibit illicit discharges, we are currently reviewing all of our stormwater related ordinances and will prepare revised ordinances for consideration and adoption in 2014. Concurrent with this SWPPP Document, the City has also been in the process of updating its Local Surface Water Management Plan, which is on a 10-year recurring schedule. Revisions to all stormwater related sections of the City Code will be written concurrently such that they can properly reference other sections as desired.*

### Construction site stormwater runoff control

A. Do you have a regulatory mechanism(s) that establishes requirements for erosion and sediment controls and waste controls?  Yes  No

1. If **yes**:

a. Check which *type* of regulatory mechanism(s) your organization has (check all that apply):

- Ordinance  Contract language  
 Policy/Standards  Permits  
 Rules  
 Other, explain: \_\_\_\_\_

b. Provide either a direct link to the mechanism selected above or attach it as an electronic document to this form; or if your regulatory mechanism is either an Ordinance or a Rule, you may provide a citation:

Citation:

*Anoka City Code; Chapter 38; Environmental; Article V. Surface Water Management*

Direct link:

Check here if attaching an electronic copy of your regulatory mechanism, with the following file naming convention: *MS4NameHere\_CSWreg.*

B. Is your regulatory mechanism at least as stringent as the MPCA general permit to Discharge Stormwater Associated with Construction Activity (as of the effective date of the MS4 Permit)?  Yes  No

If you answered **yes** to the above question, proceed to C.

If you answered **no** to either of the above permit requirements listed in A. or B., describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

*We will revise our ordinances to be at least as stringent as the MPCA CSW program within 12 months of permit coverage.*

C. Answer **yes** or **no** to indicate whether your regulatory mechanism(s) requires owners and operators of construction activity to develop site plans that incorporate the following erosion and sediment controls and waste controls as described in the Permit (Part III.D.4.a.(1)-(8)), and as listed below:

- |  |   |
|--|---|
| 1. Best Management Practices (BMPs) to minimize erosion.   | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 2. BMPs to minimize the discharge of sediment and other pollutants.  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 3. BMPs for dewatering activities.   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 4. Site inspections and records of rainfall events   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 5. BMP maintenance   | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 6. Management of solid and hazardous wastes on each project site.  | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No |
| 7. Final stabilization upon the completion of construction activity, including the use of perennial vegetative cover on all exposed soils or other equivalent means. | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |
| 8. Criteria for the use of temporary sediment basins.  | <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

*Draft amended ordinance consistent with permit requirements within 6 months of permit coverage.*

*Distribute for internal staff review, revise as necessary, within 7 months of permit coverage.*

*Review draft ordinance with Planning Commission (2 meetings anticipated) within 9 months of permit coverage.*

*First reading and public hearing with City Council within 10 months of permit coverage.*

Address comments and provide to City Council for approval within 12 months of permit coverage.

## Post-construction stormwater management

A. Do you have a regulatory mechanism(s) to address post-construction stormwater management activities?

Yes  No

1. If **yes**:

a. Check which *type* of regulatory mechanism(s) your organization has (check all that apply):

- Ordinance  Contract language  
 Policy/Standards  Permits  
 Rules  
 Other, explain: \_\_\_\_\_

b. Provide either a direct link to the mechanism selected above or attach it as an electronic document to this form; or if your regulatory mechanism is either an Ordinance or a Rule, you may provide a citation:

Citation:

*Anoka City Code; Chapter 38; Environmental; Article V. Surface Water Management*

Direct link:

Check here if attaching an electronic copy of your regulatory mechanism, with the following file naming convention: *MS4NameHere\_PostCSWreg*.

B. Answer **yes** or **no** below to indicate whether you have a regulatory mechanism(s) in place that meets the following requirements as described in the Permit (Part III.D.5.a.):

1. **Site plan review:** Requirements that owners and/or operators of construction activity submit site plans with post-construction stormwater management BMPs to the permittee for review and approval, prior to start of construction activity.  Yes  No
2. **Conditions for post construction stormwater management:** Requires the use of any combination of BMPs, with highest preference given to Green Infrastructure techniques and practices (e.g., infiltration, evapotranspiration, reuse/harvesting, conservation design, urban forestry, green roofs, etc.), necessary to meet the following conditions on the site of a construction activity to the Maximum Extent Practicable (MEP):
  - a. For new development projects – no net increase from pre-project conditions (on an annual average basis) of:  Yes  No
    - 1) Stormwater discharge volume, unless precluded by the stormwater management limitations in the Permit (Part III.D.5.a(3)(a)).
    - 2) Stormwater discharges of Total Suspended Solids (TSS).
    - 3) Stormwater discharges of Total Phosphorus (TP).
  - b. For redevelopment projects – a net reduction from pre-project conditions (on an annual average basis) of:  Yes  No
    - 1) Stormwater discharge volume, unless precluded by the stormwater management limitations in the Permit (Part III.D.5.a(3)(a)).
    - 2) Stormwater discharges of TSS.
    - 3) Stormwater discharges of TP.
3. **Stormwater management limitations and exceptions:**
  - a. Limitations  Yes  No
    - 1) Prohibit the use of infiltration techniques to achieve the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)) when the infiltration structural stormwater BMP will receive discharges from, or be constructed in areas:
      - a) Where industrial facilities are not authorized to infiltrate industrial stormwater under an NPDES/SDS Industrial Stormwater Permit issued by the MPCA.
      - b) Where vehicle fueling and maintenance occur.
      - c) With less than three (3) feet of separation distance from the bottom of the infiltration system to the elevation of the seasonally saturated soils or the top of bedrock.
      - d) Where high levels of contaminants in soil or groundwater will be mobilized by the infiltrating stormwater.

- 2) Restrict the use of infiltration techniques to achieve the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)), without higher engineering review, sufficient to provide a functioning treatment system and prevent adverse impacts to groundwater, when the infiltration device will be constructed in areas:
- a) With predominately Hydrologic Soil Group D (clay) soils.
  - b) Within 1,000 feet up-gradient, or 100 feet down-gradient of active karst features.
  - c) Within a Drinking Water Supply Management Area (DWSMA) as defined in Minn. R. 4720.5100, subp. 13.
  - d) Where soil infiltration rates are more than 8.3 inches per hour.
- 3) For linear projects where the lack of right-of-way precludes the installation of volume control practices that meet the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)), the permittee's regulatory mechanism(s) may allow exceptions as described in the Permit (Part III.D.5.a(3)(b)). The permittee's regulatory mechanism(s) shall ensure that a reasonable attempt be made to obtain right-of-way during the project planning process.
4. **Mitigation provisions:** The permittee's regulatory mechanism(s) shall ensure that any stormwater discharges of TSS and/or TP not addressed on the site of the original construction activity are addressed through mitigation and, at a minimum, shall ensure the following requirements are met:
- a. Mitigation project areas are selected in the following order of preference:
    - 1) Locations that yield benefits to the same receiving water that receives runoff from the original construction activity.
    - 2) Locations within the same Minnesota Department of Natural Resource (DNR) catchment area as the original construction activity.
    - 3) Locations in the next adjacent DNR catchment area up-stream
    - 4) Locations anywhere within the permittee's jurisdiction.
  - b. Mitigation projects must involve the creation of new structural stormwater BMPs or the retrofit of existing structural stormwater BMPs, or the use of a properly designed regional structural stormwater BMP.
  - c. Routine maintenance of structural stormwater BMPs already required by this permit cannot be used to meet mitigation requirements of this part.
  - d. Mitigation projects shall be completed within 24 months after the start of the original construction activity.
  - e. The permittee shall determine, and document, who will be responsible for long-term maintenance on all mitigation projects of this part.
  - f. If the permittee receives payment from the owner and/or operator of a construction activity for mitigation purposes in lieu of the owner or operator of that construction activity meeting the conditions for post-construction stormwater management in Part III.D.5.a(2), the permittee shall apply any such payment received to a public stormwater project, and all projects must be in compliance with Part III.D.5.a(4)(a)-(e).
5. **Long-term maintenance of structural stormwater BMPs:** The permittee's regulatory mechanism(s) shall provide for the establishment of legal mechanisms between the permittee and owners or operators responsible for the long-term maintenance of structural stormwater BMPs not owned or operated by the permittee, that have been implemented to meet the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)). This only includes structural stormwater BMPs constructed after the effective date of this permit and that are directly connected to the permittee's MS4, and that are in the permittee's jurisdiction. The legal mechanism shall include provisions that, at a minimum:
- a. Allow the permittee to conduct inspections of structural stormwater BMPs not owned or operated by the permittee, perform necessary maintenance, and assess costs for those structural stormwater BMPs when the permittee determines that the owner and/or operator of that structural stormwater BMP has not conducted maintenance.
  - b. Include conditions that are designed to preserve the permittee's right to ensure maintenance responsibility, for structural stormwater BMPs not owned or operated by the permittee, when those responsibilities are legally transferred to another party.
  - c. Include conditions that are designed to protect/preserve structural stormwater BMPs and site features that are implemented to comply with the Permit (Part III.D.5.a(2)). If site configurations or structural stormwater BMPs change, causing decreased structural stormwater BMP effectiveness, new or improved structural stormwater BMPs must be implemented to ensure the conditions for post-construction stormwater management in the Permit (Part III.D.5.a(2)) continue to be met.

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within twelve (12) months of the date permit coverage is extended, these permit requirements are met:

*Draft amended ordinance consistent with permit requirements within 6 months of permit coverage.*

*Distribute for internal staff review, revise as necessary, within 7 months of permit coverage.*

*Review draft ordinance with Planning Commission (2 meetings anticipated) within 9 months of permit coverage.*

*First reading and public hearing with City Council within 10 months of permit coverage.*

*Address comments and provide to City Council for approval within 12 months of permit coverage*

### III. Enforcement Response Procedures (ERPs): (Part II.D.3)

- A. Do you have existing ERPs that satisfy the requirements of the Permit (Part III.B.)?  Yes  No
1. If **yes**, attach them to this form as an electronic document, with the following file naming convention: *MS4NameHere\_ERPs*.
  2. If **no**, describe the tasks and corresponding schedules that will be taken to assure that, with twelve (12) months of the date permit coverage is extended, these permit requirements are met:  
*Meet with appropriate City departments to discuss current procedures and identify gaps, if any. Document Enforcement Response Procedures in writing within 12 months of permit coverage.*
- B. Describe your ERPs:

### IV. Storm Sewer System Map and Inventory: (Part II.D.4.)

- A. Describe how you manage your storm sewer system map and inventory:  
*The storm sewer map is in electronic (GIS) form. When new projects are constructed, the map is updated if needed to reflect any changes to the system.*
- B. Answer **yes** or **no** to indicate whether your storm sewer system map addresses the following requirements from the Permit (Part III.C.1.a-d), as listed below:
1. The permittee's entire small MS4 as a goal, but at a minimum, all pipes 12 inches or greater in diameter, including stormwater flow direction in those pipes.  Yes  No
  2. Outfalls, including a unique identification (ID) number assigned by the permittee, and an associated geographic coordinate.  Yes  No
  3. Structural stormwater BMPs that are part of the permittee's small MS4.  Yes  No
  4. All receiving waters.  Yes  No
- If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:
- C. Answer **yes** or **no** to indicate whether you have completed the requirements of 2009 Minnesota Session Law, Ch. 172. Sec. 28: with the following inventories, according to the specifications of the Permit (Part III.C.2.a.-b.), including:
1. All ponds within the permittee's jurisdiction that are constructed and operated for purposes of water quality treatment, stormwater detention, and flood control, and that are used for the collection of stormwater via constructed conveyances.  Yes  No
  2. All wetlands and lakes, within the permittee's jurisdiction, that collect stormwater via constructed conveyances.  Yes  No
- D. Answer **yes** or **no** to indicate whether you have completed the following information for each feature inventoried.
1. A unique identification (ID) number assigned by the permittee.  Yes  No
  2. A geographic coordinate.  Yes  No
  3. Type of feature (e.g., pond, wetland, or lake). This may be determined by using best professional judgment.  Yes  No

If you have answered **yes** to all above requirements, and you have already submitted the Pond Inventory Form to the MPCA, then you do not need to resubmit the inventory form below.

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

*Complete inventory within 12 months as required*

- E. Answer **yes** or **no** to indicate if you are attaching your pond, wetland and lake inventory to the MPCA  Yes  No on the form provided on the MPCA website at: <http://www.pca.state.mn.us/ms4>, according to the specifications of Permit (Part III.C.2.b.(1)-(3)). Attach with the following file naming convention: *MS4NameHere\_inventory*.

If you answered **no**, the inventory form must be submitted to the MPCA MS4 Permit Program within 12 months of the date permit coverage is extended.

## V. Minimum Control Measures (MCMs) (Part II.D.5)

### A. MCM1: Public education and outreach

- The Permit requires that, within 12 months of the date permit coverage is extended, existing permittees revise their education and outreach program that focuses on illicit discharge recognition and reporting, as well as other specifically selected stormwater-related issue(s) of high priority to the permittee during this permit term. Describe your **current** educational program, including **any high-priority topics included**:

*The City of Anoka primarily educates the public via the stormwater page on the City website, handouts available at City hall, and newspaper articles. We currently focus on urban BMP's including: Keeping yard waste and trash out of the storm sewer system, illicit discharge detection and reporting, picking up pet waste, proper irrigation of lawn, testing soil for proper fertilizer application, and soil erosion.*

- List the categories of BMPs that address your public education and outreach program, including the distribution of educational materials and a program implementation plan. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the U.S. Environmental Protection Agency's (EPA) *Measurable Goals Guidance for Phase II Small MS4s* (<http://www.epa.gov/npdes/pubs/measurablegoals.pdf>).

If you have more than five categories, hit the tab key after the last line to generate a new row.

Established BMP categories	Measurable goals and timeframes
Distribute flyers and brochures	Number of flyers and brochures distributed annually.
Stormwater Web Page	Number of times viewed annually.
Newsletter articles	Number of articles published annually.
BMP categories to be implemented	Measurable goals and timeframes
Review and revise program if necessary to focus on high priority topics	Number of topics identified and number of education materials developed. Within 12 months of permit coverage.

- Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

*Public Services Director*

### B. MCM2: Public participation and involvement

- The Permit (Part III.D.2.a.) requires that, within 12 months of the date permit coverage is extended, existing permittees shall revise their current program, as necessary, and continue to implement a public participation/involvement program to solicit public input on the SWPPP. Describe your current program:

A meeting is held every year to solicit public comment on our SWPPP.

- List the categories of BMPs that address your public participation/involvement program, including solicitation and documentation of public input on the SWPPP. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the EPA's *Measurable Goals Guidance for Phase II Small MS4s* (<http://www.epa.gov/npdes/pubs/measurablegoals.pdf>). **If you have more than five categories**, hit the tab key after the last line to generate a new row.

Established BMP categories	Measurable goals and timeframes
Annual public meeting	Number of interested parties that provide comments, annually.
Public Notice	Separate Public Notice in local paper 30 days in advance of meeting.
BMP categories to be implemented	Measurable goals and timeframes
Public Notice	Revise to use same public noticing requirements as other agenda items within 12 months of permit coverage.

- Do you have a process for receiving and documenting citizen input?  Yes  No  
 If you answered **no** to the above permit requirement, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, this permit requirement is met:

- Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:  
*Public Services Director*

**C. MCM 3: Illicit discharge detection and elimination**

- The Permit (Part III.D.3.) requires that, within 12 months of the date permit coverage is extended, existing permittees revise their current program as necessary, and continue to implement and enforce a program to detect and eliminate illicit discharges into the small MS4. Describe your current program:  
*Our current program utilizes dry weather inspections to look for illicit discharges. If an illicit discharge is suspected, further investigation and tracking is performed. During inspections, staff is on the lookout for unusual colors and odors, foamy or soapy looking surface waters, sheens, and discharges during dry weather periods.*
- Does your Illicit Discharge Detection and Elimination Program meet the following requirements, as found in the Permit (Part III.D.3.c.-g.)?
  - Incorporation of illicit discharge detection into all inspection and maintenance activities conducted under the Permit (Part III.D.6.e.-f.) Where feasible, illicit discharge inspections shall be conducted during dry-weather conditions (e.g., periods of 72 or more hours of no precipitation).  Yes  No
  - Detecting and tracking the source of illicit discharges using visual inspections. The permittee may also include use of mobile cameras, collecting and analyzing water samples, and/or other detailed procedures that may be effective investigative tools.  Yes  No
  - Training of all field staff, in accordance with the requirements of the Permit (Part III.D.6.g.(2)), in illicit discharge recognition (including conditions which could cause illicit discharges), and reporting illicit discharges for further investigation.  Yes  No
  - Identification of priority areas likely to have illicit discharges, including at a minimum, evaluating land use associated with business/industrial activities, areas where illicit discharges have been identified in the past, and areas with storage of large quantities of significant materials that could result in an illicit discharge.  Yes  No

- e. Procedures for the timely response to known, suspected, and reported illicit discharges.  Yes  No
- f. Procedures for investigating, locating, and eliminating the source of illicit discharges.  Yes  No
- g. Procedures for responding to spills, including emergency response procedures to prevent spills from entering the small MS4. The procedures shall also include the immediate notification of the Minnesota Department of Public Safety Duty Officer, if the source of the illicit discharge is a spill or leak as defined in Minn. Stat. § 115.061.  Yes  No
- h. When the source of the illicit discharge is found, the permittee shall use the ERPs required by the Permit (Part III.B.) to eliminate the illicit discharge and require any needed corrective action(s).  Yes  No

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

*Incorporate training for all field staff and convert Standard Operating Procedure into an Enforcement Response Procedure within 12 months of permit coverage.*

3. List the categories of BMPs that address your illicit discharge, detection and elimination program. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the EPA's *Measurable Goals Guidance for Phase II Small MS4s* (<http://www.epa.gov/npdes/pubs/measurablegoals.pdf>).

If you have more than five categories, hit the tab key after the last line to generate a new row.

Established BMP categories	Measurable goals and timeframes
Storm Sewer Map	Percentage of storm sewer and treatment BMPs mapped. Available for tracking an illicit discharge if discovered. Update annually as necessary to keep current.
Regulatory Control Program	Review our ordinance annually and as potential illicit discharges are investigated to ensure that it continues to address the permit requirements.
Inspections	Annual outfall inspections to ensure that no illicit discharges are present. If discharges are found during dry weather, or if any other indicators are observed, tracking of suspected illicit discharge to identify and further investigate the source.
Training	Engineering staff and consultants are trained in spotting and handling illicit discharges. Continuing education on an annual basis.
Education	We have developed an illicit discharge flyer that is available at City hall.
BMP categories to be implemented	Measurable goals and timeframes
Regulatory Control Program	Revise ordinances in conjunction with all other ordinance revisions within 12 months of permit coverage.

4. Do you have procedures for record-keeping within your Illicit Discharge Detection and Elimination (IDDE) program as specified within the Permit (Part III.D.3.h.)?  Yes  No

If you answered **no**, indicate how you will develop procedures for record-keeping of your Illicit Discharge, Detection and Elimination Program, within 12 months of the date permit coverage is extended:

5. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

*Public Services Director*

#### D. MCM 4: Construction site stormwater runoff control

1. The Permit (Part III.D.4) requires that, within 12 months of the date permit coverage is extended, existing permittees shall revise their current program, as necessary, and continue to implement and enforce a construction site stormwater runoff control program. Describe your current program:

*A Land Disturbance and Erosion Control Plan (LDECP) is required for all sites that disturb 10,000 square feet or more. City staff reviews all LDECP's to ensure that proper erosion and sediment controls are proposed. All sites greater than 1 acre also require a permit and review from the Lower Rum River WMO. Before the land disturbance can begin a security must be posted with the City. During construction, sites are inspected to ensure conformance with City code and the permit.*

2. Does your program address the following BMPs for construction stormwater erosion and sediment control as required in the Permit (Part III.D.4.b.):
- a. Have you established written procedures for site plan reviews that you conduct prior to the start of construction activity?  Yes  No
  - b. Does the site plan review procedure include notification to owners and operators proposing construction activity that they need to apply for and obtain coverage under the MPCA's general permit to *Discharge Stormwater Associated with Construction Activity No. MN R100001*?  Yes  No
  - c. Does your program include written procedures for receipt and consideration of reports of noncompliance or other stormwater related information on construction activity submitted by the public to the permittee?  Yes  No
  - d. Have you included written procedures for the following aspects of site inspections to determine compliance with your regulatory mechanism(s):
    - 1) Does your program include procedures for identifying priority sites for inspection?  Yes  No
    - 2) Does your program identify a frequency at which you will conduct construction site inspections?  Yes  No
    - 3) Does your program identify the names of individual(s) or position titles of those responsible for conducting construction site inspections?  Yes  No
    - 4) Does your program include a checklist or other written means to document construction site inspections when determining compliance?  Yes  No
  - e. Does your program document and retain construction project name, location, total acreage to be disturbed, and owner/operator information?  Yes  No
  - f. Does your program document stormwater-related comments and/or supporting information used to determine project approval or denial?  Yes  No
  - g. Does your program retain construction site inspection checklists or other written materials used to document site inspections?  Yes  No

If you answered **no** to any of the above permit requirements, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met.

*We will compile our current inspection practices and develop written procedures for priority sites for inspection. In general, the priority sites will be all sites that are in close proximity to a surface waters, and/or are directly connected by the storm sewer system to a surface water, or has high potential for soil erosion. Our written procedures will include inspection frequency, name or title of individuals responsible for completing inspections, and checklists (electronic or paper) to be utilized when performing inspections. As a goal, we will compile our existing procedures within 6 months such that the revised program will be complete within 12 months of permit coverage.*

3. List the categories of BMPs that address your construction site stormwater runoff control program. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the EPA's *Measurable Goals Guidance for Phase II Small MS4s* (<http://www.epa.gov/npdes/pubs/measurablegoals.pdf>). **If you have more than five categories**, hit the tab key after the last line to generate a new row.

Established BMP categories	Measurable goals and timeframes
Land Disturbance Permit Program	Review and process all complete permits within 30 days of receipt.
Inspections	Most major projects within the City have a resident inspector on-site and are inspected daily and within 24 hours of a ½" or greater rain.
Ordinance	Chapter 38 of the City Code includes the provisions for the Erosion and Sediment Control Program. Review annually to ensure that it continues to address City's needs.
Education	We have developed a flyer that is available at City hall. Review annually and update if necessary.

BMP categories to be implemented	Measurable goals and timeframes
Written Program	Update our existing program to meet the MPCA General Permit requirements and capture in written form within 12 months of permit coverage.
Ordinance	Review ordinance within 6 months of permit coverage and revise within 12 months of permit coverage.
Checklist	Develop a checklist for site reviews and site inspections within 12 months of permit coverage.

4. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

Public Services Director

### E. MCM 5: Post-construction stormwater management

1. The Permit (Part III.D.5.) requires that, within 12 months of the date permit coverage is extended, existing permittees shall revise their current program, as necessary, and continue to implement and enforce a post-construction stormwater management program. Describe your current program:

*We have a Surface Water Management ordinance that requires permanent stormwater facilities for new development and re-development. In addition, we have our Local Surface Water Management Plan which guides our decisions as they relate to permanent stormwater facilities. The City collects a stormwater utility fee which provides a funding source for ensuring long term operation of all City owned BMPs.*

2. Have you established written procedures for site plan reviews that you will conduct prior to the start of construction activity?  Yes  No
3. Answer **yes** or **no** to indicate whether you have the following listed procedures for documentation of post-construction stormwater management according to the specifications of Permit (Part III.D.5.c.):
- a. Any supporting documentation that you use to determine compliance with the Permit (Part III.D.5.a), including the project name, location, owner and operator of the construction activity, any checklists used for conducting site plan reviews, and any calculations used to determine compliance?  Yes  No
- b. All supporting documentation associated with mitigation projects that you authorize?  Yes  No
- c. Payments received and used in accordance with Permit (Part III.D.5.a.(4)(f))?  Yes  No
- d. All legal mechanisms drafted in accordance with the Permit (Part III.D.5.a.(5)), including date(s) of the agreement(s) and names of all responsible parties involved?  Yes  No

If you answered **no** to any of the above permit requirements, describe the steps that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met.

*Since Anoka is mostly developed, there may not be many locations where traditional mitigation or fee-in-lieu projects could be developed. Therefore, it will be necessary to thoroughly review the possible program structure and feasibility prior to implementing. Due to the potential challenges, it will be necessary to begin studying mitigation and fee-in-lieu programs within 2 months of permit coverage, such that a program can be developed within 12 months of permit coverage. A standard Maintenance Agreement will be developed and our program will be revised to include all permit requirements within 12 months of permit coverage.*

4. List the categories of BMPs that address your post-construction stormwater management program. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. Refer to the EPA's *Measurable Goals Guidance for Phase II Small MS4s* (<http://www.epa.gov/npdes/pubs/measurablegoals.pdf>). **If you have more than five categories**, hit the tab key after the last line to generate a new row.

Established BMP categories	Measurable goals and timeframes
Ordinance	Chapter 38 of the City Code includes provisions for permanent stormwater management.
Local Surface Water Management Plan	Serves as a guide document in reviewing site plans, revise

	every 10 years.
Site Plan Review	All projects and calculations are reviewed within 30 days to ensure that proposed permanent stormwater BMPs meet City Code and Local Surface Water Management Plan requirements.
Security	A security is required to ensure that private site developers construct permanent facilities in accordance with approved plans and specifications. Security is required before project can begin.
Inspections	At least one inspection preformed during construction to ensure that permanent stormwater facilities are constructed in accordance with approved plans and specifications.
As-Built Plans	As-Built plans must be submitted at the end of the project to certify as-built conditions. Required prior to releasing security.
Available Resources	Utilize available resources such as the MN Stormwater Manual to ensure that proposed designs conform to best practices, as projects are proposed.
<b>BMP categories to be implemented</b>	<b>Measurable goals and timeframes</b>
Ordinance Revisions	Update ordinances within 12 months of permit coverage to meet current permit requirements.
Mitigation and Fee-in-lieu provisions	Consider possible mitigation and fee-in-lieu programs within 12 months of permit coverage to provide alternatives to sites with restrictions.
Permanent Maintenance Provisions	Require developers to enter into a Maintenance Agreement consistent with permit requirements for all new projects to ensure long term maintenance of BMP's, within 12 months of permit coverage.

5. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

*Public Services Director*

#### F. MCM 6: Pollution prevention/good housekeeping for municipal operations

1. The Permit (Part III.D.6.) requires that, within 12 months of the date permit coverage is extended, existing permittees shall revise their current program, as necessary, and continue to implement an operations and maintenance program that prevents or reduces the discharge of pollutants from the permittee owned/operated facilities and operations to the small MS4. Describe your current program:

*We routinely inspect, maintain and repair our stormwater infrastructure to ensure that it continues to operate properly. Our structural pollution control devices are inspected annually and maintenance performed if needed. In addition, we complete our pond and outfall inspections annually and schedule any necessary repairs or maintenance. We sweep the streets using a regenerative vacuum sweeper in the spring of each year to prevent the sediment and organic matter from entering our stormwater system and surface waters. Our grounds and landscaping staff implement best management practices in their daily duties to reduce the water quality impacts to the MEP. Our fleet and building maintenance staff take care in the storage and use of significant materials to minimize the possibility of spills and washing into our stormwater system.*

2. Do you have a facilities inventory as outlined in the Permit (Part III.D.6.a.)?  Yes  No
3. If you answered **no** to the above permit requirement in question 2, describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, this permit requirement is met:

*We will complete our facilities inventory within 12 months of permit coverage.*

4. List the categories of BMPs that address your pollution prevention/good housekeeping for municipal operations program. Use the first table for categories of BMPs that you have established and the second table for categories of BMPs that you plan to implement over the course of the permit term.

Include the measurable goals with appropriate timeframes that each BMP category will be implemented and completed. In

addition, provide interim milestones and the frequency of action in which the permittee will implement and/or maintain the BMPs. For an explanation of measurable goals, refer to the EPA's *Measurable Goals Guidance for Phase II Small MS4s* (<http://www.epa.gov/npdes/pubs/measurablegoals.pdf>).

If you have more than five categories, hit the tab key after the last line to generate a new row.

Established BMP categories	Measurable goals and timeframes
Municipal Operations Training Program	Provide annual training to City grounds and maintenance staff, fleet and building maintenance staff, street maintenance staff and storm sewer maintenance staff.
Street Sweeping	Sweep streets at least once annually and more often in priority areas.
Inspections of Structural Pollution Control Devices	Perform inspections and cleaning on an annual basis as needed.
Inspection of ponds and outfalls	Inspections conducted each year to look for proper operation as well as illicit discharges.
Inspection of exposed stockpiles and material storage handling areas	Conduct annual inspections.
Inspection Follow Up	Each year, review inspection results and determine whether repair, replacement or maintenance measures are necessary.
Record Keeping	The City currently utilizes a GIS tracking system for outfall and pond inspections, updated annually as inspections are performed.
BMP categories to be implemented	Measurable goals and timeframes
Facilities Inventory	Complete within 12 months of permit coverage.

5. Does discharge from your MS4 affect a Source Water Protection Area (Permit Part III.D.6.c.)?  Yes  No
- a. If **no**, continue to 6.
- b. If **yes**, the Minnesota Department of Health (MDH) is in the process of mapping the following items. Maps are available at <http://www.health.state.mn.us/divs/eh/water/swp/maps/index.htm>. Is a map including the following items available for your MS4:
- 1) Wells and source waters for drinking water supply management areas identified as vulnerable under Minn. R. 4720.5205, 4720.5210, and 4720.5330?  Yes  No
- 2) Source water protection areas for surface intakes identified in the source water assessments conducted by or for the Minnesota Department of Health under the federal Safe Drinking Water Act, U.S.C. §§ 300j – 13?  Yes  No
- c. Have you developed and implemented BMPs to protect any of the above drinking water sources?  Yes  No
6. Have you developed procedures and a schedule for the purpose of determining the TSS and TP treatment effectiveness of all permittee owned/operated ponds constructed and used for the collection and treatment of stormwater, according to the Permit (Part III.D.6.d.)?  Yes  No
7. Do you have inspection procedures that meet the requirements of the Permit (Part III.D.6.e.(1)-(3)) for structural stormwater BMPs, ponds and outfalls, and stockpile, storage and material handling areas?  Yes  No
8. Have you developed and implemented a stormwater management training program commensurate with each employee's job duties that:
- a. Addresses the importance of protecting water quality?  Yes  No
- b. Covers the requirements of the permit relevant to the duties of the employee?  Yes  No
- c. Includes a schedule that establishes initial training for new and/or seasonal employees and recurring training intervals for existing employees to address changes in procedures,  Yes  No

practices, techniques, or requirements?

9. Do you keep documentation of inspections, maintenance, and training as required by the Permit (Part III.D.6.h.(1)-(5))?  Yes  No

If you answered **no** to any of the above permit requirements listed in **Questions 5 – 9**, then describe the tasks and corresponding schedules that will be taken to assure that, within 12 months of the date permit coverage is extended, these permit requirements are met:

*We will update our inspection frequency for stockpiles to quarterly as required by the permit within 12 months of permit coverage We will update our training program to include a schedule for new and/or seasonal employees and ensure that it encompasses all current permit requirements within 12 months of permit coverage.*

10. Provide the name or the position title of the individual(s) who is responsible for implementing and/or coordinating this MCM:

*Public Services Director*

## VI. Compliance Schedule for an Approved Total Maximum Daily Load (TMDL) with an Applicable Waste Load Allocation (WLA) (Part II.D.6.)

- A. Do you have an approved TMDL with a Waste Load Allocation (WLA) prior to the effective date of the Permit?  Yes  No

1. If **no**, continue to section VII.
2. If **yes**, fill out and attach the MS4 Permit TMDL Attachment Spreadsheet with the following naming convention: *MS4NameHere\_TMDL*.

This form is found on the MPCA MS4 website: <http://www.pca.state.mn.us/ms4>.

## VII. Alum or Ferric Chloride Phosphorus Treatment Systems (Part II.D.7.)

- A. Do you own and/or operate any Alum or Ferric Chloride Phosphorus Treatment Systems which are regulated by this Permit (Part III.F.)?  Yes  No

1. If **no**, this section requires no further information.
2. If **yes**, you own and/or operate an Alum or Ferric Chloride Phosphorus Treatment System within your small MS4, then you must submit the Alum or Ferric Chloride Phosphorus Treatment Systems Form supplement to this document, with the following naming convention: *MS4NameHere\_TreatmentSystem*.

This form is found on the MPCA MS4 website: <http://www.pca.state.mn.us/ms4>.

## VIII. Add any Additional Comments to Describe Your Program