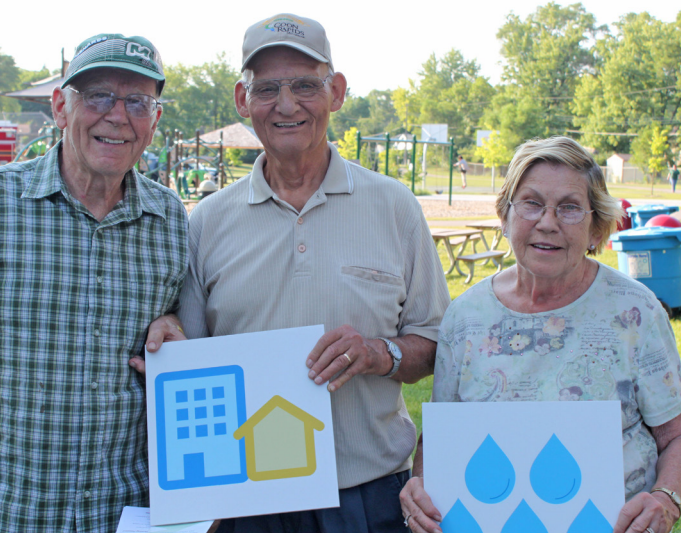


2040 Coon Rapids

comprehensive plan

future
vision
thrive

The Plan:
moving toward the vision

Chapter 1 - Introduction 1-1

Chapter 2 - Land Use 2-1

Chapter 3 - Transportation 3-1

Chapter 4 - Housing 4-1

Chapter 5 - Water Resources 5-1

Chapter 6 - Parks & Open Space 6-1

Chapter 7 - Economic Competitiveness 7-1

Chapter 8 - Mississippi River Corridor Critical Area Protection 8-1

Chapter 9 - Implementation 9-1

City of Coon Rapids

2040 Plan Executive Summary

The Coon Rapids 2040 Plan is an update to the City's Comprehensive Plan, which guides future development, transportation, housing, water resources, parks and other public facilities through the year 2040. The *2040 Plan* contains those elements required by the Metropolitan Council as well as additional sections needed to provide guidance and information regarding the development and decision-making processes in the City of Coon Rapids. By 2040, Coon Rapids will be a community with a slowly growing population of about 72,000 people, and will successfully adapt to challenges in the areas of housing, schools, jobs, transportation (specifically along Coon Rapids Boulevard) and natural areas. The following sections provide a high-level preview of each chapter of the *2040 Plan.*

Land Use. The chapter of the *2040 Plan* regarding Land Use provides direction and policies to maintain **sound existing development** and to achieve desired change in the city through 2040. Generally, the Land Use Plan influences the future physical character of the city to enhance existing positive aspects, produce future characteristics compatible with sound existing conditions, and **enrich the overall quality of the community.** The City has proposed the following goals as a framework for future city land use decisions:

- Maintain complete and balanced neighborhoods that include a variety of housing resources, supporting commercial development, and adequate open space and recreation opportunities.
- Maintain a diversified economic base and a climate that encourages economic development, redevelopment, and ongoing business activity.
- Protect and enhance the city's natural resources for the community's long-term benefit.
- Maintain community character and ensure that new development is well designed.
- Provide distinctive commercial districts that serve neighborhood, community and regional consumers.
- Improve the appearance and function of Coon Rapids Boulevard, ensuring that it gradually redevelops with a variety of housing types, supporting commercial uses, and urban design amenities.
- Eliminate blighting influences throughout the city and encourage redevelopment of underutilized land.

Again, the Land Use chapter sets a framework for future city development, with an overlying assumption that by 2040, the City projects to have a population of 72,100 in 29,300 households. To accommodate for that projection, the City wishes to **convert presently vacant and underutilized land to residential and mixed uses** at various densities and to concentrate commercial and high-density residential development along Coon Rapids Boulevard in a handful of **mixed-use nodes,** called Preservation or Renovation Tracts (or PORTs, i.e. Port Evergreen, Port Riverwalk, Port Campus Square and Port Wellness).

Transportation. The Transportation chapter of the *2040 Plan* provides direction and policies to maintain a safe, efficient and multi-modal transportation system in Coon Rapids through 2040. This component of the overall plan provides a framework for future city development based on those aspects of transportation that most influence community development, while simultaneously **ensuring the rational and economic development of the regional transportation system.** Goals making up that framework include:

- Promote safe movement of traffic within the community.
- Promote efficient movement of traffic in a manner that respects neighborhood context.
- Redesign Coon Rapids Boulevard traffic flow, road layout to ensure compatibility with new residential uses along the street.
- Promote sustainable street and highway designs that accommodate multiple modes of transportation.
- Provide transit system service to key points in the community, adjacent communities, and to downtown Minneapolis and Saint Paul.
- Continue growth and maintenance of a trail and sidewalk system that allows for safe pedestrian and bicycle movements throughout the city, and provides access to transit stops, parks, and other open spaces for residents of all ages.
- Ensure long-term sustainability in the city's pedestrian and bicycle system.

Generally, the City wishes to **balance urban development with considerations for community amenities, welfare, and environmental protection.** Priorities include the alleviation of congestion on Highway 10, the prioritization of the Northstar Commuter Line, and the maintenance of streets, sidewalks and trails.

Housing. This chapter of the *2040 Plan* describes the City's housing stock and programs, and also states the City's goals and policies for **maintaining the existing housing stock,** adding a variety of **new housing units,** and addressing **affordability** needs:

» Maintain a high-quality living environment, preserve stable residential neighborhoods and, where necessary, upgrade the existing housing stock in the city.

» Provide a variety of housing types and designs to allow all people a housing choice.

» Create housing opportunities at a cost low- and moderate-income individuals and families can afford without compromising essential needs.

» Advocate for equal opportunity in home ownership and renting.

With limited developable land in the city, much of the effort to expand housing will come from the **redevelopment of older stock,** or development of mixed-use residential units on presently underutilized land. Other priorities for the City include the **preservation of existing affordable housing units,** as well as the **creation and expansion of a housing supply** with between 20% and 25% of all units affordable to families at 60% AMI (Area Median Income).

Water Resources. This chapter of the *2040 Plan* includes plans for protecting the city's water supply and delivering drinkable water, plans for **upgrading and maintaining the wastewater system,** and a plan for **the management of surface water and storm water:**

» Provide high quality drinking water to residents and businesses in the community in the most fiscally responsible and reliable manner possible.

» Protect the water resources to the extent possible through the continued use of an emergency preparedness program.

» Comply with local and regional standards for wastewater management.

» Implement public education programs addressing various issues dealing with wastewater, including service connections and maintenance responsibilities, among others.

» Maintain or improve the quality of water in lakes, streams or rivers within or immediately downstream of the city.

» Continue an active storm sewer system maintenance and inspection program, especially in reviewing and addressing existing ponds and outlet structures lacking adequate easements for maintenance.

The City will continue to adequately fund the operations and maintenance of its water supply system through its annual operating budget, which is funded by user fees (which also fund capital costs incurred). In addressing wastewater issues, the City will focus **on lining RCP pipe, upgrading lift stations, and establishing VCP service connections.** Finally, the City will address stormwater issues by allocating funds from the **Storm Water Drainage Utility.**

Parks & Open Space. This chapter of the *2040 Plan* provides direction and policies to **preserve open space, maintain existing parks, and augment the city's park and open space system.** The city's park system has been built over a period of about 60 years, and the last major comprehensive review (the *Parks, Trails & Open Space System Plan Update*) was completed in 2012 and adopted in 2013. It is expected that the *Parks, Trails & Open Space System Plan* will be updated again before the next Comprehensive Plan update, and will refine general policies established by this chapter, including:

» Establish, maintain, and promote parks and preserved natural areas for recreational uses that provide visual and physical diversions from the developed residential, commercial, and industrial environment, and as a means to maintain the character, ambiance, appearance and history of the community.

» Preserve and conserve ecological systems and natural resources within the city.

» Develop an interconnected trail and sidewalk system for transportation and recreation purposes and as a means to tie divergent parks and open space with the broader community.

» Provide opportunities for all community residents to participate in recreation activities and programs through effective, accessible, and inclusive recreation programs.

Recreation and open space is a vital component of the city's environment, which serves to provide **recreational resources, protect natural resources,** and effectively **structure urban development.** While the City will make few additions to the parks system in the future (except for the acquisition of land for trail expansion and the possible acquisition of natural areas), it will continue to use a combination of **regulations, routine maintenance, and capital improvements** to implement the *Parks, Open Space, and Trail System Plan.*

Economic Competitiveness. Regional economic competitiveness is a core element of the region's sustained prosperity. Collectively, the region must **provide great locations for businesses to succeed.** While some policies will be specific to the aforementioned PORTs or individual development sites, this chapter of the *2040 Plan* establishes policies for both **business development activities and redevelopment activities** in Coon Rapids, including:

» Incite a wide range of employment opportunities for residents within the city's targeted industries.

» Promote efficient land use and increase the city's tax base.

» Foster a high-quality, diverse business climate that is sustainable and resilient to short-term economic trends.

The city's employment base has expanded by about 6% since 2011, however, many residents still work outside of Coon Rapids. With this significant regional commuting, continuous **transportation investments** are key to remain economically competitive. Further, s**timulating private investment** will help to both ensure an adequate housing supply for employees and lead to investment in infrastructure. **Prioritizing existing businesses** through **increased business outreach** will also be key for the City's economic development service efforts.

Coon Rapids Boulevard. The Coon Rapids Boulevard corridor, stretching from the Blaine border on the east to the Anoka border on the west, has undergone several changes in recent years. While the corridor used to include a majority of the city's commercial and institutional uses, it has been transformed due to the out-migration of many principal users to newer or more accessible commercial developments. The transformation has meant that existing buildings have been **converted to lower value uses, redeveloped** to new uses, **or remained vacant** for extended periods of time.

The land use recommendation for Coon Rapids Boulevard is primarily associated with the concentration of businesses in a limited number of nodes, or **PORT Districts**. Land uses within each PORT are dictated by adopted master plans, and development within each respective PORT must adhere to the adopted master plan. Areas along Coon Rapids Boulevard in between PORTs are planned for primarily **moderate density residential development,** with limited neighborhood commercial development to provide an overall mixed-use corridor in between PORTs.

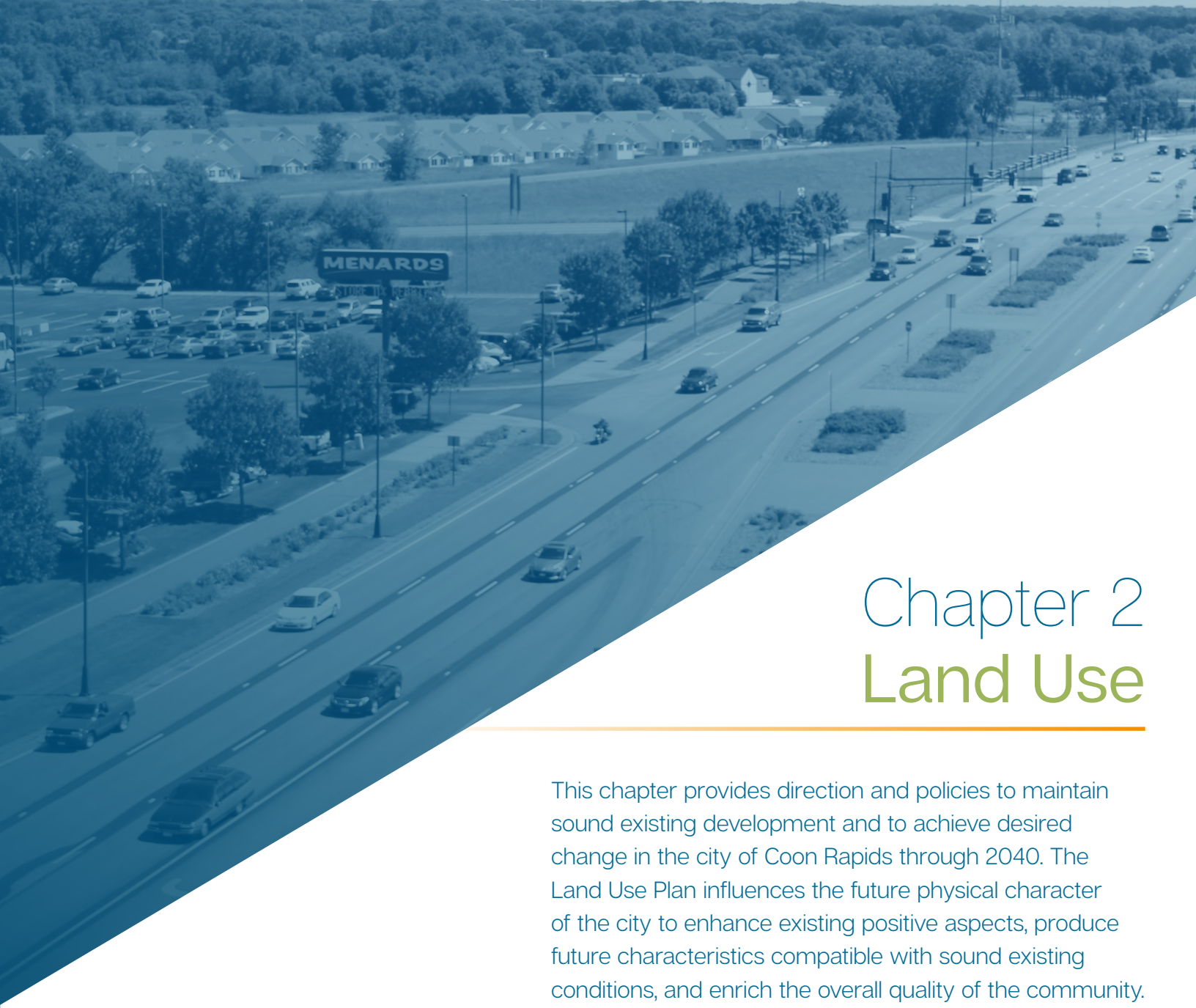
In keeping with the Transportation plan, the City will redesign the traffic circulation system along the corridor to **provide adequate capacity,** as well as **convenient access to businesses** that complements the community orientation of the corridor. This system will include a complete sidewalk and trail system, with linkages to the Mississippi River throughout.

Finally, the City will develop a **unifying urban design theme** along the corridor, with individualized themes for each node that coincide with a well-landscaped, pedestrian-friendly environment. These public enhancements will include **consistent signage, public art, underground utilities** and **well-maintained properties.**

Mississippi River Corridor Critical Area Protection (MRCCA). MRCCA is a joint state, regional and local program that provides coordinated **planning and management** for the **72-mile stretch of the Mississippi River corridor** that passes through the seven-county Twin Cities metropolitan area. A total of 30 communities, including Coon Rapids, have land within the MRCCA. This chapter of the *2040 Plan* updates the MRCCA Plan first adopted by Coon Rapids in 1979 and last updated during the 2008 Comprehensive Plan process.

Few significant changes are likely to occur within the Coon Rapids portion of the MRCCA, as the city and the riverfront is essentially fully developed. The riverfront location does present an opportunity for **high-value homes,** and **improvements to existing homes** may also occur over the next decade. **Coon Rapids Dam Regional Park** is a highly valued asset for the community, which presents an opportunity to maintain this invaluable resource of river access, views, and recreational opportunities.

Maintaining environmental quality will also continue to be a challenge as new development and other changes occur in the MRCCA. While future natural occurrences that impact the MRCCA are presently unknown, proper **planning,** ongoing **maintenance,** and a focus on the **restoration of vegetation and the shoreline** can protect the health of the river and preserve it as a natural and cultural resource.



Chapter 2
Land Use

This chapter provides direction and policies to maintain sound existing development and to achieve desired change in the city of Coon Rapids through 2040. The Land Use Plan influences the future physical character of the city to enhance existing positive aspects, produce future characteristics compatible with sound existing conditions, and enrich the overall quality of the community.

The Land Use Plan defines a framework for future city development, guiding the amount, location, and intensity of future land uses to ensure compatibility with one another and the natural environment. While Coon Rapids is now a fully developed community, careful land use planning remains important. Since ways of living and doing business change over time, the City must be prepared to react to those trends. This comprehensive plan stresses ensuring high-quality development, maintaining the integrity of the city's established neighborhoods, and redeveloping obsolete and underutilized areas.

Several general premises guide the plan, balancing urban development with community amenities, welfare, and environmental protection considerations. The plan's development strategy stresses:

» Complete and balanced neighborhoods, which include a variety of housing resources and supporting commercial development.

» Protection of environmentally sensitive areas.

» Adequate public and recreational areas.

» Appropriate attention to surface water management, historic preservation, and solar access protection.

This chapter includes four sections:

» The **Existing Conditions** section examines Coon Rapids' current distribution of land uses, residential densities, locations of natural resources, and employment characteristics. This information provides a foundation for the chapter's policies and recommendations.

» The **Goals and Policies** section defines land use needs, sets goals and objectives, and recommends policies for each issue area.

» The **Future Land Use** section describes how Coon Rapids will accommodate growth and maintain balanced neighborhoods.

» The **Resource Protection** section addresses policies for the city's natural and cultural resources, including historic preservation, aggregate resources, and renewable energy.

» The **Implementation** section establishes the action items that are necessary for the City to carry out its land use policies.

EXISTING CONDITIONS

Forecasts and Community Designation

The Metropolitan Council identifies Coon Rapids with the community designation of Suburban, shown in Map 2-1 on the following page. Suburban communities experienced their primary era of development during the 1980s and early 1990s. They are typically characterized by automobile-oriented development patterns and lower densities. Metropolitan Council's systems statement projections are shown in the following table.

TABLE 2:1 - Population, Household and Employment Estimate/Forecasts - 2010-2040

	2010 Estimate	2015 Estimate	2020 Forecast	2030 Forecast	2040 Forecast
Population	61,476	62,527	64,800	68,400	72,100
Households	23,532	24,023	25,500	27,500	29,300
Employment	23,260	24,007	27,100	28,900	30,900

Source: U.S. Census Bureau Decennial Census, Metropolitan Council

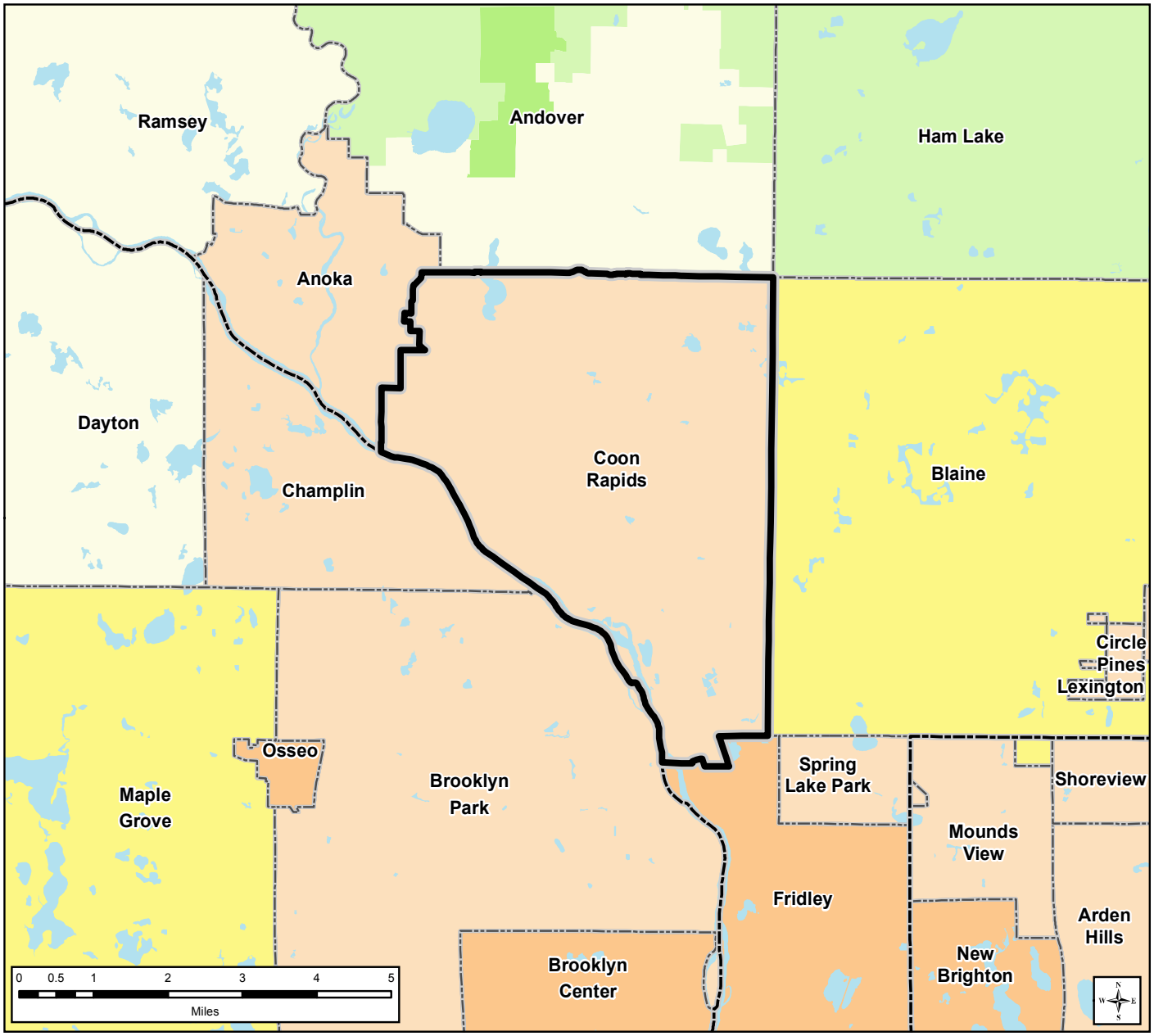
The City of Coon Rapids' role in planning for orderly and efficient land use as a suburban community is as follows:

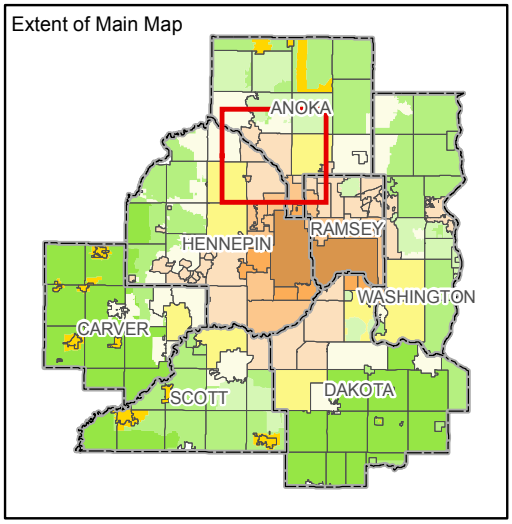
- Plan for forecasted population and household growth at overall average densities of at least 5 units per acre, and target opportunities for more intensive development near regional transit investments at densities and in a manner articulated in the *2040 Transportation Policy Plan*.
- Identify areas for redevelopment, particularly areas that are well-served by transportation options and nearby amenities and that contribute to better proximity between jobs and housing.
- In collaboration with other regional partners, lead major redevelopment efforts.
- Lead detailed land use planning efforts around regional transit stations and other regional investments. Plan for and program local infrastructure needs (for example, roads, sidewalks, sewer, water, and surface water), including those needed to accommodate future growth and implement local comprehensive plans.

The Metropolitan Council's role includes:

- Maintaining and improving regional infrastructure to support adaptive reuse, infill development, and redevelopment.
- Supporting local planning and implementation efforts to target growth in and around regional transit as articulated in the *2040 Transportation Policy Plan*.
- Coordinating regional infrastructure and program funding with other efforts designed to mitigate Areas of Concentrated Poverty and Racially Concentrated Areas of Poverty and better connect the residents of these areas with opportunities.
- Providing technical assistance to communities undertaking planning efforts around regional transit stations and other regional investments.
- Partnering with local communities to improve land use patterns to reduce the generation of carbon emissions.

MAP 2-1: Community Designations, Anoka & Hennepin Counties





Community Designation

- Urban Center - Core City
- Urban Center
- Urban
- Suburban
- Suburban Edge
- Emerging Suburban Edge
- Rural Center
- Diversified Rural
- Rural Residential
- Agricultural
- Outside Council planning authority

- County Boundaries
- City and Township Boundaries
- Lakes and Major Rivers

Existing Land Use

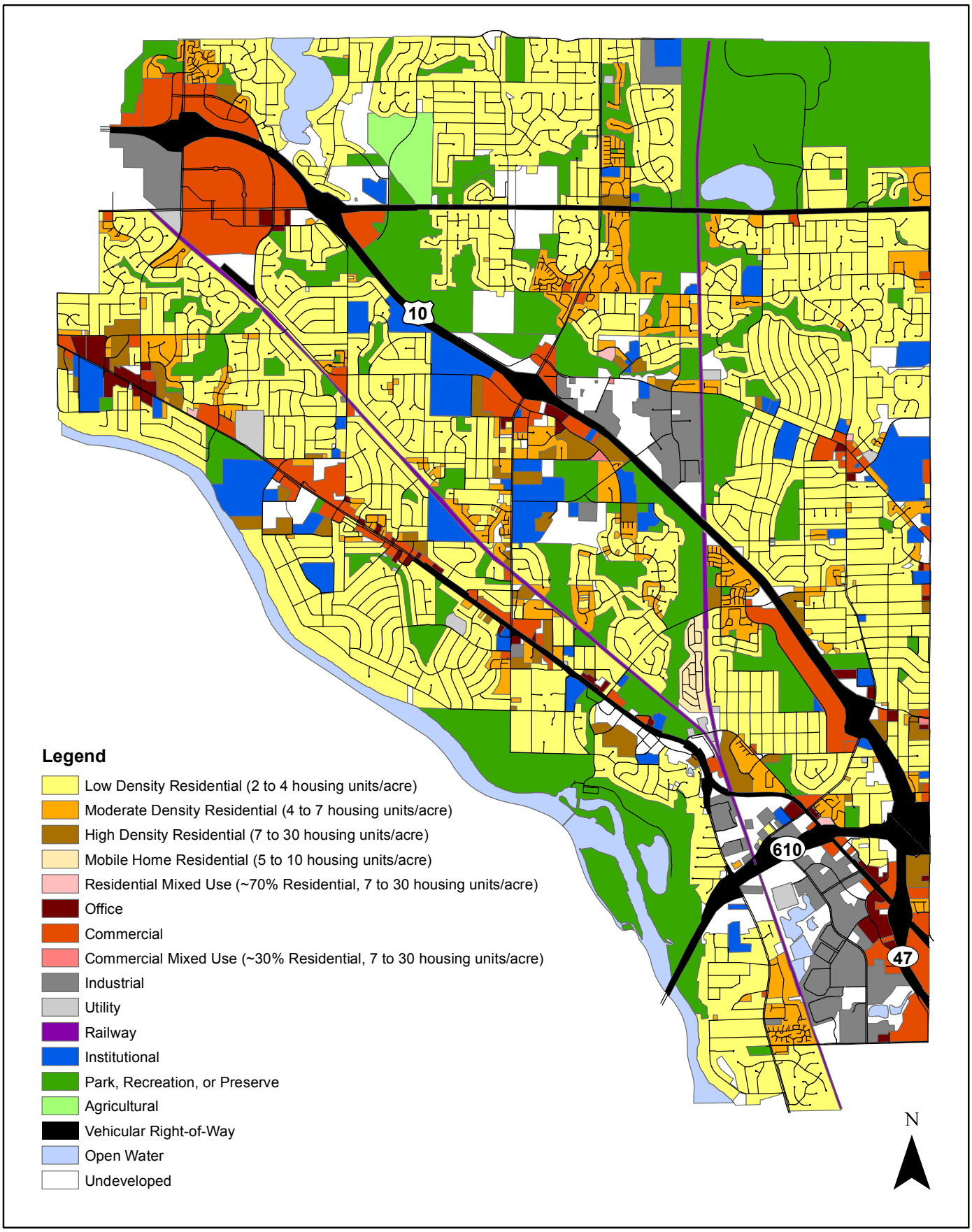
The Existing Land Use Map (2-2) on next page illustrates Coon Rapids' current distribution of land uses. Table 2-2 lists the number of acres in each land use category.

TABLE 2-2: Existing Land Uses, 2017

Land Use	Description	Existing Acreage	% of Total
Residential Land Uses			
Low Density Residential	Mostly single-family homes with some two-family homes and open space within or related to a residential development at a gross density of 2 to 4 units per acre.	6,316	42.0%
Moderate Density Residential	Generally attached housing, including two-family homes and townhomes, at a gross density of 4 to 7 units per acre.	915	6.1%
High Density Residential	Multi-family housing, including apartment buildings and condominiums, at a gross density of 7 to 30 units per acre.	309	2.1%
Mobile Home Residential	Privately owned land that is neither developed nor in agricultural use.	49	0.3%
Residential Mixed Use	Primarily residential at a gross density of 7 to 30 units per acre; some other use may be appropriate.	9	0.1%
Commercial Land Uses			
Office	Predominately administrative, professional, or clerical services, including medical clinics.	145	1.0%
Commercial	Provision or goods or services.	846	5.6%
Commercial Mixed Use	Primarily commercial, office, and institutional; some high-density residential may be appropriate.	5	0.0%
Industrial Land Uses			
Industrial	Primarily light manufacturing, warehouses, services, and related uses.	530	3.5%
Utility	Power substations, communications towers, water towers, or similar uses.	72	0.9%
Railway	Freight or passenger rail activities.	134	0.9%
Public/Semi Public Land Uses			
Institutional	Primarily religious, governmental, educational, social, or healthcare facilities.	625	4.2%
Park, Recreation, or Preserve	Primarily for public active recreation activities improved with athletic fields, playground equipment, golf courses, or similar facilities.	2,821	18.7%
Other Land Uses			
Agricultural	Farming, horticulture, and other agricultural purposes, including farmsteads.	99	0.7%
Open Water	Permanently flooded open water, not including wetlands or periodically flooded areas.	551	3.5%
Vehicular Right-of-Way	Principal arterial rights-of-way.	635	4.3%
Undeveloped Land	Privately owned land that is neither developed nor in agricultural use.	912	6.2%
TOTAL		14,975	100%

MAP 2:2 - Existing Land Use

CITY OF COON RAPIDS



Detached single-family homes comprise about 42% of Coon Rapids' total land area. Attached and multi-family residential, generally located at the periphery of single-family neighborhoods along major streets, make up another 8%. Table 2-2 presents the net density of Coon Rapids' residential development. Net residential acreage is calculated by subtracting from gross acres, wetlands, water bodies, public parks, arterial streets, and natural resources protected by ordinance. Overall, the city's residential density is about 3.27 units per acre. Because Coon Rapids is a developed community with little remaining vacant land, the overall residential density will likely increase in the coming years, as underutilized commercial land is converted to residential uses. The Future Land Use section of this chapter addresses potential locations for residential redevelopment.

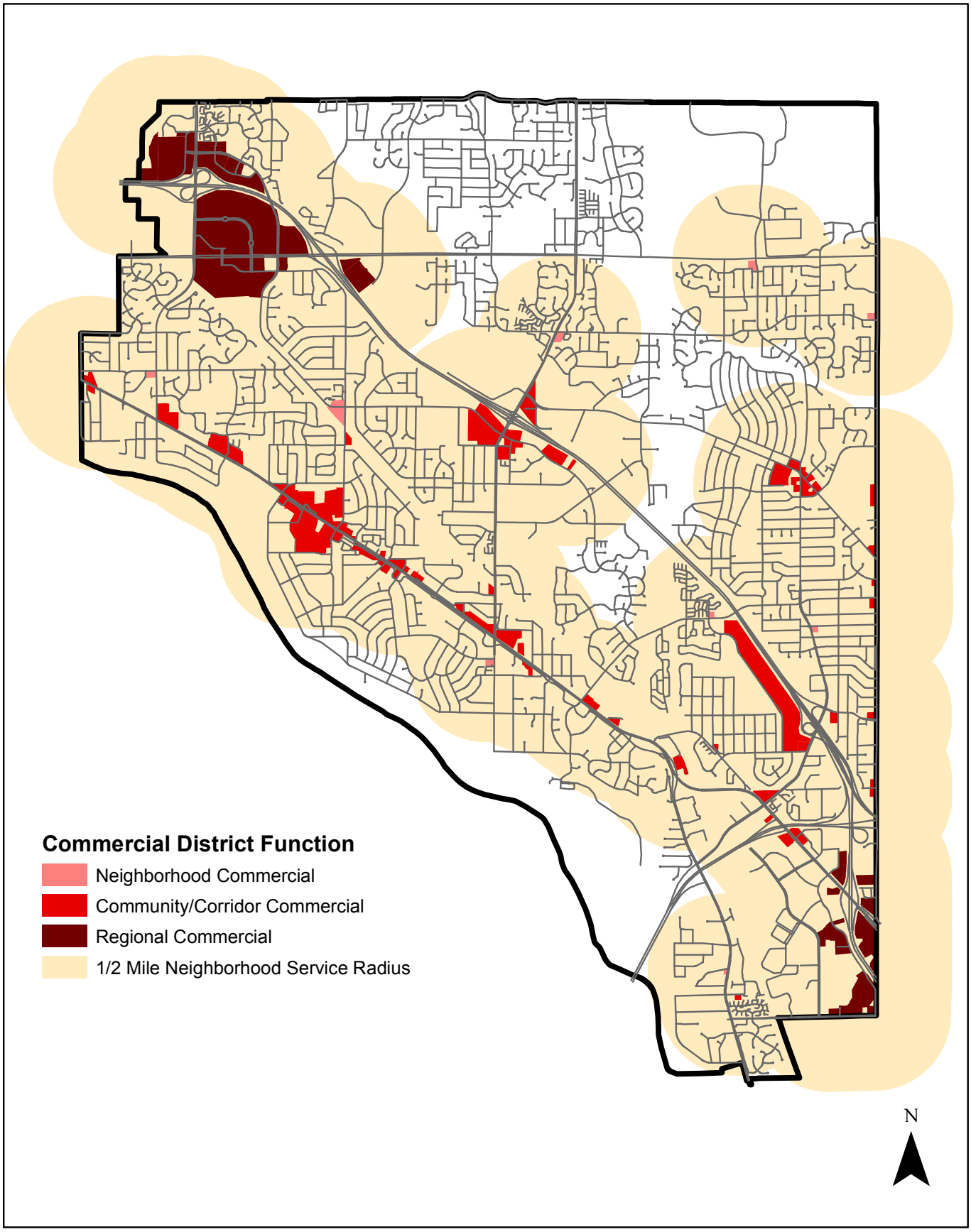
TABLE 2-2: Net Density of Residential Development, 2017

Land Use	# of Units	Net Acres in Land Use	Net Density (Units/Acre)
Low Density Residential	15,670	6,258	2.50
Moderate Density Residential	4,741	913	5.19
High Density Residential	3,995	307	13.01
Mobile Home Residential	232	49	4.73
TOTAL	24,638	7,527	3.27
Source: 2016 Metropolitan Council Housing Stock Estimates			

Commercial and industrial uses comprise about 7% of the City's land area, with the largest concentrations in the Riverdale commercial area near Highway 10 and Main Street and the commercial and industrial areas near Highways 47 and 610 and Coon Rapids Boulevard. Coon Rapids' existing business districts generally fall into three categories, illustrated by the Commercial Districts Map (Map 2-3), along with one-half mile service radii.

MAP 2-3: Commercial Districts

CITY OF COON RAPIDS



Neighborhood Commercial Areas. These are small shopping centers, generally less than three acres in size, that include low-intensity commercial uses serving the daily needs of residential areas within about one-half mile of the center and have sufficient pedestrian access. In a few instances, these areas include only a single convenience store. In most cases, these areas correspond to the Neighborhood Commercial (NC) zoning district. They include:

1. The southwest corner of Main Street and Foley Boulevard.
2. The northwest corner of 121st and University Avenues.
3. The southeast corner of 121st Avenue and Hanson Boulevard.
4. The northwest corner of Northdale and Crooked Lake Boulevards.
5. The southwest corner of 105th Lane and Foley Boulevard.
6. The northeast corner of Quince Street and Egret Boulevard.
7. The southwest corner of 113th Avenue and Robinson Drive.
8. The southwest corner of 105th Avenue and Hanson Boulevard.
9. The southwest corner of 119th Avenue and Round Lake Boulevard.
10. The southwest corner of 87th Lane and East River Road.

Community Commercial Areas. These are moderate-intensity shopping centers and peripheral businesses serving wide areas of the city. They may include lower-intensity office uses on the fringes. While they are more automobile-oriented than neighborhood commercial districts, these areas still provide pedestrian accessibility. Community commercial areas, which typically require more buffering from surrounding residential areas than neighborhood commercial districts, generally correspond to the Community Commercial (CC) zoning district and in some instances the General Commercial (GC) district. Existing community commercial districts include:

11. The intersection of Foley and Northdale Boulevards, centered around the Northdale Shopping Center.
12. Areas near Northdale Boulevard and University Avenue.
13. Areas near Highway 10 and Foley Boulevard, centered around the Foley Plaza and Pine Cone Plaza shopping center.
14. Areas near 101st Avenue and University Avenue.
15. Areas near Highway 10 and Hanson Boulevard, centered around the Village Ten Shopping Center.
16. Several areas along Coon Rapids Boulevard, including intersections with Round Lake Boulevard, Pheasant Ridge Drive, Hanson Boulevard, Foley Boulevard, and the areas between Xavis Street and Mississippi Boulevard.

Regional Commercial Areas. These are large-scale commercial districts, generally at least 100 acres in size, with a regional market orientation. They are zoned Regional Shopping (RS), General Commercial (GC), or Community Commercial (CC). They include:

1. The Riverdale shopping area near Highway 10 and Main Street and Round Lake Boulevard.
2. Businesses at the periphery of Northtown Mall located near Highway 47 and Coon Rapids Boulevard.

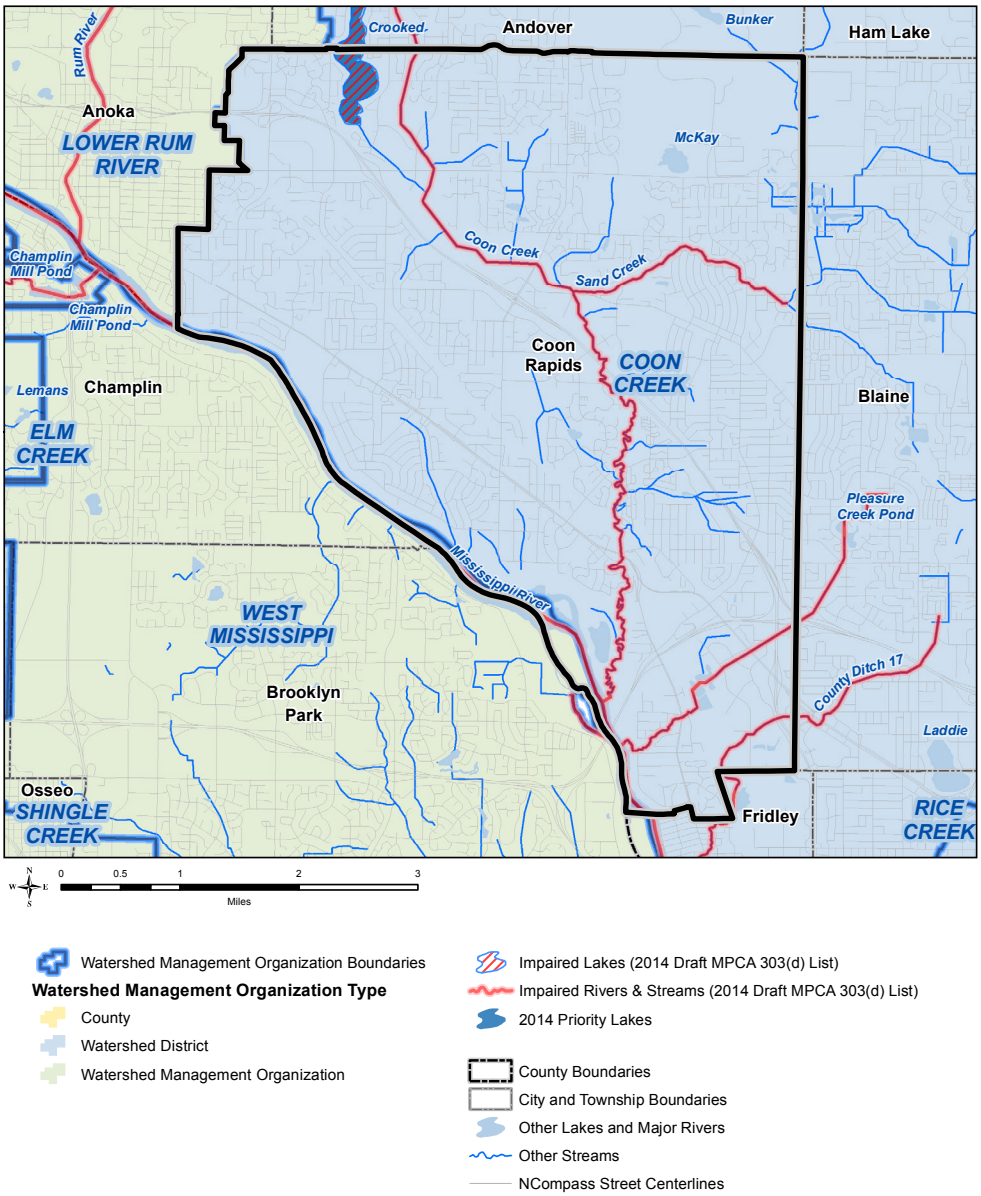
Coon Rapids contains two industrial areas, which include primarily light manufacturing, warehouses, services, and related uses:

» The Coon Rapids Industrial Park, bounded by Highway 10, Northdale Boulevard, and the railroad tracks.

» The Evergreen Industrial Park and peripheral industrial areas, which are generally bounded by 85th Avenue, Springbrook Drive, Coon Rapids Boulevard, and East River Road.

Lakes, streams, wetlands, and drainage courses make up a large portion of Coon Rapids' land area. The Surface Water Resources Map illustrates the city's surface water resources.

MAP 2-4: Surface Water Resources



Previously Planned Land Use

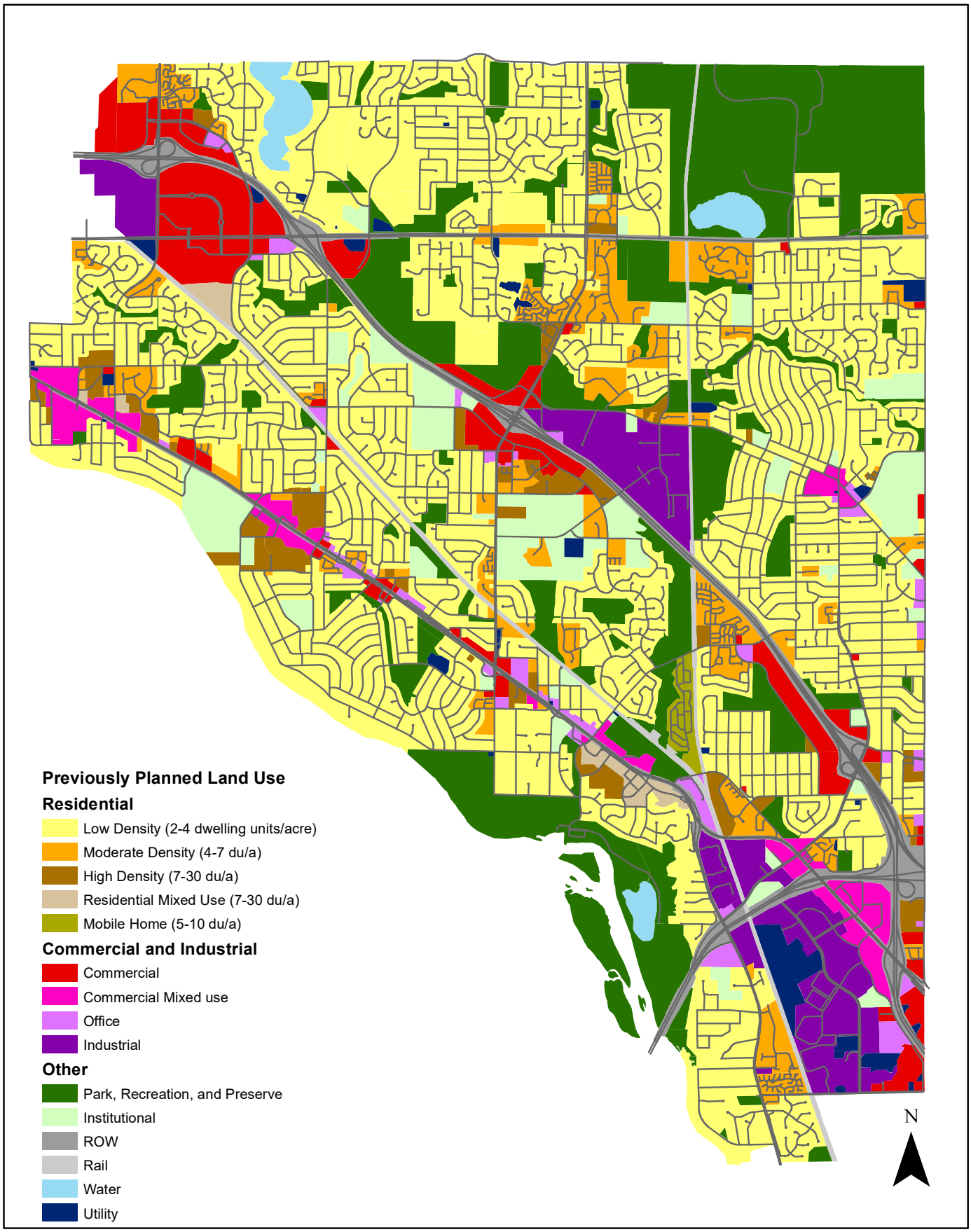
The Previously Planned Land Use Map (2-5) indicates the location and extent of land planned for each land use type in the *City of Coon Rapids Comprehensive Plan* approved by the Metropolitan Council in 2008. Table 2-4 indicates the number of acres planned for each land use category, along with the land use category descriptions listed in the previous Comprehensive Plan.

TABLE 2-4: Previously Planned Land Use, 2008

Land Use	Description	# Acres	% of Total
Residential Land Uses		8,278	57%
Low Density Residential	Mostly single-family homes with some two-family homes and open space within or related to a residential development at a gross density of 2 to 4 units per acre.	6,743	46%
Moderate Density Residential	Generally attached housing, including two-family homes and townhomes, at a gross density of 4 to 7 units per acre.	981	7%
High Density Residential	Multi-family housing, including apartment buildings and condominiums, at a gross density of 7 to 30 units per acre.	347	2%
Residential Mixed Use (70% minimum)	Primarily residential at a gross density of 7 to 30 units per acre; some other use may be appropriate.	141	1%
Mobile Home Residential	Primarily single-family homes grouped together due to particular space requirements, construction, and style.	66	>1%
Commercial and Industrial Land Uses		1,827	13%
Office	Predominantly administrative, professional, or clerical services; including medical clinics. May include limited commercial uses generally compatible with adjacent residential uses	250	2%
Commercial	Provision of goods or services.	751	5%
Industrial	Primarily light manufacturing, warehouses, services, and related uses.	606	4%
Commercial Mixed Use (70% min)	Primarily commercial, industrial, or office uses with some high-density residential at a gross density of 7 to 30 units per acre.	220	2%
Extractive	Extraction of nonmetallic metals, quarrying sand and gravel.	0	0%
Public/Semi-Public Land Uses		4,330	30%
Institutional	Primarily religious, governmental, educational, social, or healthcare facilities.	725	5%
Park, Recreation or Preserve	Primarily for public active recreation activities improved with athletic fields, playground equipment, golf courses, or similar facilities.	2,576	18%
Open Space/ Agricultural/ Undeveloped	Natural resource protection or buffer areas, agricultural purposes, or undeveloped land.	0	0%
Open Water	Rivers, lakes, other water ways	495	3%
Roadway Right of Way (ROW)	Public or private vehicular, transit, and/or pedestrian rights-of-way.	681	5%
Utility	Public or private land occupied by a power plant or substation, transmission line, municipal water facility, communications tower or similar facility.	180	1%
Railway	Public or private freight or passenger rail activities.	168	1%
Airport	Public or private airports and related activities.	0	0%
TOTAL		14,975	100%

MAP 2-5: Previously Planned Land Use

CITY OF COON RAPIDS



Goals and Policies

Because Coon Rapids is a nearly fully developed community, this plan's land use policies must focus on redevelopment priorities, changes to residential densities, and design of infill development.

During the City's 2040 Plan process and the years leading up to it, residents participating in surveys identified several land use concerns and visions for the future. Overall, residents have expressed that they support the direction in which Coon Rapids is headed. In the National Citizen Survey administered in 2016, many participants reported a positive impression of new development in Coon Rapids and the majority rated the city's downtown/commercial area, the overall built environment, affordable quality housing, housing options, public places, and businesses and services positively.

In the National Citizen Survey administered in 2016, many participants reported that they had a positive impression of new development in Coon Rapids and the majority rated the city's downtown/commercial area, the overall built environment, affordable quality housing, housing options, public places, and businesses and services positively.

Coon Rapids Boulevard is consistently identified as a corridor in need of improvements. The National Citizen Survey demonstrated that respondent's top priority for the City is development along Coon Rapids Boulevard. The online Comprehensive Plan Survey also revealed residents' negative opinion of the corridor. Coon Rapids Boulevard was the most cited least favorite place in the city. City appearance also emerged as a major concern for respondents. A significant portion of comments indicated a desire for a more aesthetically attractive city. This demonstrates the importance of maintaining existing neighborhoods with code enforcement and ensuring aesthetic quality of new development. Respondents also listed business growth, fewer vacancies, and newer or improved housing as desires for the future.

The survey results also revealed the high value residents place on parks, trails, and community facilities. Natural areas, parks, and other open spaces were cited among the respondents' favorite places in the city. Respondents also reported high use of these places currently and in the future. Answers to questions of this nature demonstrate the importance of preserving these spaces while still accommodating desired residential and business growth.

This section presents the goals, objectives, and policies for land use in the Coon Rapids.

Goal #1

Maintain complete and balanced neighborhoods that include a variety of housing resources, support for commercial development, and adequate open space and recreation opportunities.

Objectives:

1-1 To ensure that new development is adequately served by public facilities and enhances the character of existing neighborhoods.

1-2 To provide a variety of housing types serving all stages of the life cycle so that residents can remain within the community long-term.

1-3 To preserve the integrity of existing stable residential areas.

1-4 To ensure adequate mobility throughout the city via motorized and non-motorized transportation modes.

1-5 To curb the spread of blighting characteristics and eliminate obsolete land uses.

Policies:

1-1 Ensure that future development decisions are based on the Comprehensive Plan so that new development is adequately served by public facilities and successfully enhances the character of existing neighborhoods.

1-2 Encourage a balanced housing stock serving all stages of the life cycle in all portions of the city. Allow increased residential densities in appropriate locations along major transportation corridors.

1-3 Preserve the integrity of existing stable single-family residential areas by ensuring adequate buffering from more intense adjacent uses. Ensure the location of higher density residential development at the fringes of neighborhoods and along transit corridors. Consider alternative forms of low-density residential development, such as small-lot subdivisions and detached townhouses, in suitable locations.

1-4 Continue to enforce the City's property maintenance code to encourage proper upkeep of all residential areas.

1-5 Ensure that neighborhoods appropriately interface with transportation systems within the city, including the sidewalk and trail network.

1-6 Ensure that development near the city's commuter rail stations and bus lines is transit-supportive in its density and design.

1-7 Encourage conversion of underutilized commercial land to mixed uses in areas designated by the Comprehensive Plan.

1-8 Adhere to the City's Parks and Open Space Plan and the parks component of the Comprehensive Plan to ensure appropriate geographic distribution of active and passive recreation facilities.

1-9 Review and update the City's zoning regulations periodically for residential districts to reflect changing lifestyles and ensure that infill development is compatible with the surrounding neighborhood in scale and design.

Goal #2

Maintain a diversified economic base and a climate that encourages economic development, redevelopment, and ongoing business activity.

Objectives:

2-1 To provide a wide range of employment opportunities for city residents.

2-2 To promote efficient land use and increase the City's tax base.

2-3 To foster a high-quality, diverse business climate.

2-4 To eliminate blighting characteristics in the city's business districts.

Policies:

2-1 Redevelop distressed and underutilized commercial and industrial properties through various financial incentives to efficiently make use of existing infrastructure. The City may assist in site assembly for redevelopment of areas displaying blighting characteristics.

2-2 Develop and implement corridor and small-area plans to refine the policies of the Comprehensive Plan and subsequently encourage high-quality infill and redevelopment.

2-3 Promote retention and expansion of existing businesses and the attraction of new businesses, particularly those in the Target Industry Sectors identified in the Economic Competitiveness chapter of this plan.

2-4 Provide a supply of commercial and industrial land that meets the city's projected demands, with employment centers concentrated at Port Wellness, Port Evergreen, Evergreen Industrial Park, Coon Rapids Industrial Park, and the Federal Cartridge site.

2-5 Encourage high-intensity use of remaining industrial land to promote efficient land use and increase the City's tax base. Discourage new low-yield industries and those with nuisance characteristics.

2-6 Maintain strong relationships with local and regional economic development agencies, educational institutions, and the business community to share resources and achieve common goals.

2-7 Continue to enforce performance standards in industrial areas, including adequate screening of outdoor storage and loading areas. Periodically review and update applicable zoning regulations to reflect changing business needs and ensure compatibility with surrounding properties.

2-8 Ensure the range of housing options in the city continues to match housing needs of local employees.

Goal #3

Protect and enhance the city's natural resources for the community's long-term benefit.

Objectives:

3-1 To protect air quality, water quality and wildlife habitats.

3-2 To provide active and passive recreation opportunities to city residents.

Policies:

3-1 Maintain a connected system of active and passive open space to protect natural resources and provide enjoyment to the City's residents.

3-2 Protect the city's surface water from the negative impacts of development by means of shoreland zoning regulations, Mississippi River Critical Area regulations, and wetland buffer regulations.

3-3 Follow the policy guidelines of the Mississippi River Critical Area and Mississippi National River and Recreation Area Plans at the end of this section to protect and enhance the Mississippi River corridor through the city.

3-4 Adhere to the City's Wetland Management Plan, updating it as necessary.

3-5 Encourage the use of new energy resources and protect solar access for existing and new developments. Allow solar development on lands that are poorly suited for other types of development and promote increased solar energy production.

3-6 Incorporate woodland best management practices addressing protection of wooded areas into development review. Budget for and achieve urban canopy and tree planting goals. Ensure tree diversity through landscape standards.

Goal #4

Maintain community character and ensure that new development is well designed.

Objectives:

4-1 To ensure high aesthetic quality of new development and compatibility with the surrounding area.

4-2 To protect historically and culturally significant sites.

Policies:

4-1 Enforce architectural and site design standards, including landscaping standards, for new commercial, industrial, and attached residential development. Ensure that landscaping is properly maintained.

4-2 Review zoning regulations periodically for new development to ensure a high aesthetic quality and compatibility with the surrounding area.

4-3 Identify and preserve historic and cultural landmarks and ensure that adjacent developments complement them.

4-4 Consider adopting a tree preservation ordinance to ensure that valuable mature trees are preserved as new development occurs.

Goal #5

Provide distinctive commercial districts that serve neighborhood, community, and regional consumers.

Objectives:

5-1 To ensure that all city residents can access a variety of shopping areas by way of motorized and non-motorized transportation modes.

5-2 To encourage high aesthetic quality in each commercial district.

Policies:

5-1 Ensure that new commercial development is consistent with the role of each commercial area as defined by the Comprehensive Plan.

5-2 Avoid strip commercial development and concentrate it in nodes, as defined by the Comprehensive Plan.

5-3 Direct high-intensity, regional commercial development toward portions of the city with traffic capacity and transit options.

5-4 Establish and implement beautification programs for various commercial districts and enforce site design standards, including landscaping, screening of parking areas, and pedestrian and vehicular access, to ensure top-quality appearance.

5-5 Continue to enforce sign regulations that encourage high aesthetic quality.

5-6 Require pedestrian access within commercial developments and ensure connectivity with the city's sidewalk and trail network.

Goal #6

Improve the appearance and function of Coon Rapids Boulevard, ensuring that it gradually redevelops with a variety of housing types, supporting commercial uses, and urban design amenities.

Objectives:

6-1 To curb the spread of blighting characteristics along Coon Rapids Boulevard and eliminate underutilized land and obsolete land uses.

6-2 To increase the number of housing units and bolster the market for neighborhood commercial development along Coon Rapids Boulevard.

6-3 To ensure high aesthetic quality of both private developments and the public right-of-way.

Policies:

6-1 The most intense commercial and residential development should be concentrated in a limited number of nodes. Four of these nodes, known as "Preservation Or Renovation Tracts," or PORTs, have been given a special zoning designation to ensure that redevelopment occurs in accordance with a master plan for each area, and are considered priorities for redevelopment. Consolidation of commercial uses allows for greater economic viability than dispersed strip commercial development patterns.

6-2 Commercial properties and incompatible single-family houses outside of PORT Districts and designated nodes should be encouraged to redevelop as compatible residential uses. New housing should fulfill the needs of the community and should fit in with the scale and character of the corridor. While the highest residential densities are envisioned in the PORT Districts, moderate to high density residential development is appropriate in areas between the PORTs.

6-3 Design new retail development in a way that considers the corridor's long-term position in the retail market.

6-4 Update design guidelines periodically for new buildings in the River Rapids Overlay district.

6-5 Improvements along the corridor should support a sense of community, encouraging interaction among neighbors. Amenities such as sidewalks, lighting, landscaping, street furniture, open spaces, and landscaping can help foster a sense of place.

Goal #7

Eliminate blighting influences throughout the city and encourage redevelopment of underutilized land.

Objectives:

7-1 To curb the spread of blighting characteristics and eliminate underutilized land and obsolete land uses.

7-2 To ensure high aesthetic quality of new development.

7-3 To ensure that new development reflects current market conditions and meets the needs of the surrounding area.

Policies:

7-1 Prepare small area plans to guide future land uses, densities, and public improvements in redevelopment areas.

7-2 Review and update zoning regulations to allow desired uses and densities at key redevelopment sites.

7-3 Obtain Housing and Redevelopment Authority assistance with land acquisition and site assembly in appropriate instances.

Future Land Use

Future Land Use Considerations

Several factors were considered in determining Coon Rapids' future land uses, providing a conceptual basis for Map 2-6, "Future Land Use."

Environmental Considerations. While their primary function is to provide drainage and preserve water quality, the City's water-related systems also provide important amenities, recreational resources, and wildlife habitats. The maintenance of the function, integrity and quality of these systems to convey and store water and to address urban storm water concerns is an important consideration for the location of future development. This includes protection and appropriate preservation of floodplain, shoreland, wetland, and Mississippi River corridor areas and responsible management of lakes, creeks, and storm water channels and ponds. The Surface Water Resources Map 2-4 illustrates the location of these resources.

Existing Uses. During the Comprehensive Plan preparation, all existing uses were analyzed to confirm their future desirability and relevance. The definition of appropriate uses for presently vacant or underutilized land and any alternatives proposed for inappropriate existing uses recognizes the need for compatibility with sound existing uses.

Public Facilities. Because Coon Rapids is a nearly fully developed community, all City, County, and metropolitan systems needed to support future land uses generally exist now or are programmed for construction. During plan preparation, it was confirmed that the capacities and service levels of the following public facilities are adequate to serve planned land uses:

» Metropolitan, County, and City transportation systems

» Metropolitan, County, and City recreation open space systems

» Metropolitan and City waste water and sanitary sewer systems

» City storm water management and water systems

Despite sufficient levels of service to accommodate future land uses, subsequent chapters of the Comprehensive Plan address modifications to these systems in order to accommodate anticipated regional growth and maintain a high level of service.

Future Land Use Framework

The Goals and Policies and Future Land Use Considerations sections form the overall influences of the Future Land Use map. Addressing the collective implications of these influences provides the conceptual basis for the plan. This section outlines the factors influencing the locations of future land uses.

Transportation Systems. Arterial streets are a primary organizing feature for the Comprehensive Plan. This transportation system provides accessibility to intensive land uses and facilitates the movement of people and goods in the city. Anticipated changes to metropolitan transit service, including the Northstar Commuter Rail and bus service along key corridors, such as Coon Rapids Boulevard, also affect locations of new development. This includes increased residential densities in areas with frequent transit service and appropriately located commercial development.

Natural and Recreational Systems and Non-Private Land. The city's water-based natural systems, including water courses, water bodies, and wetlands; extensive park and trail facilities; and major public and semi-public land provide a significant structuring influence on the built environment. These systems also offer a high level of amenity to the community.

Development Systems. The Future Land Use Map 2-6 determines the location of uses in the city to maximize the influence of transportation, natural, and recreational systems and to assure efficient, orderly, compatible, and livable development patterns.

The Land Use Plan provides distinctive kinds of commercial areas with varying market orientations in compact locations with good transportation access. These include regional, general (highway-oriented), community, and neighborhood commercial. Office and industrial areas are clustered in locations throughout the city with high levels of arterial street accessibility.

Areas of low-density, or generally single-family, housing are located throughout the city with moderate and high density housing generally occurring on the edges of low-density housing with arterial or collector street access. In most instances, these neighborhoods are centrally served by an elementary school or neighborhood park.

Future Land Use Plan

This section outlines the location and extent of future land uses in Coon Rapids. Map 2-6, "Future Land Use," illustrates future land uses in the city. The previous chapter of this plan projects a 2040 population of 72,100 in 29,300 households. The Future Land Use map indicates that by converting presently vacant and underutilized land to residential and mixed uses at various densities, the City can accommodate at least 4,400 new housing units by 2040.

Table 2-7 lists the land use categories used on the Future Land Use map, which correspond to the Metropolitan Council's standardized categories. The following two sections provide a narrative for areas that are slated for changes in land use in the coming years.

TABLE 2-7: Future Land Use Categories

Category	Description
Residential Land Uses	
Low Density Residential	Mostly single-family homes and open space within or related to a residential development at a gross density of 3 to 5 units per acre.
Moderate Density Residential	Attached housing, including two-family homes and townhomes, at a gross density of 5 to 10 units per acre.
High Density Residential	Multi-family housing, including apartment buildings and condominiums, at a gross density of 10 to 50 units per acre.
Mobile Home Residential	Manufactured housing in a land-lease community at a gross density of 5 to 10 units per acre.
Residential Mixed Use	Primarily residential use (at least 70%) at a gross density of 10 to 50 units per acre with some other use. (% is estimate on district-wide scale; not required for individual projects.)
Transit Mixed Use Overlay	Within Residential Mixed Use District, primarily residential use (at least 70%) at a gross density of 20 to 50 units per acre.
Commercial Land Uses	
Office	Predominantly administrative, professional, or clerical services; includes medical clinics.
Commercial	Provision of goods or services.
Commercial Mixed Use	Primarily commercial and/or office uses (at least 70%) with some high-density residential at a gross density of 10 to 50 units per acre. (% is estimate on district-wide scale; not required for individual projects.)
Industrial Land Uses	
Industrial	Primarily light manufacturing, warehouses, services, and related uses.
Utility	Public or private land occupied by a power plant or substation, transmission line, municipal water facility, communications tower or similar facility.
Railway	Public or private freight or passenger rail activities.
Public/Semi-Public Land Uses	
Institutional	Primarily religious, governmental, educational, social, or healthcare facilities.
Park, Recreation, or Preserve	Primarily for public active recreation activities improved with playfields/grounds or exercise equipment, golf courses or other similar areas.
Other Land Uses	
Open Water	Permanently flooded open water, not including wetlands or periodically flooded areas.
Vehicular Right-of-Way	Public or private vehicular, transit, and/or pedestrian rights-of-way.
Undeveloped	Land that is publically or privately owned that has been left undeveloped.

Table 2-8: compares the acreages of existing land uses with those of the planned land uses.

Table 2-8: Existing and Future Land Use by Decade

Land Use	Existing Density Range (Housing Units/Acre)		Planned Density Range (Housing Units/Acre)		Existing Acreage	Planned Acreage
	MIN	MAX	MIN	MAX		
Residential Land Uses						
Low Density Residential	2	4	3	5	6,316.3	6,793.7
Moderate Density Residential	4	7	5	10	915.1	890.8
High Density Residential	7	30	10	50	308.9	279.8
Mobile Home Residential	5	10	5	10	49.3	54.0
Residential Mixed Use (70% residential/30% commercial or office)	7	30	10	50	9.3	124.4
Commercial Land Uses						
Office					144.9	-
Commercial					846.0	536.9
Commercial Mixed Use (70% commercial or office/30% residential)	7	30	10	50	5.0	708.8
Industrial Land Uses						
Industrial					529.5	761.0
Utility					72.0	53.0
Railway					134.4	175.3
Public/Semi Public Land Uses						
Institutional					625.9	700.7
Park, Recreation, or Preserve					2821.9	2695.4
Other Land Uses						
Agricultural					98.8	-
Open Water					551.3	548
Vehicular Right-of-Way					634.7	654
Undeveloped Land					911.6	-
TOTAL					14,975	14,975

*acreages for mixed use categories represent the total for that category.

Table 2-8: Existing and Future Land Use by Decade (cumulative)

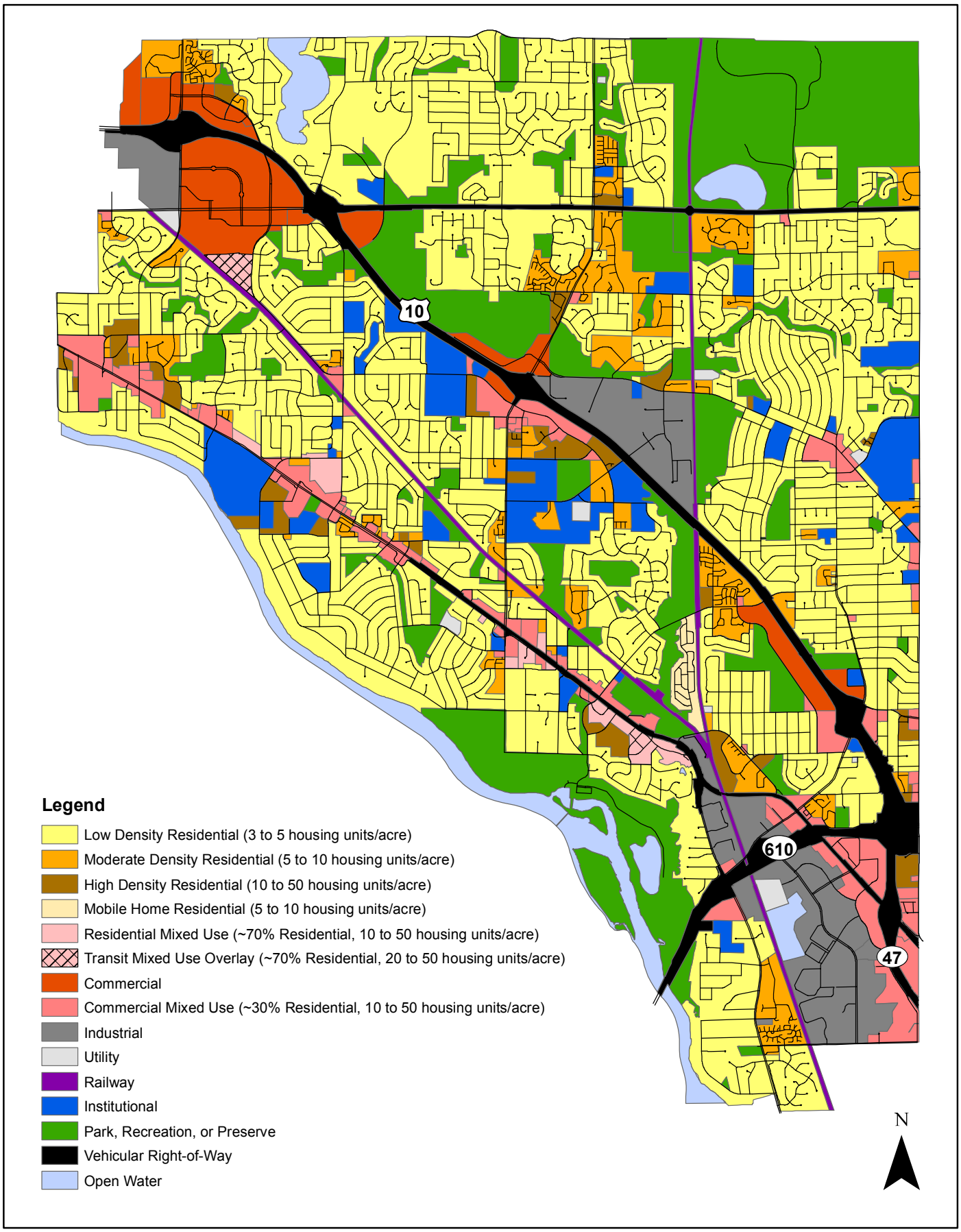
Land Use	Existing		2020		2030		2040	
	Acres	% Total	Acres	% Total	Acres	% Total	Acres	% Total
Residential Land Uses								
Low Density Residential	6316.3	42.2%	6359.7	42.5%	6576.7	43.9%	6793.7	45.4%
Moderate Density Residential	915.1	6.1%	912.9	6.1%	901.9	6.0%	890.8	5.9%
High Density Residential	308.9	2.1%	306.2	2.0%	293	2.0%	279.8	1.9%
Mobile Home Residential	49.3	0.3%	49.7	0.3%	51.9	0.3%	54	0.4%
Residential Mixed Use (70% residential/30% commercial or office)	9.3	0.1%	19.7	0.1%	72.1	0.5%	124.4	0.8%
Commercial Land Uses								
Office	144.9	1.0%	131.8	0.9%	65.9	0.4%	0	0.0%
Commercial	846	5.6%	817.9	5.5%	677.4	4.5%	536.9	3.6%
Commercial Mixed Use (70% commercial or office/30% residential)	5	0.0%	69	0.5%	388.9	2.6%	708.8	4.7%
Industrial Land Uses								
Industrial	529.5	3.5%	550.6	3.7%	655.8	4.4%	761	5.1%
Utility	72	0.5%	70.3	0.5%	61.6	0.4%	53	0.4%
Railway	134.4	0.9%	138.1	0.9%	156.7	1.0%	175.3	1.2%
Public/Semi-Public Land Uses								
Institutional	625.9	4.2%	632.7	4.2%	666.7	4.5%	700.7	4.7%
Park, Recreation, or Preserve	2821.9	18.8%	2810.4	18.8%	2752.9	18.4%	2695.4	18.0%
Other Land Uses								
Agricultural	98.8	0.7%	89.8	0.6%	44.9	0.3%	0	0.0%
Open Water	551.3	3.7%	551	3.7%	549.5	3.7%	548	3.7%
Vehicular Right-of-Way	634.7	4.2%	636.5	4.3%	645	4.3%	653.6	4.4%
Undeveloped Land	911.6	6.1%	828.7	5.5%	414.3	2.8%	0	0.0%
TOTAL	14975		14975		14975		14975	

*acreages for mixed use categories represent the total for that category.

Table 2-9 shows the fluctuation in available acreage by the type of land use between the present and 2040, based on the future land use map.

MAP 2-6: Future Land Use

CITY OF COON RAPIDS



Residential Density. The Metropolitan Council requires cities designated as a Suburban Community like Coon Rapids to plan for identified development and redevelopment land to have an average net residential density of five units per acre. Because Coon Rapids is a developed community, virtually all of its residential growth will occur as redevelopment of underutilized land with increased residential densities and the conversion of commercial and office to mixed use with high-density residential. Except in areas noted in this section, particularly along Coon Rapids Boulevard, the city's neighborhood, community, and regional commercial areas will generally retain their current functions. In certain instances noted in the following sections, obsolete commercial uses may be redeveloped with residential uses in the long term.

Table 2-9 shows the average net residential density for planned residential land uses as a result of the changes. If the residential land in the city grows at its lowest allowed density range for each planned land use, Coon Rapids will gain approximately 4,349 new housing units. At this level of growth, the average net residential density of the planned residential land uses will be 5.6, which exceeds the Metropolitan Council's density requirements for designated Suburban Communities.

TABLE 2-9: Average Net Residential Density for Planned Residential Land Uses

Residential Land Use Category	Planned Acreage	Net Developable Residential Acreage	Planned Density Range (Housing Units/Acre)		Total Minimum New Housing Units
			MIN	MAX	
Low Density Residential	513.3	477.4	3	5	1,432
Moderate Density Residential			5	10	
High Density Residential			10	50	
Residential Mixed Use (70% residential)	115.1	80.6	10	50	806
Commercial Mixed Use (30% residential)	703.7	211.1	10	50	2,111
TOTAL	1,332	769			4,349
Average Net Residential Density					5.7

The Residential Mixed Use and Commercial Mixed Use land use categories have density ranges of 10 to 50 housing units per acre. This range exceeds the Metropolitan Council's required minimum density level to support construction of affordable housing of eight units per acre. These areas can addommodate Coon Rapids' affordable housing allocation of 457 units between 2021 and 2030.

Table 2-10 and the Development and Redevelopment Areas Map (Map 2-7) show the areas of the Future Land Use Map that are available or likely to be available for redevelopment, infill development, or new development. Future development is anticipated in four different areas, identified by the planned land uses. The most growth is expected to occur in the Mixed Use Commercial Corridor Redevelopment Areas along commercial corridors in the city, where 2,917 housing units could be developed over the next 22 years. Other major areas of growth include Low Density Residential in the northern part of city, where 1,432 housing units could be built over the same time period. The 40 Acres in the Vacant Commercial Areas are expected to be developed by 2020, and the Vacant Industrial Areas cover 189 acres, which could be developed by 2040. The 457 allocated affordable housing units are expected to be over the period of 2021-2030 in the Mixed Use Commercial Corridor Redevelopment Areas.

TABLE 2-10: Identified Areas of Development and Redevelopment

Area	Land Use(s)	Acreage	Density Range (Housing Units/ Acre)	Total Housing Units	Total Affordable Housing Units
2018-2020					
Low Density Residential Areas	Low Density Residential	43.4	3 to 5	130	
Vacant Commercial Areas	Commercial	40.8			
Vacant Industrial Areas	Industrial	21.0			
Mixed Use Commercial Corridor Redevelopment Areas*	Residential Mixed Use, Commercial Mixed Use	74.4 / 26.5 Residential	10 to 50	265	
2021-2030					
Low Density Residential Areas	Low Density Residential	217.0	3 to 5	651	
Vacant Industrial Areas	Industrial	105.2			
Mixed Use Commercial Corridor Redevelopment Areas**	Residential Mixed Use, Commercial Mixed Use	372.2 Total / 132.6 Residential	10 to 50	1,326	457
2031-2040					
Low Density Residential Areas	Low Density Residential	217.0	3 to 5	651	
Vacant Industrial Areas	Industrial	105.2			
Mixed Use Commercial Corridor Redevelopment Areas***	Residential Mixed Use, Commercial Mixed Use	372.2 Total / 132.6 Residential	10 to 50	1,326	
TOTAL		1,604		4.349	457

* *Includes all Mixed Use Commercial Corridor Redevelopment Areas*
** *Includes all Mixed Use Commercial Corridor Redevelopment Areas*
*** *Includes all Mixed Use Commercial Corridor Redevelopment Areas*

MAP 2-7: Development and Redevelopment Areas

CITY OF COON RAPIDS

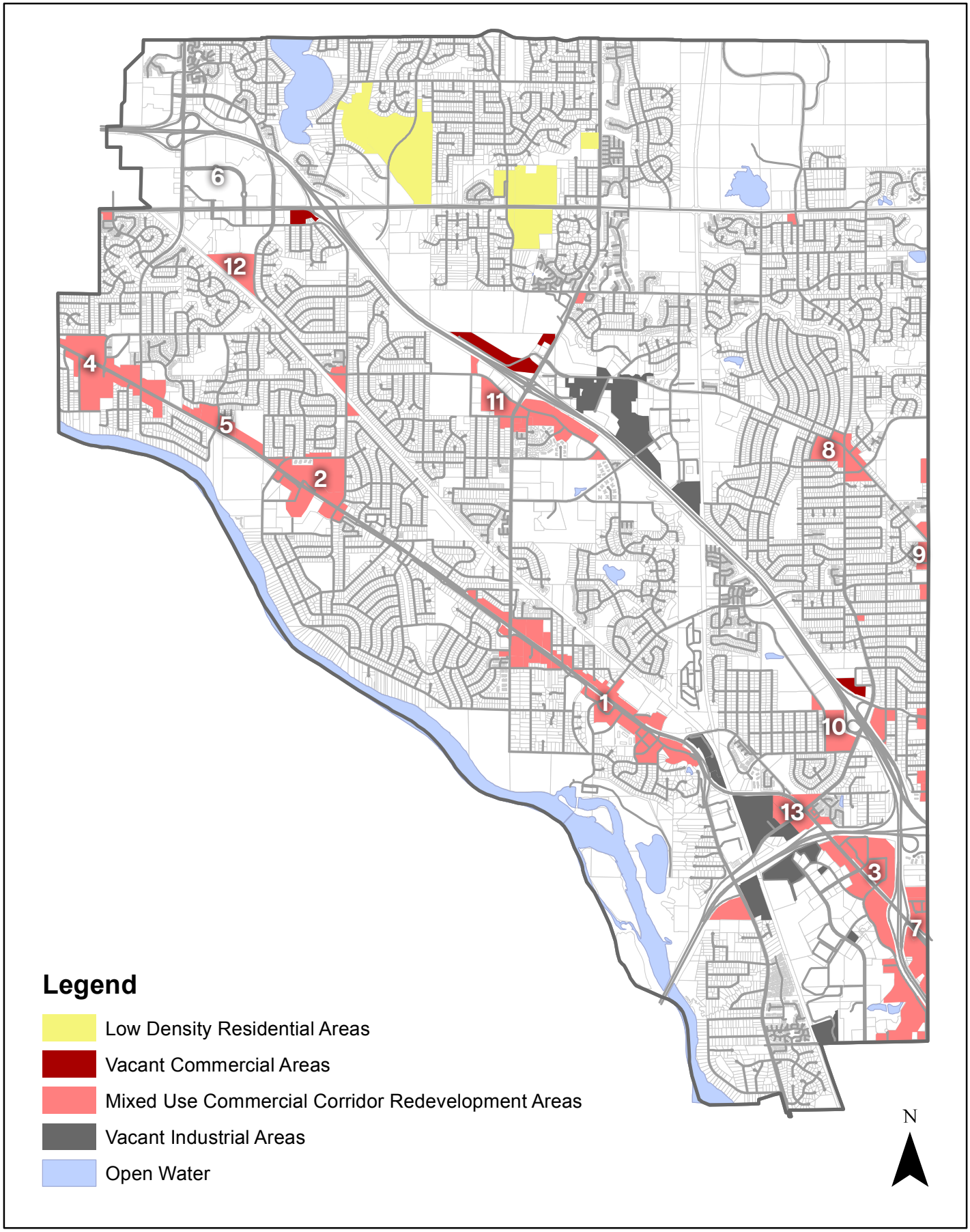


Table 2-11 estimates the impact these land use changes will have on sanitary sewer flows. Overall, as the city is built-out and as redevelopment occurs, its sanitary sewer demand will increase by less than 12% over its present level.

TABLE 2-11: Land Use and Sewer Flow Analysis

Land Use	Allowed Density Range Housing Units/Acre		Sewer Flow Assumptions	Existing million gallons per day (mgd)	Planned million gallons per day	Flow Increase in million gallons per day
	MIN	MAX	(gallons/acre)	mgd	mgd	mgd
Residential Land Uses						
Low Density Residential	3	5	343	2.17	2.33	0.18
Moderate Density Residential	5	10	686	.63	0.61	-0.02
High Density Residential	10	50	1,714	.53	0.48	-0.05
Mobile Home Residential	5	10				
Residential Mixed Use (70% min residential)	10	50	1,200	.01	0.15	0.14
Commercial Land Uses	Est. Employees /Acre					
Office	20		1,049	0.15	0.00	-0.15
Commercial	20		1,049	0.89	0.56	-0.32
Commercial Mixed Use (70% min commercial)	20 (70%)		735	0.00	0.52	0.55
Industrial Land Uses						
Industrial	20		1,049	0.56	0.80	0.20
Utility						
Railway						
Public/Semi Public Land Uses						
Institutional						
Park, Recreation, or Preserve						
Other Land Uses						
Agricultural						
Vehicular Right-of-Way				0	0	0
Undeveloped Land				0	0	0
TOTAL				4.93	5.45	0.52

Coon Rapids Boulevard

The Coon Rapids Boulevard corridor, stretching from the Blaine border on the east to the Anoka border on the west, has undergone several changes in recent years. While the corridor used to include a majority of the city's commercial and institutional uses, it has been transformed due to the out-migration of many of the principal users to newer or more accessible commercial developments, including Riverdale, Woodcrest Drive, the Northtown area, and the Northdale-Hanson area. This transformation has meant that existing buildings have been converted to lower value uses, redeveloped to new uses, or remained vacant for extended periods of time. Portions of the corridor also include obsolete commercial uses and incompatible housing.

This plan's overall land use recommendation is that commercial and high-density residential development should be concentrated in a handful of mixed-use nodes. Four of these nodes, known as "Preservation or Renovation Tracts," or (PORTs), have been given a special zoning designation to ensure that redevelopment occurs in accordance with a master plan for each area, and are considered priorities for redevelopment. These areas include: Port Evergreen (between Highway 47 and Foley Boulevard), Port Riverwalk (between East River Road and Egret Boulevard), Port Campus Square (between Crooked Lake and Mississippi Boulevards), and Port Wellness (between Round Lake Boulevard and the Anoka city limits). Land uses in each PORT are dictated by adopted master plans, which refine the future land uses outlined in this plan. Areas along Coon Rapids Boulevard in between the PORTs, which presently include a variety of land uses, are planned for primarily residential mixed use and commercial mixed use development. This redevelopment has been encouraged by means of an overlay zoning district. While significant expansion of commercial zoning is not appropriate on the corridor, some neighborhood commercial development adjacent to existing commercial areas and the nodes at Hanson Boulevard, Xavis Street, and Pheasant Ridge Drive is expected. Land use policies for specific areas along Coon Rapids Boulevard are as follows:

Port Riverwalk (1). Areas along Coon Rapids Boulevard between the "Y" at East River Road and Egret Boulevard are priorities for redevelopment. The City demolished the Coon Rapids Shopping Center in the mid-2000s to make way for a major redevelopment on the south side of Coon Rapids Boulevard. Primarily moderate and high-density housing is planned for this area. Neighborhood commercial and small-scale office development is planned for the north side of Coon Rapids Boulevard. As redevelopment occurs, the street network should be modified to include a new street parallel to Coon Rapids Boulevard connecting Egret Boulevard and Avocet Street. Future development on the north side of Coon Rapids Boulevard would be served by a new street behind the development extending from Egret Boulevard to Avocet Street. The vacant land and storage facility east of Coon Rapids Boulevard Extension, while not included in the PORT, is slated for industrial development. The City anticipates that approximately half of this redevelopment will occur by 2030, with the other half being complete by 2040.

Port Campus Square (2). The area between Crooked Lake Boulevard and Mississippi Boulevard, near Anoka-Ramsey Community College, is also a priority for redevelopment. Older commercial development on the south side of Coon Rapids Boulevard has been replaced in recent years with the Coon Rapids Ice Center, River North Apartments, and Boulevard Plaza. The vacant land west of the Ice Center should be reserved for a future community center or other public improvements. Mixed use development is planned for the existing Family Center Mall site on the north side of Coon Rapids Boulevard and the strip commercial development with poor visibility on the south side of the street. Parcels fronting Coon Rapids Boulevard are planned for commercial, office, or mixed-use redevelopment. The City anticipates that approximately half of this redevelopment will occur by 2030, with the other half being complete by 2040.

Port Evergreen (3). Areas along Coon Rapids Boulevard generally between Foley Boulevard and Highway 47 have experienced a fair amount of redevelopment since 2000. It is envisioned that commercial and office development will continue to be the predominant land uses in the future, with vacant and underutilized parcels redeveloping as such. Some areas along the south side of Coon Rapids Boulevard could provide expansion opportunities for industrial businesses in the adjacent Evergreen Industrial Area. However, any manufacturing or warehouse uses must be compatible with the commercial character of Coon Rapids Boulevard. The predominantly single-family neighborhood north of Coon Rapids Boulevard and south of Highway 610 is slated for eventual redevelopment with mixed uses. While higher density residential development is planned farther from Coon Rapids Boulevard, much of this area is suited for primarily commercial and office uses. The City anticipates that approximately half of this redevelopment will occur by 2030, with the other half being complete by 2040.

Port Wellness (4). While the area between Round Lake Boulevard and the west city limits, near Mercy Hospital, is generally a viable office and commercial district, several opportunities exist for redevelopment. Primarily office and institutional uses are planned for both sides of Coon Rapids Boulevard to accommodate future expansions of the hospital and additional medical office development. Some supporting commercial and residential uses are also appropriate. Significant new development—both commercial and residential—has occurred in recent years, including a senior housing project, several medical office buildings, and a multi-year expansion of Mercy Hospital. The City anticipates that approximately half of this redevelopment will occur by 2030, with the other half being complete by 2040.

WCCO Tower Site (5). If this facility is ever vacated, residential mixed use development is planned close to Coon Rapids Boulevard and low density residential development is planned for the northern portion of the site with street connections to the existing neighborhood to the north and east.

Other Areas of Coon Rapids Boulevard Between PORTS. Areas along Coon Rapids Boulevard between the PORTs, which presently include a variety of land uses, are planned for a mixture of land uses, but primarily moderate density residential redevelopment due to the corridor's transit access. The existing River Rapids Overlay zoning allows for moderate density residential development along all areas of the corridor outside of the PORTs. This includes areas with underlying zoning for office, commercial, and low-density residential. Some higher density residential development is appropriate in limited areas in the between the PORTs on sites that are adjacent to existing commercial or high-density-residential development. Some neighborhood commercial development is appropriate in these areas, but should be concentrated at existing nodes at Hanson Boulevard, Xavis Street, and Pheasant Ridge Drive, on parcels currently zoned for commercial and office development. While significant expansion of commercial zoning is not appropriate in these areas, new commercial or mixed use development may be appropriate adjacent to existing commercial or office development on parcels that are otherwise not suited for residential development.

Regional Commercial Areas

Riverdale Village Commercial Area (6). Riverdale Village, with its prominent location adjacent to Highway 10 off Main Street and Round Lake Boulevard, is likely to remain a regional commercial area oriented to the highway. Residential land use of any kind in the area is not appropriate.

Northtown Mall Area (7). The Northtown Area, which includes the businesses at the periphery of Northtown Mall around the intersections of Highway 47, Coon Rapids Boulevard, and 85th Avenue, presently consists of strictly commercial uses. With the prominence of the area as a regional draw, it is expected to remain primarily commercial in the future. As older commercial buildings become obsolete, some mixed-use redevelopment may be appropriate.

Community Commercial and Corridor Mixed-Use Areas

Northdale and Foley Boulevard Commercial Area (8). The Northdale Shopping Center and peripheral commercial and office uses near the intersection of Northdale and Foley Boulevards may require revitalization in the future. While at least some commercial development will likely remain viable in this area in the long-term, some residential or mixed use redevelopment is appropriate. In addition, the more intense General Commercial zoning district is not appropriate in this area because of its neighborhood focus.

University Avenue Corridor (9). The University Avenue Corridor presently includes a variety of land uses and zoning districts. No significant expansion of general commercial zoning is necessary beyond existing commercial nodes. As commercial uses become obsolete, new commercial or residential redevelopment is appropriate. However, redevelopment of existing single-family properties is generally not anticipated unless they are isolated from other single-family uses.

Highway 10 and Foley Commercial Area (10). The commercial area located along both sides of Highway 10 near Foley Boulevard is currently primarily commercial uses. Because of the close proximity to the highway, the area should not transition to other uses as rehabilitation and redevelopment occur. The highway-oriented commercial uses along Woodcrest Drive are likely to remain and some residential redevelopment may be deemed appropriate closer to existing residential areas.

Highway 10 and Hanson Commercial Area (11). The commercial area located around the intersection of Highway 10 and Hanson Boulevard is currently a major concentration of retail. The primary use is likely to remain commercial, with the north side of Highway 10 being highway-oriented commercial and the south side transitioning to mixed-use with some residential in peripheral areas.

Transit Station Areas

Riverdale Station Area (12). The City adopted the *Riverdale Station Area Transit-Oriented Development Design Guidelines* in 2007, which established development guidelines for the area surrounding the Riverdale commuter rail station. A new zoning district for this area was subsequently created. It suggested that the vacant property near the station develop with a mix of uses, but primarily moderate or high density residential development. This plan guides the area as Residential Mixed Use. Full development of this site is anticipated in the short term with a minimum residential density of 20 units per acre.

Foley Boulevard Station Area (13). While transit service at this station area currently consists of a high-frequency bus park-and-ride, a future station on the Northern Lights Express high-speed rail is planned at this location. The surrounding area, which presently includes a variety of industrial, office, and incompatible single-family residential uses, provides another opportunity for transit-oriented development. *The Foley Boulevard Station Area Plan*, as adopted into the Comprehensive Plan by the City Council in 2014, established land use and infrastructure policies for this area. New local streets in this area would free up land for transit-supportive redevelopment. While most of the area is not suited for new residential development, some commercial and office uses are appropriate in addition to light industrial uses.

Neighborhood Commercial Mixed-Use Areas

- The following intersections are currently identified as neighborhood commercial areas:
- The southwest corner of Main Street and Foley Boulevard.
- The northwest corner of 121st and University Avenues.
- The southeast corner of 121st Avenue and Hanson Boulevard.
- The northwest corner of Northdale and Crooked Lake Boulevards.
- The southwest corner of 105th Lane and Foley Boulevard.
- The northeast corner of Quince Street and Egret Boulevard.
- The southwest corner of 113th Avenue and Robinson Drive.

» The southwest corner of 105th Avenue and Hanson Boulevard.

» The southwest corner of 119th Avenue and Round Lake Boulevard.

» The southwest corner of 87th Lane and East River Road.

These areas are likely to remain as small commercial centers serving the needs of adjacent neighborhoods. For this reason, Community Commercial or General Commercial zoning is not appropriate in these areas. While maintaining neighborhood commercial uses throughout the city is important, it is possible that some of these areas could become unviable for retail in the long term. Some residential redevelopment may be appropriate if that occurs.

Industrial Areas

Coon Rapids and Evergreen Industrial Parks. Coon Rapids Industrial Park (generally along Xeon Street between Highway 10 and Northdale Boulevard) and Evergreen Industrial Park (generally along Evergreen Boulevard south of Highway 610) provide important employment opportunities for city and regional residents. Both areas contain a variety of manufacturing, warehousing, office, and research businesses and are almost completely developed. In the long term, some of the existing low-yield industrial uses may become obsolete and their redevelopment will become necessary. As redevelopment occurs, new businesses in the industrial parks should provide quality jobs and fall primarily within the following sectors: light manufacturing with minimal outdoor storage, medical and pharmaceutical industries, information technology (computer and telecommunication), environmental technology, and office/research and development. The City may consider financial incentives to encourage these types of businesses. The City may consider revising its industrial zoning district regulations to prohibit new low-yield uses with nuisance characteristics and encourage high-yield, high-technology uses that are compatible with the surrounding area. This may include limiting outdoor storage, ensuring high-quality building materials, and extensive landscaping. Chapter 8 of this plan provides additional recommendations for these areas.

Federal Cartridge Site. While it is unlikely that Federal Cartridge will vacate its site at Highway 10 and Round Lake Boulevard in the near future, the City should plan for its redevelopment if some or the entire site becomes available in the long term. In the 2000s, the City enacted the Northstar Office Park Overlay District, which envisions an office development with a campus-like setting that encourages a planned, integrated and unified environment combining corporate and administrative offices, research and development facilities, and associated overnight accommodations and meeting spaces. However, continued industrial use is appropriate in the short and mid-term.

Low-Density Residential Areas

Undeveloped Areas Generally Along Main Street. While Coon Rapids contains very little vacant, developable land for new residential development, a few sod farms along Main Street could be developed as residential uses when it becomes cost-effective to complete the necessary soil corrections and wetland mitigation. The Future Land Use Plan indicates that areas along Coon Creek Boulevard north of Main Street are planned for low density residential development. The remaining single-family homes between Main Street and Bison Creek Park should eventually be acquired to expand the park and eliminate this generally incompatible land use. The parcels on the northeast corner of Main Street and Shenandoah Boulevard should be redeveloped as primarily moderate density residential. The sod farm east of Shenandoah Boulevard, if ever developed, should include generally low-density residential development, possibly with some moderate-density development adjacent to Main Street. The undeveloped privately owned land generally southwest of the intersection of 121st Avenue and Shenandoah Boulevard is slated for low density residential development, although the southern portion of this site will likely remain undeveloped to accommodate drainage and wetlands.

Predominantly Large-Lot Residential Areas South of Coon Rapids Boulevard. In recent years, several large residential lots between Coon Rapids Boulevard and the Mississippi River east of Hanson Boulevard have been subdivided to allow new home construction. Current zoning regulations allow further subdivision of this area, with the exception of lots with frontage on the river. Additional subdivision is appropriate, provided the street network is well-connected and newly created lots do not display awkward platting. Prohibiting "flag" lots in this area should be considered.

Resource Protection

While the Land Use Plan takes into account preservation and enhancement of Coon Rapids' natural and cultural resources, additional efforts are necessary to ensure their protection. This section addresses historic preservation, aggregate resources, renewable energy, and the Mississippi River Critical Area.

Historic Preservation

The City presently has a Historical Commission to address historic preservation needs. The Commission:

» Advises the City Council on matters relating to the preservation of buildings, lands, areas or districts which possess historical or architectural significance and which will promote the educational, cultural, and general welfare of the city.

» Recommends to the City Council acquisition and maintenance of buildings, lands, areas or districts which the Commission has determined to have historical or architectural value. Also recommends methods to recognize and record persons, places, and events having historical significance to the city.

» Plans activities to recognize and celebrate the history of the city.

In the future, it is anticipated that the Commission will:

» Continue the historical site marker program.

» Support City housing rehabilitation efforts maintaining the historical and architectural integrity of the city's housing stock.

» Support Mississippi National River and Recreation Area efforts to recognize the historical significance of the Coon Rapids Dam.

Aggregate Resources

According to the *Minnesota Geological Aggregate Resources Inventory of the Seven-County Metropolitan Area*, Coon Rapids does not contain substantial deposits of aggregate materials. Because Coon Rapids is a developed community, no resource extraction is anticipated in the future.

Renewable Energy Infrastructure and Resources

Solar Resource Protection. Minnesota Statutes require comprehensive plans to include "an element for the protection and development of access to direct sunlight for solar energy systems." While this requirement was intended to address concerns over declining fossil fuel supplies in the 1970s, alternative energy production has received an increasing amount of attention in recent years.

TABLE 2-13: City of Coon Rapids Solar Resource Calculations

Gross Solar Potential	Rooftop Solar Potential	Gross Solar Generation Potential	Rooftop Generation Potential
27,706,525	3,001,256	2,770,652	300,125

Source: Metropolitan Council, June 2017

The Gross Solar Potential Map (2-8) shows the city's gross solar potential geographically. The most solar potential exists in the central part of the city along Highway 10 and Main Street and in other pockets throughout the city. Table 2-13 shows the gross solar potential calculations for the entire city as a whole based on the solar map. Gross Solar Potential and Rooftop Solar Potential estimates the total potential solar energy resource before removing areas unsuitable for solar development or factors related to solar energy efficiency. Gross Solar Generation Potential and Rooftop Generation Potential are estimates of how much electricity could be generated using existing technology and assumptions on the efficiency of conversion. The City's goal and policies regarding solar resources are as follows:

Goal #1: Encourage the use of new energy resources and protect solar access.

Policies:

5-1 Ensure the zoning regulations regarding setbacks and height limitations generally allow for direct solar access on rooftops and south-facing walls.

5-2 Work with power companies to accommodate customer use of solar energy systems.

Strategies to implement these policies include making sure that residents and developers are aware of the zoning regulations that allow for direct solar access and provide the option to implement solar energy infrastructure.

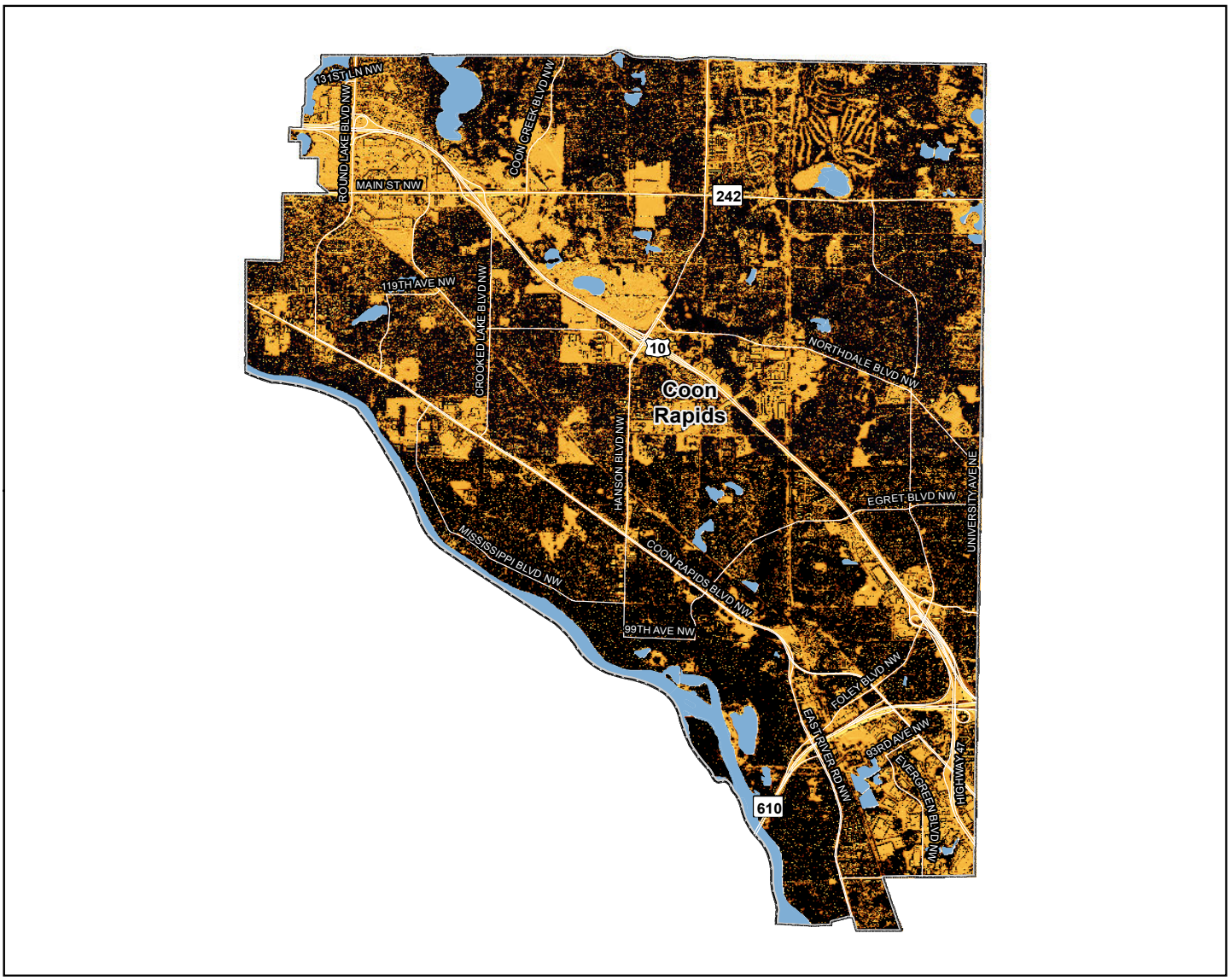
Other Energy Resources. In addition to solar energy systems, Coon Rapids' zoning regulations allow for earth-sheltered single-family homes, which are typically more energy efficient than traditionally constructed homes. Earth-sheltered homes that do not meet all zoning requirements for standard homes can be considered as a conditional use in residential zoning districts. This allows for more flexibility in accommodating energy-efficient dwellings.

City Code also allows the use of wind-powered generators. The City should encourage the use of wind power, provided that turbines are compatible with surrounding land uses and any noise generated meets Minnesota Pollution Control Agency standards.

The City should also ensure that its building and zoning regulations allow and encourage construction techniques and site design characteristics that limit negative environmental impacts and provide high levels of energy efficiency. This includes the U.S. Green Building Council's LEED (Leadership in Energy and Environmental Design) standards.

MAP 2-8: Gross Solar Potential

City of Coon Rapids, Anoka County



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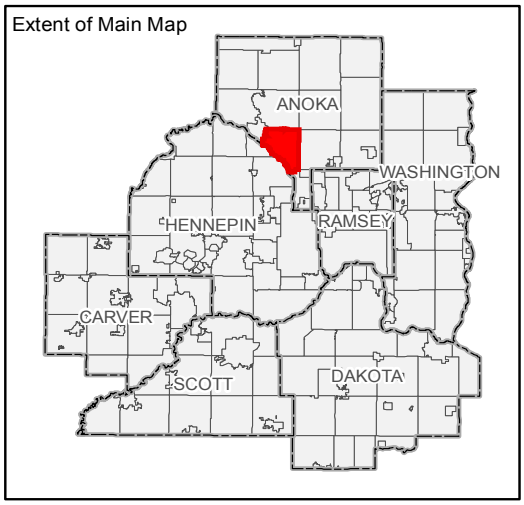


0 0.5 1 2 3 4
Miles

Gross Solar Potential
(Watt-hours per Year)

High : 1269262

Low : 900001

Solar Potential under 900,000 watt-hours per year

County Boundaries

City and Township Boundaries

Wetlands and Open Water Features

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

Implementation

The *2040 Plan* establishes policies for future development in Coon Rapids, guiding the amount, location, and intensity of future land uses to ensure compatibility with one another and the natural environment. This section tells *how* the City intends to accomplish this future vision. Official controls, including ordinances and fiscal devices, are the primary tool for implementing the City's land use policies.

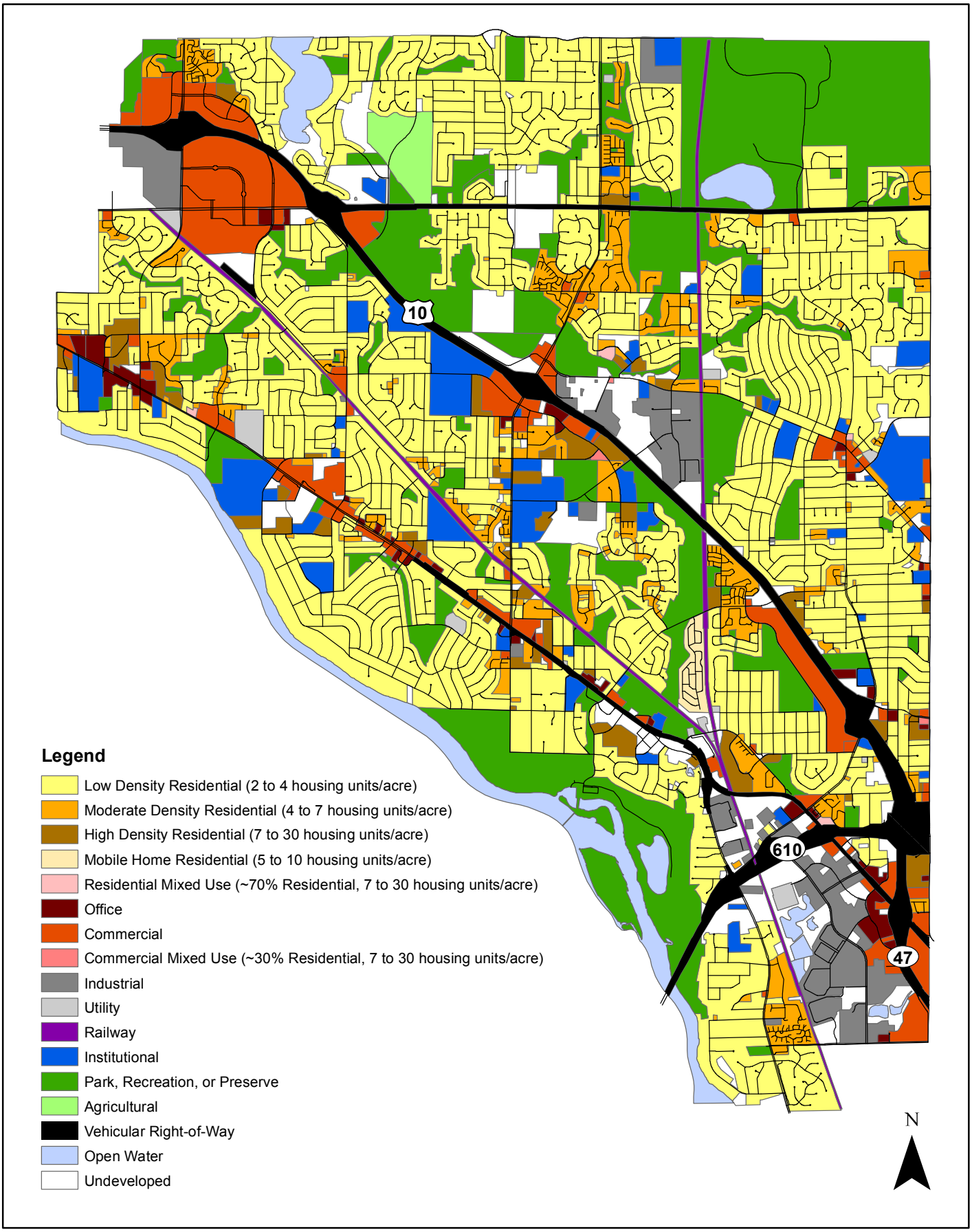
Zoning Districts. The *Metropolitan Land Planning Act* requires that a community's official controls be consistent with its Comprehensive Plan. A community's zoning ordinance and map are the primary mechanisms for realizing the vision of its Comprehensive Plan. Overall, Coon Rapids' existing zoning districts allow for implementation of the policies established in this chapter. The least dense residential district allows three dwelling units per acre and other districts allow up to 50 units per acre by right. Flexibility mechanisms are built into the zoning code in some districts to allow for even higher density in certain settings. Table 2-14 lists the future land use categories, along with the corresponding zoning districts and residential densities. While multiple zoning districts may correspond to a single future land use category, not all of those districts are appropriate in all areas guided in a particular category. Individual rezoning request must be evaluated against the policies established by this chapter. The Existing Zoning Map (Map 2-9) presents current zoning in the city.

TABLE 2-14: Future Land Use-Zoning Relationships

Future Land Use Category	Zoning Districts	Residential Density Range
Residential Land Uses		
Low Density Residential	LDR-1-Low Density Residential LDR-2-Low Density Residential	Up to 4, min. lot size-15,000 sf Up to 5, min. lot size-10,800 sf
Moderate Density Residential	MDR- Moderate Density Residential	5 to 10
High Density Residential	HDR- High Density Residential	10 to 50
Mobile Home Residential	MH-Mobile Home	5 to 10
Residential Mixed Use	PORT-Preservation or Renovation Tract MDR- Moderate Density Residential HDR- High Density Residential NC- Neighborhood Commercial	10 to 50
Commercial/Industrial Land Uses		
Commercial	NC- Neighborhood Commercial CC- Community Commercial GC- General Commercial RS- Regional Shopping	
Commercial Mixed Use	PORT-Preservation or Renovation Tract HDR- High Density Residential NC- Neighborhood Commercial CC- Community Commercial	
Industrial	I- Industrial	

MAP 2-10: Existing Zoning Map

CITY OF COON RAPIDS



Zoning Map. Nearly all new development in the city will occur in areas that are well-served by existing infrastructure. The existing zoning map allows for increased residential densities and intensification of land uses along transit corridors and other areas with infrastructure capacity. Any zoning map amendments to achieve consistency with the Future Land Use Map should be made by 2021.

Development Regulations. When the Planning Commission reviews proposals for new development, it should ensure that its decisions are based on the policies established in the 2040 Plan, particularly when a rezoning is requested. Over time, site plan regulations should be reviewed and updated to encourage high aesthetic quality, support a multi-modal transportation system, and ensure compatibility with the surrounding neighborhood.

Subdivision Regulations. The City's subdivision regulations require access to public services for all subdivided land and payment of park dedication fees to ensure implementation of the City's *Parks, Open Space, and Trail Plan*. The subdivision regulations also include standards for implementing proposed pedestrian and bicycle facilities.

Wetland Management. The City revised its regulations for protection and mitigation of wetlands after the *Wetland Management Plan* was adopted in 2004. The existing regulations allow for implementation of policies pertaining to wetland management.

Shoreland Zoning Regulations. While the City generally follows the shoreland zoning requirements recommended by the Department of Natural Resources, the City's zoning ordinance should be refined to reflect these requirements.

Mississippi River Corridor Critical Area. Ordinance updates related to the Mississippi River Corridor Critical Area recommended by the Chapter 9 of the 2040 Plan should be adopted as required by the Department of Natural Resources.

Plan Maintenance. Although most official controls are in place for implementing the *Comprehensive Plan*, the City's zoning ordinance should be reviewed at least every three years to ensure that the plan's policies are followed. In addition, the plan's policies should be reviewed periodically to reflect emerging trends.

Redevelopment. Staff will monitor the physical condition and economic viability of land uses to determine if there is potential for redevelopment consistent with Land Use Plan objectives. If there is redevelopment potential, fiscal tools such as tax-increment financing and tax abatement will be considered as a way to stimulate and facilitate redevelopment. This topic is addressed in more detail in Chapter 8 of this Plan, Economic Competitiveness.

Chapter 3
Transportation

This chapter provides direction and policies to maintain a safe, efficient and multi-modal transportation system in Coon Rapids through 2040. The Transportation Plan identifies a system that includes roads and highways, commuter rail and other transit services, pedestrian and bicycle facilities, freight movement, and aviation.

The transportation component of the Comprehensive Plan provides a framework for future City development, based on those aspects of transportation that most influence community development. The plan also ensures the rational and economic development of the regional transportation system.

Several general premises guide the plan, balancing urban development with community amenities, welfare, and environmental protection considerations. The Comprehensive Plan's development strategy focuses on:

- Existing Conditions
- Traffic Analysis Zones (TAZ)
- Highways and Streets
- Transit
- Bicycle and Pedestrian Facilities
- Aviation
- Freight
- Special Situations (Corridor Studies)

EXISTING CONDITIONS

Highways and Streets

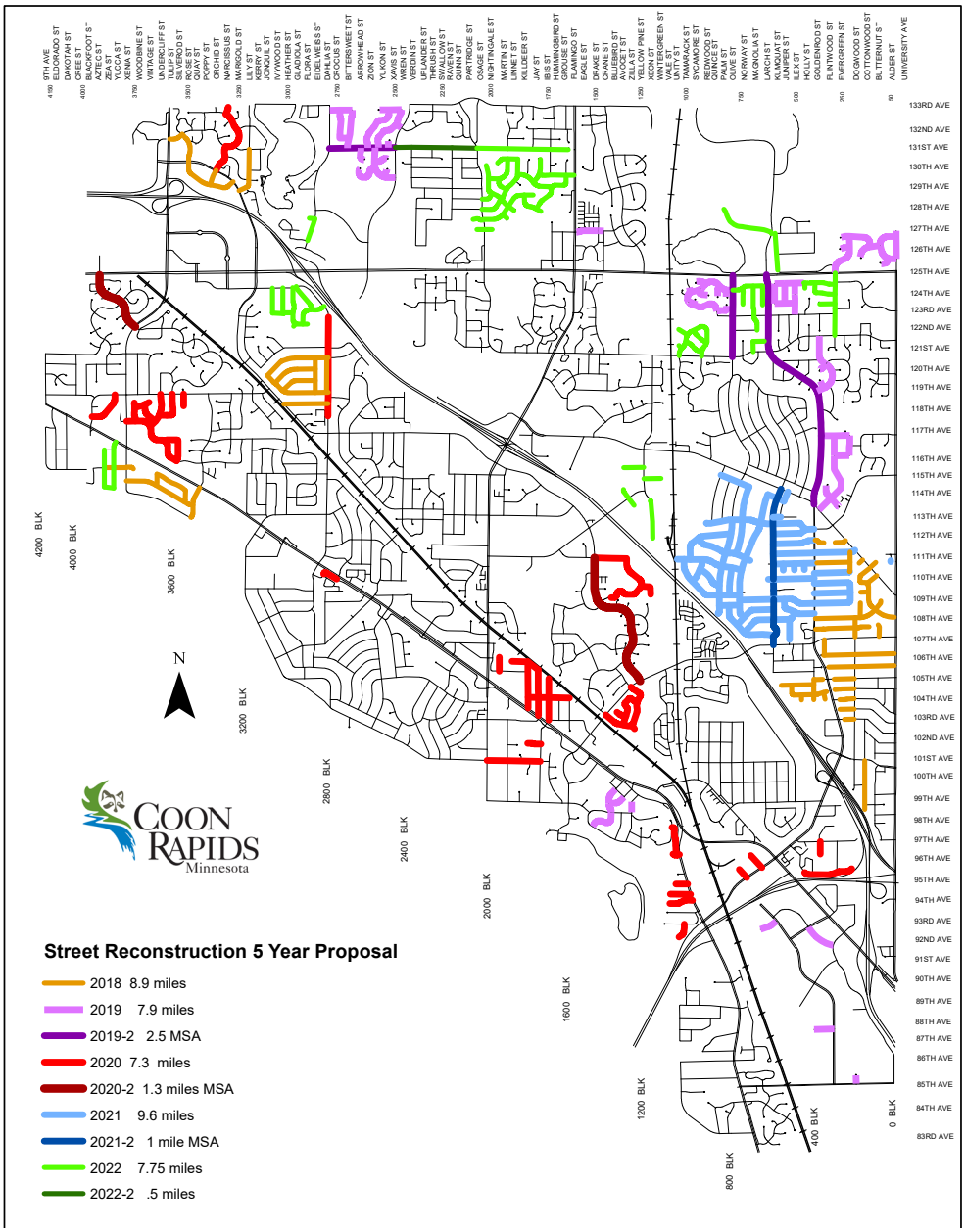
The highway and street system in Coon Rapids includes a mix of US highway (Highway 10), Minnesota highways (Highways 610 and 47), Anoka County roads and city streets. The table below summarizes the current miles of roadway by jurisdictional classification.

Jurisdiction	Mileage
US Highway	6.7
State Highway	3.7
County Road	29.3
Municipal Street	218.2
Total	257.9

Since 2012, the City has employed an aggressive street reconstruction program that rehabilitates between 8 to 10 miles of city streets each year. The City plans to continue this level of street reconstruction for at least the next 5 years.

The map below (Map 3-1) shows the current five year plan for street reconstruction. The plan is approved on a year by year basis by the City Council. The City plans to continue to target between 5 and 10 miles of streets to be reconstructed each year.

MAP 3-1



Functional Classifications

The city's highway and street system can be broken down into four classifications: principal arterials, minor arterials, collector streets and local streets. Principal arterials, minor arterials, and collector streets are listed in Table 3-1 "Functional Classification of Streets" and are shown on the map "Functional Class Roads." (Map 3-2) There are three principal arterials in the city, Highways 10 and 610, and County Road 14 (Main Street). The purpose of these roadways is to provide inter-regional connections with an emphasis on mobility. Minor arterials provide intra and inter city connections, and include county highways and major city streets also with an emphasis on mobility.

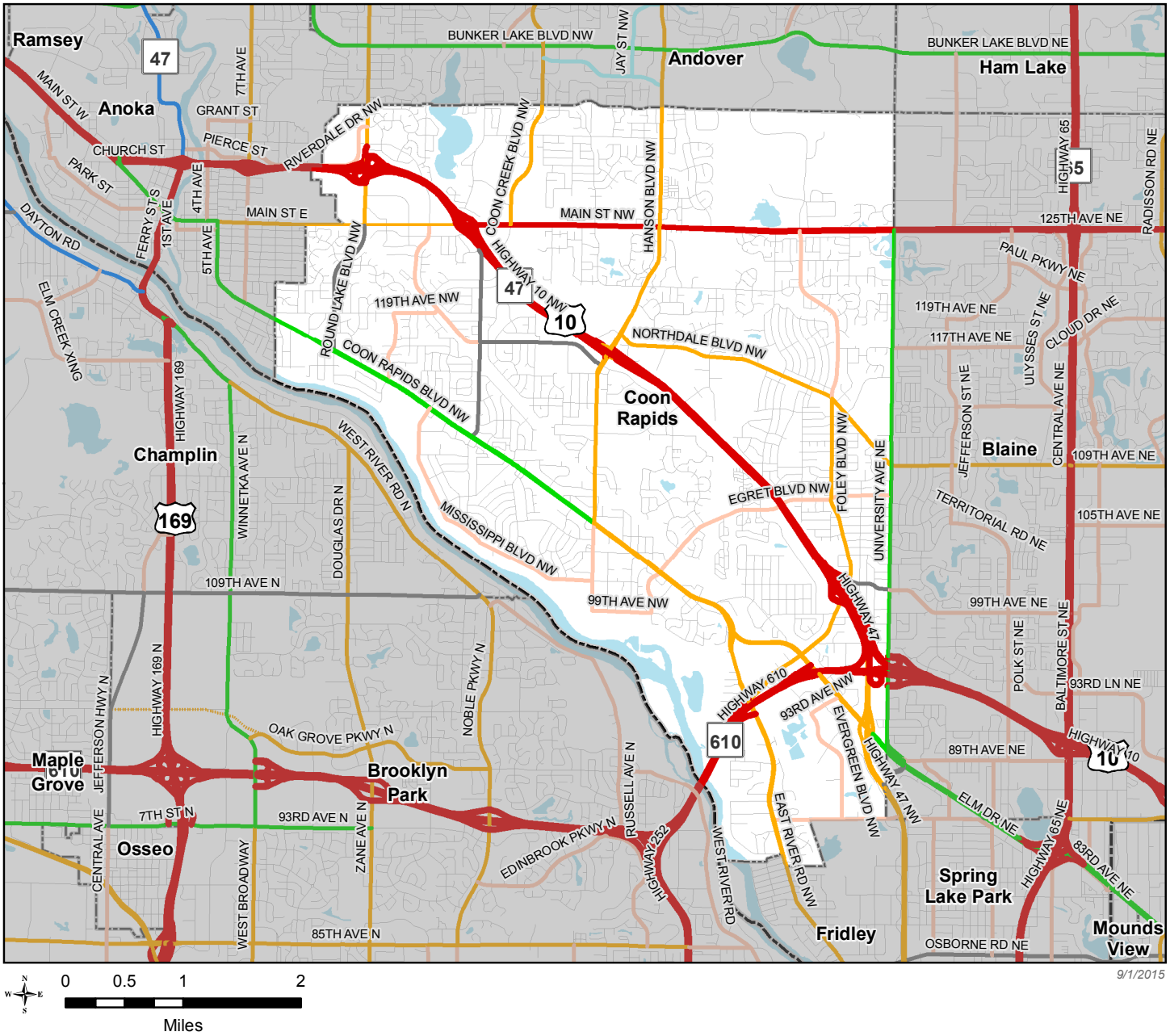
Collector streets provide access between neighborhoods and from neighborhoods to small commercial concentrations. The emphasis of these streets is equally on mobility and access. Local streets connect blocks and parcels of land. The emphasis of these streets is land access. Local streets typically connect to other local streets and collectors. Both collector streets and local streets are city streets.

TABLE 3-1: Functional Classification of Streets

Principal Arterials	Minor Arterials		Collectors
US 10	Coon Rapids Blvd.	Round Lake Blvd. (from Main St. to Coon Rapids Blvd.)	119th Ave. (from Northdale Blvd. to Pheasant Ridge Dr.)
State Hwy 610	Main St. (from Hwy 10 to Anoka)	Northdale Blvd. (from Hanson Blvd. to Crooked Lake Blvd.)	Northdale Blvd. (from Crooked Lake Blvd. to Main Street.)
Main Street (from Hwy 10 to University Ave.)	Hanson Blvd. (from Andover to Coon Rapids Blvd.)	Coon Creek Blvd.	Mississippi Blvd.
	Northdale Blvd. (from University Ave. to Hanson Blvd.)	101st Ave.(from University to Foley Blvd.).	Hanson Blvd. (from Coon Rapids Blvd. to 99th Ave.)
	Foley Blvd. (from Northdale Blvd. to East River Road)	Crooked Lake Blvd. (from Coon Rapids Blvd to 124th)	Pheasant Ridge Dr.
	East River Road	Round Lake Blvd. (from Main St. to Coon Rapids Blvd.)	99th Ave. (from Egret Blvd. to Hanson Blvd.)
	State Hwy 47		Egret Blvd.
	University Ave.		Foley Blvd. (from Main St. to Northdale Blvd.)
	Round Lake Blvd. (from Andover to Main St.)		93rd Ave. (from Coon Rapids Blvd. to Evergreen Blvd.)
			Evergreen Blvd. (85th Ave. to 93rd Ave.)
			85th Ave.

MAP 3-2: Regional Transportation System - Functional Class Roads

Coon Rapids



Existing Functional Class Roads

- Principal Arterial
- A Minor Augmentor
- A Minor Reliever
- A Minor Expander
- A Minor Connector
- Other Arterial
- Major Collector
- Minor Collector

Planned Functional Class Roads

- Principal Arterial
- A Minor Augmentor
- A Minor Reliever
- A Minor Expander
- A Minor Connector
- Other Arterial
- Major Collector
- Minor Collector

- County Boundaries
- City and Township Boundaries
- Lakes and Rivers

TABLE 3-2: Number of Lanes Arterial Streets

Principal Arterials	Existing Number of Lanes
Highway 10	4 – Anoka to Hanson Boulevard
	6 – Hanson Boulevard to Highway 610
Highway 610	6
Main Street	4 – Anoka to Round Lake Boulevard
	6 – Round Lake Boulevard to Highway 10
	5 – Highway 10 to Coon Creek Boulevard
	4 – Coon Creek Boulevard to University Ave.
Minor Arterials	
University Avenue	4
Foley Boulevard	4
Coon Creek Boulevard	2
Hanson Boulevard	4
Round Lake Boulevard	6 – Main Street to Andover
	2 – Main Street to Coon Rapids Boulevard
Northdale Boulevard	2 – Crooked Lake Boulevard to Raven Street
	4 – Raven Street to Hanson Boulevard
	2 – Hanson Boulevard to University Avenue
East River Road	4
Coon Rapids Boulevard	4 – 9th Street to Hanson Boulevard
	5 – Hanson Boulevard to Avocet Street
	6 – Avocet Street to East River Road
	4 – East River Road to University Avenue

** There is one additional eastbound thru lane planned for Coon Rapids Boulevard from Egret Boulevard to East River Road.*

Several notable city State Aid routes also serve as collector streets, however are not shown on the Regional System Map. The streets listed below are designated as Local Streets on the Regional Functional Class Roads Map. The City is proposing the designation of the streets listed below be changed to Collector Streets.

Proposed Additions to Collector Street Classification

Northdale Boulevard – From Main Street (CSAH 14) to Round Lake Boulevard (CSAH 9)
121st Avenue – From University Avenue to Shenandoah Boulevard
Shenandoah Boulevard – From 121st Avenue to 133rd Avenue
Springbrook Drive – From 85th Avenue to Coon Rapids Boulevard
133rd Avenue – From Hanson Boulevard to Coon Creek Boulevard
Riverdale Drive – From Round Lake Boulevard to Anoka
Robinson Drive – From Hanson Boulevard to Egret Boulevard
119th Avenue – From Pheasant Ridge Drive to Round Lake Boulevard
Woodcrest Drive – Egret Boulevard to 99th Avenue

Existing and Future Traffic

The changing traffic patterns and increase in traffic are shown on Table 3-3 "Traffic Counts 2003 to 2016" and maps "Existing Daily Traffic Volumes" and "2040 Daily Traffic Forecasts."

TABLE 3-3: Traffic Counts 2003 to 2016

STREET NAME	2003	2005	2008	2012	2016	% CHANGE (2003-2016)
Hwy 610 Bridge	78,000	84,000	87,000	NO DATA	102,000	31%
Hwy 10 (E of Hanson)	90,000	93,000	86,000	94,000	95,761	6%
Main St. @ Foley Blvd.	19,000	21,500	19,200	14,100	19,800	4%
Main St. @ Coon Creek Blvd.	21,000	17,000	33,500	21,900	29,500	40%
Round Lake Blvd. S of Main Street	14,900	15,000	14,000	12,300	13,000	-13%
Round Lake Blvd. N of Hwy 10	30,000	29,000	40,500	33,500	31,500	5%
Northdale Blvd. N of Hwy 10	10,500	10,000	13,100	14,900	15,300	46%
Northdale Blvd. S of Hwy 10	14,500	14,500	15,200	15,600	15,300	6%
Hanson Blvd. N Hwy 10	25,000	29,000	34,000	37,500	38,000	52%
Hanson Blvd. S Hwy 10	15,500	14,900	14,900	14,200	13,800	-11%
Hanson Blvd. N Main St.	21,000	21,500	21,500	23,000	25,800	23%
Coon Rapids Blvd. West	24,500	21,500	21,500	18,000	16,800	-31%
Coon Rapids Blvd. Central	35,000	34,000	34,000	28,000	29,000	-17%
Coon Rapids Blvd. East @ Northtown Mall	21,000	17,700	16,900	17,800	17,700	-16%
Coon Creek Blvd.	13,200	14,100	15,300	12,100	12,400	-6%
Foley Blvd.	23,000	21,800	20,100	18,800	19,100	-17%
University Ave.	19,000	18,900	22,200	22,000	22,700	19%
East River Road	15,300	15,900	16,100	14,000	13,300	-13%
Hwy 47 @ Northtown Mall	25,000	23,500	22,000	22,500	21,100	-16%

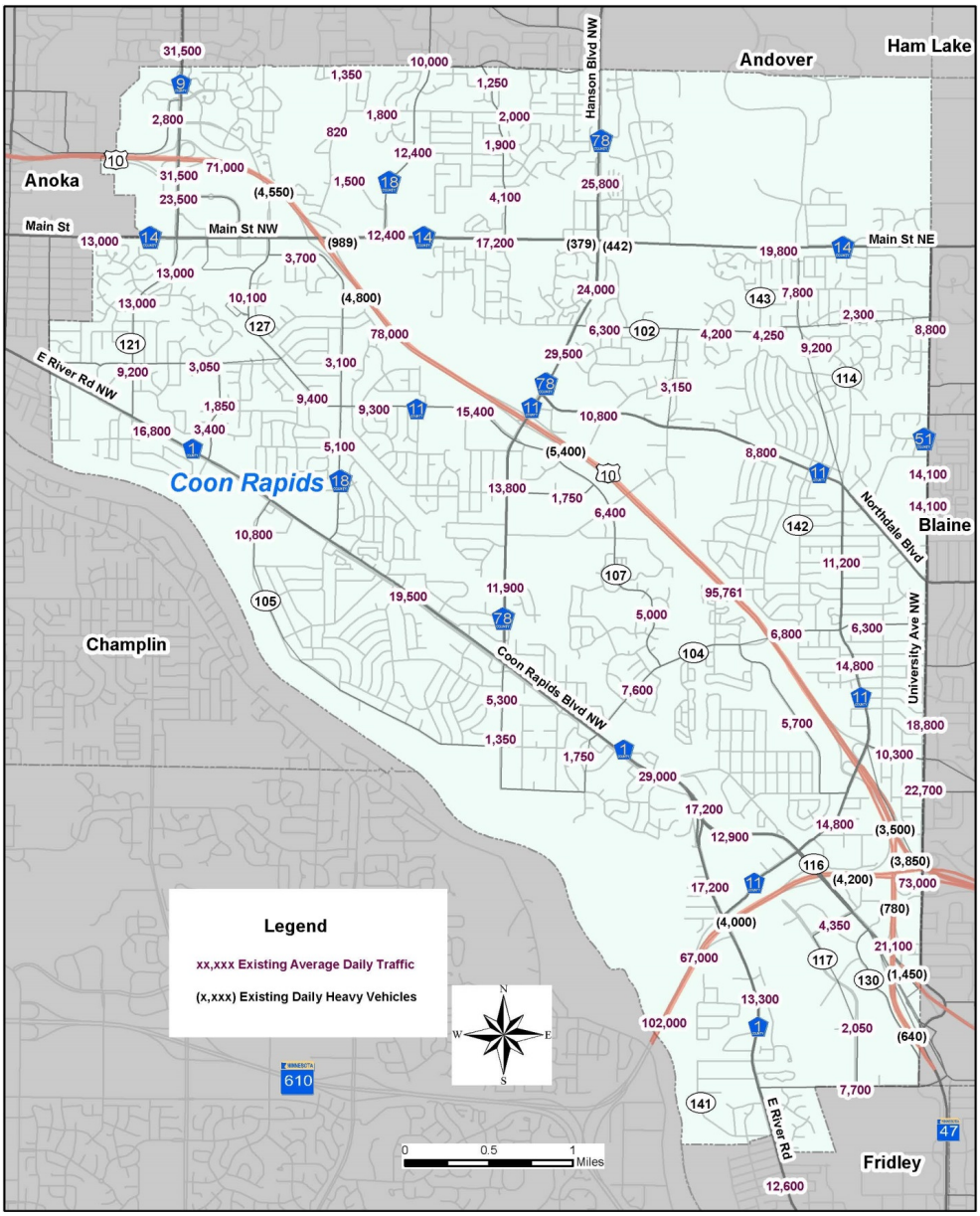
The table shows that traffic volumes on the city's three principal arterial streets (Highway 610, Highway 10, and Main Street measured at Foley Boulevard) increased 31%, 6%, and 4% respectively between 2003 and 2016. These streets provide inter-regional connections.

The remaining roads listed in Table 3-2 are minor arterial streets. They provide intra-regional connections as well as inter-regional connections. The traffic increase on some of the arterials is a function of the growth occurring in adjacent communities, especially those to the north and east. Residents living north of the city utilize the north/south arterials such as Hanson Boulevard, Round Lake Boulevard, and Coon Creek Boulevard to access Highway 10. The success of the Riverdale shopping area, a regional draw, has also contributed to the traffic increase on Round Lake Boulevard north of Main Street. Residents living east of the city continue to use Highways 10 and 610 as primary transportation corridors.

Since the last Comprehensive Plan update, a third lane has been added in each direction of Highway 10 between Foley Boulevard and Hanson Boulevard. This has taken some of the pressure off of Coon Rapids Boulevard to serve as an alternative if Highway 10 becomes congested. The decrease in traffic on Coon Rapids Boulevard could be attributed to the continued loss of commercial business along Coon Rapids Boulevard and diversion of traffic to Highway 10. A grade separated railroad crossing is under construction at Hanson Boulevard and the Burlington Northern railroad tracks. This crossing work is expected to be complete at the end of 2019. A second grade separated crossing is planned at Foley Boulevard; the City will be working with Anoka County on advancing the construction date for that project.

There is currently no local full access from Highway 610 in Coon Rapids. To improve access from Highway 610 and Coon Rapids, the City has initiated conversations with MnDOT and Anoka County on constructing a full interchange at Highway 610 and East River Road. The city has been exploring the feasibility of various interchange concepts and designs. The city hopes to enter into a preliminary design phase in the near future.

MAP 3-3: Existing Daily Traffic Volumes



2040 Daily Traffic Forecasts

Coon Rapids believes that Highway 10 is reaching capacity. Even though it is not included in the Current Revenue Scenario of the TPP, discussion for a third lane between Hanson Boulevard and Round Lake Boulevard has been proposed by the Highway 10 Coalition led by Anoka County. Without the additional lane, the City fears that there will be continued congestion and delays on Highway 10 that will result in diversion of traffic to Coon Rapids Boulevard and other city streets such as Foley Boulevard, Egret Boulevard, Hanson Boulevard, Robinson Drive, Northdale Boulevard, and Round Lake Boulevard.

Diversion of traffic would be especially troublesome for future redevelopment efforts along Coon Rapids Boulevard. This road has been the historical backbone of the transportation system in Coon Rapids. In the past, it functioned as the main commercial corridor in the city. As commercial uses relocated to other areas of the city, the Boulevard's role as a commercial corridor changed to one focused more on residential use. It has now become a primary commuter street and an alternative to Highway 10. The City's long range plan calls for continued mixed-use residential development along this street.

MAP 3-4: 2040 Daily Traffic Forecasts

The City recognizes that Coon Rapids Boulevard is a primary traffic corridor through the city. As such, certain design standards shall be implemented to ensure efficient flow of traffic. In 2010, the Cities of Anoka and Coon Rapids, and Anoka County worked together to complete the Coon Rapids Boulevard/East River Road Corridor Study between 7th Avenue and Highway 610. This document shall continue to serve as the primary source of guidance for transportation development decisions along the Coon Rapids Boulevard corridor, but updates and reviews must be conducted as the use and function of this roadway is shifting (as described above).

The City considers Coon Rapids Boulevard to be important in that it also creates a major visual impression of the city for users of the roadway. In order to enhance the appearance of Coon Rapids Boulevard, the City will continue to work toward maintaining existing transportation levels of service, while creating a friendlier urban environment that compliments new development and the evolving function of the corridor.

The City acknowledges that limiting vehicle capacity on Coon Rapids Boulevard will be difficult in the future due to projections of growth in surrounding communities. The Metropolitan Council projects that there will be 26,419 more people in Andover, Anoka, Ramsey and St. Francis in 2040 than there are today. The increased growth will mean increased automobile traffic. The changes from the traffic counts in 2003 to 2016 can be seen on Table 3.2. 2040 projections are provided on the 2040 Daily Traffic Forecast map.

Traffic Congestion

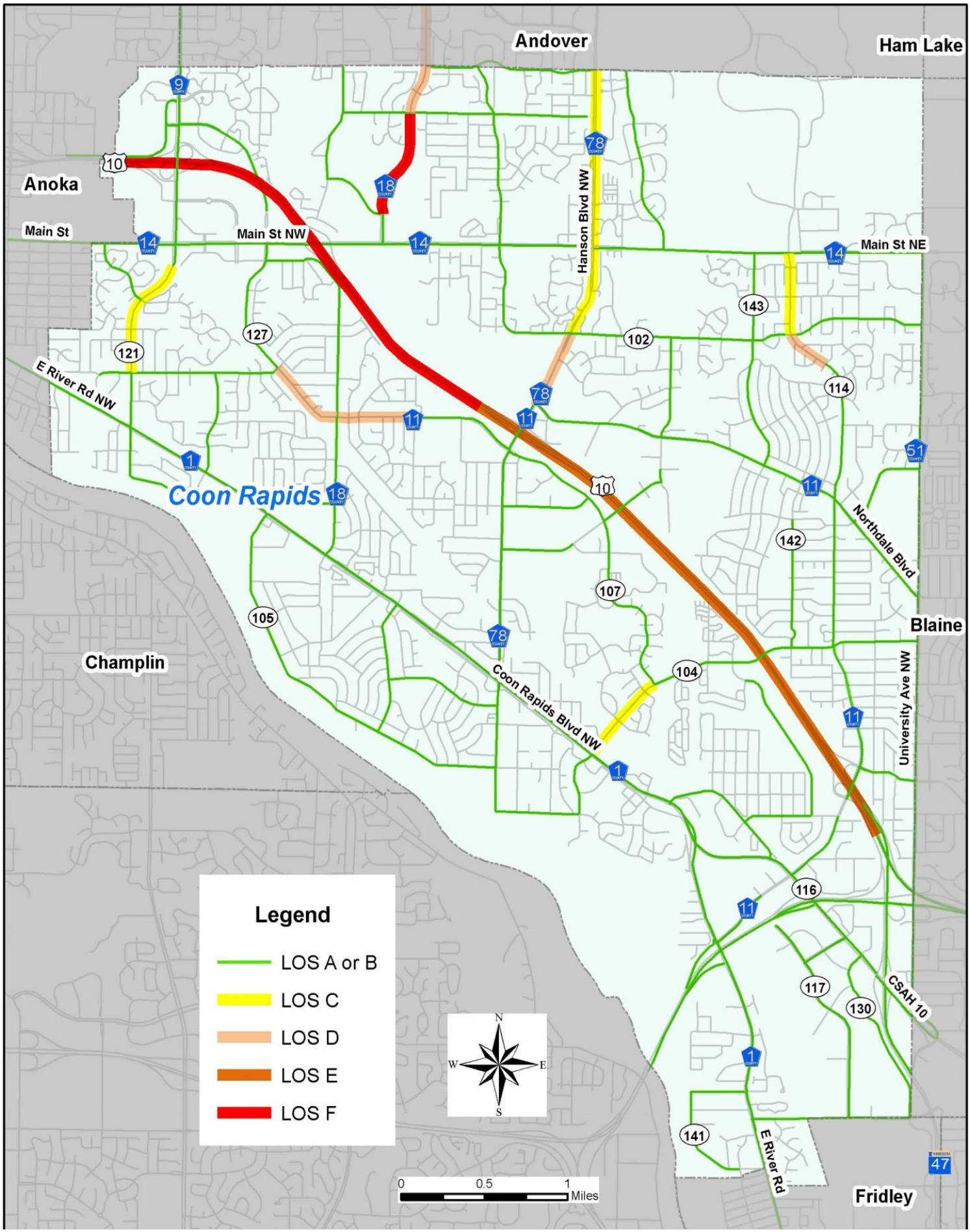
Congested areas already exist in the city. Congestion is measured by various levels. Those levels of concern are Levels of Service (LOS) D, E, or F. They are defined as follows:

Level of Service D – higher density traffic restricts maneuverability and volumes approaching capacity.

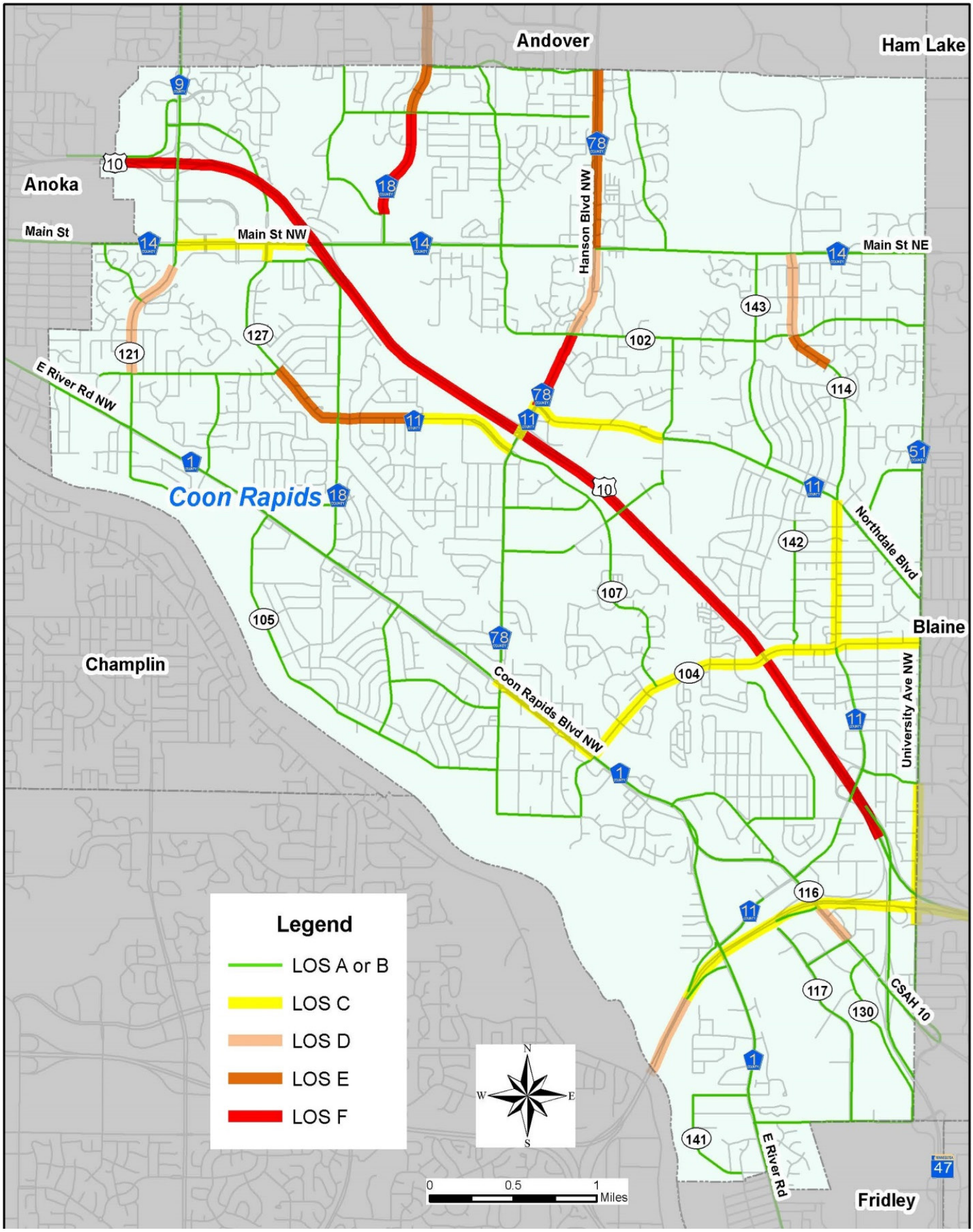
Level of Service E – low speeds, considerable delays, and volumes at or slightly over capacity.

Level of Service F – very low speeds, volumes exceed capacity, and long delays with stop-and-go traffic.

MAP 3-5: Existing Roadway Congestion Levels



MAP 3-6: 2040 Projected Roadway Congestion Levels



As shown on the maps, the level of congestion on the roadways within Coon Rapids will continue to increase. Congestion increases are a result of surrounding communities continuing to develop while plans for new or expanded roadways remain stagnant or decline given resource constraints. The freeways, including US Hwy 10, are the roadways that will be most affected by increased traffic levels. Hanson Boulevard north of US Hwy 10 currently operates near or approaching capacity and will reach level of service E and F by 2040. Future improvements to the Highway 10 Hwy corridor west of Hanson Boulevard are anticipated to reduce future congestion. Main Street between US 10 and Round Lake Boulevard currently operates at an acceptable level of service but will be approaching capacity by 2040. The majority of County and City roadways are projected to operate at acceptable levels of service in 2040 with traffic levels continuing to increase.

Traffic Analysis Zones (TAZ)

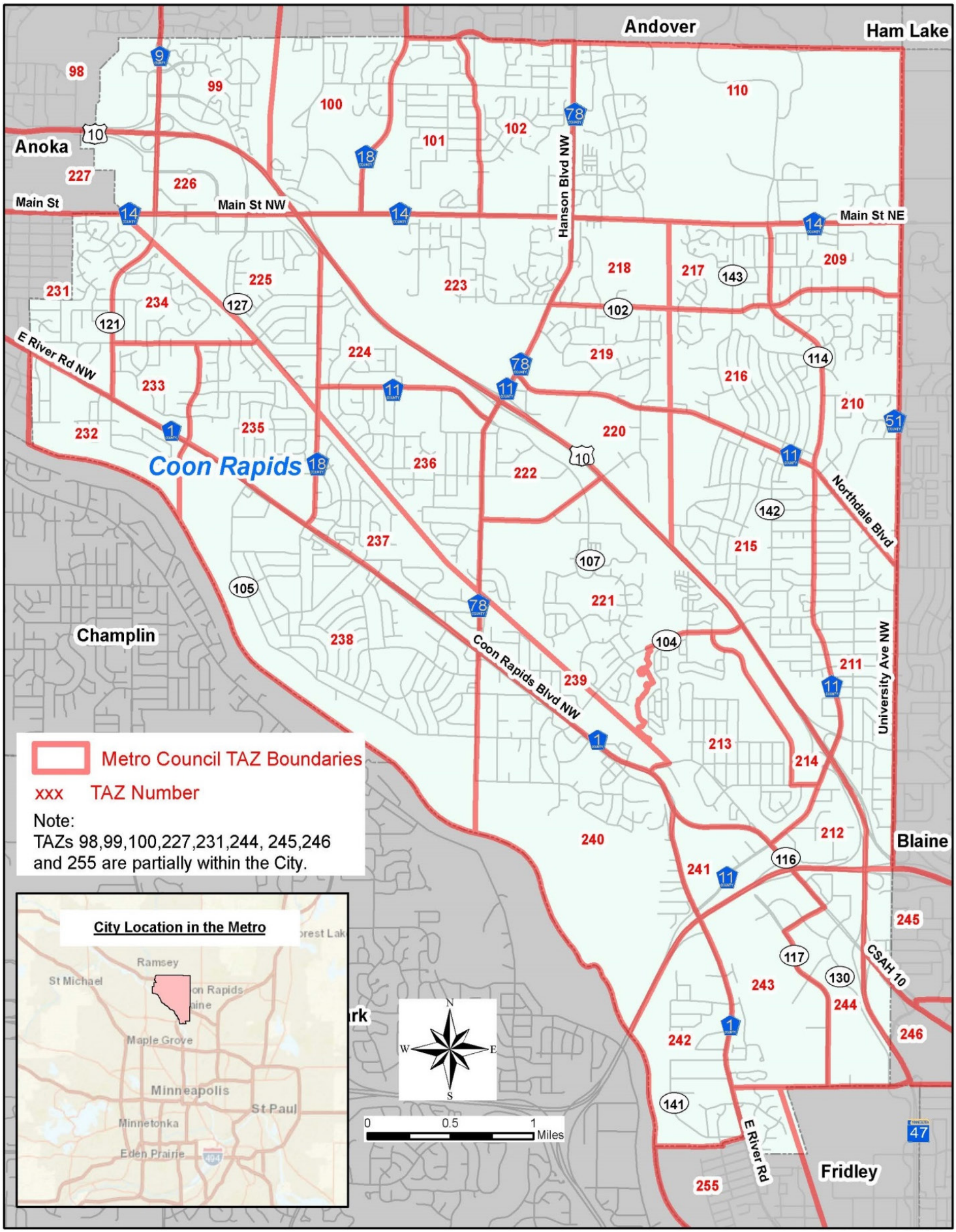
The following Traffic Analysis Zones (TAZ) table includes existing and projected population, households, and employment for each TAZ in Coon Rapids. The following Map "Model Traffic Analysis Zones" shows the location of the 42 TAZs as defined by the Metropolitan Council. The Metropolitan Council and Anoka County use TAZs to make future transportation projections. The Metropolitan Council provided the population, household and employment data shown in the chart. The 2015, 2020, 2030, and 2040 projections were extrapolated to the different TAZ based on amount of vacant land, redevelopment opportunities, and future land use designations.

Table Traffic Analysis Zones (TAZ)

TAZ	HH2015	HH2020	HH2030	HH2040	2015-2040 Change	POP2015	POP2020	POP2030	POP2040	2015-2040 Change	EMP2015	EMP2020	EMP2030	EMP2040	2015-2040 Change
98*	1,507	1,598	1,723	1,836	329	3,598	3,765	3,974	4,189	591	1,282	1,433	1,528	1,634	352
99*	823	873	942	1,004	181	2,172	2,273	2,399	2,529	357	673	752	802	857	184
100*	433	459	495	527	94	1,228	1,285	1,356	1,429	201	58	65	69	74	16
101	565	599	646	688	123	1,599	1,673	1,766	1,861	262	43	48	51	54	11
102	574	609	657	700	126	1,627	1,702	1,797	1,894	267	17	19	20	21	4
110	835	885	954	1,016	181	2,297	2,403	2,537	2,674	377	145	162	173	185	40
209	345	366	395	421	76	892	933	985	1,038	146	43	48	51	54	11
210	661	701	756	806	145	1,709	1,788	1,887	1,989	280	388	434	463	495	107
211	1,053	1,116	1,204	1,283	230	2,706	2,831	2,988	3,150	444	290	324	345	369	79
212	149	158	170	181	32	374	391	413	435	61	134	150	160	171	37
213	1,255	1,331	1,435	1,529	274	3,132	3,277	3,459	3,646	514	115	128	137	147	32
214	0	0	0	0	0	0	0	0	0	0	784	876	934	999	215
215	1,035	1,098	1,184	1,261	226	2,888	3,022	3,190	3,363	475	429	479	511	546	117
216	917	972	1,048	1,117	200	2,357	2,466	2,603	2,744	387	84	94	100	107	23
217	407	431	465	495	88	1,053	1,101	1,162	1,225	172	93	104	111	119	26
218	346	367	396	422	76	890	931	983	1,036	146	6	7	7	8	2
219	640	678	731	779	139	1,781	1,864	1,968	2,074	293	457	510	544	582	125
220	0	0	0	0	0	0	0	0	0	0	980	1,095	1,168	1,249	269
221	1,245	1,320	1,424	1,517	272	3,140	3,285	3,467	3,655	515	413	461	492	526	113
222	720	764	824	878	158	1,634	1,710	1,805	1,903	269	641	717	765	818	177
223	610	647	698	744	134	1,706	1,785	1,884	1,986	280	296	331	353	377	81
224	267	283	305	325	58	609	637	672	708	99	310	346	369	395	85
225	535	567	611	651	116	1,489	1,558	1,645	1,734	245	1,068	1,193	1,272	1,360	292
226	0	0	0	0	0	0	0	0	0	0	1,806	2,018	2,152	2,301	495
227*	0	0	0	0	0	0	0	0	0	0	39	43	46	49	10
231*	852	904	975	1,039	187	2,159	2,259	2,384	2,513	354	762	851	908	971	209
232	324	343	370	394	70	825	863	911	960	135	2,162	2,416	2,576	2,754	592
233	582	617	665	709	127	1,497	1,566	1,653	1,742	245	85	95	101	108	23
234	365	387	417	444	79	946	990	1,045	1,101	155	19	21	22	23	4
235	701	743	801	853	152	1,822	1,906	2,012	2,121	299	390	436	465	497	107
236	935	992	1,070	1,140	205	2,572	2,691	2,840	2,994	422	653	730	778	832	179
237	644	683	737	785	141	1,612	1,687	1,781	1,877	265	446	498	531	568	122
238	1,808	1,917	2,067	2,202	394	4,523	4,733	4,996	5,266	743	1,713	1,914	2,041	2,182	469
239	287	305	329	351	64	656	686	724	763	107	215	240	256	274	59
240	1,257	1,333	1,438	1,532	275	2,959	3,096	3,268	3,445	486	694	776	828	885	191
241	7	8	9	10	3	22	23	24	25	3	667	745	794	849	182
242	378	401	432	460	82	938	981	1,035	1,091	153	151	169	180	192	41
243	399	423	456	486	87	990	1,036	1,094	1,153	163	2,118	2,367	2,524	2,699	581
244*	172	182	196	209	37	441	462	488	514	73	3,426	3,828	4,082	4,365	939
245*	275	291	314	335	60	741	775	818	862	121	77	86	92	98	21
246*	0	0	0	0	0	0	0	0	0	0	71	80	85	91	20
255*	141	150	162	173	32	354	370	391	412	58	12	13	14	15	3
City Total	**24,049**	**25,501**	**27,501**	**29,302**	**5,253**	**61,938**	**64,804**	**68,404**	**72,101**	**10,163**	**24,255**	**27,102**	**28,900**	**30,900**	**6,645**
MC Statement	**N/A**	**25,500**	**27,500**	**29,300**	**N/A**	**N/A**	**64,800**	**68,400**	**72,100**	**N/A**	**N/A**	**27,100**	**28,900**	**30,900**	**N/A**

**District includes adjacent Community*

MAP 3-7: Regional Model TAZs within the City of Coon Rapids



Goals and Policies

During the City's *2040 Visioning Plan* process, residents participating in a community survey identified transportation related issues as serious challenges facing the city. They stressed a need to alleviate the congestion on Highway 10. The back-ups and delays on Highway 10 contribute to increased congestion on local and neighborhood streets. Residents believe the Northstar Commuter Rail line will continue to have a positive impact on the community, as well as provide another option for accessing the metropolitan area. Local street maintenance, including the reconstruction of Coon Rapids Boulevard to complete sidewalk and trail gaps, was also cited as a problem. Residents stressed that the City needs to remain an active and cooperative participant in discussions that address multi-jurisdictional transportation issues. Since all of the arterial streets in the City are either MnDot or Anoka County roads, the City utilizes MnDot and Anoka County access management guidelines to guide access along principal and arterial roadways. Based on these needs, this section establishes goals with respect to transportation in the city, as well as policies, or courses of action, which can be followed to achieve those goals.

Streets and Highways

Goal #1

Promote safe movement of traffic within the community.

Objectives:

1-1 To reduce the number of traffic accidents.

1-2 Minimize the amount of commercial traffic through neighborhoods.

Policies:

1-1 Develop and maintain traffic patterns that keep commercial and industrial traffic out of residential neighborhoods.

1-2 Work with Anoka County and MnDOT to keep through-traffic on arterials to minimize traffic on residential streets.

1-3 Create clear zones at intersections by eliminating obstructions.

1-4 Include traffic calming techniques in road improvement programs as appropriate.

1-5 Continue implementation of the street reconstruction and pavement management programs.

1-6 Work with Anoka County and the Metropolitan Council on changing the functional classification of certain streets where necessary.

1-7 Ensure traffic control devices are located where appropriate.

1-8 Urge the County to consider utilizing urban and/or residential design standards for County roads extending through Coon Rapids.

1-9 Work towards constructing grade separated railroad crossings at Foley Boulevard and throughout the city.

Goal #2

Promote efficient movement of traffic in a manner that respects neighborhood context.

Objectives:

2-1 To incorporate Anoka County and MnDOT access management guidelines for arterials and collectors where possible.

2-2 To support strategic improvements to principal and minor arterials that address congestion.

Policies:

2-1 Work with Anoka County and MnDot on implementing their access management goals and policies as appropriate.

2-2 Work with Anoka County to manage access to minor arterial roads from abutting properties.

2-3 Maintain minimum separation distances between driveways and intersections.

2-4 Require new plats to show continuity of street patterns and access to adjacent parcels and neighborhoods.

2-5 Work towards reducing curb-cuts and encourage shared driveways on arterial and collector streets.

2-6 Work with Anoka County, MnDOT, and member Cities of the Greater Minnesota Gateway Coalition to promote and advocate for improvements to Highway 10 through Anoka County.

2-7 Work with Anoka County on future improvements to the following minor arterials:

- Hanson Boulevard
- Coon Rapids Boulevard
- Northdale Boulevard
- East River Road
- Coon Creek Boulevard
- Round Lake Boulevard
- Main Street (Riverdale Area)

2-8 Work with Anoka County, the Met Council and MnDOT to design, fund, and construct a full access interchange at Highway 610 and Coon Rapids Boulevard.

Goal #3

A Coon Rapids Boulevard design that is compatible with new residential uses along the street.

Objectives:

3-1 To improve the aesthetic appeal of Coon Rapids Boulevard.

3-2 To improve pedestrian safety and mobility.

Policies:

3-1 Advocate for aesthetic and streetscape improvements to Coon Rapids Boulevard that make it a much more pleasant street to drive and walk, as well as a street that appeals to future residential redevelopment.

3-2 Support improvements on Coon Rapids Boulevard that improve traffic safety and flow without increasing speeds or adding more lanes.

3-3 Partner with Anoka County and private developers as appropriate to implement improvements on Coon Rapids Boulevard that match polices adopted in the Coon Rapids Boulevard Corridor Study completed in June 2010. Include updates and revisions, as appropriate, based on new development along the corridor.

Goal #4

Promote sustainable street and highway designs that accommodate multiple modes of transportation.

Objectives:

4-1 Adopt policies that accommodate street trees and enhance stormwater quality management where appropriate. This may take the form of a Complete Street Policy.

4-2 Increased coordination with energy providers and partner agencies to implement energy efficient street and traffic signal lighting infrastructure where appropriate.

4-3 Continued efforts to plan for future developments that recognize and accommodate changes in traditional modes of transportation.

Policies:

4-1 The City will consider modifications to an existing street that would follow the City's Complete Streets Policy where appropriate on street reconstruction projects.

4-2 The City will continue efforts in the identification and prioritization of existing sidewalk and trail gaps as those relate to its Complete Streets Policy.

4-3 The City will consider the development of ordinances that provide for narrower public streets (22 or 24-foot wide) where maintenance and public safety considerations can reasonably be met.

4-4 The City will work with the Anoka County Highway Department to review and consider LED lighting on all traffic signal replacement or reconstruction projects.

4-5 The City will work with Connexus Energy, Xcel Energy, and Anoka Electric to furnish and install LED street lighting as appropriate on future light replacement projects.

4-6 The City will coordinate with partner agencies to research changes in public and private infrastructure development that will encourage the use of autonomous vehicles.

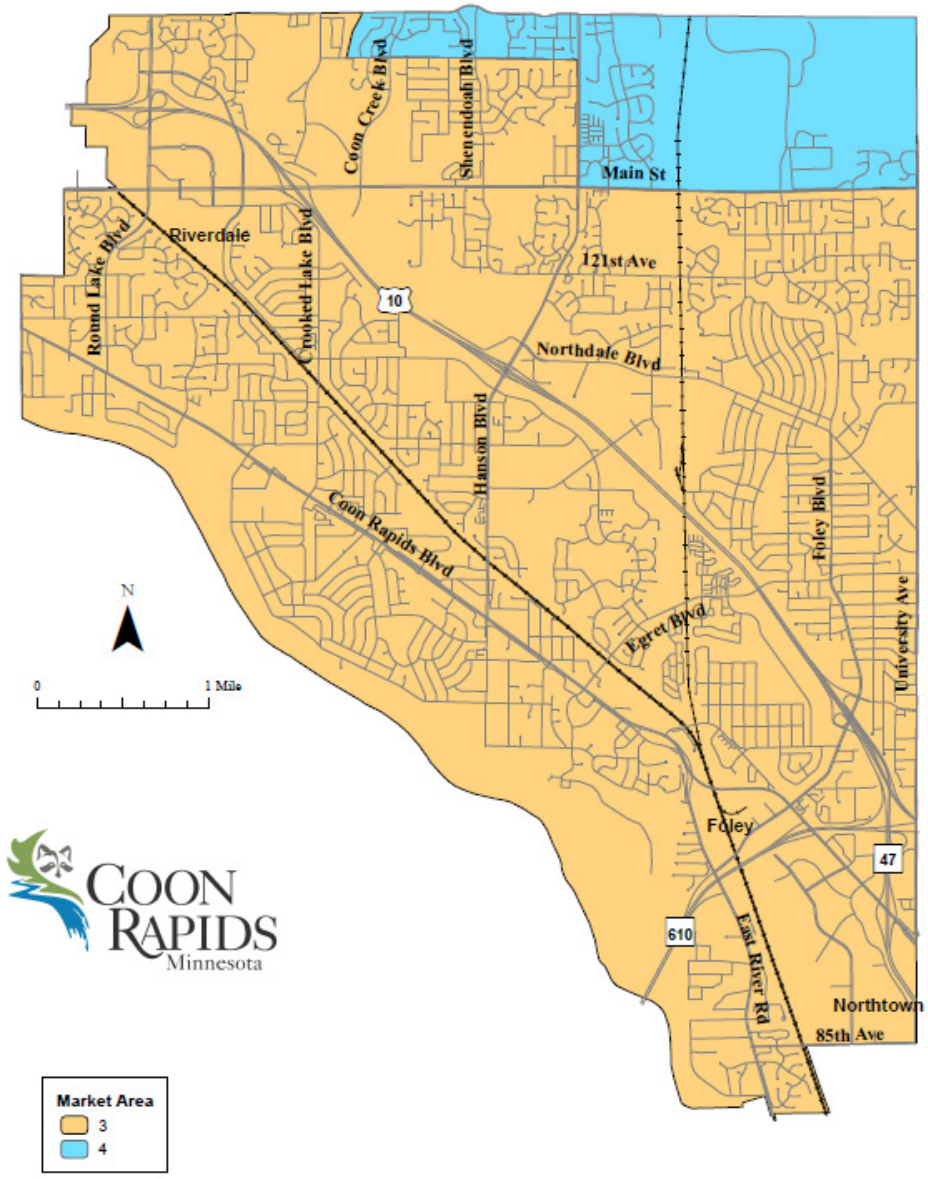
4-7 The City will consider and promote as appropriate the expansion of electric vehicle charging stations in conjunction with new development or redevelopment.

4-8 Through the implementation of a Complete Streets Policy, the City will consider infrastructure systems that manage and reduce Greenhouse Gas emissions, and provide for an increased level of mobility options.

Transit

Coon Rapids is located within the Metropolitan Transit Taxing District and classified as a Market Area III. Transit service in this area is primarily commuter express bus service with some fixed-route local service providing basic coverage. General public dial-a-ride services are available where fixed-route service is not viable. A small portion of the northeast corner of the city, generally north of Main Street and east of Hanson Boulevard, is within Market Area IV. This market can support peak-period express bus service if a sufficient concentration of commuters likely to use transit service is located along a corridor. Other transit options for city residents and visitors include local taxi cab companies, hotel shuttle service between local hotels and the airport, and ride sharing companies.

MAP 3-8: Transit Market Areas



Coon Rapids has regular transit service provided by Metro Transit, Anoka County Traveler and the Northstar Commuter Rail. A Northstar Commuter Rail station is located along Northdale Boulevard near the Riverdale shopping area. It operates 12 daily trips during weekdays, five in each direction and two reverse trips. During the weekend, it offers six daily trips, three in each direction. Metro Transit offers increased trip frequency and hours into downtown for special events such as Twins and Vikings games. The Northstar Corridor is an 80-mile rail corridor, between downtown Minneapolis and St. Cloud. The first phase of this corridor has been constructed and runs from downtown Minneapolis to Big Lake. The line connects with the Blue and Green LRT lines. For most of its length Northstar runs parallel to Highway 10. The commuter rail line operates on the existing Burlington Northern Santa Fe (BNSF) Railroad main line and includes several stations and a maintenance facility in Big Lake. The Foley Boulevard Park and Ride has been identified as a possible location for Northern Lights Express, a Duluth to Twin Cities high speed passenger rail service station. Northern Lights Express is through preliminary engineering and environmental review.

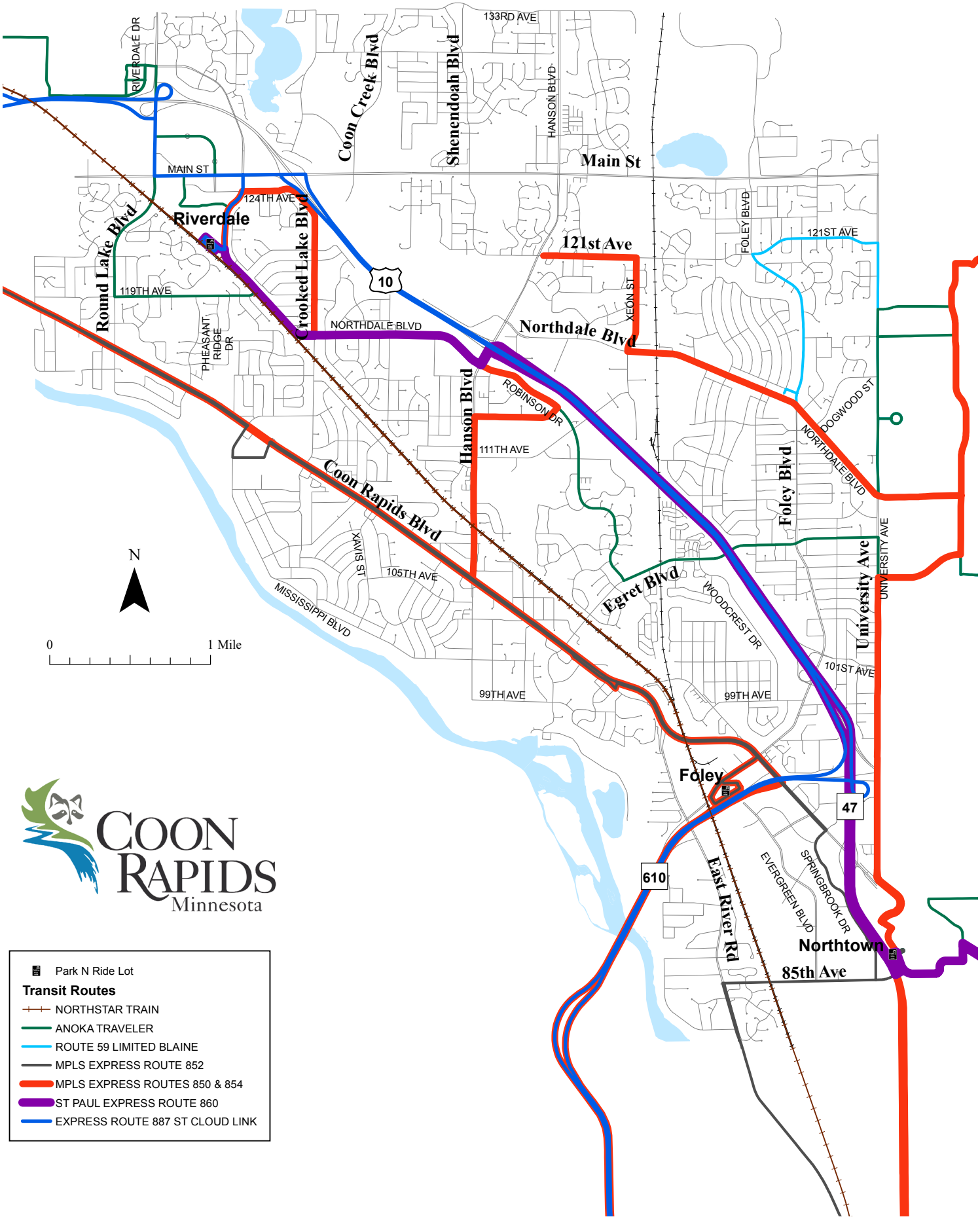
Metro Mobility and Transit Link provides both regular and ADA curb-to-curb service in Anoka County. Anoka County Medlink provides rides to and from medical, dental and social service appointments for seniors (60+) and clients receiving services from Anoka County.

Bus service includes express routes, urban local routes, and suburban local routes. There are four express routes that provide express service, one to downtown St. Paul and three to downtown Minneapolis. Both Coon Rapids Boulevard and Highway 10 include bus shoulders that aid in the express bus service. The suburban local route is the Anoka Traveler. The urban local routes are the Local Foley and the Local Northtown to Minneapolis. The neighborhoods north of Main Street are lacking transit service. Local service should be provided to this area. The following is a list of the specific routes serving Coon Rapids:

Route Number	Northbound Trips – week day	Southbound Trips – week day
854 Express	3	3
852 Express Northtown	19	19
850 Express Foley	24	25
860 Express St. Paul	7	7
59 Local Foley/Northdale to Minneapolis	2	2
25 Local Northtown to Minneapolis	11	13
Anoka Traveler 805 from Riverdale to Northtown	14	13
831 Local	13	12

Feeder bus service to the Riverdale Northstar station will be needed in the future. Connections should include Mercy Hospital and Anoka Ramsey Community College. The City will work with Metro Transit to determine the best routes. Routes will have to service communities outside of Coon Rapids, as well as Coon Rapids. The local routes could also be altered so they can provide service to the transit stations.

MAP 3-8: Transit Routes and Facilities



Goal #5

Maintain and develop a transit system that provides service to key points in the community, adjacent communities, and to downtown Minneapolis and Saint Paul.

Objectives:

5-1. Work with the Met Council on increasing transit ridership by 2040. Work with Metro Transit to provide for efficient and consistent times to downtown Minneapolis from Riverdale Northstar station, and coordinate with Metro Transit on desired transit improvements for the express and local network.

5-2 Ensure capacity for city residents on all Northstar Commuter rail trains.

Policies:

5-1 Urge the Metropolitan Council to provide schedules and routes that meet residents' needs, including the area of 121st Avenue.

5-2 Identify opportunities for transit stops and Park & Ride facilities in new and existing developments as part of the site plan review process.

5-3 Inform residents of various transit services such as Metro Mobility and use of cabs. Improve pedestrian connections to transit stops.

a. Monitor transit ridership to ensure that it meets community needs.

b. Continue support for express commuter bus service in addition to the Northstar Line.

c. Support express bus service to St. Paul, and continue to work with the Met Council on the inclusion of transit connections between Coon Rapids and the Target corporate office complex in Brooklyn Park within their regional policy.

d. Ensure that development near the city's commuter rail station and bus lines is transit-supportive in its density and design.

e. Develop feeder bus service for Northstar Commuter Rail.

f. Promote development of Northern Lights Express Duluth to the Twin Cities high speed passenger rail service with a stop at the Foley Boulevard station site.

Goal #6

Sustainable Mass Transit

Objective:

6-1 The City will work with transit providing agencies to increase levels of Transit Ridership.

Policies:

6 -1 Advocate for added and expanded transit service.

6 -2 Coordinate with Metro Transit to improve the condition of bus stops by adding amenities such as shelters and benches as appropriate.

Bicycle and Pedestrian Facilities

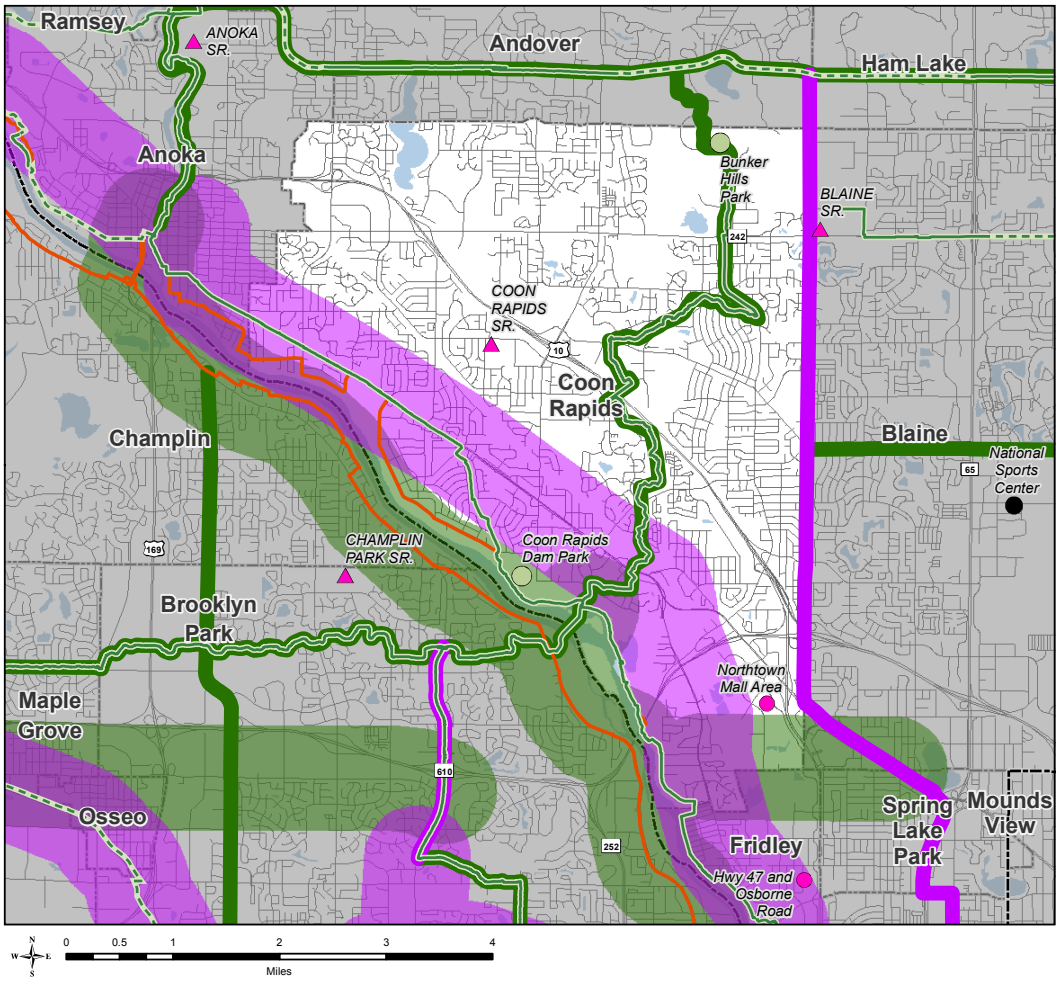
An interconnected system of trails and sidewalks is an essential part of the Comprehensive Plan. Trails build connections, allowing people to move through the community without a car, provide the means for using parks and other natural areas, and offer recreational opportunities for Coon Rapids residents.

The trail and sidewalk plan is shown on two maps: the Regional Bicycle Transportation Network Map and the Sidewalks and Trails Map. The Regional Bicycle Transportation Network (RBTN) is the network of existing and planned regional trails that are designated by the Metropolitan Council as part of the Regional Parks System. They are designed as multi-use facilities to serve both recreation and transportation trips. The Coon Rapids trail system includes the Mississippi River Regional Trail and the Coon Creek Regional Trail.

The Sand Creek linkage connects the Coon Creek Regional Trail with Bunker Hills Regional Park. The trail plan has been updated with improvements to the system. The City, as part of its parks and trails planning, is constructing missing sections in the trails and sidewalk system as well as installing ADA compliance improvements.

MAP 3-9: Regional Bicycle Transportation Network (RBTN)

City of Coon Rapids, Anoka County



RBTN Alignments

- Tier 1 Alignment
- Tier 2 Alignment

RBTN Corridors (Alignments Undefined)

- Tier 1 Priority Corridor
- Tier 2 Corridor

Regional Destinations

- Metropolitan Job Centers
- Regional Job Centers
- Subregional Job Centers
- Large High Schools
- Colleges & Universities
- Highly Visited Regional Parks
- Major Sport & Entertainment Centers

Regional Trails (Parks Policy Plan)

- Existing
- Planned
- County Boundaries
- City and Township Boundaries
- NCompass Street Centerlines
- Open Water Features
- Existing State Trails (DNR)
- Mississippi River Trail

MAP 3-10: Sidewalks and Trails
City of Coon Rapids

For the purposes of the Comprehensive Plan, continued planning and development of the trail system should be guided by the following:

Goal #7

Continue growth and maintenance of a trail and sidewalk system that allows for safe pedestrian and bicycle movements throughout the city, and provides access to transit stops, parks, and other open spaces for residents of all ages.

Objectives:

7-1 To complete the missing links in the adopted system map.

7-2 To ensure safe pedestrian and non-motorized vehicle movements through the city.

Policies:

7-1 Incorporate trail development with street reconstruction or roadway expansion projects. Where possible, the trail should be detached and separate from the roadway.

7-2 Integrate trails and sidewalks into new subdivisions. Propose as appropriate sidewalk and trail connections in existing developments that were originally constructed without these facilities.

7-3 Provide pedestrian and bicycle accessibility to public facilities, transit corridors and transit facilities, and other major activity, commercial and employment centers.

7-4 Coordinate city trail and sidewalk connections with adjacent municipalities, and with Anoka County Parks.

7-5 Require pedestrian access within commercial developments and ensure connectivity with the city's sidewalk and trail network.

7-6 Minimize crossing distances for at-grade pedestrian/bicycle crossings.

7-7 Adopt connectivity and block length standards that provide pedestrians with frequent crossing opportunities.

7-8 Utilize crosswalks, illumination, signals, and medians to provide safe pedestrian crossings.

7-9 Provide for a pedestrian bridge for the Coon Creek Regional Trail over Coon Rapids Boulevard at Avocet Street in conjunction with the proposed Riverwalk development.

7-10 Continue to install ADA compliant improvements along existing trails, sidewalks and crossings and per the City's ADA Transition Plan.

7-11 Work towards designing and implementing the Safe Routes to School program.

Goal #8

Ensure long-term sustainability in the city's pedestrian and bicycle system.

Objective:

8-1 To seek opportunities to promote the active use of trails and sidewalks as both a recreational opportunity and a means of transportation.

Policies:

8-1 The City will continue to identify and remedy gaps in the existing sidewalk and trail system network.

8-2 The City will document, encourage, and install as appropriate bicycle facilities such as bike racks and fix-it repair stations in parks and as part of private development.

8-3 The City will encourage bike sharing programs.

8-4 The City will continue working towards being recognized as a "Walk Friendly or Bike Friendly Community."

8-5 The City will work with appropriate agencies and groups on establishing Healthy Living Initiatives programs and goals

Aviation

Airports

There are no airports located within Coon Rapids. Anoka County Airport, located in Blaine, is the closest airport facility. However, seaplanes are allowed to land on the Mississippi River and Crooked Lake. Even though seaplane landings are not prohibited on the Mississippi River and Crooked Lake, landings are infrequent and there are no facilities to accommodate the landings.

Helipads

Mercy Hospital has an emergency helipad located at the northwest corner of their site, between a parking lot and Dakotah Street. The helipad was constructed in the 1970's. The pad was upgraded with lights in 1987. The hospital averages two landings per month, and is planning future upgrades to the pad in order to meet current FAA guidelines.

Airspace Protection

The 652 foot tall WCCO radio tower is the only structure in the city over 200 feet tall. Generally, the City's zoning regulations limit the maximum height of transmission towers to 150 feet. The City will require anyone proposing a structure 200 feet or more above ground that could affect navigable airspace to notify the Federal Aviation Administration consistent with current FAA regulations.

Freight

Railways

There are two segments of railroad tracks that transect the city. Burlington Northern Santa Fe Railsway's dual main line runs generally parallel to Coon Rapids Boulevard. A second BNSF single line runs north and south, east of Hanson Boulevard. The two lines join at Coon Creek Junction, just north of Coon Rapids Boulevard.

The BNSF main line averages 60-80 freight trains per day which includes periodic Northstar Commuter Rail trains and Amtrak trains. The BNSF single line to Duluth/Hinckley carries approximately 10 trains per day.

Freight Terminals

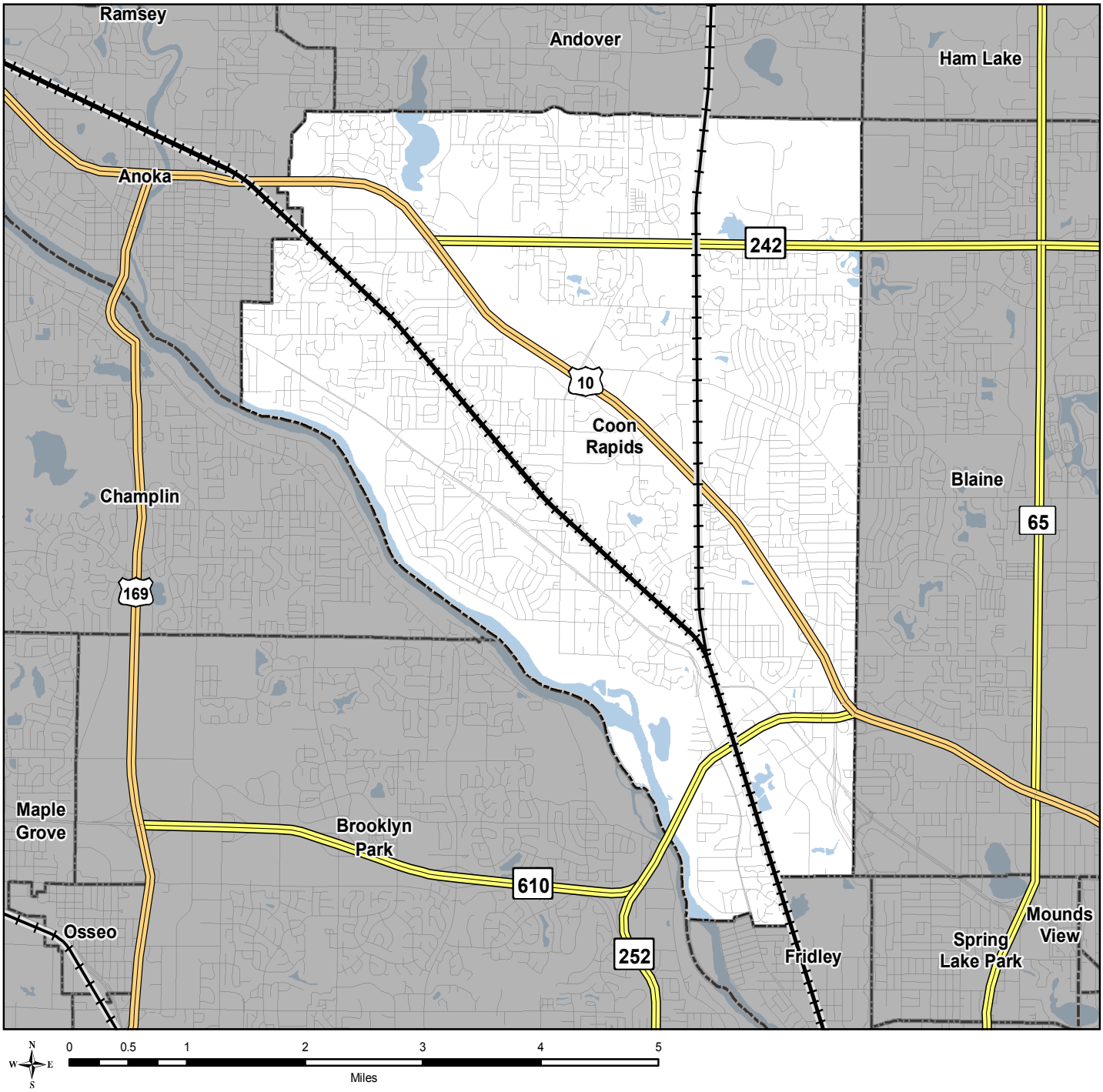
There are two large freight terminals in the city, USF Holland and Magnum Trucking. The Holland trucking terminal consists of a 100 loading docks along with office and maintenance space. The facility is located on Xeon Street, just north of Highway 10. Magnum trucking includes 80 loading docks, office and maintenance space. It is located on Evergreen Boulevard north of 85th Street.

There are two industrial parks that generate most of the freight terminal traffic. Evergreen Industrial Park is located along Evergreen Boulevard, south of Highway 610, between Highway 47 and East River Road. This industrial park includes a mix of manufacturing, warehouse, office and research businesses. Magnum trucking is located in this industrial park. The other industrial park is Coon Rapids Industrial Park, generally located between Highway 10 and Northdale Boulevard. This park includes a number of small to midsize trucking companies as well as USF Holland. There are also manufacturing, warehouse and research businesses.

There is a concentration of retail space located at the intersection of Highway 10 and Round Lake Boulevard. The center piece of this shopping area is Riverdale Village shopping center. This area includes approximately 2 million square feet of retail space.

MAP 3-11: Metropolitan Freight System

City of Coon Rapids, Anoka County



Freight Terminals

- Air / Truck
- Barge / Truck
- Rail / Truck

Railroads (Functional & Abandoned)

- EXISTING
- ABANDONED

Principal Arterial Highways

- Interstate
- US Highway
- State Highway
- County Road

- Street Centerlines (NCompass)
- Lakes and Major Rivers

Special Situations

Corridor Studies, Planned Transit Services, and Future Highway Improvements

Coon Rapids Boulevard/East River Road Corridor Study between 7th Avenue and TH 610

In 2010, the City in partnership with the City of Anoka and Anoka County, conducted an assessment of Coon Rapids Boulevard, both from a traffic and land use perspective. The plan laid out concepts for the redevelopment and enhancement of the Boulevard. The plan focused on land use issues, access control, transportation improvements, and streetscape components.

East River Road (CSAH 1) Corridor Study in Fridley and Coon Rapids

In 2012, the City in partnership with the City of Fridley and Anoka County, conducted an assessment of East River Road, both from a traffic and land use perspective. The plan focused on land use issues, access control, transportation improvements, and streetscape components.

Highway 10 Corridor Improvements

Several upgrades have been identified along Highway 10 through Anoka County. Since these improvements provide regional benefits, the City will continue to advocate for them, even in the event those improvements may not be taking place directly in Coon Rapids.

Improvements noted by the Greater Minnesota Gateway Coalition along Highway 10 in Anoka County are as follows:

» Construction of the Thurston Avenue Interchange

» Construction of the Fairoak Avenue Underpass

» Addition of a 3rd lane on Highway 10 between Hanson Boulevard and Round Lake Boulevard in the City of Coon Rapids

» Ramsey Boulevard Interchange

» Sunfish Lake Boulevard Interchange

» North Frontage Road between Thurston Avenue and Anoka Technical College

» Backage Road in the City of Anoka – Construction of this road will keep local traffic off Highway 10

» Reconstruction of the Highway 10 crossing over the Rum River

Northern Lights Express High Speed Passenger Rail

The Met Council and MnDOT continue to review the feasibility of high speed passenger rail service from the Twin Cities to Duluth. This project would involve the construction of a third track along the double track BNSF mainline to Coon Creek Junction, and then along the single track north through Coon Rapids. A station site is being considered at Foley Boulevard near existing transit facilities in that area.

Chapter 4
Housing

This chapter of the *Coon Rapids 2040 Plan* describes the city's housing stock, housing programs, and states the City's goals and policies for maintaining the existing housing stock, adding a variety of new housing units, and addressing affordability needs.

Coon Rapids has a diverse housing stock with a variety of types of homes located throughout the city, although single family homes are the dominant housing type. Most of the housing is owner-occupied and about 90% of the housing supply is considered to be affordable to households with incomes at or below 80% AMI (Area Median Income). The pace of large scale residential construction has slowed since about 2000, as most of the remaining vacant tracts of land in the city were been developed prior to that time.

Coon Rapids' Housing Stock

This inventory section of the Plan includes a variety of elements that describe the state of the City's housing supply. There are sections on housing types, housing tenure, housing costs and family income, housing affordability, housing age, uninhabitable homes, foreclosures, vacant homes, housing rehabilitation, new construction activity, and potential housing sites.

Housing Types

Single-family detached homes are the dominant housing type in Coon Rapids. However, there are a variety of housing types, locations, and costs offered throughout the City for families at all stages of their life cycles. As Table 4-1 indicates, housing choices have remained relatively unchanged since 2000. The percentage of single-family attached/townhouses has increased slightly while the percentages of other housing types have decreased or stayed the same.

TABLE 4-1: Number of Housing Units by Type

Housing Unit Types	1980 Census		1990 Census		2000 Census		2010 Estimates		2015 Estimates	
	Units	(%)	Units	(%)	Units	(%)	Units	(%)	Units	(%)
Single-family detached	8,706	(81%)	12,273	(68%)	14,557	(64%)	15,598	(64%)	15,670	(64%)
Manufactured homes	186	(2%)	330	(2%)	276	(1%)	241	(1%)	232	(1%)
Single-family attached/Townhouses	434	(4%)	2,268	(13%)	3,739	(16%)	4,354	(18%)	4,367	(18%)
Multi-family	1,409	(13%)	3,227	(8%)	4,231	(19%)	4,269	(17%)	4,369	(18%)
Total	10,735	(100%)	18,098	(100%)	22,803	(100%)	24,462	(100%)	24,638	(100%)
Source: U.S. Census, Metropolitan Council Housing Stock Estimates										

** The total number of units for the year 2000 was revised later by the Census Bureau to 22,828, but the number of the various types of units was not revised.*

The percentage of single-family homes has overall decreased since 1980 and has remained at 64% since 2000. This trend toward a smaller share of the residential units being single-family is expected to continue in Coon Rapids as the availability of developable land decreases and costs rise. Other housing opportunities may be realized through the reuse of properties which will incur the additional costs of redeveloping the land. This will mean that increased development densities will be needed to offset the price of increasingly scarce land or added redevelopment costs.

Housing Tenure (Ownership vs. Rental)

As shown in Table 4-2, the share of the Coon Rapids housing stock that is owner-occupied decreased from 80% to 74% in the 2000s even though the share of single-family homes stayed the same. This decrease in owner-occupancy can be attributed, in part, to the conversion of single-family homes from owner-occupied to renter-occupied. However, Coon Rapids' share of rental housing remains relatively low when compared with peer cities in the Twin Cities region.

TABLE 4-2: Owner and Renter Housing in 1990, 2000, and 2010

	1990		2000		2010		2015	
	Units	(%)	Units	(%)	Units	(%)	Units	(%)
Owner-occupied housing units	13,965	(77%)	18,142	(80%)	18,159	(74%)	18,274	(74%)
Renter-occupied housing units	3,488	(19%)	4,436	(19%)	5,373	(22%)	5,837	(24%)
Vacant units	645	(4%)	225	(1%)	930	(4%)	612	(2%)
Total housing units	18,098	(100%)	22,803	(100%)	24,462	(100%)	24,723	(100%)
Source: U.S. Census Bureau Decennial Census, Metropolitan Council Housing Stock Estimates								

Housing Costs and Family Income

Median home values in Coon Rapids are increasing faster than incomes of city residents. Median rent increases are keeping more in line with income increases, but have increased more drastically than incomes during the 2000s.

Table 4-3 contains U.S. Census income and housing cost figures from 1990, 2000, and 2010.

TABLE 4-3: Housing Values and Rent Levels

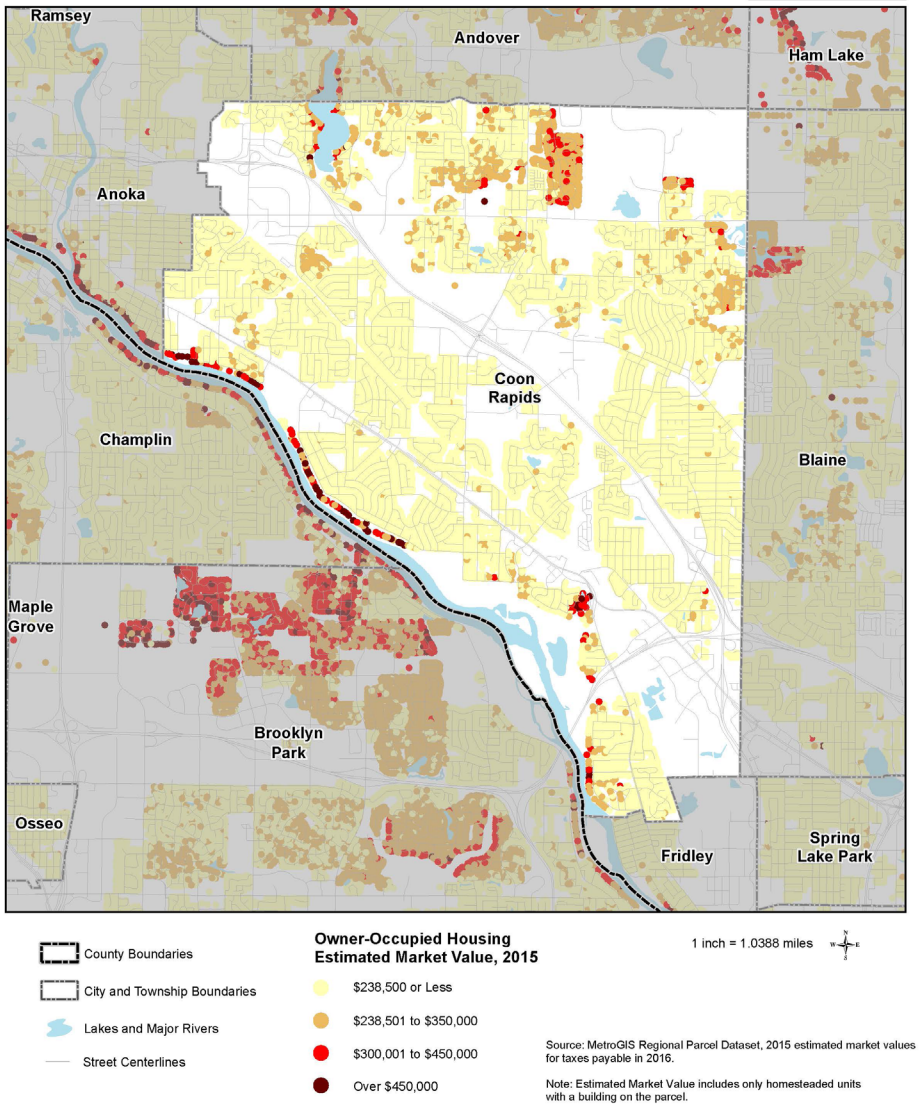
	1990 Census	2000 Census	2010 ACS 5-Year Estimates	2015 ACS 5-Year Estimates	Percent Change 2000-2010	Percent Change 2010-2015
Median Family Income*	$45,135	$62,327	$72,472	74,480	16%	3%
Median Household Income*	$42,074	$55,868	$62,448	64,203	12%	3%
Median Home Value	$82,542	$124,595	$202,700	$167,000	63%	-18%
Median Rent	$520	$689	$887	$1,032	29%	16%
Source: U.S. Census Bureau Decennial Census, American Community Survey						

**In decennial census data, household income includes the income of the householder and all other individuals 15 years of age and older in the household, whether they are related to the householder or not. Because many households consist of only one individual, median (average) household income is usually less than median family income.*

Increases in resident income have not kept up with increasing home values and rents. During the 2000s, the median rent level increased by 29%, compared to income increases of 12-16%. Home value increases, however, were much greater. The median home value in Coon Rapids jumped 63% in from 2000 to 2010.

Shown in the Map 4-1 on the following page, most owner-occupied housing is valued at $238,500 or less. Concentrations of higher valued housing are located in the northern part of the City and along the Mississippi River.

MAP 4-1: Owner-Occupied Housing by Estimated Market Value



Housing Affordability

Defining Affordability for Low Income Households

The Metropolitan Council has adopted the standards of using Area Median Household Income (AMI) to define levels of household income and housing affordability. AMI is the midpoint of a region's income distribution and provides a relative benchmark for income thresholds. Depending on their household size, households earning 30% of AMI are considered extremely low income ($25,750*), households earning between 31% and 50% of AMI are considered to be very low income ($42,900*) and households earning between 51% and 80% of AMI are considered to be low income ($65,700*). There are two standard indicators that describe housing affordability in a community. The first indicator is the percent of housing units that are affordable to low income households. The other is the percentage of low income households that pay more than 30% of their income in housing costs.

*Income figures are based on a family of four for Minneapolis-St.Paul-Bloomington Metropolitan Statistical Area (MSA) for 2016.

Indicator 1 – Percent of Affordable Housing Units. Affordable housing, according to the U.S. Department of Housing and Urban Development, is housing that costs not more than 30% of a household's gross income. The table below shows the number of housing units that are affordable to low income households of three different levels, as estimated by the Metropolitan Council. Many low income households are limited in options for affordable housing. Currently, only 5% of all housing units are affordable to households with incomes at or below 30% of AMI. Higher income levels have more options: more than a third of housing units are affordable to households with income 31% to 50% of AMI and more than half of all units are affordable to housings with income 51% to 80% of AMI.

TABLE 4-4: Housing Units that are Affordable to Low Income Households

Units affordable to households with income at or below 30% of AMI	Units affordable to households with income 31% to 50% of AMI	Units affordable to households with income 51% to 80% of AMI
1,126 (5% of all housing units)	8,286 (34% of all housing units)	12,765 (52% of all housing units)
Source: Metropolitan Council staff estimates for 2015 based on 2015 and 2016 MetroGIS Regional Parcel Datasets (ownership units), 2009-2013 Comprehensive Housing Affordability Strategy data from HUD (rental units and household income), and the Council's 2015 Manufactured Housing Parks Survey (manufactured homes)		

Indicator 2 – 30% of Income Spent on Housing Costs. Even with lower interest rates, more than 20% of low income households have housing costs that exceed the generally accepted maximum amount of 30% of household income. It is estimated that 5,583 low-income households are experiencing housing cost burdens. Most of the housing cost burdened households are earning incomes below 50% of AMI.

TABLE 4-5: Low-Income Households whose housing costs are at least 30% of their income (Housing Cost Burdened Households)

Income Level	Housing Cost Burdened Households
Income at or below 30% of AMI	2,154
Income 31% to 50% of AMI	2,127
Income 51% to 80% of AMI	1,302
Total Cost Burdened Low-Income Households	5,583 (23% of all households)
Source: U.S. Department of Housing and Urban Development, 2009-2013 Comprehensive Housing Affordability Strategy (CHAS) data, with counts adjusted to better match Metropolitan Council 2015 household estimates	

Factors that Affect Affordability

There are a number of factors that make housing more, or less, affordable.

City Zoning Requirements

Zoning code requirements for residential lot sizes and the amount of density allowed are factors that affect affordability. Lots in the predominant single-family zoning district are required to be a minimum of 80 feet wide by 135 feet deep, with an area of at least 10,800 square feet. This provides for a density of four housing units per acre.

The City believes that this size is reasonable. However, in some cases density for single-family detached homes can be increased through a form of planned unit development. This allows smaller lot sizes that can reduce the overall cost of the housing units. Several projects have been built that utilize this planned unit development tool to increase typical single-family home densities.

The maximum density increases to seven units per acre in the City's Moderate Density Residential district. Density in the High Density Residential district, generally located along collector or arterial streets, depends on a number of development guidelines, including required open space, the number of bedrooms per apartment unit, and the height of the building. The densities of multi-family developments in Coon Rapids are generally between 15 and 30 units per acre. However, greater density in new projects can be achieved through innovation in site design.

The City realizes that local official zoning requirements and design guidelines can unnecessarily inflate the cost of housing construction. Generally, the City's regulations appear to be in line with regulations in adjacent communities; however, the City will take appropriate opportunities to review regulations to identify those issues related to the cost of producing housing.

Publically Funded Housing

TABLE 4-6: Publically Subsidized Affordable Units

Publically Subsidized Senior Units	Publically Subsidized Units for People with Disabilities	Publically Subsidized Units: All Others	Total Publically Subsidized Units
149	24	881	1,054
Source: HousingLink Streams data (covers projects whose financing closed by December 2015)			

Coon Rapids has affordable housing that is funded by federal, state, and local governments. Table 4-6 indicates the number of publically subsidized units dedicated to seniors, the disabled, and no group in particular. As of December 2015, the City has 1,054 publically subsidized affordable units. Most is funded by the Minnesota Housing Finance Agency and U.S. Department of Housing and Urban Development. Table 4-7 outlines each these properties, the number of units, and the earliest expiration, by the public entity funding source.

TABLE 4-7: Coon Rapids Locally Assisted Housing Developments, 2006-2016

FEDERALLY FUNDED				
Property Name	Address	Total Units	Affordable Units	Earliest Expiration
Oxbowl Bend/VOA Senior Housing	3101 111th Ave. NW	61	60	7/6/2018
Dublin Park Apartments	10020 Drake St. NW	89	89	9/30/2016
Galway Place	11200 - 11240 Osage St. NW	36	36	7/27/2017
Grasslands Housing Inc.	11740 Xeon Blvd. NW	24	24	
Drake Apartments	10011 Egret Blvd. NW	48	48	6/21/2018
Mississippi View Apartments	11010 Mississippi Blvd. NW	96	95	3/14/2028
STATE FUNDED				
Property Name	Address	Total Units	Affordable Units	Earliest Expiration
Galway Place	11200 - 11240 Osage St. NW	36	36	7/27/2017
Family Affordable Housing Program	Addresses intentionally withheld	150	150	3/15/2026
Northstar Ridge	10020 - 10060 Dogwood St.	56	56	7/1/2023
HUD Homes Tax Credit	Addresses intentionally withheld	15	15	7/1/2027
Oak Run Townhomes	Addresses intentionally withheld	16	11	7/1/2027
Thousand Oaks	Addresses intentionally withheld	12	11	7/1/2026
Oak Manor Townhomes	Addresses intentionally withheld	40	40	7/1/2027
Villas Of Caroline	Addresses intentionally withheld	30	30	7/1/2026
Cottage Homesteads Of Coon Creek	2600 - 2700 Coon Rapids Blvd. NW	47	46	7/1/2026
Liberty Park	Addresses intentionally withheld	7	3	7/1/2026
Tralee Terrace	9900 Redwood St. NW	68	68	7/1/2041
Woodland Manor	1875 105th Ln. NW	24	23	7/1/2021
Villas On Palm	812 - 854 98th Ave. NW	20	14	7/1/2027
Drake Apartments	10011 Egret Blvd. NW	48	48	6/21/2018
Mississippi View Apartments	11010 Mississippi Blvd. NW	96	95	3/14/2028
Camelot Square - B	11659 - 1689 Raven St. NW	104	104	7/1/2019
Camelot Square - A	11581 - 11639 Raven St. NW	52	52	7/1/2018
Redwood Square, Wellington Ridge	9787 Palm St. NW, 9787 Redwood St. NW	71	71	7/1/2019
Harvest Hills	Addresses intentionally withheld	8	8	12/28/2020
LOCALLY FUNDED				
Property Name	Address	Total Units	Affordable Units	Earliest Expiration
Family Affordable Housing Program	Addresses intentionally withheld	150	150	3/15/2026
Northstar Ridge	10020 - 10060 Dogwood St.	56	56	7/1/2023
Source: HousingLink Streams data (covers projects whose financing closed by December 2015)				

City-Initiated Affordable Housing Production

The City has also provided assistance to housing developments so that rental costs to the resident are below normal market rates. The primary tools for these efforts are Tax Increment Financing (TIF) and partnerships with developers to sell bonds at lower than market rates to finance development costs. Table 4-8 lists the projects where the City has provided this kind of assistance. Over the last decade, there have been 169 units developed with the City's assistance. Riverdale Station will add another 251 units in 2019. The City also assists with substantial rehabilitation and preservation of housing. Since 2010, 69 units have been rehabilitated.

TABLE 4-8: Coon Rapids Locally Assisted Housing Developments, 2006-2016

NEW CONSTRUCTION						
Development	RFP award year, year of closing, or year placed-in-service	Ownership or Rental Units	Total # of Units	Housing Revenue Bonds issued by the City of Coon Rapids	Direct Local Financial Contributions (e.g. TIF, levy, etc.)	Direct County Contributions (e.g. CDBG, HOME, county levy, etc.)
Riverdale Station	2018	Rental	251	$0	$4,470,857	$0
Cottages of Coon Creek	2015	Rental	46	$5,000,000	$0	$0
River North	2015	Rental	167	$16,250,000	$1,850,000	$0
10121 Quince St	2013	Ownership	1	$0	$13,000	$128,643
9911 Larch St	2012	Ownership	1	$0	$13,000	$112,340
RECENT REHAB OR PRESERVATION						
Development	RFP award year, year of closing, or year placed-in-service	Ownership or Rental Units	# of Units with Rehab	Housing Revenue Bonds issued by the City of Coon Rapids	Direct Local Financial Contributions (e.g. TIF, levy, etc.)	Direct County Contributions (e.g. CDBG, HOME, county levy, etc.)
Single Family Home	2015	Ownership	1	$0	$0	$0
Galway Place	2012	Rental	0	$0	$0	$0
Tralee Terrace	2010	Rental	68	$8,000,000	$3,795,000	$300,000
Source: City of Coon Rapids Affordable Housing Survey 2016						

Evaluation of Coon Rapids Housing Performance

The Metropolitan Council calculates Housing Performance Scores annually for all cities and townships in the region. The scores assess and recognize local efforts in developing and maintaining affordable housing and in supporting low-and moderate-income households through a variety of programs and services. The Scores also provide critical information on new affordable housing throughout the metro region. Points are divided into four categories, with an opportunity for additional points for additional efforts in providing affordable housing. In 2016, Coon Rapids received a score of 98 out of a possible 100 points. This high score reflects Coon Rapids' performance in meeting affordable housing goals, especially in the area of preserving and rehabbing existing housing stock, providing other housing-related services, and approving and contributing to housing development and redevelopment efforts. Allocation of points for each category is described in Table 4-9.

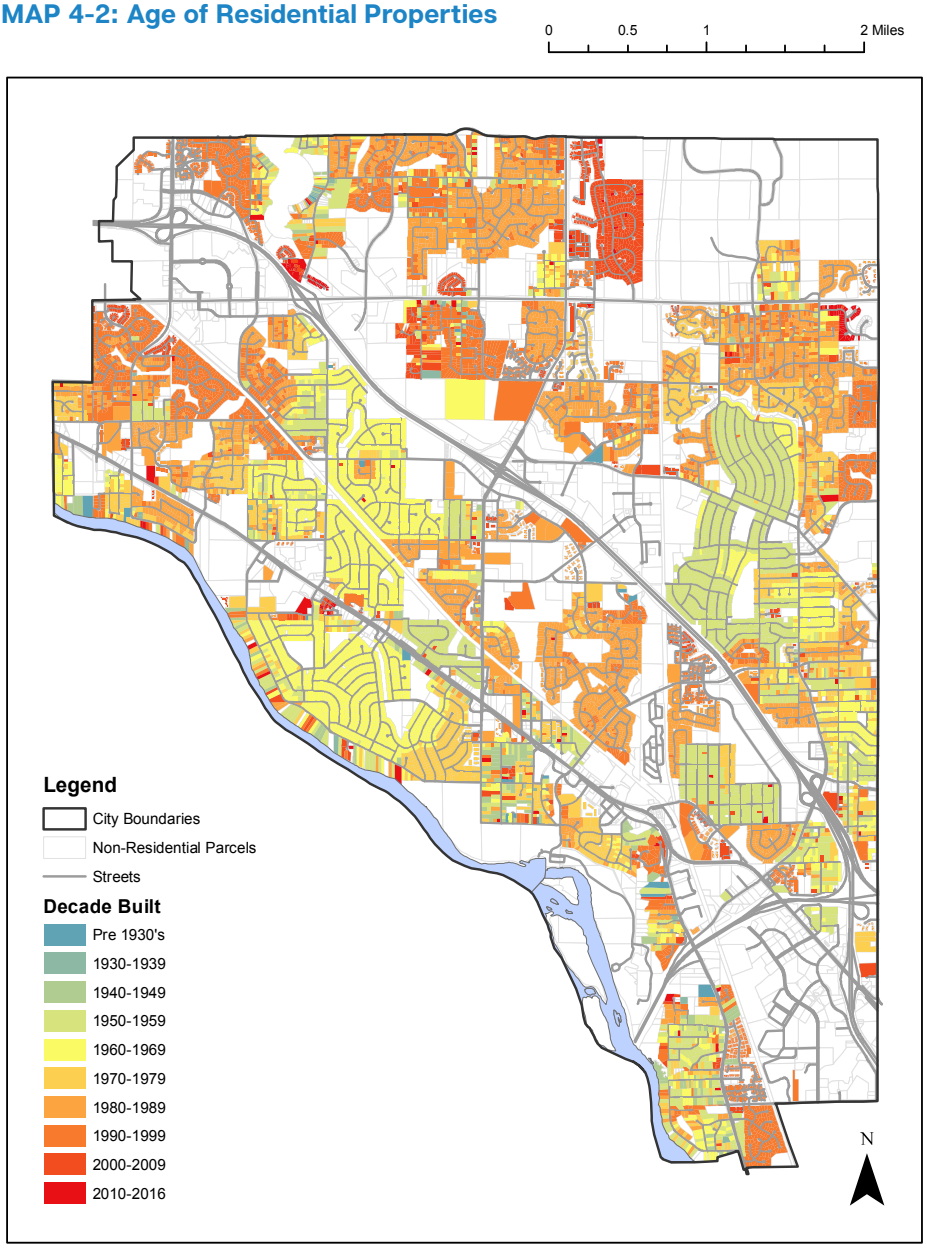
TABLE 4-9: Coon Rapids 2016 Housing Performance Score

Score Category	Points Received	Possible Points
Recent new construction projects completed in the last 10 years	15	15
Recent preservation projects in last 10 years or substantial rehabilitation in last 3 years	35	35
Housing programs and policies in place and in use in the last 5 years	25	25
Characteristics of the existing housing stock	20	25
Additional efforts in providing affordable housing	3	N/A
TOTAL	98	100
Source: City of Coon Rapids, Metropolitan Council 2016 Housing Performance Scores		

Housing Maintenance

Age of Housing. The housing stock in Coon Rapids is aging as fewer new units are built each year. The map on the following page shows the time periods when housing was built in the city. Most housing was built after 1950, when the city started to develop. Older housing built in the 1950s and 1960s is prevalent, accounting for 30% of housing. These units cover large swaths of the central part of the city. About half of the city's housing was built during the 1980s and 1990s. Residential development has since slowed. Only about 8% of the city's residential units have been built since 2000. Newer properties have mostly been built in the northern part of the city and through redevelopment near the Mississippi River.

MAP 4-2: Age of Residential Properties

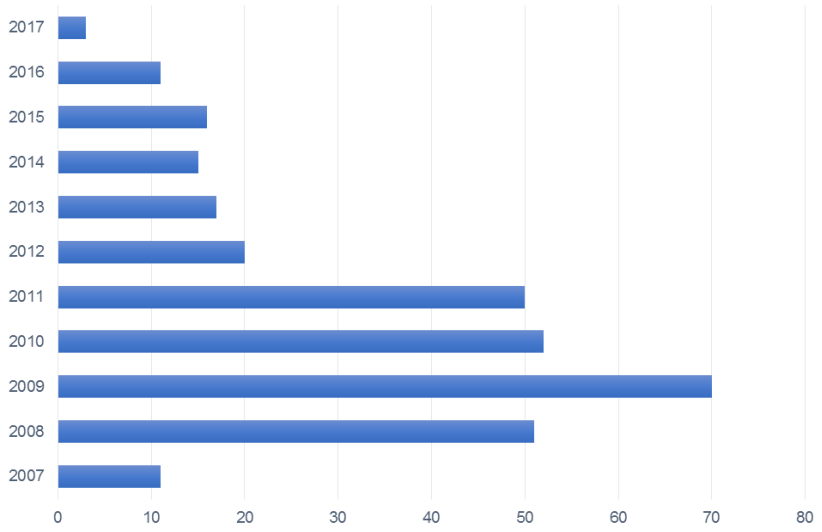


Uninhabitable Houses. Since 2001, the City has been tracking houses that are unfit for habitation. Between 2001 and 2006, 30 complaints about the condition of a housing unit were registered with the City. Since 2007, Coon Rapids has experienced an increase and subsequent decrease in the number of uninhabitable homes. Shown on page 4-10, the number of complaints and staff time devoted to this problem was at an all-time high during 2008 to 2011. In 2012, this number decreased and remained at less than 20 per year up until 2016. There were 3 complaints regarding uninhabitable homes in the first 6 months of 2017.

These homes have a variety of problems. Most of these houses were found to have utility issues or excessive storage or garbage. Many have been damaged by fire or burst pipes. Four have been used for the production of methamphetamines.

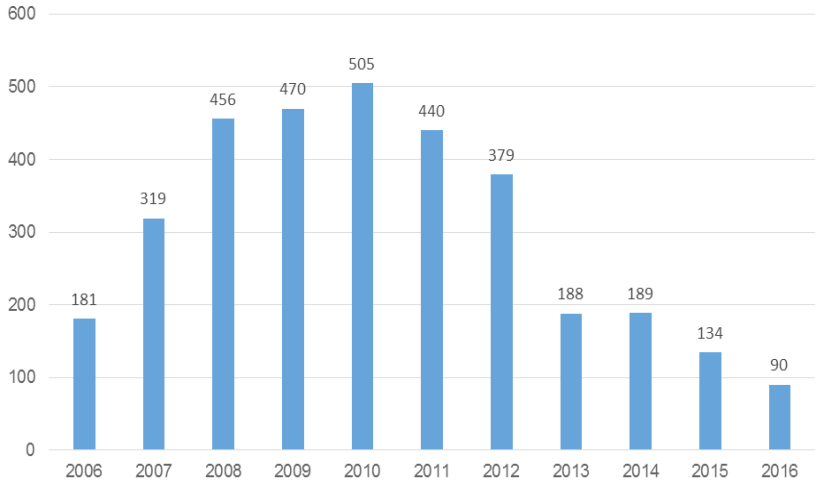
City staff works with the owners of the houses to resolve the problems, and most of the houses do get cleaned up eventually. However, in rare cases, the properties have been declared unsafe by the courts and the buildings demolished.

Coon Rapids Unhabitable Homes by Year, 2007-2017



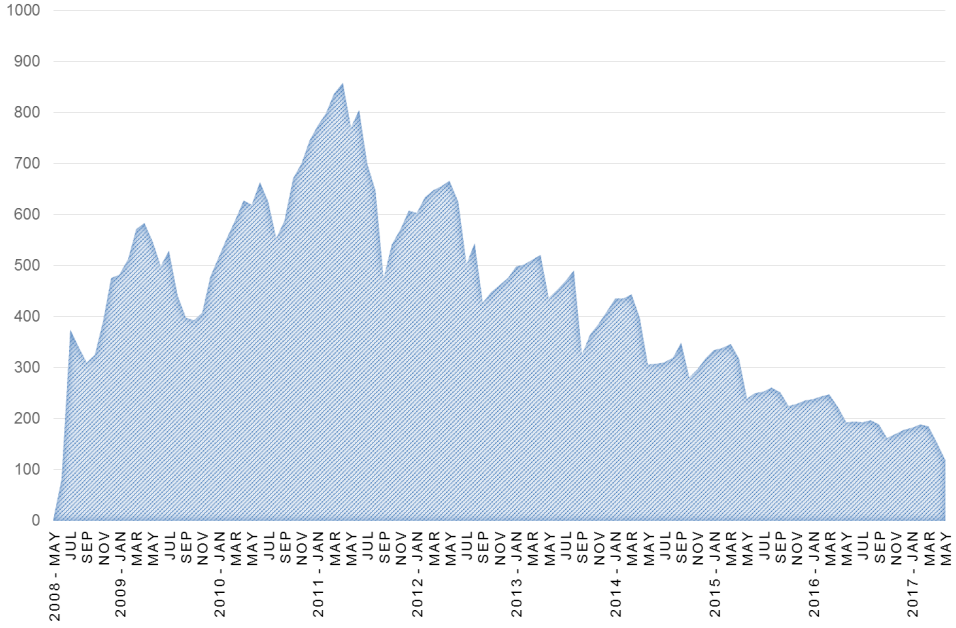
Mortgage Foreclosures. Mortgage foreclosures have affected housing conditions over the years. The greatest number of mortgage foreclosures occurred during the period between 2007 to 2012. Since then, foreclosures have steadily decreased, with only 90 foreclosures in 2016. Not only do foreclosures pose a hardship to those residents who lose their homes, they affect neighboring residences when properties exhibit deferred maintenance, as often is the case in foreclosures, and become vacant. State laws intended to tighten lending practices to help reduce foreclosures went into effect on August 1, 2007.

Foreclosures by Year



Vacant Houses. Vacant properties tend to deteriorate and can be a safety concern and nuisance for the neighborhood. Since 2008, the number of vacant homes has fluctuated with the highest numbers from 2009 to mid-2012, when there were between 600 and 800 vacant homes. These numbers have consistently dropped overall and City records indicate 119 vacant residential structures at the end of May 2017.

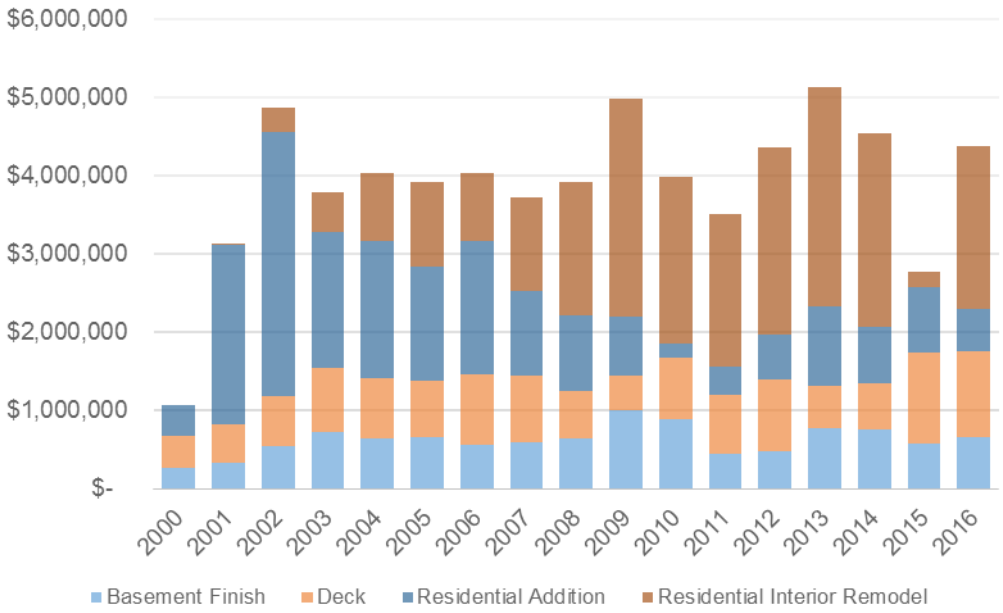
FIGURE 4-3: Vacant Homes in Coon Rapids as of 5/31/2017



Housing Rehabilitation. There is a great deal of housing rehabilitation that occurs each year – in some cases approaching or exceeding $5 million. Building permit records for rehabilitation and renovation activity from 2000 to 2016 is shown in Figure 4-4 below.

The City tracks the value of improvements when building permit applications are made. Roof and siding replacements have been excluded from the figure, however, because the City's permit system does not distinguish between residential and commercial permits for these kinds of improvements. The exact dollar value of the improvements also is unknown because building permits are not required for several types of work that improves the condition of housing. For example, exterior painting and minor, nonstructural improvements and repairs do not require permits. There are also improvements that occur without the property owner obtaining required permits. Therefore, real dollar numbers are not available.

FIGURE 4-4: Dollar Value of Residential Improvements



Home Improvement Loan Programs. Most of the work is privately funded. However, the City has several programs designed to help low- and moderate-income homeowners maintain or repair their homes. The Coon Rapids Mortgage Assistance Foundation (CRMAF) established a housing loan program in 2005 offering several home improvement loan products to Coon Rapids residents. Included in the program are the following funds:

- **Home for Generations II Program** – Fixed, low interest loans of up to $50,000 for participants in the City's Home for Generations II program that provides incentives for homeowners to undertake large scale, value-added remodeling projects. There are no income restrictions for borrowers. As of 2017, the program has leveraged over $5.8 million in private investment.
- **Home Improvement Incentive Loan Program** – Revolving loans for repairs or value-added improvements to single- and two-family structures and interior work on townhouse and other common interest community properties. There are no income limits for borrowers.
- **Home Rehabilitation Assistance Loan Program** – Low-interest loans for necessary repairs or improvements for borrowers earning not more than 110 percent of area median income. Area median income for the metropolitan statistical area was $85,800 in 2016. Loan payments may be deferred for homeowners at or below 50 percent of area median income.
- **Two-family Home Rehabilitation Program** – Loans at attractive interest rates for the exterior maintenance of two-family dwellings and program guidelines require that the work ensure the exteriors of both units remain compatible. There are no income limits for borrowers and payments may be deferred for borrowers at or below 50 percent of area median income.
- **Emergency Home Repair Program** – Loans for homeowners facing emergency repair needs but who are unable to access other funding sources. This fund is restricted to households below 50% AMI.

Table 4-10 shows the City's program and the amount of activity since 2005.

TABLE 4-10: City of Coon Rapids Home Improvement Loan Program Activity

Housing Rehabilitation Programs	Time Frame	Level of Activity	Total Loan Amounts
Home for Generations II Program	2013-2017	23	$1,013,946
Home Improvement Incentive Loan Program	2005-2016	97	$1,278,776
Home Rehabilitation Assistance Program	2005-2016	77	$1,120,826
Two-Family Home Rehabilitation Program	2005-2013	12	$150,774
Emergency Home Repair Program	2005-2017	2	$7,573
Source: City of Coon Rapids			

New Construction Activity

Coon Rapids is virtually developed and only 1% of the city's land remains in agricultural use, primarily sod fields. As a result, the number of new housing units constructed each year has been declining since about 2000.

Table 4-11 shows the number and types of housing units that received building permits from the year 2000 through 2015.

TABLE 4-11: New Housing Unit Permits by Year

Type	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	Total
Single-Family	76	73	100	193	178	88	33	29	5	9	10	21	33	15	11	25	899
Townhomes	68	133	65	139	105	87	115	38	4	4	8	5	0	0	0	3	774
Duplex, triplex, and quad*	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4
Multifamily**	4	136	56	0	0	0	24	24	0	0	0	0	0	100	0	167	511
Total	148	344	221	332	283	177	172	91	9	13	18	26	33	115	11	195	2,188

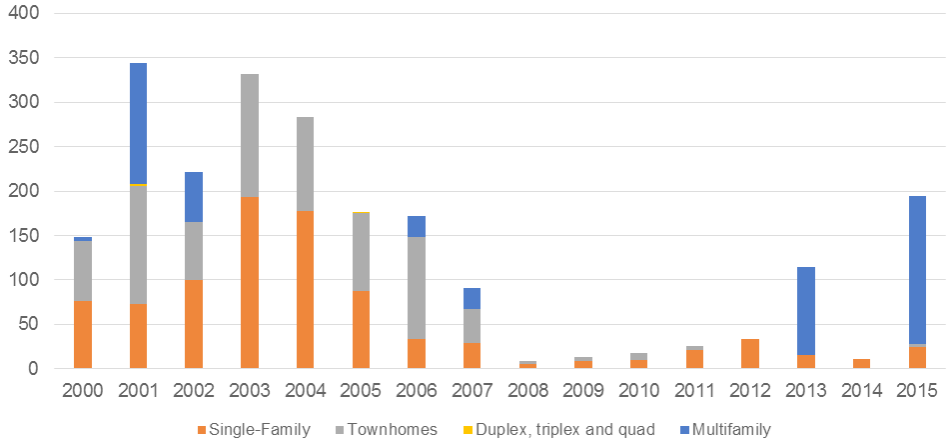
*For years 2000 to 2003, this category only included duplexes (triplexes and quads were included in the multifamily category)

**For years 2000 to 2003, this category includes housing types of 3 or more units. For years 2004 onward, this category includes housing types of 5 or more units

Source: Metropolitan Council

Part of the decline in housing construction activity is explained by market conditions in the Twin Cities region. The Twin Cities housing market peaked in November 2005. Housing demand and values across the region declined after that. Several projects across the metropolitan area were postponed indefinitely in 2006 and 2007 as the housing market went through an adjustment period. The PORT Riverwalk development in Coon Rapids was one of those projects.

FIGURE 4-5: Housing Permits Issued by Year and Type



Even by the year 2000, residential construction activity slowed down substantially due to a shortage in developable land. The year 2000 showed only 148 dwelling units received building permits. There was a significant increase to 344 units in 2001 as the Wexford area began developing. The economy had a minor effect in 2002 when the number of new housing units fell to 221 units. However, construction activity rebounded in 2003 to 332 units. The number of new units has fallen steadily since 2003 with 283 new units in 2004, 177 in 2005, 172 in 2006, and 91 in 2007. Between 2007 and 2013, Coon Rapids saw little residential construction, which can be attributed to the economic recession. In 2013 and 2015, construction activity picked up again to more than 100 units, mostly in the form of multifamily housing.

The types of units built in the city are also changing. The previous graph shows the number of single-family, townhomes, duplex, triplex and quads, as well as multi-family units constructed by year.

Single-family Construction. The traditional single-family detached home is the largest component of the Coon Rapids housing supply. 899 single-family homes were issued building permits from 2000 to 2015. However, with the scarcity of developable land, single-family housing construction has slowed since it peaked in 2003. During 2003, more than 100 single-family homes were under construction at the Wexford development at Main and Avocet streets. Since the peak, there have been relatively few new single-family homes constructed. Construction was at its lowest during the period of 2008 to 2010 when only 5-10 permits were issued, and has since picked up a bit in recent years.

Townhouse Construction. Townhomes are the second most prevalent housing type receiving building permits during 2000-2015. Over that time period, 774 permits were issued. Townhouse construction reached its peak of activity in 2003 (139 units) with fewer units being constructed each year since. Only 24 townhouse units were constructed from 2008 to 2015.

Duplex, Triplex, and Quad Construction. Duplexes, Triplexes, and Quads make up the smallest component of the Coon Rapids housing supply. While some of these permits may be accounted for in the multi-family category before 2004, when structures of 3 or more units (including triplexes and quads) were designated as multi-family, there have been only a handful of these types of housing units constructed. None of these units have been constructed after 2005.

Multi-family Construction. The development of multi-family dwelling units in Coon Rapids has been sporadic. There have been permits issued in only 7 of the 15 years between 2000 and 2015 for the development of 511 multi-family units. There was no multi-family construction from 2008 to 2012, but in the following years, multi-family housing dominated, with 267 units from 2013 to 2015.

Summary of Existing Housing Needs

The data and analysis above suggest the following housing needs in Coon Rapids through 2040. The Implementation section of this Chapter lists the tools and strategies that can be used to address those needs.

1. Maintenance assistance for low-income homeowners at or below 60% AMI;
2. Rental units for large families at all affordability levels;
3. Preservation of naturally-occurring affordable housing within all bands of affordability, especially near transit stations.

Future Housing Needs

Metropolitan Council Forecasts

The Metropolitan Council's systems statement projections are shown in Table 4-12.

TABLE 4-12: Metropolitan Council Forecasts

	2010 Estimate	2015 Estimate	2020 Forecast	2030 Forecast	2040 Forecast
Population	61,476	62,527	64,800	68,400	72,100
Households	23,532	24,023	25,500	27,500	29,300
Employment	23,260	24,007	27,100	28,900	30,900
Source: U.S. Census Bureau Decennial Census, Metropolitan Council					

Developable land is very limited in Coon Rapids. This has resulted in an average of 136 total units per year permitted from 2000 through 2015. However, as shown in Table 4-11, there were fewer than 35 units permitted per year from 2008 to 2012 and in 2014.

Two scenarios are realistic in considering how many units will be constructed in future years.

Scenario 1—Metropolitan Council Growth Scenario. This scenario asserts an average of 186 units will need to be built in Coon Rapids each year between 2015 and 2040 to meet the Metropolitan Council's projection of 29,300 households by 2040, which also represents a Council-forecasted addition of approximately 5,065 households between 2016 and 2040. Since there was less than a 1% difference between the number of households and the total number of units in the community in the year 2010, for projection purposes, it is assumed that one household equals one dwelling unit.

The U.S. Census reported that there were 24,462 housing units in Coon Rapids in the year 2010 and estimates 24,638 units in 2015. Therefore, the construction of 4,662 housing units would be needed from 2015 to the end of 2040 to meet the Metropolitan Council's projections. It is likely the City will have to be heavily involved in project assistance (land assembly and/or write-down of land costs) to meet this projection.

Scenario 2—Limited City Involvement Growth Scenario. This scenario assumes 50 units per year will be constructed and may be a more realistic scenario than Scenario 1, especially in considering the potential for limited City involvement. Therefore, it is likely there may not be more than 1,200 units built in the city before the year 2040 if there is not significant involvement by the City in stimulating or assisting construction activity. The rate of construction proposed under this scenario would result in 25,838 housing units in Coon Rapids by the year 2040, or 3,462 units less than the Metropolitan Council's projection.

Implications. A shortfall of 3,462 units from the Metropolitan Council's forecast will not result in inefficient use of capital investments for parks, transit, sewers, and other regional infrastructure. This is within a one-half percent of the Metropolitan Council's forecast.

The real concern is that declining housing production could mean that aging, obsolete, and blighted sites in the community which might be otherwise redeveloped in a booming real estate market will not be redeveloped. This could result in additional disinvestment in adjacent housing and an appearance that the city is in decline based on its housing stock.

Affordable Housing Need Allocation

The Metropolitan Council has calculated 37,900 new affordable housing for-sale or rental units will be needed in the metropolitan area between 2021 and 2030. The Council has developed a formula to allocate those units among all communities in the metro area anticipating sewer-serviced household growth. This allocation of need is based on the forecasted regional household growth that will make less than a set threshold of income and therefore need affordable housing. It is determined that Coon Rapids' need for affordable housing is 457 units in the period from 2021 to 2030. For comparison, the Metropolitan Council's Affordable Housing Need Allocation for Blaine has been established at 1,139, Anoka 113, Fridley 268, and Andover 483. The breakdown of the affordable housing needed for each income level is shown in Table 4-13.

TABLE 4-13: Affordable Housing Need Allocation

Income Level	Number of Affordable Housing Units Needed
Income at or below 30% of AMI	240
Income 31% to 50% of AMI	53
Income 51% to 80% of AMI	164
Total Affordable Housing Units	457
Source: Metropolitan Council	

To address this need, the *2040 Plan* guides land use that will support multi-family affordable housing. The Future Land Use Map shown in Chapter 2 of this plan (Map 2-6) reflects minimum densities sufficient to address the total allocation of affordable housing need of 457 units. Some parts of the city, mostly areas off of Coon Rapids Boulevard, are mixed-use with high density residential and commercial uses. The land use categories residential mixed-use and commercial mixed-use have density ranges from 10 to 50 housing units per acre, which exceeds Metropolitan Council's minimum density requirement of eight units per acre. These land uses are slated to increase by 318 acres, allowing for an estimated 3,000 new units to be built by 2040. Depending on the new development that occurs, it is possible for 457 of these the estimated 1,500 units per decade to be designated as affordable for households of different low income levels.

Goals, Objectives and Policies

Given the existing housing conditions and development prospects, the City has adopted the following goals, objectives, and policies to address housing production and maintenance.

Goal #1: Housing Quality

A high-quality living environment, the preservation of stable residential neighborhoods, and, where necessary, the upgrading of the existing housing stock in the city.

Objectives:

1-1 Removal or buffering of non-residential uses that are a blighting influence on their residential surroundings.

1-2 Elimination of blighting influences and conditions such as unkempt or weedy yards, glaring lights, unscreened storage, poorly maintained exteriors, uninhabitable homes, and an excessive number of vehicles parked on residential properties.

1-3 Removal of substandard housing units that are economically unfeasible to rehabilitate.

1-4 Construction of high quality new housing.

1-5 Remodeled homes that are attractive to new homebuyers.

Policies:

1-1 Respond to complaints about owner occupied properties just as aggressively as with renter occupied properties that are not being maintained or are apparent nuisances in the neighborhood.

1-2 Assure the maintenance of the city's housing stock by developing and distributing informational materials that help home and apartment owners address maintenance and housing system problems.

1-3 Provide information for rental property owners to help screen tenants and deal with tenant-related issues that eventually lead to deteriorating properties.

1-4 Provide information, upon request, that does not violate data privacy rules about neighborhood property maintenance or construction activity.

1-5 Work with homeowners' associations to help them plan for and manage their maintenance needs.

1-6 Monitor housing maintenance and outside storage regulations.

1-7 Provide those neighborhoods that have the highest housing maintenance violations the highest priority for financial programs to encourage reinvestment.

1-8 Protect the integrity and desirability of established residential neighborhoods by considering the discontinuation of isolated and aging nonresidential uses through buyout and/or amendments to the future land use map as opportunities arise.

1-9 Facilitate removal of substandard housing for which rehabilitation has been determined to be economically unfeasible.

1-10 Continue programs that help owners of older homes to update and renovate their properties in a sensitive way that respects architectural integrity.

1-11 Encourage existing home renovations to improve functionality and exterior curb appeal.

1-12 Add to financial assistance programs to help low-income property owners address deteriorating housing problems.

1-13 Use HUD's Section 8 housing quality standards to determine whether a house is in need of substantial rehabilitation or beyond repair, except where a particular funding program or regulation specifies an alternate definition.

1-14 Protect the quality of its housing stock by ensuring that there is full disclosure of existing code violations. At the very least, this will mean promotion to real estate agents and prospective home buyers or sellers of the practice of contracting for private home inspections prior to purchase of any Coon Rapids home. Promotional efforts may include but shall not be limited to periodic educational items in City publications and information made available to the public by City staff.

1-15 Undertake efforts to reduce the number of homes that fall into foreclosure and/or have severe maintenance problems.

1-16 Promote sustainability practices in its existing housing stock, including LED lighting, ultra-low flow plumbing fixtures, and pollinator plantings.

Goal #2: Housing Variety

A variety of housing types and designs to allow all people a housing choice.

Objective:

2-1 Provide housing options for all ages, income levels, and preferences for ownership and rental.

Policies:

2-1 Continue development management approaches that encourage a wide variety of housing types and ownership and rental options.

2-2 Encourage developments for retired and handicapped persons and continue programs offering City financial assistance for these special housing needs.

2-3 Continue to offer the flexibility of the Planned Unit Development process in order to achieve affordable housing units.

2-4 Identify underused nonresidential sites that may be suitable for higher density residential use.

2-5 Designate infill areas and redevelopment sites along major streets and adjacent to commercial or other high activity areas for townhouse and/or apartment type uses.

2-6 Accommodate energy conserving technologies and construction techniques, including active and passive solar energy features, by advocating their use in application for new residential development and by amending City Code or City policies as appropriate to allow residents to take advantage of new approaches.

2-7 Assist in attempts to obtain any applicable funds for City-approved development proposals designed to maximize the opportunity of providing a variety of housing types, costs, and densities that meet City objectives. Sources may include, but are not limited to, federal programs such as the Low Income Tax Credit Program or the Low/Moderate Income Rental Program, Metro Council funds such as the Local Housing Investment Account, or nonprofit assistance such as Habitat For Humanity.

2-8 Document the characteristics and neighborhood experiences of community based residential facilities in the city, so that better relations may be forged between such facilities and surrounding neighborhoods.

2-9 Encourage productive discussions between developers and surrounding residents when there is neighborhood opposition to a housing proposal that meets City objectives.

Goal #3: Affordability

Housing opportunities at a cost low- and moderate-income individuals and families can afford without compromising essential needs.

Objectives:

3-1 A housing supply that has between 20% and 25% of all units affordable to families with an income at 60% of the area median family income (AMI).

3-2 The preservation of existing affordable units, including the manufactured housing at Creekside Estates manufactured home park.

Policies:

3-1 Follow the Metropolitan Council's guidelines for bands of affordable housing need.

3-2 Acknowledge the Metropolitan Council's suggested allocation of 457 affordable units between 2021 and 2030 and continue the Council's efforts to support affordable housing opportunities for current and future residents through provision of location choices for varied housing types, participation in housing assistance programs responsive to local needs, and provision of fiscally prudent public assistance to projects that are a benefit to the community as a whole.

3-3 Continue the current development management system of providing reasonable standards that do not contribute to excessive housing production costs and a development review process that provides for efficient and timely decisions.

3-4 Continue programs to assist in the provision of low- and moderate-income and special needs housing resources and the coordination of these local efforts with other programs to maximize results.

3-5 Consider any potential housing affordability impact prior to adopting or amending any development-related or construction-related regulation. Negative impacts will be balanced against concerns for the general public health, safety, or welfare. Where possible, strategies for mitigating negative affordability impacts will be identified.

3-6 Maintain contact with owners of subsidized properties eligible to leave the subsidy program, to learn about their plans and to discuss any obstacles that may keep them from renewing their program contract.

3-7 Encourage owners of market rate rental properties to participate in the Federal Section 8 voucher program.

Goal #4: Nondiscrimination

Equal opportunity in home ownership and renting.

Objective:

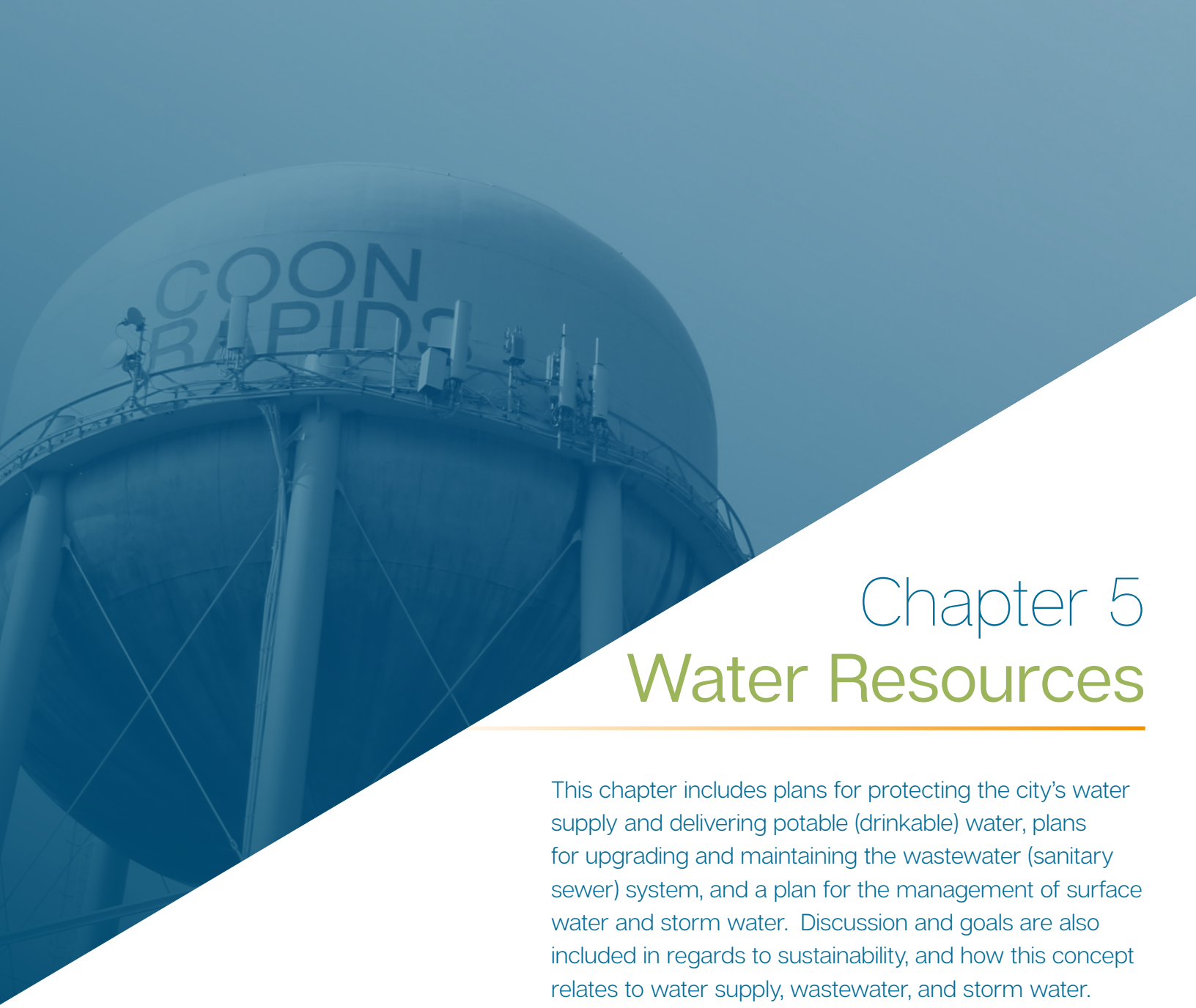
4-1 No discrimination against persons seeking housing based on age, religion, race, ethnic origin, sexual preference, gender, or disability.

Policies:

4-1 Staff will investigate any allegations of housing discrimination to determine whether the City of Coon Rapids should intervene in the dispute.

4-2 Conduct ongoing education efforts as necessary to promote equal availability of housing opportunities and fair treatment of all renters and buyers regardless of age, religion, race, ethnic origin, sexual preference, gender, or disability.

4-3 Participate in the local housing incentives program of the *Metropolitan Livable Communities Act*.



Chapter 5
Water Resources

This chapter includes plans for protecting the city's water supply and delivering potable (drinkable) water, plans for upgrading and maintaining the wastewater (sanitary sewer) system, and a plan for the management of surface water and storm water. Discussion and goals are also included in regards to sustainability, and how this concept relates to water supply, wastewater, and storm water.

Water Supply

Introduction

Coon Rapids utilizes groundwater as its source of drinking water. Raw water is supplied from 24 wells. A combination of aquifers including the Jordan, Wonewoc-Tunnel City, Mount Simon and glacial drift are utilized by the City to supply its domestic water needs. The City pumps an average of 8.2 million gallons of water per day (MGD) or approximately 3 billion gallons annually. There is capacity to pump a maximum of 38.3 MGD. Firm capacity is 35.9 MGD. Firm capacity is that which can be supplied reliably, even during maintenance activity or an emergency situation with the largest well pump (well 14) out of service. Maximum day water pumping capacity from existing high service pumping facilities is projected to be 54 MGD. The firm capacity of existing high service pumping facilities is 46.8 MGD. The system has a maximum storage capacity of 14.5 million gallons in its reservoirs and towers.

A *Comprehensive Water System Plan* update was completed in October of 2014. The inventory, analysis of needs, and recommendations for improvements to the system contained in the Plan form the basis of the Water Supply portion of this chapter of the Coon Rapids Comprehensive Plan.

Inventory

The water supply system consists of several wells, two treatment plants, water reservoirs and towers, and distribution lines.

Wells - Coon Rapids has 15 primary and 9 seasonal water wells. The table below provides information about the wells.

TABLE 5-1 City of Coon Rapids Well Inventory

City Well #	Year Installed	Design Pumping Capacity Gallons per Minute (gpm)	Design Pumping Capacity Million Gallons Per Day (mgd)	Source*	Status
1	1958	750	1.08	W-TC	System
2	1959	575	0.83	Wonewoc	System
3	Abandoned				
4	1960	1000	1.44	W-TC	System
5	1961	900	1.30	W-TC-MS	System
6	1961	1250	1.80	Jordan	System
7	1964	1600	2.30	W-TC	System
8	1965	1000	1.44	W-TC-MS	Primary
9	1969	1000	1.44	W-TC	Primary
10	1971	1000	1.44	W-TC-MS	Primary
11	1973	1200	1.73	W-TC-MS	Primary
12	1975	850	1.22	W-TC-MS	System
13	1977	850	1.22	W-TC-MS	Primary
14	1977	1650	2.38	W-TC-MS	Primary
15	1977	1400	2.02	W-TC-MS	Primary
16	1981	1500	2.16	MS	System
17	1981	1450	2.09	DRIFT	Primary
18	1986	1200	1.73	MS	System
19	1987	1100	1.58	DRIFT	Primary
20	1988	1100	1.58	DRIFT	Primary
21	1990	1200	1.73	DRIFT	Primary
22	1990	500	0.72	DRIFT	Primary
23	1992	500	0.72	DRIFT	Primary
24	2003	1500	2.16	W-TC	Primary
25	2003	1500	2.16	W-TC	Primary

*__Groundwater Source Abbreviations__: *Wonewoc-Tunnel City (W-TC), Wonewoc, Wonewoc-Tunnel City-Mount Simon (W-TC-MS), Jordan, Mount Simon (MS), Glacial Drift (DRIFT)*

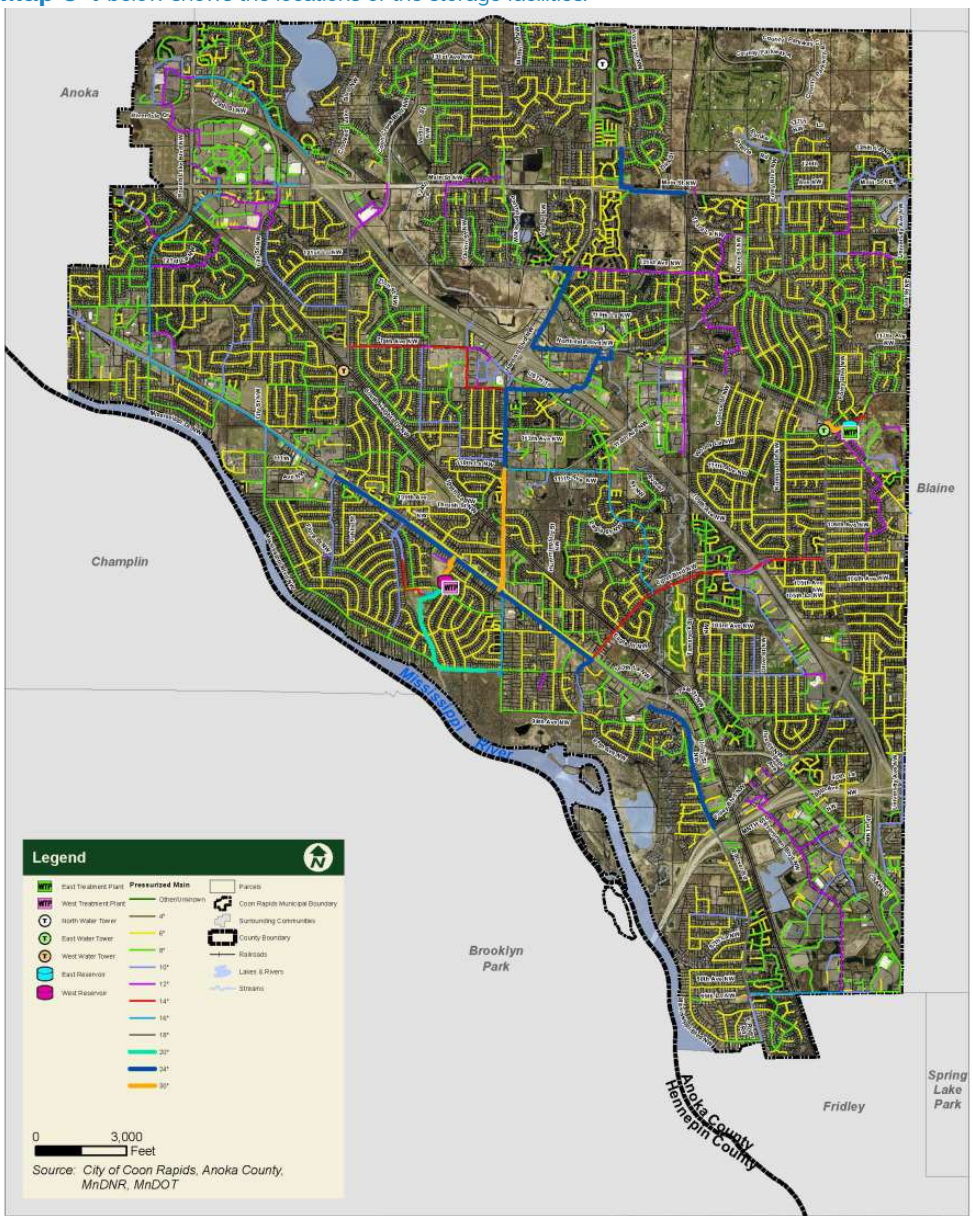
Reservoirs and Towers

There are three elevated storage tanks and two ground storage reservoirs. Table 5-2 below provides information on the location, year constructed, and volume of the storage facilities in millions of gallons (MG).

TABLE 5-2 Tower and Reservoir Location and Volumes

Storage Facility	Location	Constructed	Total Volume
East Water Tower	11316 Foley Boulevard	1958	0.5 MG
East Ground Storage Reservoir	Adjacent to the East Water Treatment Plant near Foley and Northdale Boulevards	1965	5.5 MG
West Water Tower	115th Lane and Eidelweiss Street	1960	1.0 MG
West Ground Storage Reservoir	2241 105th Avenue	1975	5.0 MG
Hanson Blvd. Tower	13101 Hanson Boulevard	2003	2.5 MG
Total Volume			14.5 MG

Map 5-1 below shows the locations of the storage facilities.



Treatment Plants

The East and West water treatment plants treat 15 of the City's supply wells. Water is treated and filtered to remove iron and manganese from the raw water, disinfect the water, and add fluoride.

Distribution Lines

The water distribution system is comprised of watermains ranging in size from 4 inches to 30 inches in diameter. There are 286 miles of watermain in the City system.

Pricing

The 2017 residential water pricing rates range from $2.00 to $2.65 per 1,000 gallons. The base fee is $16.00 per account. Water use is billed on a quarterly basis. The 2017 rate for commercial/industrial usage is $2.00 per 1,000 gallons, and $2.65 per 1,000 gallons for sprinkling meters.

Use

Residential users consume most of the water pumped by the City.

In 2013, the City pumped 2.67 billion gallons of water, which is equivalent to 7.3 million gallons per day. Approximately 10% of this pumped water is listed as unaccounted for, which is the amount of water that is pumped into the system, but is not billed. The amount of unaccounted for water can be reduced by metering City-owned facilities and estimating and accounting for water used for hydrant flushing and fire suppression.

The Metropolitan Council's projected future water use is shown in Table 5-4 below.

TABLE 5-4 Coon Rapids Projected Water Use in Million Gallons Per Day

Planning Year	Metropolitan Council Population Estimate	Per Capita Water Demand (gpcd)	Average Day Demand – Proposed Land Use	Max Day Peaking Factor	Maximum Day Demand – Proposed Land Use
2020	61,900	128	8.11	2.85	23.11
2030	65,500	128	9.05	2.85	25.80
2040	69,200	128	9.22	2.85	26.28

Drinking Water Quality – One or more contaminants regulated under the Federal Safe Drinking Water Act have been detected in trace amounts in one or more of the Coon Rapids water sources. The City currently operates Wells 16 and 18 under a compliance agreement with the Minnesota Department of Health (MDH) due to high concentration of radionuclides (Combined Radium 226 and 228). The City only uses Wells 16 and 18 as peaking wells during the summer to meet maximum day demands. However, the water supplied to users exceeds primary state and federal drinking water standards.

Conservation Efforts – Coon Rapids recognizes the need to conserve water. The City has a standing odd/even sprinkling ban from June 1 to August 31. Notification of the ban is given to residents in the summer city-wide newsletter and in utility billing documents. In addition, local ordinances (13-218 to 13-223) provide for additional emergency requirements when the need arises. The specific list of emergency restrictions is enumerated in ordinance 13-220. They include the following:

(1) Limitation on times of water usage

(2) Ban on lawn and garden sprinkling

(3) Ban on irrigation

(4) Ban on car washing

(5) Ban on usage of water for air conditioning or cooling

(6) Ban on all usage for specified periods

(7) Ban on washing mobile equipment

(8) Ban on cleaning outdoor surfaces

(9) Ban on washing buildings inside or out

(10) Ban on washing machinery and equipment

(11) Ban on the use of ornamental fountains

(12) Ban on pumping of additional water into swimming pools

(13) Any other reasonable restrictions

Needs

The City of Coon Rapids recognizes the following needs in the operation of its municipal water system.

- Protection of aquifers from pollution
- Enough water to adequately fight fires
- Conservation of the water resource
- Supplemental water supply in case of emergency
- Pressure improvements
- Elimination of dead-end lines
- Continuous tower and well rehabilitation
- Partial sealing of wells to prevent cross connection between aquifers

Goals, Objectives and Policies

The goals and policies below address these needs.

Goal #1

Provision of municipal water service to residents and businesses in the community in the most fiscally responsible and reliable manner possible.

Objectives:

1-1 Provide an adequate and reliable water supply.

1-2 Provide water at a reasonable cost.

Policies:

1-1 A well rehabilitation program will be continued to assure safe and reliable operation of the City's wells.

1-2 The City will develop the pumping capacity so that the firm pumping capacity (total system pumping capacity minus the top two producing wells) exceeds the projected daily use.

1-3 The City will continue to replace watermain pipe segments in areas where large numbers of breaks have occurred, as well as replacing outdated hydrant and valve components as part of its annual street reconstruction program.

1-4 The City will continue to use leak detection surveys as needed to reduce leaking watermains.

1-5 The City will continue an on-going meter repair and replacement program.

1-6 The City will establish an ongoing budget and program for decreasing losses in drinking water systems.

1-7 The City will assess energy and chemical use at drinking water treatment facilities, and report on changes that have a short payback period.

Goal #2

Provision of high quality drinking water that will not negatively impact the natural water resources of the community or region.

Objectives:

2-1 Maintain safe, unpolluted water.

2-2 Continued emphasis on water conservation.

Policy:

2-1 The City will continue its efforts to urge residents to conserve drinking water at all times of the year, not just during drought periods.

2-2 The City will review and consider the use of rate structure increases that impose higher unit rates for higher volumes of water used as a way of encouraging water conservation.

2-3 The City will place education materials related to water conservation in public buildings, on the City Website, and in utility billing mailings.

2-4 The City will review the creation of a demand-side management program to reduce demands on its water distribution system.

2-5 The City will promote or require purchase of US EPA Water Sense certified products in residential homes.

2-6 The City will promote water-wise and native landscaping.

Goal #3

Protection of the water resource to the extent possible through the continued use of an emergency preparedness program that allows for the City to supply quality water to community users in a prioritized manner.

Objective:

3-1 Provide adequate water for emergency situations such as fire or contamination of water supply.

Policies:

3-1 The City will continue its standing odd/even sprinkling ban from June 1 to August 31.

3-2 The City will implement a time of day or complete ban of outdoor water use in the event of an emergency. The guidelines for implementing these restrictions are indicated in City ordinances 13-218 to 13-222.

3-3 The City will protect water supply treatment facilities to reduce physical damage and sustain their function during extreme weather events.

Wastewater

Introduction

A sanitary sewer system to carry wastewater to the sewage treatment facility is a basic municipal service. Wastewater is the water that is either flushed or flows through a drain into the sanitary sewer system. All wastewater generated in Coon Rapids flows to a main metropolitan interceptor sewer pipe and eventually to the Metropolitan Wastewater Treatment Plant on the Mississippi River south of downtown St. Paul.

A plan to identify problems in the wastewater system and establish goals and policies to address system issues was prepared by Short Elliot and Hendrickson (SEH) and delivered to the City in January of 2018. That plan, titled *City of Coon Rapids 2018 Sanitary Sewer Comprehensive Plan*, should be consulted for detailed information. The highlights of that plan are included here.

Inventory

The Coon Rapids wastewater system includes over 240 miles of sewer pipe ranging in size from 4 inches to 48 inches in diameter. There are 16 sewage lift stations which serve small isolated areas. These lift stations serve approximately 10 percent of the city's population. An additional private lift station serves a small commercial area along Gateway Drive located in the northeast corner of Hanson Boulevard and Highway 10. There are neither private nor public wastewater treatment plants in the city.

The average daily flow (ADF) over the past five years is approximately 4.9 million gallons per day (MGD). Once the city is fully developed, the estimated average flow will be 6.68 MGD according to the *City of Coon Rapids 2018 Sanitary Sewer Comprehensive Plan*.

No new trunk sewers are planned in the city.

Map 5-2 shows Coon Rapids' existing sanitary sewer system including lift stations, and existing connection points to the Metropolitan Distribution System.

Map 5-3 shows the connection points between Coon Rapids and its surrounding communities.

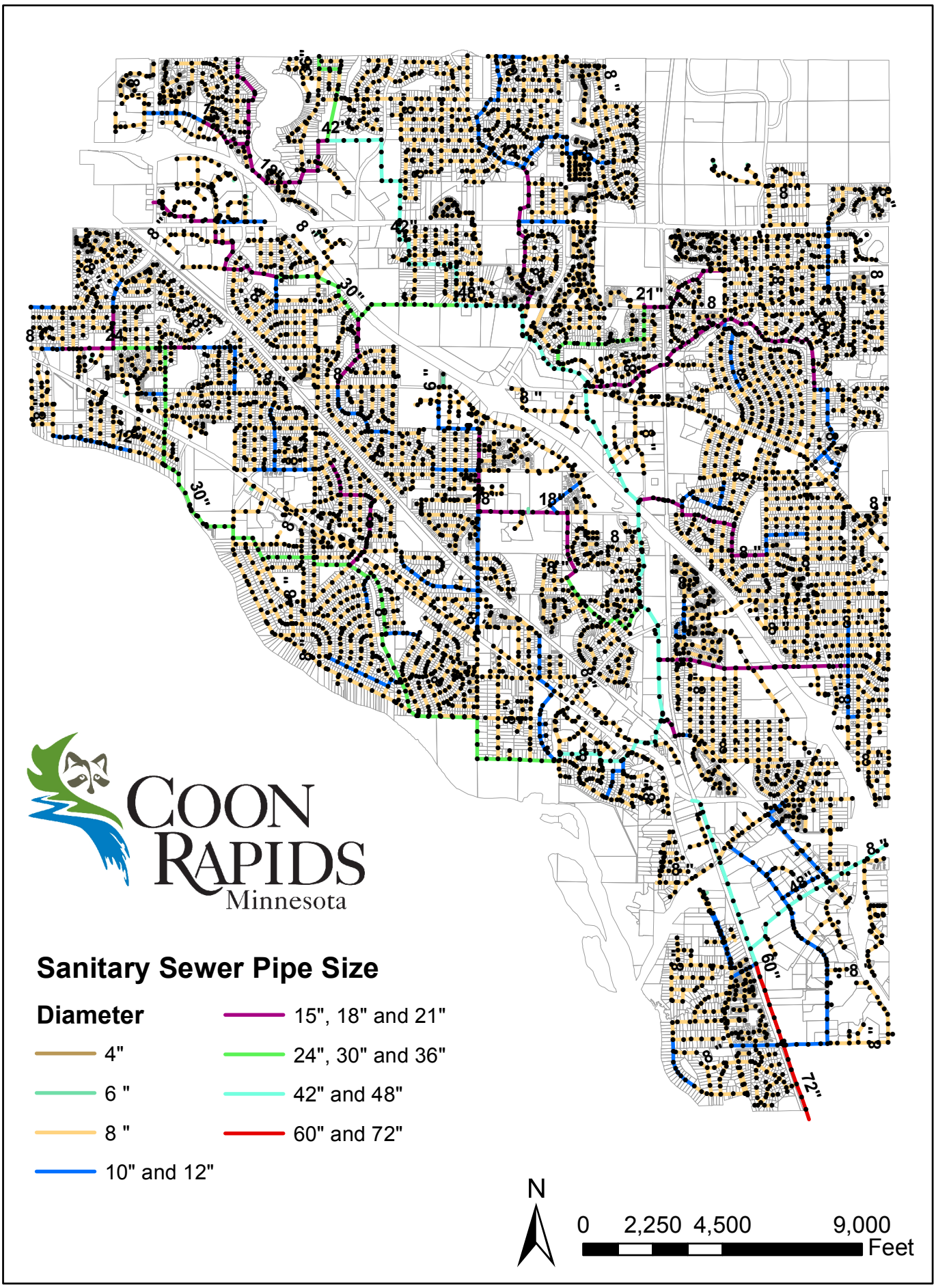
Appendix B in the *City of Coon Rapids 2018 Sanitary Sewer Comprehensive Plan* contains a table that provides the following information:

a. Capacity and design flows for existing trunk sewers

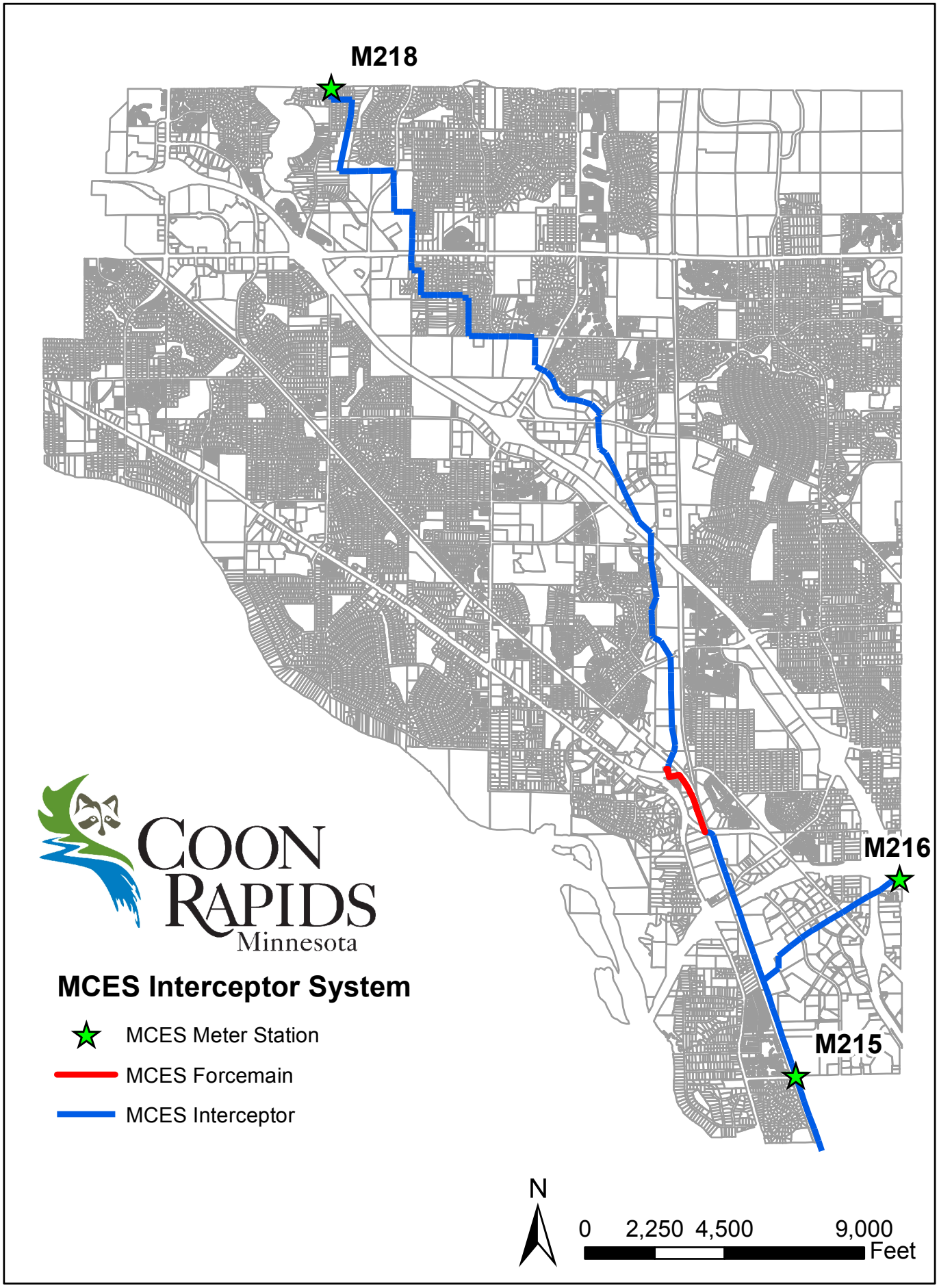
b. Information on the number of existing and potential connections

c. Projected flow volume through 2040 and build out

Map 5-2 - Existing System – Sanitary Sewer Pipe Sizes



Map 5-3 = MCES Interceptor and Inter-City Connections



Needs and Challenges

The forecasts of population, households, employment, and wastewater flows for Coon Rapids as contained in the Metropolitan Council 2040 Water Resources Policy Plan are listed in Table 5-6 below. These forecasts are for sewered development. The housing unit and household forecasts were estimated based on Sewer Availability Charge (SAC) data, annual City reports, current trends, and other information relating to Coon Rapids. The wastewater flows are based on historical wastewater flow data and the projected sewered housing and employment data.

TABLE 5-6 Projected Sewer Flow by Population, Household, and Employment

MCES Interceptor	Population			Households			Employment		
	2020	2030	2040	2020	2030	2040	2020	2030	2040
4-NS-521	2,280	2,500	2,715	957	1,050	1,133	3,718	3,852	3,952
4-NS-522	1,707	1,830	1,960	680	732	781	3,648	3,715	3,716
4-NS-525	55,060	58,020	61,065	21,744	23,455	24,984	17,793	19,212	20,902
7035	5,673	5,970	6,280	2,087	2,231	2,370	1,941	2,121	2,330
Unsewered	80	80	80	32	32	32	0	0	0
TOTAL	64,800	68,400	72,100	25,500	27,500	29,300	27,100	28,900	30,900

Source: Metropolitan Council 2040 Water Resources Policy Plan

The wastewater system needs are those characteristic of a mature community. Maintenance and selective replacement of an aging system is paramount rather than construction of many miles of new pipe and lift stations each year. Neither new sewers nor relief sewers are deemed necessary to handle the flow from their respective service areas. The City's challenges for the wastewater system are highlighted below.

- Developing an educational program for VCP services to inform residents of potential issues with their service connections, how that impacts the City's sanitary system, educating residents on ownership and maintenance responsibilities, and rehabilitation options. This includes service laterals with defects which allow inflow and infiltration and foundation drains and sump pumps connected to sanitary sewer services.
- Inspection, evaluation and potential rehabilitation for the 17 miles of reinforced concrete pipe (RCP) sewer currently installed throughout the city.
- Implementation of a public education program regarding "flushable" wipes, to encourage residents to not flush them and educate residents of the negative impacts of non-degrading wipes on the collection system.
- Continued inflow and infiltration (I/I) mitigation through existing programs as well as potential RCP sewer lining as identified above and continued manhole rehabilitation.
- Installation of fiber optic communications systems at all lift stations for uninterrupted communications.

Goals and Policies

Goal #1

Minimal claims against the City related to sewer backups.

Objective:

1-1 Provide reliable sewer conveyance for homes and businesses.

Policies:

1-1 The City will regularly clean and maintain sewer trunk lines, as well as replace lift stations as necessary.

1-2 The City will regularly televise and inspect sewers to determine their specific maintenance needs.

Goal #2

Standards and procedures for system maintenance.

Objective:

2-1 Provide safe and reliable sanitary sewer conveyance.

Policies:

2-1 The City will follow the standards suggested in the 2018 Coon Rapids Sanitary Sewer Comprehensive Plan adopted in 2018 including the recommended upgrades to several lift stations.

2-2 The City will continue to follow the requirements in Chapter 13-500 of its City Code that regulates Individual Sewer Treatment Systems.

Goal #3

Compliance with local and regional standards for wastewater management.

Objective:

3-1 Maintain continuous City compliance with wastewater standards.

Policy:

3-1 The City will work with the Metropolitan Council and other governmental agencies to regulate its trunk sanitary sewer system.

Goal #4

Continued inflow and infiltration (I/I) mitigation through existing programs, as well as potential RCP sewer lining and manhole rehabilitation.

Objective:

4-1 Reduce I/I into the wastewater system to the maximum extent feasible.

Policies:

4-1 The City will systematically inspect, line, and/or replace RCP and manholes as necessary to reduce I/I.

4-2 The City will continue to follow the requirements as set forth in Chapter 13-700 of its City Code. These requirements prohibit the discharge of any storm water, surface water, subsurface drainage, cooling water, or unpolluted industrial process water into any sanitary sewer. The City inspects properties at the time that water meters are changed to see if there are violations to Chapter 13-700. If there are, orders are issued to make corrections. The City will consider implementing penalties to property owners for discharging sump pump water into the sanitary sewer system.

4-3 The City will establish an ongoing budget and program for decreasing I/I into sewer lines.

Goal #5

Develop an educational program for VCP services to inform residents of potential issues with their service connections, how that impacts the City's sanitary system, educating residents on ownership and maintenance responsibilities, and rehabilitation options.

Objective:

5-1 An informed public that proactively maintains or rehabilitates private sewer services when necessary.

Policies:

5-1 The City will place information related to VCP service connections on the City website, articles will be published in the City newsletter, and information will be sent in utility billing mailers.

5-2 The City will inform residents of any service connection issues identified as part of the street reconstruction review process.

Goal #6

Inspection, evaluation and potential rehabilitation for the 17 miles of RCP sewer pipe currently installed throughout the City.

Objective:

6-1 Eliminate existing RCP sewer pipe as a source of I/I into the wastewater system.

Policies:

6-1 The City will coordinate the development of an inspection and potential lining program for RCP pipe similar to the one used for VCP pipe.

6-2 The City will perform an on-going review of its annual sewer rates and charges to ensure an RCP lining program, if needed, can be properly funded.

Goal #7

Implementation of a public education program regarding "flushable" wipes, to encourage residents to not flush them and educate residents of the negative impact of non-degrading wipes on the collection system.

Objective:

7-1 Create an informed public that does not flush "flushable" wipes into the sanitary sewer conveyance system.

Policies:

7-1 The City will place information related to "flushable" wipes on the City website, articles will be published in the City newsletter, and information will be sent in utility billing mailers.

7-2 The City will advocate for legislation that requires warning labels informing consumers not to flush these wipes down sewer drains.

Goal #8

Installation of fiber optic communications systems at all lift stations for uninterrupted communications.

Objective:

8-1 Connect lift stations via fiber optics to the City SCADA network.

Policies:

8-1 The City will perform an on-going review of its annual sewer rates and charges to ensure the installation of fiber optic communications systems at all lift stations can be accomplished within the next 10 years.

Storm Water

Introduction

Storm water refers to water that does not soak directly into the ground after a rainfall or snowfall event. It includes rain that falls on parking lots, roof tops, streets, steep slopes, and soils that are unable to absorb the rain as fast as it falls. This water flows into a complex system of natural ponds; ponds created as part of real estate developments, City streets, and into the streams, drainageways, and storm sewers that eventually flow to the Mississippi and Rum Rivers.

The volume and quality of the runoff are issues of public concern. Minnesota and federal regulations require that cities adopt ordinances that limit the amount of runoff so as to reduce flood damage, maintain surface water quality, and recharge groundwater.

Coon Rapids completed a major study in 2003 that resulted in the adoption of the *Comprehensive Storm Water Management Plan*. This plan was then recently updated in 2018 (referred to as the Local Surface Water Management Plan) in preparation of the City's 2040 Comprehensive Plan Update. The plan is intended to meet the requirements of the *Metropolitan Surface Water Management Act* and the Board of Water and Soil Resources (BWSR) Rules Chapter 810. The highlights of the City's updated storm water plan are included here.

Needs

The *Local Surface Water Management Plan* (updated in 2018) contains a detailed discussion of the storm water management challenges and needs in the city. It should be consulted for further information. That plan identifies 62 geographic storm water problem or water resource related issue areas. The storm water problem areas fall into three categories as follows:

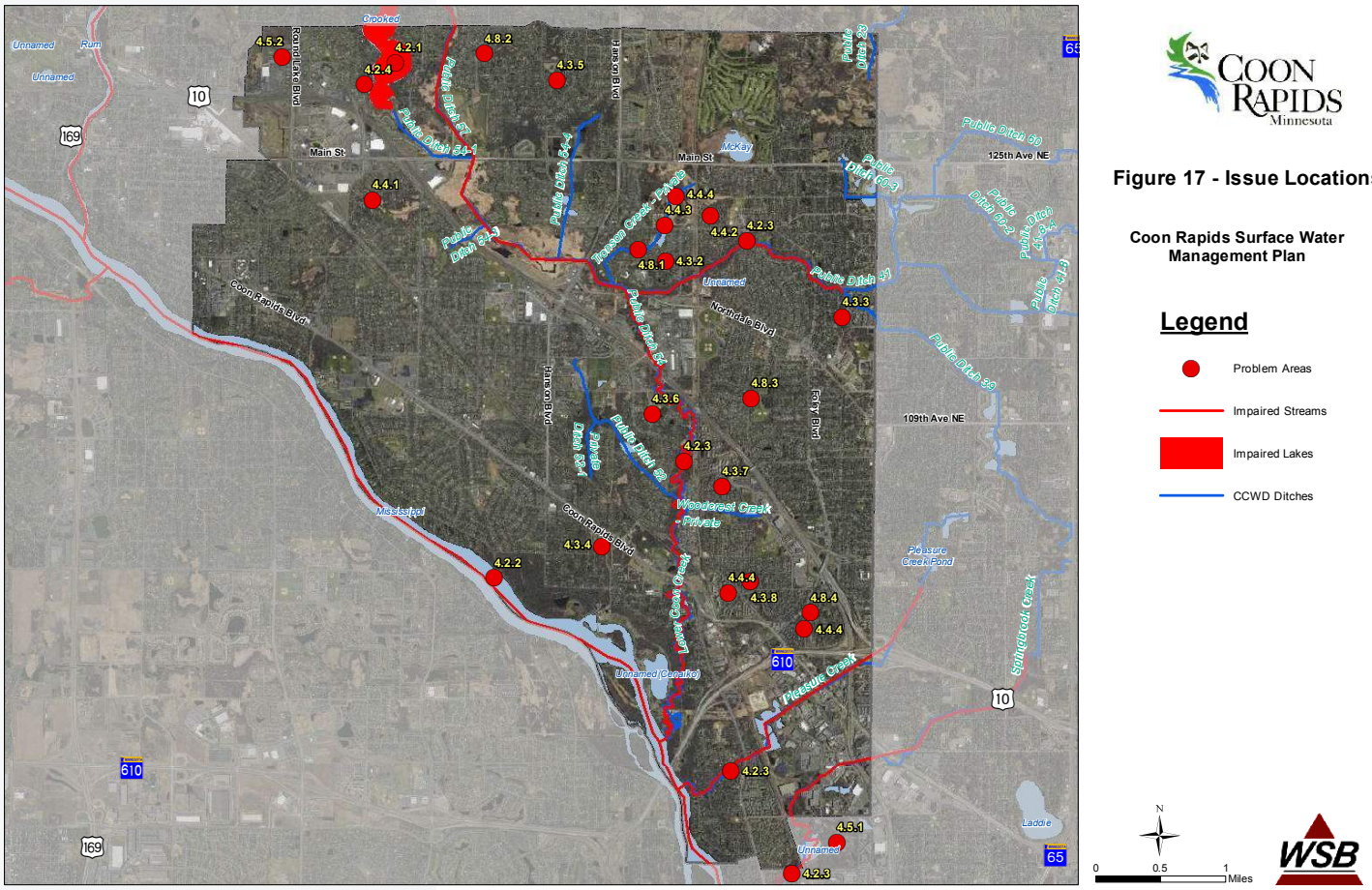
» Lake and stream water quality

» Flooding and storm water rate control within the city

» Flooding or storm water rate controls between the city and adjoining entities

Map 5-4

The attached Map 5-4 shows the location of the storm water problem areas in Coon Rapids.



A list of impaired surface waters in the City of Coon Rapids is as follows.

Table 5-7: Impaired Surface Waters in Coon Rapids

Waterway	Affected Use	Pollutant	Year Added	TMDL Status
Crooked Lake	Aquatic Consumption	Mercury in fish tissue	2008	Complete
Coon Creek	Aquatic Life, Aquatic Recreation	Biota, Fecal Coliform	2006, 2014	Complete
Sand Creek	Aquatic Life, Aquatic Recreation	Biota, Fecal Coliform	2006, 2016	Complete
Springbrook Creek	Aquatic Life, Aquatic Recreation	Biota, Fecal Coliform	2006, 2014	Complete
Pleasure Creek	Aquatic Life, Aquatic Recreation	Biota, Fecal Coliform	2006, 2014	Complete
Mississippi River	Aquatic Consumption, Aquatic Recreation, Aquatic Life	Mercury in fish tissue, Fecal Coliform, Excess Nutrients	2002, 2006, 2016	Mercury Complete, Fecal Coliform and Nutrients Underway

Map 5-5 shows the locations of impaired waters in Coon Rapids.

The City will continue to be responsible for reviewing all discharges from its Municipal Separate Storm Sewer System (MS4) and evaluating potential storm water impacts. If the City determines that its Storm Water Pollution Prevention Plan (SWPPP) does not meet goals for rate control and water quality, the City will make the appropriate modifications to its Engineering Design Standards and its SWPPP.

Goals and Policies

The City has adopted a number of goals and policies that conform to the overall purpose that is specified in Minnesota Statutes Section 103B.201. These goals and policies have been developed to complement county, regional, and state goals and policies.

The City's goals and policies are grouped by their relationship to key issues as follows:

1. Water Quantity
2. Water Quality
3. Wetland Management
4. Erosion and Sediment Control
5. Education and Public Participation
6. Groundwater Protection
7. Recreation, Fish, and Wildlife
8. Maintenance and Inspection
9. Public Ditch System
10. Financial Management
11. Mississippi River

Water Quantity - Stormwater Goal #1

Limit public capital expenditures to what is necessary to control excessive volumes and rates of runoff. Control the rate of stormwater runoff from development to reduce downstream flooding and erosion. Provide adequate storage and conveyance of runoff to protect public safety and minimize property damage. Implement the Common Drainage Problem Policy to address drainage issues reported by residents. Identify and address inconsistencies between CCWD's floodplain model and FEMA's flood zones.

Objective:

1-1 Protect homes and businesses within and downstream of the city from flooding.

Policies:

1-1 The City will implement development regulations and design standards contained within its Engineering Design Standards, Surface Water Management Ordinance, and Local Surface Water Management Plan to address water quantity goals.

1-2 The City will consider completion of the Blue Star stormwater management assessment and be recognized for implementing the actions therein. The Blue Star Award is a certification and award program established in 2010 that offers municipalities that excel in stormwater management positive public recognition. The City will explore the self-assessment process of Water Friendly Planning and Preservation, Stormwater Management Standards and Practices, and Stormwater Pollution Prevention. The City will continually review ways to incorporate assessment results into its design standards and development process.

Water Quantity - Stormwater Goal #2

Maintain or improve the quality of water in lakes, streams or rivers within or immediately downstream of the city.

Objective:

2-1 Maintain or improve water quality for property owners within and downstream of the city.

Policies:

2-1 The City will implement development regulations and design standards contained within its Engineering Design Standards, Surface Water Management Ordinance, and Local Surface Water Management Plan to address water quality goals.

2-2 The City will consider completion of the Blue Star stormwater management assessment and be recognized for implementing the actions therein. The Blue Star Award is a certification and award program established in 2010 that offers municipalities that excel in stormwater management positive public recognition. The City will explore the self-assessment process of Water Friendly Planning and Preservation, Stormwater Management Standards and Practices, and Stormwater Pollution Prevention. The City will continually review ways to incorporate assessment results into its design standards and development process.

2-3 Continue to implement Minimal Impact Design Standards (MIDS) for water quality requirements necessary on new and redevelopment projects.

2-4 The City will continue to offer incentives for stormwater infiltration and reuse practices, including rain gardens, infiltration practices, rainwater harvesting practices, pervious or permeable pavement/pavers, green roofs/walls, and tree trenches/boxes.

Water Management - Stormwater Goal #3

The City will coordinate and collaborate with the Coon Creek Watershed District (CCWD) to ensure conformance with the requirements of the Wetland Conservation Act (WCA) and no net loss of wetlands and their functions.

Objective:

3-1 Minimize or eliminate impacts to wetlands within the city.

Policies:

3-1 Coon Creek Watershed District is the Local Government Unit (LGU) for wetlands. The City will discourage wetland disturbance. The City will work cooperatively and coordinate with CCWD as wetland projects arise. The use of wetland banking opportunities will be pursued by the City in accordance with WCA and CCWD.

Erosion and Sediment Control – Stormwater Goal #4

The City will require prevention of sediment from construction sites as well as established areas including agricultural areas from entering the city's surface water resources and storm sewer system. The City will repair erosion problems on City-owned property and issue orders for private landowners to do the same when erosion problems transport sediment from the property in question.

Objective:

4-1 Minimize or eliminate sediment from entering water resources within and downstream of the city.

Policies:

4-1 The City will require all construction projects disturbing land to follow requirements of the National Pollution Discharge Elimination System (NPDES) permit.

4-2 The City will implement design techniques and Best Management Practices contained within its Engineering Design Standards, Surface Water Management Ordinance, and Local Surface Water Management Plan to address erosion and sediment control priorities on construction and development projects.

4-3 The City will make repairs to public infrastructure when necessary to eliminate erosion and sediment transport.

4-4 Property owners will be required to make repairs to private property when directed to do so by the City in the public interest of minimizing or eliminating soil erosion.

4-5 The City will sweep streets twice annually and more often in sensitive areas

Education and Public Participation – Stormwater Goal #5

The City will inform and educate the public concerning urban stormwater management and the problem pollutants. The public will be provided opportunities to comment on surface water management activities and become directly involved in these activities.

Objective:

5-1 Educate and provide for a more informed public that's engaged in water resource issues.

Policies:

5-1 The City will continue an education program which utilizes the following mediums: city newsletters, community access cable TV, individual mailings, and the City website.

5-2 The City will continue to utilize public education and outreach programs to satisfy the minimum control measures identified in the City's NPDES MS4 permit.

5-3 Public education programs will include close coordination with outside entities like CCWD, Anoka County, DNR, MPCA and others.

Groundwater Protection – Stormwater Goal #6

The City will promote recharge of groundwater by requiring infiltration where appropriate to mitigate for the increased impervious surfaces associated with development. The City will protect drinking water and wells by restricting infiltration where underlying geologic formations might convey surface water directly into groundwater aquifers as found in the Wellhead Protection Plan. The City's groundwater protection policies are intended to preserve groundwater levels and flow and protection of drinking water supplies. Promote consistent groundwater protection regulations between agencies including MPCA, DNR, CCWD, and MDH.

Objective:

6-1 Protect groundwater within the City and associated Drinking Water Supply Management Areas that include Coon Rapids and its neighboring cities.

Policies:

6-1 The City will implement its approved wellhead protection plan.

6-2 The City will cooperate with state and regional agencies on ground water monitoring, inventorying or permitting programs.

6-3 The City will work towards groundwater protection through the implementation of floodplain and shoreland ordinances in conformance with state and county regulations.

6-4 The City will encourage the development of alternative storm water management methods including vegetated swales and infiltration practices provided these methods do not contaminate ground water.

6-5 The City will cooperate with MDH to ensure that all unsealed or improperly abandoned wells within the city are properly sealed. Technical requirements for the abandonment of these wells will be in conformance with local and state regulations.

6-6 The City will sweep streets twice annually and more often in sensitive areas.

Recreation, Fish, and Wildlife – Stormwater Goal #7

The City will protect recreational opportunities and fish and wildlife habitat for the benefit of its residents. The City's recreation and fish/wildlife policies focus on access, connectivity, preservation, and control of exotic and invasive species.

Objective:

7-1 Protection and preservation of water resources for the purposes of recreation, fishing, and wildlife habitat.

Policies:

7-1 The City will cooperate with the DNR, the Corps of Engineers, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, the Anoka County Parks, and other appropriate agencies in promoting public enjoyment and protecting fish, wildlife, and recreational resources in the city.

7-2 Restoration of the city's fish and wildlife resources will be undertaken as outlined in the City's Parks, Open Space, and Trail System Plan. Activities to restore and/or maintain the city's habitat resources include prescribed burning, weeding/brushing, seed harvesting and disbursement.

7-3 The City will preserve wetlands that provide habitat for wildlife and spawning of fish.

7-4 The City will work to create wildlife corridors throughout the city where feasible.

7-5 The City will create and encourage native buffers around lakes and wetlands whenever possible to increase wildlife habitat. The City currently has an ordinance in place to encourage the use of native vegetation landscaping.

7-6 The City will continue to work with the CCWD to implement their fish and wildlife policies.

7-7 The City will partner with CCWD and the Crooked Lake Area Association (CLAA) to implement items in the Crooked Lake Management Plan to manage aquatic invasive species.

7-8 The City will implement its goose management plan to reduce total phosphorus loading to lakes and streams.

7-6 The City will coordinate with local and state agencies to protect threatened and endangered plant and animal species.

Maintenance and Inspection – Stormwater Goal #8

The City will continue an active storm sewer system maintenance and inspection program per the MS4 permit requirements. The City will review and address existing ponds and outlet structures lacking adequate easements for maintenance.

Objective:

8-1 Provide a high level of ongoing maintenance and inspections of existing publicly-owned storm sewer infrastructure and related appurtenances.

Policies:

8-1 The City will continue to implement an annual inspection and maintenance program as required by the City's NPDES MS4 permit. Infrastructure to be inspected includes outfalls, water quality BMPs, and stormwater ponds.

8-2 The City will require and enforce adequate access to ponding facilities including outlots and easements.

8-3 The City will identify pond and outlet structure locations that present access issues to its maintenance staff and develop options to address.

8-4 The City will implement the Stormwater Asset Management Program (SWAMP) that identifies and prioritizes pond maintenance activities and BMP inspections.

8-5 The City will continually perform inspections and maintenance on public roadways through reconstruction reviews and financial investments.

8-6 The City will implement the SWAMP results to schedule and track MS4 inspections and prioritize maintenance activities in coordination with CCWD.

Public Ditch System – Stormwater Goal #9

The City will provide a mechanism for management of public and private ditch systems.

Objective:

9-1 Manage the ditch systems within City jurisdiction so as to convey public drainage in a manner that conforms to City policy and ordinances.

Policies:

9-1 The City will continue to work with CCWD to provide inspection, maintenance and repair of all private ditch conveyance systems in the City's jurisdiction. Ditches will be inspected to ensure unobstructed conveyance as outlined in the Common Drainage Problem Policy.

9-2 The City will maintain the ditches in its jurisdiction in conformance with City ordinances.

Financial Management – Stormwater Goal #10

The City will utilize available funding mechanisms to construct and maintain a sustainable stormwater management system.

Objective:

10-1 Adequately provide funding for construction and maintenance of a sustainable stormwater management system.

Policies:

10-1 The City will utilize various funding sources including, but not limited to area charges, stormwater utility and grants to accomplish improvements listed in this surface water management plan and other surface water documents.

10-2 The City will pursue grants, donations, and in-kind contributions to help fund stormwater projects.

10-3 The City will educate residents on the financial responsibilities (City versus property owner) for certain drainage issues. These will be outlined in the City's Common Drainage Problem Policy.

10-4 The City will encourage the watershed district to finance intercommunity and regional stormwater related issues and projects.

10-5 The City will financially partner with other agencies/groups to address water quality issues. These agencies may include, but are not limited to, the Crooked Lake Area Association, the Coon Creek Watershed District, and the Cities of Andover, Anoka, Blaine, and Fridley.

Mississippi River – Stormwater Goal #11

To continue to protect and preserve the Mississippi River corridor, Mississippi River, and associated wetlands.

Objective:

11-1 Adequately provide environmental protection of the Mississippi River and related tributary water resources.

Policies:

11-1 The City will work cooperatively with Federal, State, and County agencies in the development of resource management and implementation plans affecting the Mississippi River.

11-2 The City will apply the Mississippi River Corridor Critical Overlay policies where appropriate.

11-3 The City will continue its partnership with USGS and neighboring cities to monitor the newly installed stream gauge. This will be used to monitor bank protection and emergency management planning.

COON

Chapter 6
Parks & Open Space

This chapter provides direction and policies to preserve open space, maintain existing parks, and augment the City's park and open space system.

Introduction

Coon Rapids has an abundance of parks, open spaces, and trails. The City, Anoka County, Anoka-Hennepin School District, Anoka Ramsey Community College, and Epiphany School own various parts of the overall parks and open space system.

The system has been built over a period of about 60 years. In recent decades, the City has periodically undertaken comprehensive reviews of the aging system order to identify the replacement needs in the system and any remaining gaps in facilities. The last major study, the *Parks, Trails & Open Space System Plan Update* was completed in 2012 and adopted by the City Council in early 2013. The major findings and recommendations of the *Parks, Trails & Open Space System Plan* are the foundation of this chapter of the *2040 Plan*. That plan recommended significant upgrades to facilities, many of which were implemented between 2013 and 2018. . It is expected that the *Parks, Trails & Open Space System Plan* will be updated again before the next Comprehensive Plan update. That plan will refine the general policies established by this Chapter.

Recreation and open space is a vital component of the City's environment, which serves several important functions:

Provision of Recreational Resources. Opportunities for recreation and leisure time activities are integral to the overall quality of life. A growing emphasis on physical fitness and a desire for recreational diversity increases the responsibility of recreational providers.

Protection of Natural Resources. Natural resources possess more than just recreational and aesthetic value. They are essential to the enrichment of human life, health and welfare. Protection of these resources responds to community-held values about the importance of wetlands, forests, grasslands and other natural features in the natural ecology of the suburban environment.

Structuring of Urban Development. The nature and variety of parks and other recreational facilities heighten a community's identity and sense of pride. Development and maintenance of a quality park and open space system is a proven way to attract high-quality residential and commercial development, enhance property values and revitalize otherwise declining areas.

Functional Classification of Parks and Open Space

The City's various park facilities serve different functions. Table 6-1 describes those functions.

TABLE 6-1: Park Descriptions by Type

Classification	Description
Mini and Neighborhood Park	These parks are intended to – Provide neighborhood recreational facilities focused on unstructured individual and family activities. Create a social center for the neighborhood. Provide open space for informal group play and limited use for organized/programmed activities.
Cornerstone Park	These kinds of parks will, once developed, offer – Unique features that have City-wide appeal. Opportunities to accommodate group facilities, such as larger picnic shelters. A setting appropriate for facilities that are too costly to duplicate in more than one or two parks throughout the City.
Athletic Complex	These facilities are used for organized adult recreational activities and/or youth activities. They include larger parking areas, restrooms, and concessions.
Community Preserve	These facilities have two primary functions – Preservation and protection of key natural areas and open spaces within the City. Creation of opportunities for human use and appreciation of the community's natural areas to a level that is appropriate for the site.
Protected Open Space	These areas consist largely of protected lands such as wetlands, and floodplains, and water bodies. The primary difference between protected open space areas and community preserves lies in their level of ecological diversity and their level of development for human use (i.e., trails, overlooks, etc.). In general, the protected open space areas are less diverse and of lower ecological quality than community preserve sites and thus fall to a lower priority for restoration and management.
Special Use Park	These are unique facilities such as splash pads, beaches, and the indoor hockey rink.
Regional Park	These parks serve a regional population. They also provide facilities that might otherwise be located in cornerstone parks.
School Site	These sites, except for Anoka Ramsey Community College and Epiphany School, are owned and controlled by Anoka-Hennepin School District # 11. However, they provide opportunities for joint use potential between the City and the schools.

Inventory

Parks

Table 6-2 contains a list of the various park and open space facilities, approximate natural and developed park acreage in each park, and the functional classification.

TABLE 6-2: Park Acreage and Functional Classification

MP=Mini Park, NP=Neighborhood Park, CP=Cornerstone Park, AC= Athletic Complex, SUP=Special Use Park, CPR=Community Preserve, RP=Regional Park, S/P=School/college grounds including buildings

Approximate Park Acreage

	Name	Natural	Developed	Total	Classification	Last Major Improvement
1	Acorn	0	1.5	1.5	MP	
2	Al Flynn	16	18.3	34.3	AC	
3	Alder	0	2.6	2.6	NP	2014
4	Aspen	10.5	8	18.5	AC/CPR	
5	Bison Creek	8.8	4	12.8	NP/CPR	2014
6	Boulevard Plaza	0	NEED	NEED	CP/SUP	
7	Bunker Hills Dog Park	NA	NA	NA	SUP	2014
8	Burl Oaks	2	3.4	5.4	NP	
9	Cardinal Woods	5	3.3	8.3	NP	
10	Coon Rapids Ice Center	NEED	NEED	NEED	SUP	
11	Creekside	6.8	0	6.8	CPR	
12	Crooked Lake Beach	0	8	8	CP/SUP	2018
13	Dahlia	0	8.1	8.1	NP	2008
14	Delta	0	3	3	NP	2016
15	Epiphany Pond	16	6	22	NP	
16	Erlandson Nature Center	64	3	67	CPR	2017
17	Kennedy	.5	5	5.5	NP	2013
18	Lions Coon Creek	25.3	10	35.3	NP/CP	2019 (scheduled)
19	Mallery	.1	3	3.1	NP	
20	Marshland	20	10.7	30.7	NP/CPR	
21	Mason	0	6.4	6.4	NP	2016
22	Mercy	.5	3.5	4	NP	
23	Moor	6	21.1	27.1	NP/AC	2015
24	Nelson	0	3.9	3.9	NP	2012
25	Parkside	8.6	4	12.6	NP/CPR	
26	Peppermint Stick	0	4	4	NP	2015
27	Pheasant Ridge	23.3	8	31.3	NP/CP	2016
28	Prairie Oaks	0	29	29	NP	2003

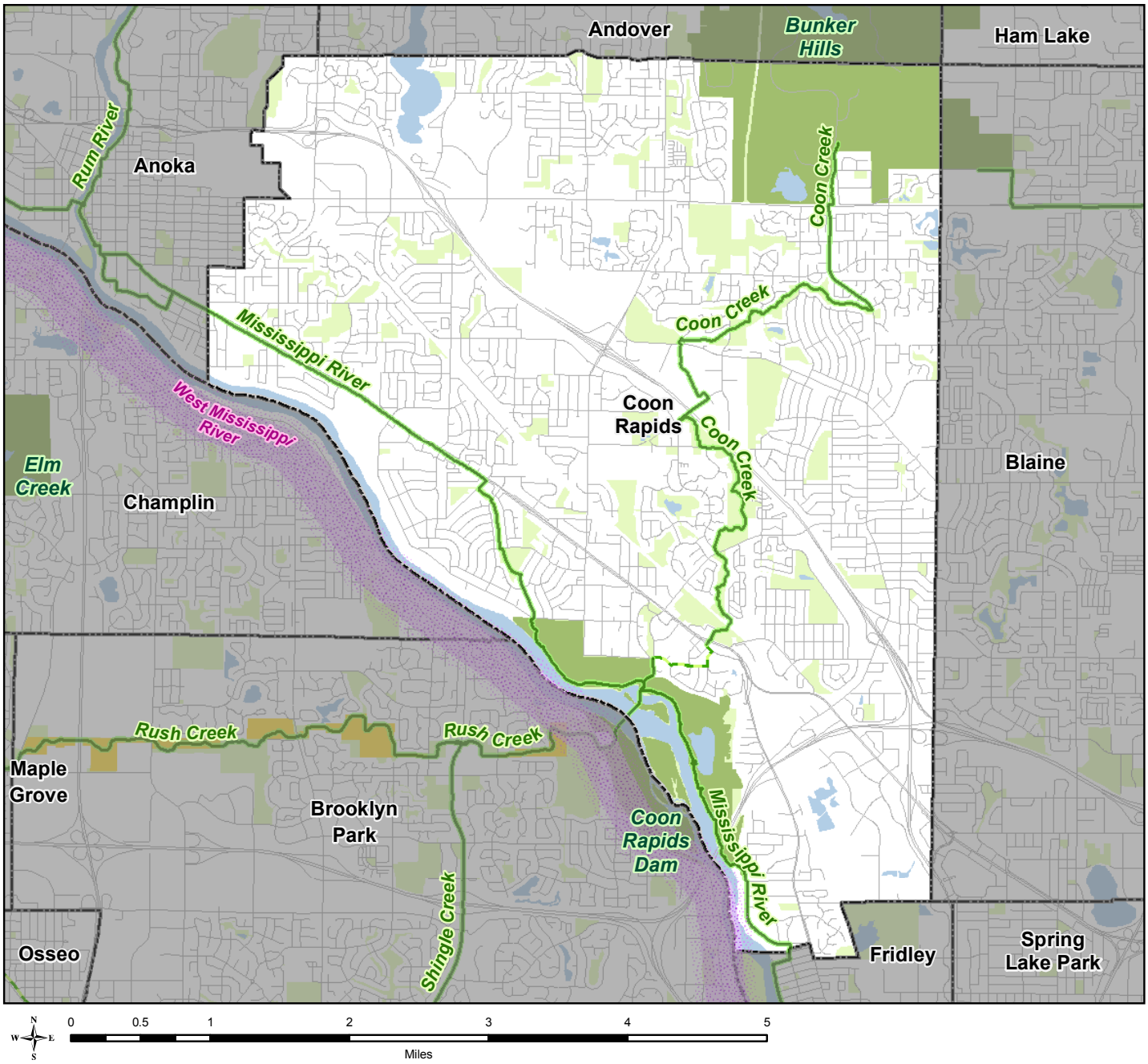
	Name	Natural	Developed	Total	Classification	Last Major Improvement
29	Prospect	0	7.2	7.2	NP	2006
30	Reservoir East	0	3	3	NP	
31	Riverdale	0.0	5.0	5.0	NP	
32	Riverview	0	20.5	20.5	CP	2015
33	Riverview Reservoir	0	18.5	18.5	NP	
34	Riverwind	3	6.8	9.8	NP/SUP	2018
35	Robinson	12	0	12	CPR	2018
36	Rockslide	0	12	12	NP	2003
37	Sand Creek	15	58.5	73.5	AC	2017
38	Soccer Complex	5	35	40	AC	2017
39	Sunrise Ponds	0	2.7	2.7	NP	2015
40	Thorpe	.5	8	8.5	NP	2002
41	Thrush	2	2	4	NP	2004
42	Towerview	0	5	5	NP	
43	Trackside	0	4.3	4.3	NP	2018
44	Twin Field	3.5	3.5	7	NP	2001
45	Vineyard	4	3.5	7.5	NP	2017
46	Wilderness	73	0	73	CPR	
47	Wildwood	15.7	3	18.7	NP/CPR	
48	Wintercrest	0	16	16	AC	2017
49	Woodcrest	32	8	40	NP/CPR	2016
50	Woodland Oaks and Heights	158	3	18.8	NP/CPR	
51	Woodview	0	10	10	NP	2016
52	Bunker Hills Golf Course			350	SUP	
Bunker Hills Regional Park – Anoka County				1500	RP	
Coon Rapids Dam Regional Park – Anoka County				450	RP	
Anoka-Ramsey Community College				≈100	S/P	
Coon Rapids High School/Middle School				57*	S/P	
Northdale Middle School/Eisenhower Elementary				57*	S/P	
Sand Creek Elementary				10*	S/P	
Mississippi Elementary				12*	S/P	
Morris Bye Elementary				9*	S/P	
Sorteberg Elementary				12*	S/P	
Hoover Elementary				24*	S/P	
Adams Elementary				10*	S/P	
L.O. Jacob Elementary				15*	S/P	
Hamilton Elementary				8*	S/P	
Epiphany School (Private ball fields)				4*	S/P	

* *Open space portion of the site only.*

These facilities are shown on the Existing Parks and Trails Map. Designated regional parks and trails are highlighted on the Regional Parks System Map.

MAP 6-1: Regional Parks System

City of Coon Rapids, Anoka County



N W E S 0 0.5 1 2 3 4 5 Miles

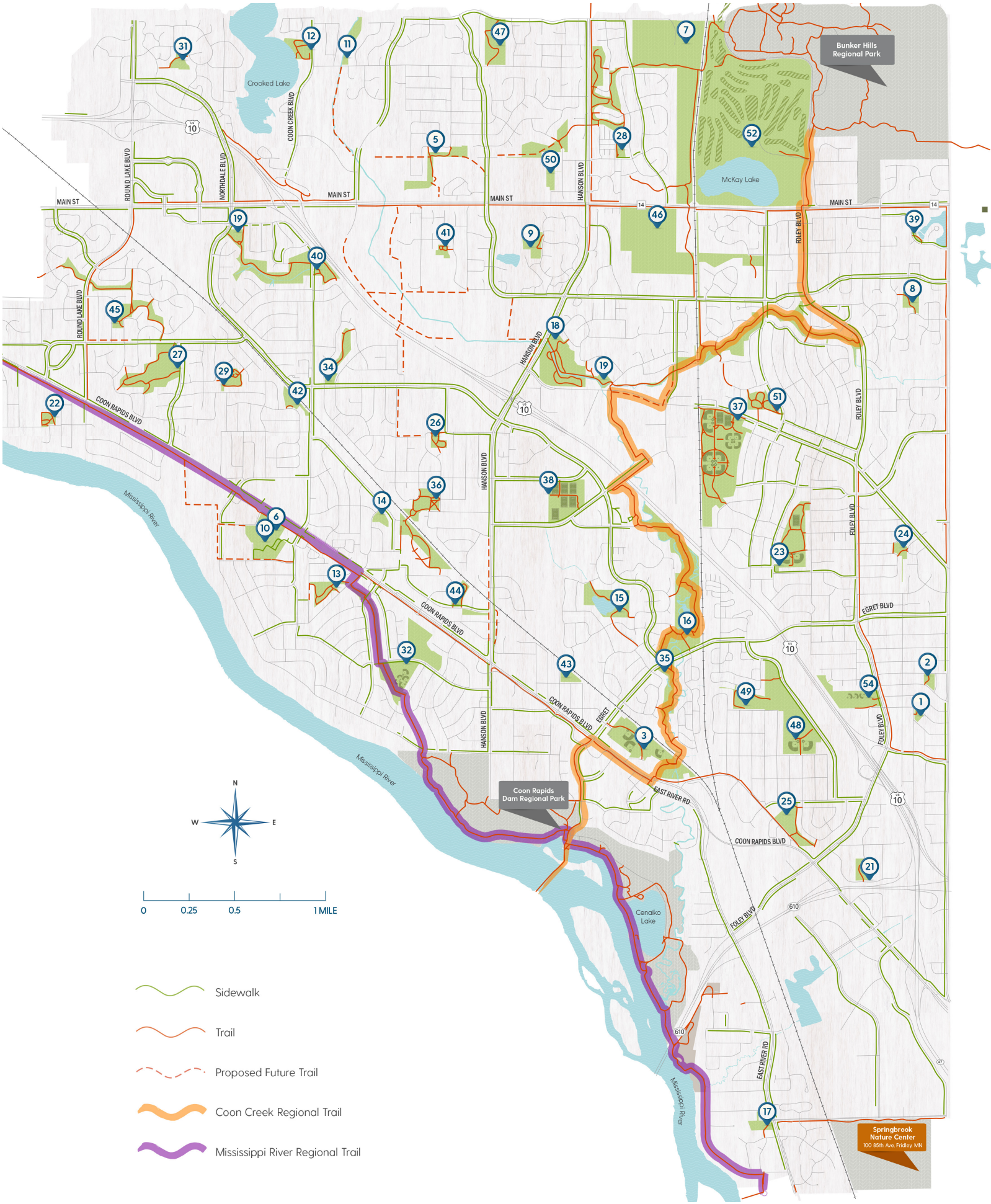
Regional Parks
- Existing
- In Master Plan
- Planned Parks and Reserves

Regional Trails
- Existing Regional Trails
- Planned Regional Trails
- Regional Trail Corridor Land

Regional Park Search Areas and Regional Trail Search Corridors
- Boundary Adjustments
- Search Areas
- Regional Trail Search Corridors
- Regional Trails - 2040 System Additions

- Minnesota Valley National Wildlife Refuge
- State Parks
- State Wildlife Management Areas (Publicly Accessible)
- Scientific and Natural Areas (SNA)
- Other Parks and Preserves
- Existing State Trails
- Street Centerlines (NCompass)
- Lakes and Major Rivers

MAP 6-2: Existing Parks and Trails



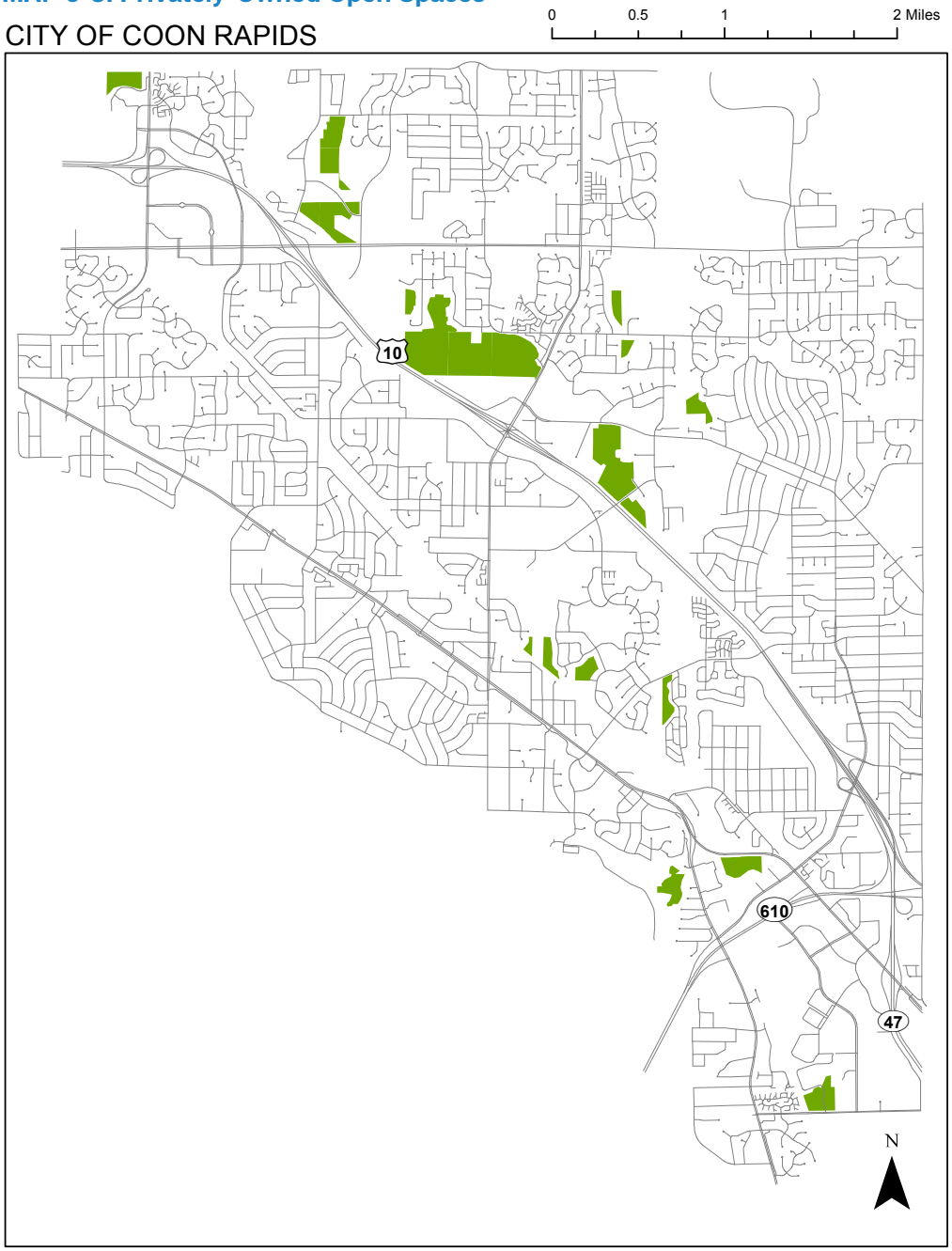
Natural Areas

Many of the natural areas in the City have been purchased by the City or some other governmental agency for parks or open space preservation. Several other natural areas have been developed. The Privately Owned Open Spaces Map (Map 6-3) shows the location of remaining privately owned open spaces in the City that have natural resource and ecological value.

Protected Areas

Some of the natural areas shown on the Privately Owned Open Spaces Map (Map 6-3) are protected by federal, state, or Coon Rapids regulations. These include those areas of the City that are floodplains, shorelands, or wetlands. The Mississippi River Critical Area policies detailed in Chapter 8 of the *2040 Plan* protect the Mississippi River and adjacent shorelands by requiring the review of new or additional development on land several blocks away from the river.

MAP 6-3: Privately-Owned Open Spaces



Trails

The *Parks, Open Space, and Trail System Plan Update* contains an extensive discussion of trails and their design standards. Table 6-3 summarizes the major trail segments in Coon Rapids and their current development status.

TABLE 6-3: Development Status

Segment	Status
Coon Creek Regional Trail	Largely complete; remaining segment to be constructed involves signalized crossing of Northdale Blvd. at Xeon St.
Coon Creek West Municipal Trail	upcoming priorities include improving the trail crossing at Northdale Blvd., sections through Lions Park and across Hanson Blvd., and sections along Coon Creek Blvd. and 128th Ave.
Sand Creek Trail	Complete
Mississippi River Regional Trail	Significant progress has been made in recent years. Sections through Kennedy Park, near Adams School, and along 109th Lane are priorities for completion.
Coon Rapids Boulevard Trail	Complete
Main Street (Northern Municipal Trail)	Continuous trail is complete; construct additional linkages through Woodland Heights/Bison Creek Parks.
Middle Municipal Trail	Complete south of Peppermint Stick Park; improve Hwy. 10 crossing and link to Coon Creek Trail.

Goals, Objectives, and Policies

In order to address system needs, the City has adopted the following goals, objectives, and policies.

Goal #1: Park Functions

Establish, maintain, and promote parks and preserved natural areas for recreational uses that provide visual and physical diversions from the developed residential, commercial, and industrial environment, and as a means to maintain the character, ambiance, appearance, and history of the community.

Objectives:

1-1 Fulfill the present and future physical and psychological needs of residents and enhance the quality of life within the City with park land and natural resource areas.

1-2 Develop parks and natural resource areas and interconnected trail corridors that are significant factors in shaping future growth in Coon Rapids.

1-3 Emphasize orderly and sequential growth in a compact urban form that is in harmony with the natural environment.

Policies:

1-1 Use park land dedication policies and ordinances to require developers (of all land use categories) to contribute to park and trail acquisition and park redevelopment through land dedication and/or fees.

1-2 Acquire and develop parks, trails, natural resource areas, and related recreation facilities in accordance with the Parks and Trails Master Plan for the purpose of shaping the built form of the community and establishing a balance between urbanization parks, trail corridors, and natural areas.

1-3 Engage a diverse range of stakeholders in the decision-making process for developing, updating and maintaining quality parks and facilities.

1-4 Make a reasonable effort to eliminate all physical barriers that deter individuals from using existing or future parks and recreation facilities. Barrier-free design principles shall be implemented in accordance with accepted guidelines and laws.

1-5 Ensure consistency in design and maintenance procedures with accepted industry standards. Design and maintenance of all parks and recreation facilities shall emphasize high quality, user safety, and cost accountability.

1-6 The Parks and Recreation Commission and staff shall review and comment on all planned development matters that affect park land and trail corridor dedication, acquisition, and development.

1-7 Improve the overall park design quality throughout the system without all parks having identical elements. Efforts will be made to design parks so they entice individuals of all ages, races, and ability levels to use them.

1-8 Examine the concept of a community center facility that balances recreation and community needs and involves the appropriate community partners.

1-9 Continually evaluate budgets to align with ongoing maintenance and replacement needs and identify creative ways to fund projects.

1-10 Build partnerships with Anoka County, local schools, and neighborhoods on projects.

1-11 Identify partners to provide ADA accessibility and inclusion in parks.

1-12 Consider sustainability when making capital improvements and in operation and maintenance of park facilities, including energy efficient lighting and plumbing fixtures, rain gardens, recycling containers, and pollinator-friendly landscaping.

Efforts will be made to design parks so they entice individuals of all ages, races, and ability levels to use them.

Goal #2: Natural resources

Preservation and conservation of ecological systems and natural resources within the City.

Objectives:

2-1 Identify and preserve significant natural resources as open space and important components of the overall park system.

2-2 Enhance the character or appeal of the community through interconnected natural resource areas.

2-3 Emphasize the orderly and sequential growth within the community in a compact form in harmony with the natural environment.

2-4 Provide sustainable and desirable natural resource areas and ecological systems.

Policies:

2-1 Restore or manage natural resource areas identified in the Parks and Trails Master Plan to enhance and protect them.

2-2 Provide educational materials to residents so they can be informed about ecological issues and the importance of restoration and management programs and their role in protecting the City's natural resources and the natural character of their properties.

2-3 Consider setting aside natural resource areas through direct purchase, developer's agreements, conservation easements, or other means to preserve the natural character of the community. These areas shall be considered as additions to, rather than substitutes for, other types of park land.

2-4 Ensure that the City's wetland and shoreland management policies and practices will be consistent with accepted statewide standards.

2-5 Consider certification of the Bunker Hills golf course in the Audubon Cooperative Sanctuary Program.

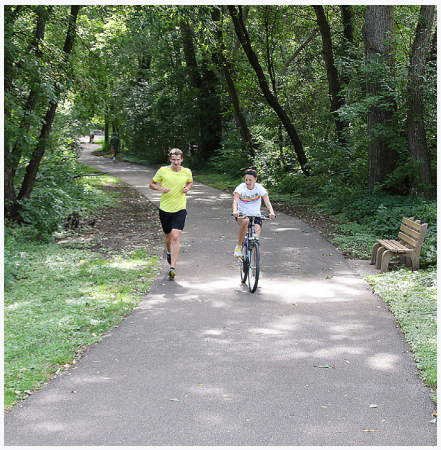
2-6 Promote water-wise and native landscaping.

2-7 Consider including community gardens, orchards, and pollinator plantings on City land, particularly in areas accessible to disadvantaged communities.

2-8 Consider adopting pollinator/monarch-safe policies in natural areas of City parks.

Goal #3: Trails

An interconnected trail and sidewalk system for transportation and recreation purposes and as a means to tie divergent parks and open space with the broader community.



The trail system shall accommodate a range of activities (e.g. walking, hiking, bicycling, in-line skating and cross country skiing).

Objectives:

3-1 Develop a trail system that emphasizes harmony with the built and natural environment.

3-2 Provide relatively uninterrupted pleasure hiking, biking, and other uses to and through the City's park system and developed areas.

3-3 Provide a well connected, comprehensive park and trail system with an emphasis on enhancing the recreational experience of the use. Also, a trail system connected to trails in adjacent cities and the county.

3-4 Maintain safe trail system where users are protected from urban developmental encroachment and associated vehicular traffic.

Policies:

3-1 Require developers to dedicate land for trails when the developed land contains an identified trail corridor. The developers will also be required to provide access from new subdivisions to those trails.

3-2 Develop trails in conjunction with future developments, parks, natural resource areas, greenways, and roadway projects to provide transportation throughout the City and for recreation purposes.

3-3 Develop the trail system, including tunnels under railroad tracks and overhead bridges over major transportation corridors, to minimize the potential for conflicts between pedestrians and motor vehicles.

3-4 Require trail types, development standards, and general location to be in accordance with the Parks and Trails Master Plan. The trail system shall accommodate a range of activities (e.g. walking, hiking, bicycling, in-line skating and cross country skiing).

3-5 Provide trail support facilities as warranted (including trail signage and striping, benches, picnic tables, bridges, restrooms, parking, shelters, etc.).

3-6 Ensure trail design sensitive to the natural environment and character of the area it traverses.

3-7 Design trails to be accessible to all populations with varying abilities wherever feasible, practical, and appropriate given the specific setting.

3-8 Construct trails to require minimal maintenance and limit the opportunity for vandalism.

3-9 Provide adequate screening and buffering, where possible, along trail corridors to provide a physical and psychological separation between the trail and adjacent land uses.

3-10 Prohibit motorized vehicles on all trails unless required for maintenance and safety.

3-11 Promote the trail system through events and publications.

3-12 Develop plans for major trail connections and crossings.

Goal #4: Programs

Opportunity for all community residents to participate in recreation activities and programs through effective, accessible, and inclusive recreation programs.

Objectives:

4-1 Support and compliment the efforts of local recreational providers in addressing the recreation and leisure needs of the diverse community including all races, ages, abilities, and underserved populations.

4-2 Support and encourage a wide range of recreation and leisure interests within the community.

4-3 Provide and maximize adequate facilities for programmed use on a fair and equitable basis to ensure that all individuals and groups receive equal access to facilities.

Policy:

4-1 Continually evaluate recreation programming to ensure it meets community needs and provide new programs based on gaps in service.

4-2 Develop strategic partnerships that are mutually beneficial to optimize opportunities and creatively use resources.

4-3 Invest recreation resources in people, programs, facilities and infrastructure to support a healthy community.

4-4 Reflect our community's diversity and changing demographics in our provision of services and programs.

4-5 Provide effective, timely and open communication channels for residents and business owners/ representatives to build awareness and promote programs and services.

4-6 Provide adequate staffing and organizational structure to align with community needs and desires.

4-7 Maintain strong communications with volunteer and athletic associations to support programming needs.

4-8 Integrate environmental education into outdoor space and programs where appropriate.

4-9 Use future recreation trends and forecasts to anticipate programing or facility needs.

Chapter 7

Economic Competitiveness

Regional economic competitiveness is a core element of the region's sustained prosperity. Collectively, the region must provide great locations for businesses to succeed – particularly those industries that export products or services beyond the metropolitan area and bring revenue and jobs to the region. This chapter establishes policies for both business development activities and redevelopment activities for Coon Rapids within the Twin Cities Metropolitan Area through 2040.

Business Development

This section assesses the city's current economic and employment situation, sets goals for economic development, and establishes policies and actions to stimulate business retention and attraction.

Inventory and Assessment

This section reviews Coon Rapids' employment characteristics and compares them with those of peer cities within the metro area.

Employment. Table 7-1 shows employment trends by industry in Coon Rapids. The city had a total of 21,999 private sector employees in 2016. The city's employment base has expanded by about 6% since 2011. The largest increases were in Trade, Transportation, Utilities, Education and Health Services industries. As established in Chapter 2 of the 2040 Plan and shown in Table 7-2, Coon Rapids is projected to have 30,900 employees by 2040, an increase of 7,640 over the 2010 level. The Twin Cities region as a whole is projected to add 489,000 employees between 2010 and 2040.

Business Distribution. Table 7-3 overviews that Coon Rapids has just over 1,000 private employers. The City's health care and retail trade sectors represent the largest proportions of establishments.

Wages. Table 7-4 illustrates relevant wage data in the city of Coon Rapids. The average weekly wage for private sector employees in Coon Rapids is $905. The highest paying jobs in the city are in the Manufacturing, Financial Activities, Education and Health Services industries, however, wages in all industries have grown steadily over the past five years. Average wages in Coon Rapids are similar to those of peer cities, although substantially high wages in a few suburbs are driven by the presence of a single high-paying employer. For instance, Blaine has a lower average wage than does Coon Rapids, while Fridley and Maple Grove have significantly higher wages on average.

TABLE 7-1: Average Annual Employment by Industry, Coon Rapids

Industry	2011	2012	2013	2014	2015	2016
Manufacturing	3,068	3,251	3,099	3,072	2,868	2,934
Trade, Transportation, and Utilities	5,127	5,466	5,467	5,567	5,653	5,745
Financial Activities	794	676	719	746	699	733
Professional and Business Services	1,852	1,771	2,247	2,233	2,189	2,107
Education and Health Services	5,525	5,739	5,832	5,625	5,734	5,783
Leisure and Hospitality	2,885	3,087	3,046	3,007	3,023	2,994
Other Services	869	927	1,012	1,086	1,070	1,007
TOTAL (Private Employment)	20,776	21,598	22,155	22,090	21,973	21,999

Source: Minnesota Department of Employment and Economic Development

TABLE 7-2: Population and Employment Projections, Coon Rapids

	2010 Estimate	2015 Estimate	2020 Forecast	2030 Forecast	2040 Forecast
Population	61,476	62,527	64,800	68,400	72,100
Households	23,532	24,023	25,500	27,500	29,300
Employment	23,260	24,007	27,100	28,900	30,900

Source: U.S. Census Bureau Decennial Census, Metropolitan Council

TABLE 7-3 Average Annual Establishments, Coon Rapids

Industry	2011	2012	2013	2014	2015	2016
Education and Health Services	170	176	182	182	161	175
Financial Activities	141	133	130	124	122	126
Leisure and Hospitality	121	124	121	124	122	119
Manufacturing	51	50	48	48	47	47
Professional and Business Services	187	191	171	164	162	156
Trade, Transportation and Utilities	243	250	241	236	225	226
Other Services	94	94	89	95	94	100
Total, All Industries	1,089	1,076	1,061	1,051	1,028	1,041

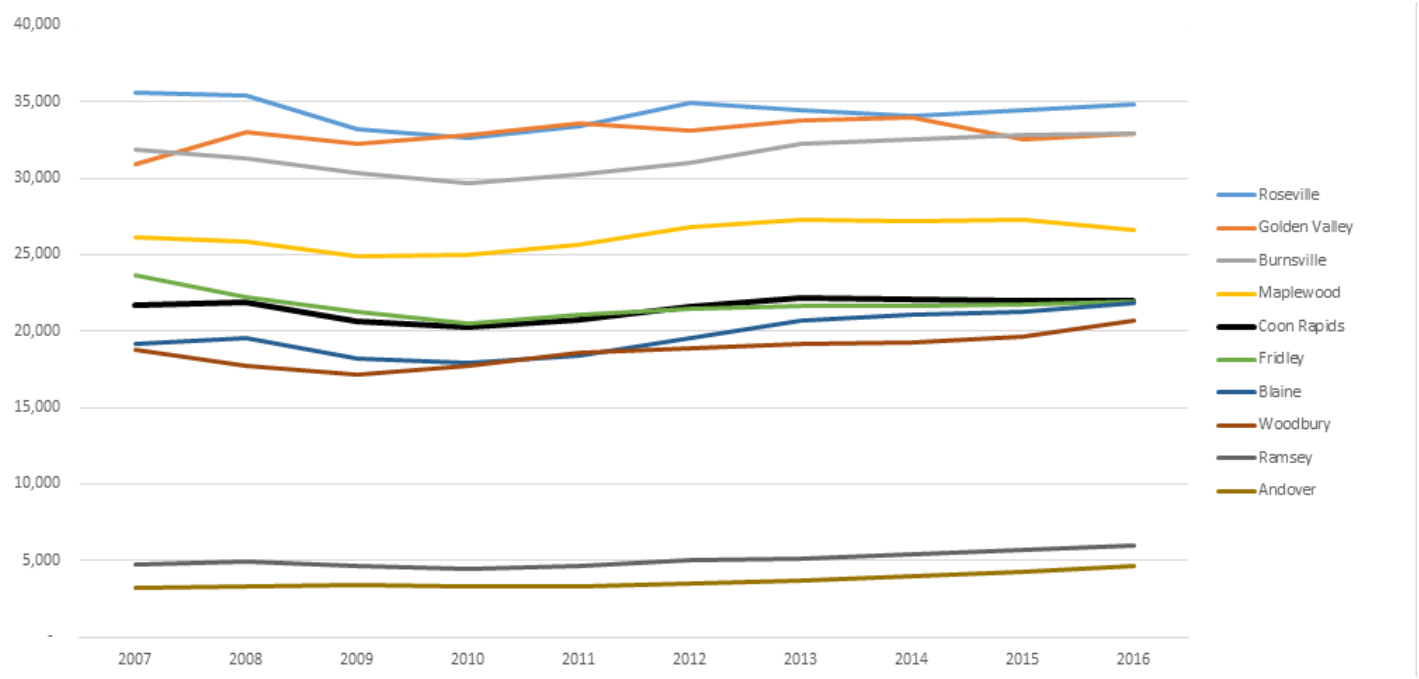
Source: Minnesota Department of Employment and Economic Development

TABLE 7-4: Average Weekly Wage, Coon Rapids

Industry	2011	2012	2013	2014	2015	2016
Education and Health Services	$1,119	$1,152	$1,145	$1,198	$1,266	$1,260
Financial Activities	$1,107	$1,017	$1,051	$1,111	$1,163	$1,012
Leisure and Hospitality	$266	$270	$281	$282	$306	$325
Manufacturing	$1,210	$1,243	$1,248	$1,277	$1,298	$1,316
Professional and Business Services	$822	$829	$836	$823	$846	$879
Trade, Transportation and Utilities	$578	$629	$641	$657	$684	$702
Other Services	$429	$441	$470	$503	$894	$558
Total, All Industries	$811	$842	$839	$860	$894	$905

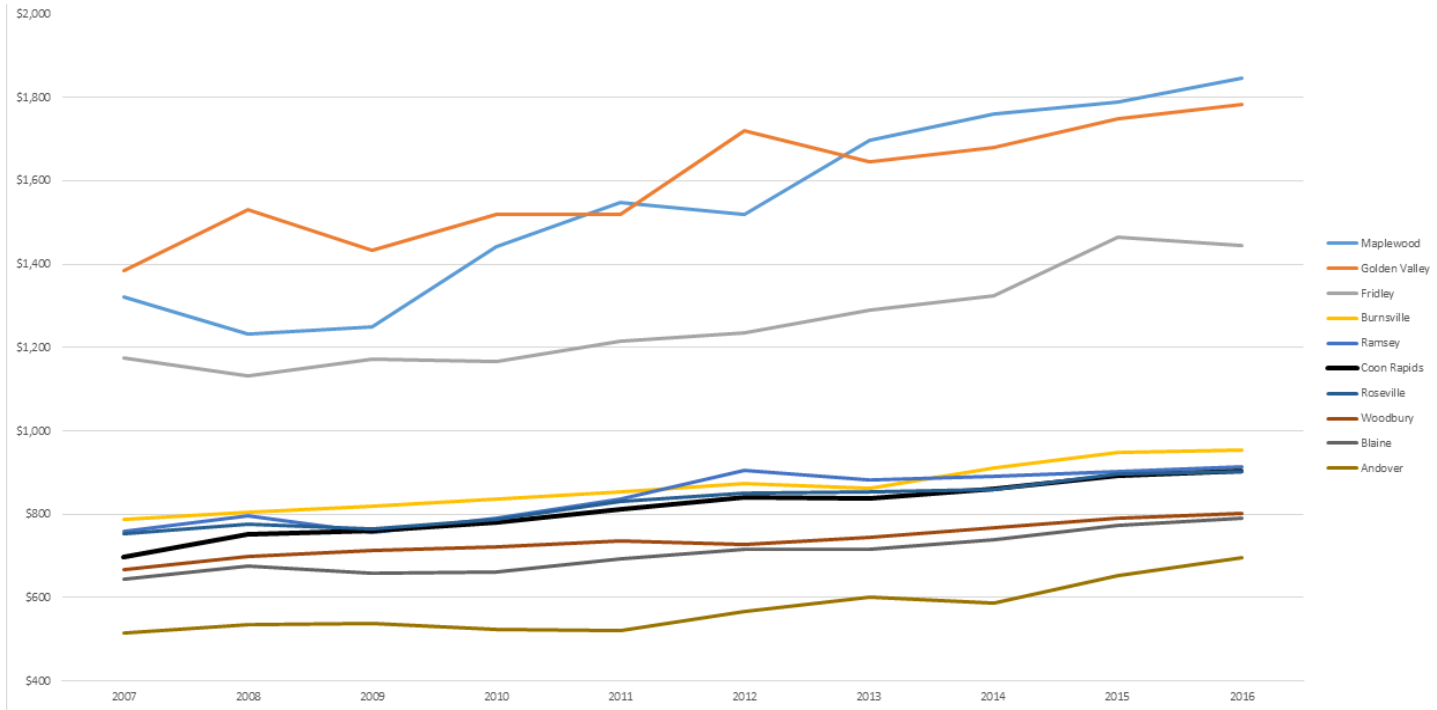
Source: Minnesota Department of Employment and Economic Development

FIGURE 7:1 - Average Annual Employment Select Suburbs



Source: Minnesota Department of Employment and Economic Development

FIGURE 7-2: Average Weekly Wage in Select Suburbs



Source: Minnesota Department of Employment and Economic Development

Commuting Patterns. While Coon Rapids has a solid employment base, most city residents work outside of the city. Similarly, many employees of Coon Rapids businesses commute from other parts of the region. Tables 7-5 and 7-6 show the county of residence of Anoka County workers and the county of employment of Anoka County residents. Just under half of those working in Anoka County also live in the county. Only about 30% of employed Anoka County residents work in the county, with nearly 40% commuting to Hennepin County and 18% commuting to Ramsey County. The Generalized Job Concentrations Map (Map 7-1) and Generalized Manufacturing and Distribution Centers Map (Map 7-2) illustrate the regional geographic distribution of jobs. In 2010, one in six jobs in the region was located in the four largest centers of employment: downtown Minneapolis, downtown St. Paul, the University of Minnesota, and the airport/Mall of America. About half of the region's jobs are located in the Job Concentrations shown on the map. Coon Rapids and its adjacent cities contain one of these concentrations, which is centered around the Northtown Mall and the Evergreen Industrial areas. While this chapter's recommendations focus on ensuring Coon Rapids' economic competitiveness and enhancing employment opportunities in the city, it is important to recognize that significant regional commuting will continue to occur and constitent transportation investments will be necessary.

TABLE 7-5: County of Residence of Workers Employed in Anoka County

County of Residence	Count (2014)	Share (2014)
Anoka County, MN	51,025	44.6%
Hennepin County, MN	21,117	18.5%
Ramsey County, MN	10,056	8.8%
Sherburne County, MN	4,548	4.0%
Washington County, MN	4,536	4.0%
Isanti County, MN	3,440	3.0%
Dakota County, MN	2,776	2.4%
Wright County, MN	2,689	2.3%
Chisago County, MN	2,522	2.2%
Scott County, MN	976	0.9%
All Other Locations	10,754	9.4%

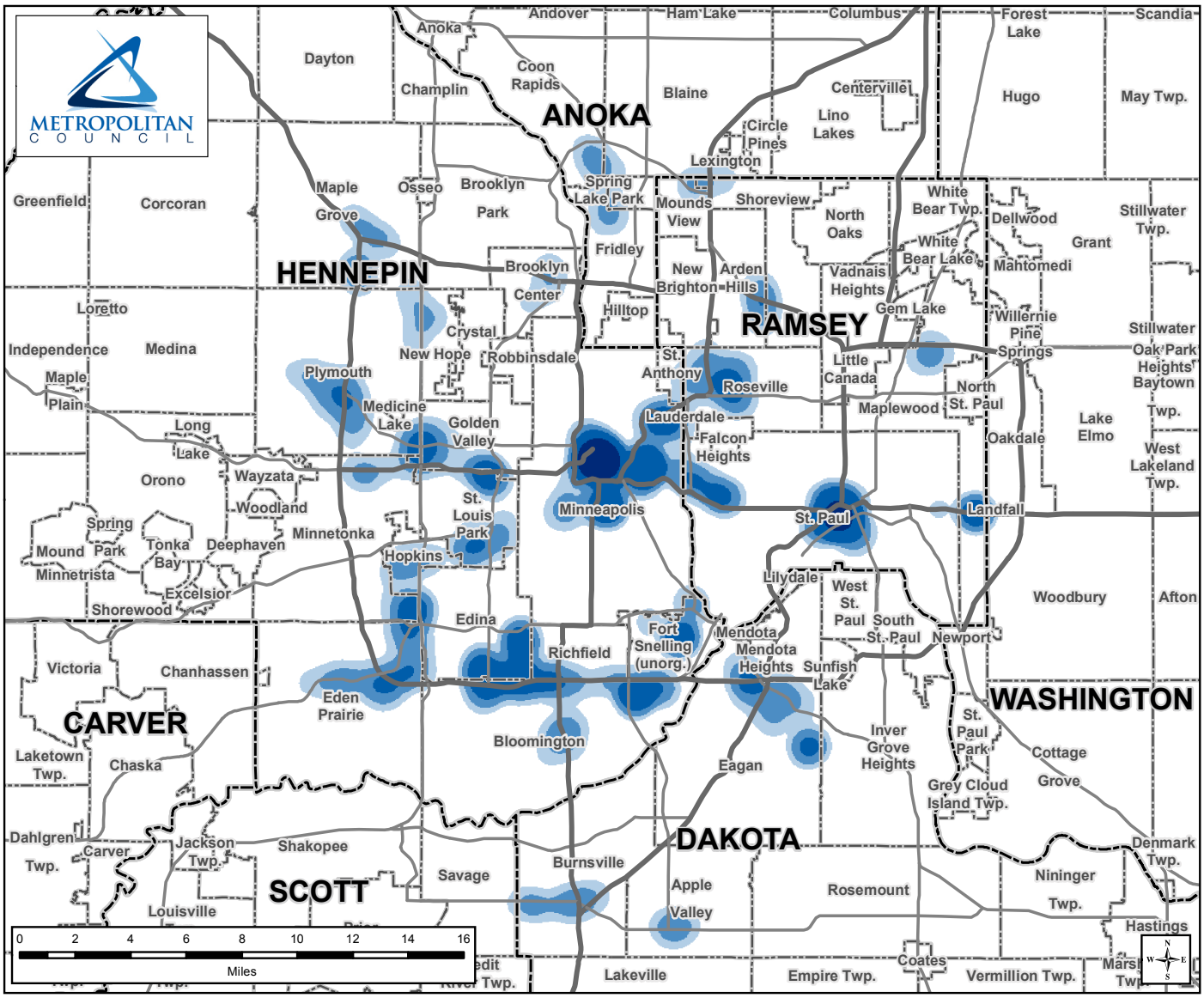
Source: Economic Development Business Recruitment Roadmap, Anoka County, MN

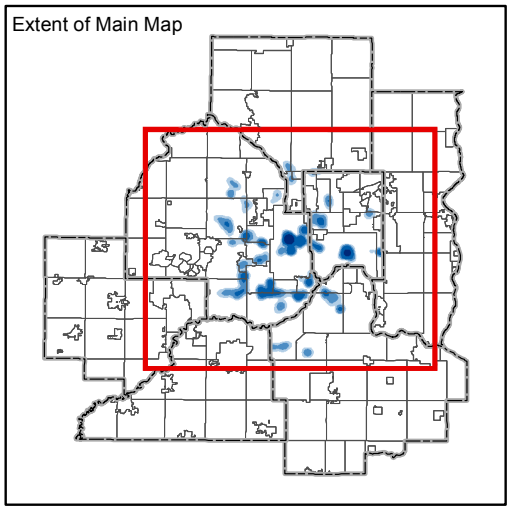
TABLE 7-6: County of Employment of Workers who Live in Anoka County

County of Employment	Count (2014)	Share (2014)
Hennepin County, MN	68,720	39.8%
Anoka County, MN	51,025	29.6%
Ramsey County, MN	30,914	17.9%
Dakota County, MN	3,859	2.2%
Washington County, MN	3,664	2.1%
Sherburne County, MN	2,264	1.3%
Chisago County, MN	1,220	0.7%
Wright County, MN	1,024	0.6%
St. Louis County, MN	1,006	0.6%
Isanti County, MN	960	0.6%
All Other Locations	7,999	4.6%

Source: Economic Development Business Recruitment Roadmap, Anoka County, MN

MAP 7-1: Generalized Job Concentrations





Jobs Per Acre

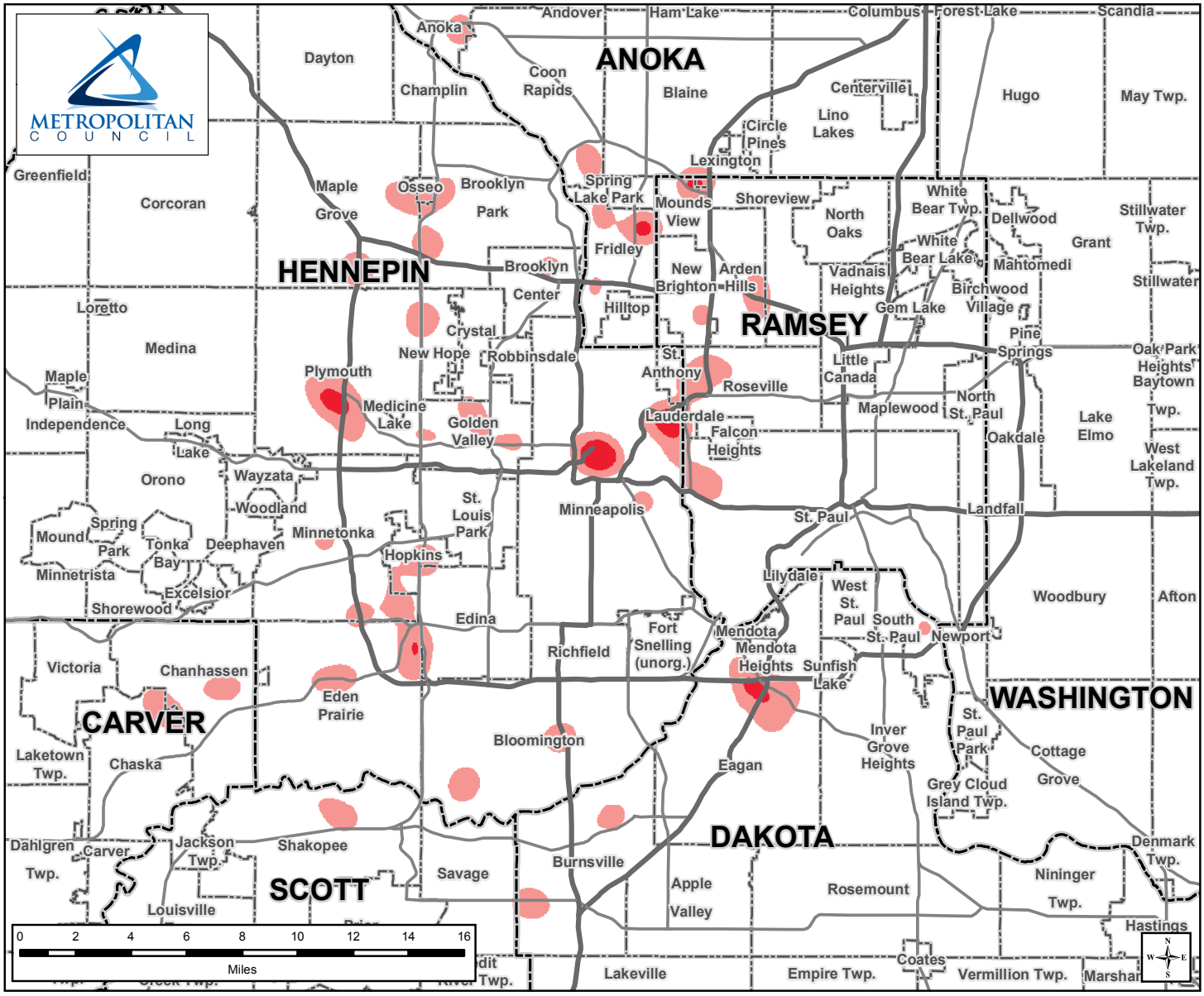
- Less than 2
- 2 to 4.9
- 5 to 9.9
- 10 to 39.9
- 40 to 160

- Interstate Highways
- State, US Highways and County Roads
- County Boundaries
- City and Township Boundaries

Sources: Minnesota Department of Employment and Economic Development's Quarterly Census of Employment and Wages, 2nd Quarter, 2012.

Author: Hansonpe
Document: N:\CommDev\Research\Research\GIS\Small Map Requests\Thrive\Report\Job_Concentrations.mxd

MAP 7-2: Generalized Manufacturing and Distribution Centers



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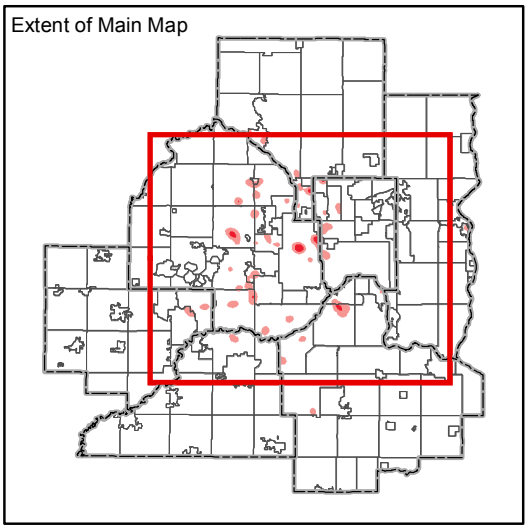


Jobs Per Acre

- Less than 2
- 2 to 4.9
- 5 to 9.5

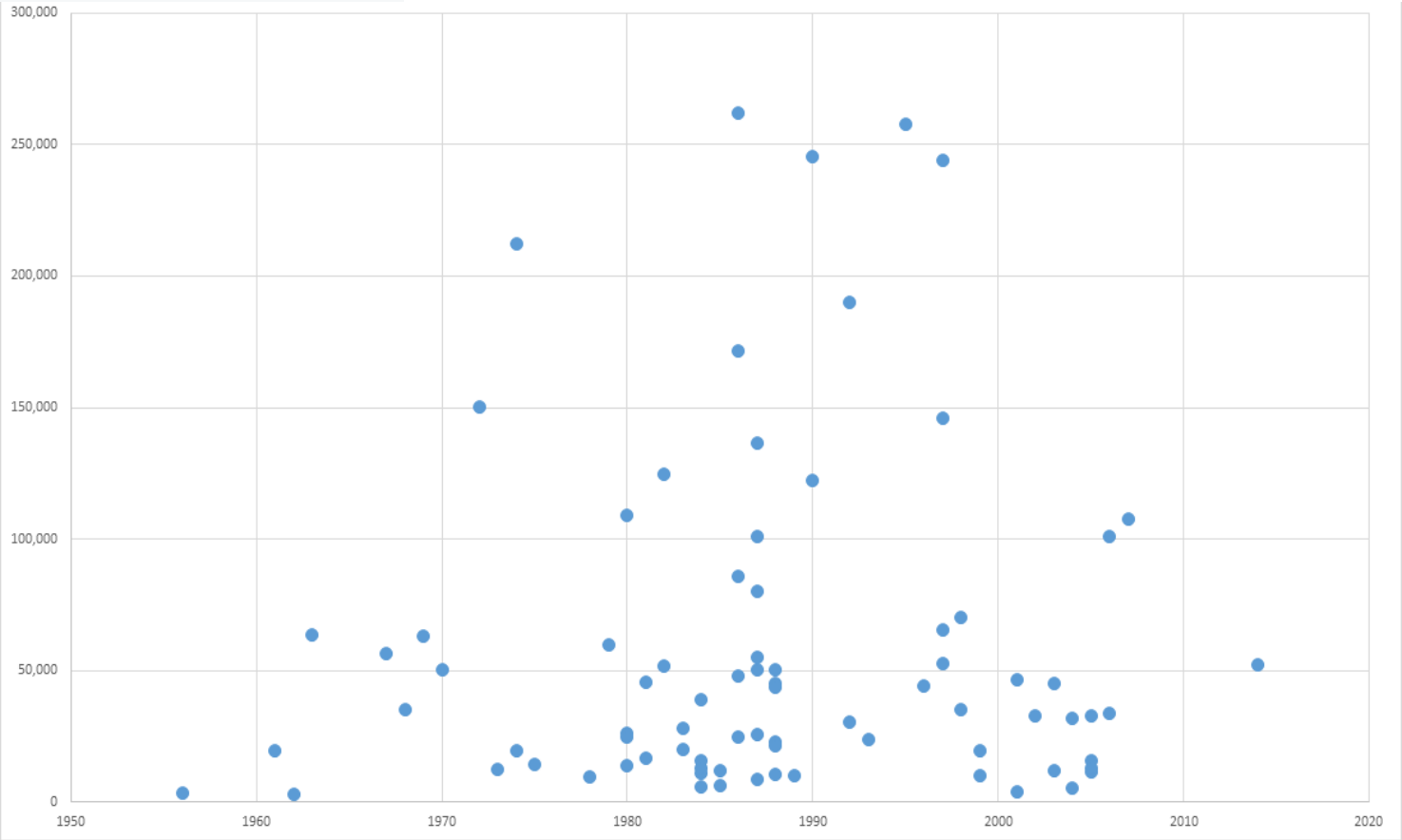
- Interstate Highways
- State, US Highways and County Roads
- County Boundaries
- City and Township Boundaries

Sources: Minnesota Department of Employment and Economic Development's Quarterly Census of Employment and Wages, 2nd Quarter, 2012.

Author: Hansonpe
Document: N:\CommDev\Research\Research\GIS\Small Map Requests\Thrive\Report\Mfg_and_Distribution_Centers.mxd

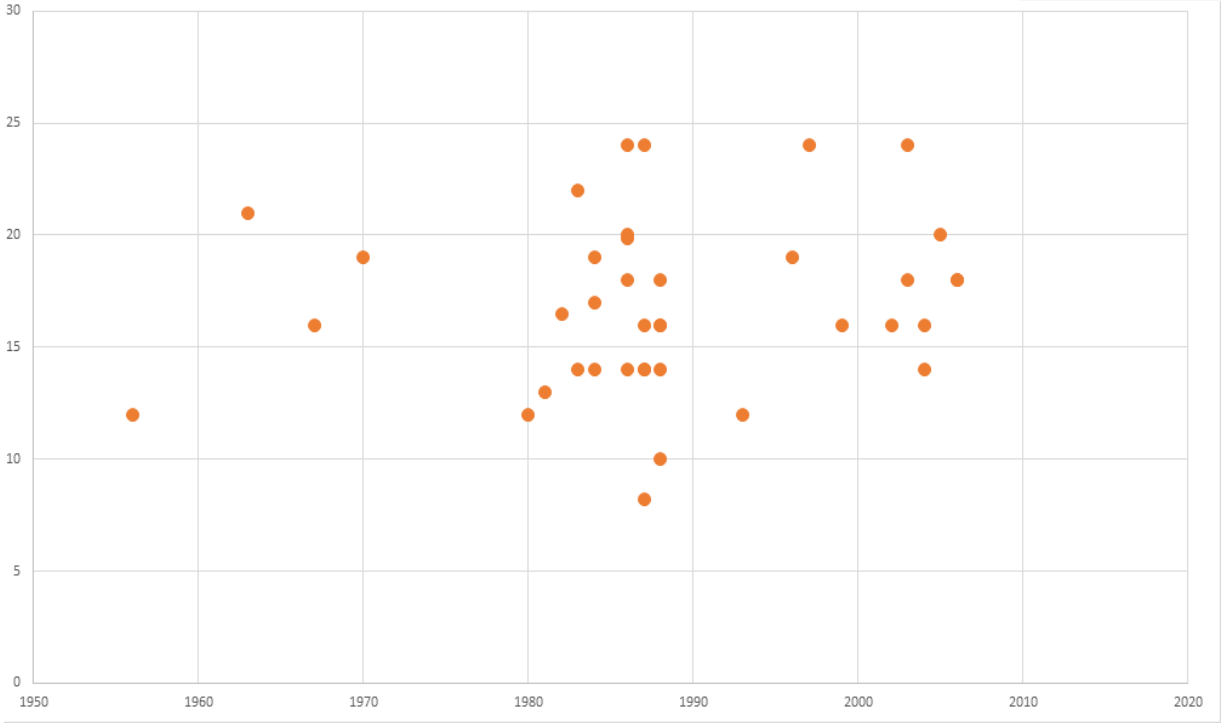
Industrial Building Inventory. Because Coon Rapids contains only a handful of moderately-sized vacant industrial parcels, it is expected that most employment growth will occur through reuse, expansion, and redevelopment of existing buildings. In addition, building and land supply must be accounted for when identifying target industries. Coon Rapids is home to about 4,700,000 of industrial space across approximately 80 industrial buildings. As of 2017, the vacancy rate for square feet industrial space in the city was about 8%, compared with 7% for the Twin Cities region. However, a few individual large vacancies make up much of Coon Rapids' overall amount of vacant industrial space. Most new manufacturing uses and other target industries will require at least a Class B building, which generally corresponds to those built after about 1980. Because over 80% of the city's industrial buildings were built in 1980 or later, Coon Rapids is well-positioned to accommodate these users. The city's industrial buildings also generally have a clear height of at least 16 feet, which is also a common requirement for light manufacturing users, particularly those in the medical device industry. However, since very few of the buildings have the 24 foot clear height required by warehouse and distribution users, it is not expected that Coon Rapids will attract significant new warehouse and distribution businesses. While few vacant industrial parcels exist in the city, existing industrial properties in Coon Rapids have a floor-area ratio of only about 0.25 (buildings on average cover about 25% of the lots on which they are located). This means that existing businesses likely have the opportunity to expand, as the industrial zoning district allows up to 50% lot coverage. For all of these reasons, Coon Rapids is unlikely to experience significant industrial redevelopment in the foreseeable future. Rather, the city will achieve projected employment growth, accommodate new businesses in the targeted categories, and allow its existing businesses to expand through the existing industrial building and land supply.

FIGURE 7-3: Coon rapids Industrial Buildings, Building Area (sq. ft) by Year Built



Source: Xceligent, Inc.

FIGURE 7-4: Select Coon Rapids Industrial Buildings, Clear Height by Year Built



Source: Xceligent, Inc.

Regional Perceptions. The *Economic Development Business Recruitment Roadmap* completed in 2017 for the Anoka County region involved conducting interviews with nearly 20 stakeholders to gain input. While these interviews addressed perceptions of the Anoka County region as a whole, it is important for Coon Rapids to recognize the themes as the city positions itself to retain and attract businesses. The stakeholders included a mix of local businesses, local economic developers, educational institutions and workforce representatives, and real estate representatives. These individuals provided input on strengths, weaknesses, opportunities and threats in the region. The following key themes emerged:

» Positive perceptions of the county revolve around doing business in the county and quality of life. Proximity to Minneapolis/St. Paul is a benefit to businesses as well as residents from a quality of life perspective. Other business advantages include supply chain opportunities, work ethic of employees and business engagement in the community. From a quality of life perspective, perceptions are that Anoka County has a variety of housing options available and good public schools. Many of the communities are also perceived as being safe with low crime and poverty rates.

» The most cited negative perception of the county is that anything north of Minneapolis/St. Paul is extremely remote and rural, and that the only jobs available in the region are blue-collar in nature.

» Talent is currently one of the biggest challenges for local employers in terms of both attracting and retaining talent. The local educational institutions in the region have responded well to employers' needs, however, employers must consistently compete for labor with Minneapolis/St. Paul.

» The biggest opportunities that stakeholders see for the county include changing the negative perceptions of the county, continuing to improve transportation infrastructure and developing clarity and cohesiveness between the cities and the county.

Business Development Goals and Policies

City government must play a role in encouraging economic development, redevelopment, and ongoing business activity by stimulating private investment, ensuring an adequate housing supply for employees, and investing in infrastructure. The following goals are established to help the city employment opportunities for City residents, enhance prosperity, and improve the community's overall quality of life.

Goal #1

Incite a wide range of employment opportunities for residents within the city's targeted industries.

1-1 Promote the retention and expansion of existing businesses and the attraction of new businesses within the targeted industry categories.

1-2 Promote job growth in the Target Industry sectors, particularly incentivizing higher wage jobs.

1-3 Ensure regional readiness in terms of workforce and sites and buildings.

Goal #2

Promote efficient land use and increase the city's tax base.

2-1 Ensure availability of commercial and industrial land that meets the city's projected demands, with employment centers concentrated at Port Wellness, Port Evergreen, Evergreen Industrial Park, Coon Rapids Industrial Park, and the Northstar Business Park.

2-2 Encourage high-intensity use of remaining industrial land to promote efficient land use and increase the city's tax base. Discourage new industries with nuisance characteristics, low employment density, and low taxable values or cause deterioration of infrastructure.

2-3 Eliminate blighting characteristics in the city's business districts by means of various financial incentives and land assembly in appropriate instances.

2-4 Ensure that the city's regulations, tax levels, and incentives are competitive with those of peer cities.

2-5 Maintain a streamlined and effective development review process.

Goal #3

Foster a high-quality, diverse business climate that is sustainable and resilient to short-term economic trends.

3-1 Promote Coon Rapids and the surrounding area to appropriate regional audiences, addressing perceptions among key stakeholders.

3-2 Advocate for regional multi-modal transportation investments that encourage business development and allow for easy access to regional employment centers. Maintain adequate infrastructure to support business growth.

3-3 Maintain strong relationships with local and regional economic development agencies, educational institutions, and the business community to share resources and achieve common goals.

3-4 Ensure that the city's housing stock supports the needs of local employees and targeted businesses. Ensure adequate marketing of the city's housing amenities.

3-5 Continue to attract retail spending and support business districts with a variety of retail options.

3-6 Ensure adequate dispersal of retail districts throughout the city.

3-7 Ensure that Coon Rapids' jobs/housing balance, tax capacity, wage levels, and employment levels remain comparable to those of its peer cities.

Providing high-quality basic services and appropriate regulations are the most important roles of local government in encouraging economic development.

Business Development Recommendations

A balanced economic development strategy addresses both retention of existing businesses and attraction of new businesses. Providing high-quality basic services and appropriate regulations are the most important roles of local government in encouraging economic development. Additional actions, such as those discussed in this section, may be considered in appropriate instances. This section addresses policies for encouraging business retention and attraction.

Annual Indicators. The City should track various metrics and analytics, including employment, wages, taxable value of commercial property, commercial construction, and retail sales. This data should be continually updated to gauge the city's strengths and weaknesses and adjust economic development policies accordingly. The overall economic development strategy may be adjusted to account for changes in the city's key indicators.

Business Outreach. Because the city's existing businesses are an important source of growth, they should also be a priority for economic development service efforts. If local firms are satisfied, they are more likely to expand within the community and spur additional economic development as a result. City Staff began visiting industrial businesses in 2007 to understand the nature of their operations and build relationships with the business community. These visits also help to communicate City initiatives to the business community. Other business retention activities, such as print or digital communication and in-person meetings, such as quarterly Business Council meetings, will also help maintain consistent connections between City government and the business community.

Business Targets. City resources should be directed toward industries that have the greatest potential for creating wealth, based on the existing business base. This involves capitalizing on its existing business clusters, yet maintaining a diverse business base to ensure resilience to short-term economic trends. While the City should provide a positive business climate for a wide array of businesses, priority should be given to industries that have high potential for unsubsidized spin-off businesses. The Economic Development Business Recruitment Roadmap completed in 2017 for the Anoka County region identified a handful of Target Industries for Anoka County. Table 7-7 reviews these industries, as well as suitability for Coon Rapids specifically.

TABLE 7-7: Target Industry Analysis

Target Industry	Subsectors of Focus	Comments	Suitability for Coon Rapids
Light Manufacturing	Medical Device Manufacturing and Related Industries	The medical device supply chain is well developed in the region. Technologic advances in medical devices are creating opportunities for metal and advanced materials fabrication and precision instrument manufacturing.	Coon Rapids is home to several medical device and component manufacturers that supply the medical device industry. The city's existing industrial building stock makes Coon Rapids well-positioned to attract additional businesses in this sector, which is a Primary Target.
	Plastic Product Manufacturing	Plastics manufacturing technologies are well established in the region Producers are aligned with both advanced devices (e.g. medical devices) and commodity parts (e.g. food machinery, farm equipment, transportation equipment)	The city's existing industrial building stock makes Coon Rapids well-positioned to attract additional businesses in this sector, which is a Primary Target.
	Instrument Manufacturing	Instrumentation and measuring devices are critical to manufacturing precision products including medical devices. There is growing demand for precision instruments.	The city's existing industrial building stock makes Coon Rapids well-positioned to attract additional businesses in this sector, which is a Primary Target.
	Metal Working, Machining, and Specialized Metals	The region has a strong tradition for precision machining and the fabrication of metal and other specialized materials. Advanced materials, such as carbon fiber, are growing in importance within the global economy.	The city's existing industrial building stock makes Coon Rapids well-positioned to attract additional businesses in this sector, which is a Primary Target.
	Chemical Manufacturing	Minneapolis/St. Paul region has a long history around innovation and manufacturing of adhesives and other industrial supply chain specialty chemicals. Advances in medical devices, pharmaceuticals, coating technologies are present in the region and align with Anoka County skill sets.	The city's existing industrial building stock makes Coon Rapids well-positioned to attract additional businesses in this sector, which is a Primary Target.
Heavy Manufacturing	Machinery Manufacturing	This includes machinery related to existing industries in the region including food processing and material handling equipment, and farm machinery.	The city's industrial building and land supply are generally not suited for heavy manufacturing. The zoning code generally does not allow these uses. Therefore, heavy manufacturing is not a Target Industry for Coon Rapids.
Distribution and Trucking	Specialized Distribution and Warehousing	The big box-type fulfillment centers are more likely to locate south of the city for better access to market; however, Anoka County has seen some small specialty distribution going on in the region and smaller trucking operations.	Coon Rapids is home to several trucking and distribution firms. While they are an important part of the local economy, these types of businesses should not be a priority for financial assistance.
Data Centers	Smaller Data Centers	Data centers are big users of electricity and Anoka County has the infrastructure to support this. However, this industry also requires fiber access, which is only available in some parts of the county. Recruitment should be limited to only those areas.	Coon Rapids does not presently contain any data centers. Lower employment density and lack of suitable land and building supply make data centers less of a priority for financial assistance than manufacturing.
Back Office	Medical services, call centers	Some available buildings for this; however, there will need to be a better inventory of these buildings in the future in order for Anoka County to realistically recruit this industry.	Existing building supply and presence of existing health care businesses make Coon Rapids well-positioned to attract these businesses. However, they should be less of a priority for financial assistance than manufacturing.

- **Primary Targets.** Most of the city's economic development resources should be directed toward the Primary Targets. These industries have relatively high wages, high employment density, potential for spin-off businesses, and potential for growth in the region. The City's tax increment/tax abatement policies should target these types of businesses, in addition to other City financial resources. As identified in Table 7-7, these industries include:
  - Medical equipment and supplies manufacturing
  - Medical device manufacturing and related industries
  - Plastic product manufacturing
  - Instrument manufacturing
  - Metal working, machining, and specialized metals
- **Secondary Targets.** While City resources should be largely directed toward the Primary Targets, some resources should be made available to the following business types. Although these industries generally have lower starting wages than the Primary Targets, they create basic employment and have potential for spin-off businesses. While tax-increment financing and tax abatement should generally not be directed toward Secondary Targets, other resources, such as revolving loans may be appropriate.
  - Smaller data centers
  - Back office related to medical services and health care
  - Businesses creating skilled jobs at wage levels in excess of the metro area median
  - Financial and Technical Resources. The City should market available resources to both existing and new businesses.

- **Resources for Existing Businesses.** The City should market available resources to businesses, including technical assistance programs, such as Open to Business, which provides free consultations to existing and prospective business owners.
- **Revolving Loan Fund.** Through its Housing and Redevelopment Authority, the City offers gap-financing assistance for construction, real estate, and equipment purchases creating a substantial number of jobs. Loans should be directed toward businesses in the primary target areas, as well as redevelopment projects in older commercial districts.
- **Industrial Revenue Bonds.** The City has traditionally offered conduit financing through revenue bonds for industrial construction projects. The City should maintain and market this resource.
- **Tax Increment Financing/Tax Abatement.** In the past, the City has used TIF for redevelopment projects that meet state requirements and economic development projects that meet state job creation requirements. The City should continue to offer these resources, but also adopt more-detailed policies for their use. For instance, subsidies for new development projects should be directed toward targeted business types and those with the highest potential for high-paying jobs and "spin-off" jobs.
- **State Resources.** The City should utilize and market relevant programs offered by the state's Department of Employment and Economic Development (DEED). These programs, such as the Minnesota Investment Fund, may be appropriate for some local projects.

The City can play an important role in encouraging business growth through specific actions. Because a large number of economic development organizations compete for a comparatively small number of business relocations, Coon Rapids must be strategic in targeting its economic development resources.

Workforce Development. Access to workforce education and training programs is important to encouraging economic development. Anoka-Ramsey Community College provides customized training for many local businesses. It has successfully received Job Skills Partnership grants from the State of Minnesota to assist with the cost of providing training. The City should maintain connections with Anoka-Ramsey and other education resources and market available resources to local businesses. The City should also advocate for additional community resources.

Marketing. A community's ability to attract business is largely founded in its quality of life amenities, educational opportunities, transportation, and access to markets. However, the City can play an important role in encouraging business growth through specific actions. Because a large number of economic development organizations compete for a comparatively small number of business relocations, Coon Rapids must be strategic in targeting its economic development resources. This means directing incentives toward types of businesses most likely to create jobs that enhance the community's wealth.

While the City's economic development strategy should not rely on mass marketing, some targeted marketing is appropriate. The City should market itself as well as individual office and industrial properties differently and to targeted audiences. Recommended marketing strategies include:

» Maintaining relationships with real estate brokers throughout the metro area and maintaining regular contact with key brokers.

» Continuing involvement with the Minnesota Commercial Association of Realtors to increase awareness of Coon Rapids' amenities and available properties.

» Continuing awareness of available commercial and industrial properties and relaying that information to interested parties.

» Advertising key sites on the City's web site and marketing "shovel-ready" sites either through the State of Minnesota program or a City program.

» Maintain contact with local and regional chambers of commerce, Anoka County, economic development organizations, convention and visitors bureaus, and educational institutions. Ensure that the City's economic development message is consistent with those of other organizations and addresses regional perceptions.

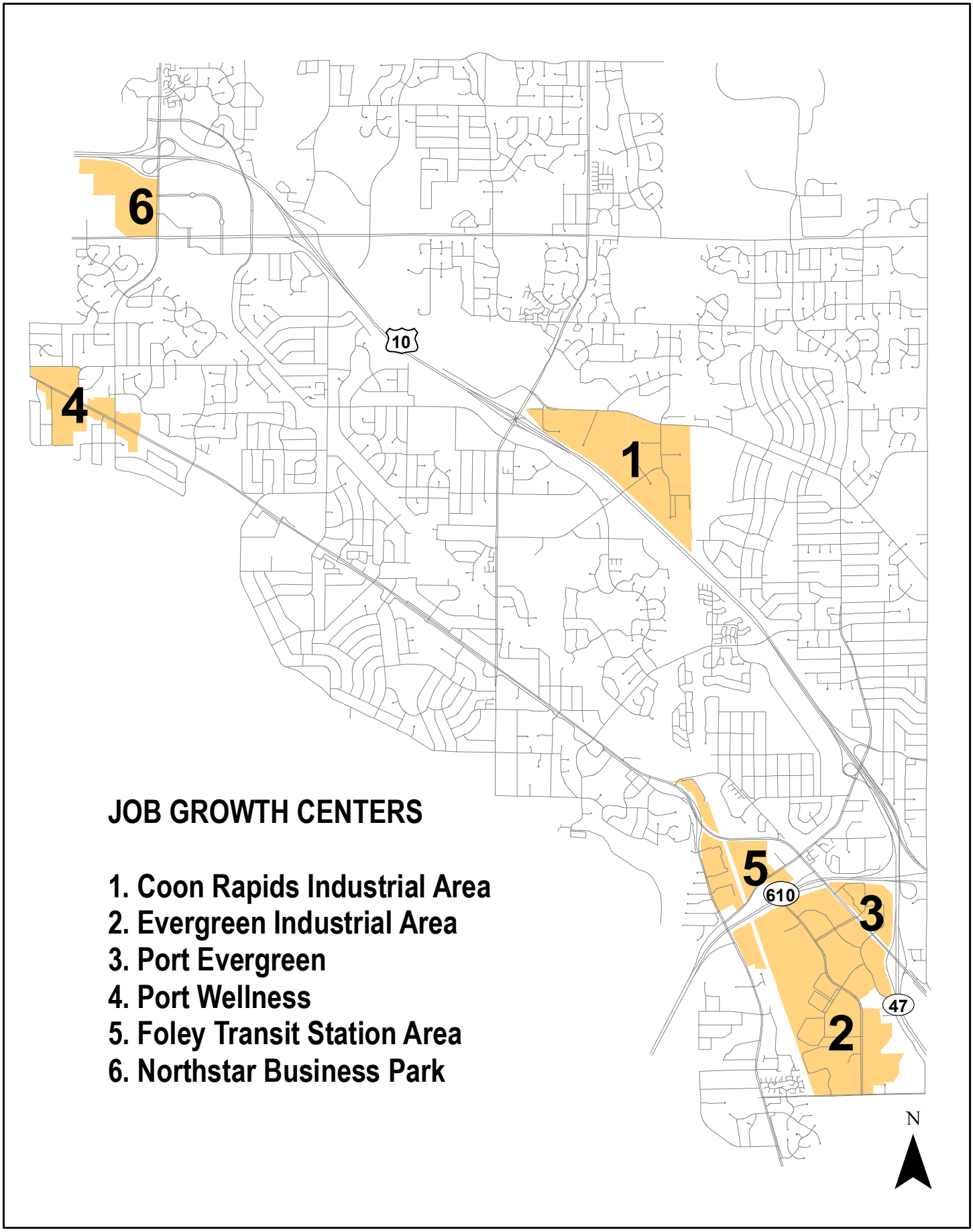
» Maintain ties with local residential real estate agents to monitor the relationship between the local housing supply and economic development.

Land and Building Supply. Since Coon Rapids is a developed community, very little vacant land exists for new commercial and industrial development. Most new development in the city will involve redeveloping underutilized land and encouraging development of vacant infill parcels. The City should periodically assess its supply of available land and facilitate land assembly in appropriate instances. Adopting small-area plans for these districts into the City's Comprehensive Plan may help to ensure efficient land use. The City should also ensure top-quality appearance of these areas by periodically reviewing and updating its zoning regulations. This section discusses the locations within Coon Rapids where job growth will be concentrated.

- **Coon Rapids and Evergreen Industrial Parks.** Coon Rapids Industrial Park (generally along Xeon Street between Highway 10 and Northdale Boulevard) and Evergreen Industrial Park (generally along Evergreen Boulevard south of Highway 610) provide important employment opportunities for city and region residents. Both areas contain a variety of manufacturing, warehousing, office, and research businesses and are almost completely developed. In the long term, some of the existing low-yield industrial uses may become obsolete and their redevelopment will become necessary. As redevelopment and reuse of existing buildings occurs, new businesses in the industrial parks should provide quality jobs and fall within the Target Industries identified in this chapter. The City may also consider financial incentives to encourage these types of businesses.
- **Port Evergreen.** The area along Coon Rapids Boulevard between Highways 610 and 47 includes the city's largest concentration of office development, with nearly 300,000 square feet of office space. While some commercial and residential development is planned, the City's Comprehensive Plan envisions that office, commercial, and light manufacturing will continue to be the predominant land use as redevelopment occurs. While substantial City involvement in land assembly is not anticipated in Port Evergreen, the City should monitor the condition of properties and consider strategic acquisitions. The City may consider financial incentives to stimulate redevelopment.
- **Port Wellness.** The area along Coon Rapids Boulevard between Round Lake Boulevard and the west city limits includes Mercy Hospital and about 175,000 square feet of primarily medical office space. The Comprehensive Plan calls for primarily office and institutional uses on both sides of Coon Rapids Boulevard to accommodate future expansions of the hospital and additional medical office development. While City involvement in land assembly is not anticipated, financial incentives to encourage redevelopment may be considered, particularly for uses that fall within the Target Industries that are allowed by the existing zoning in this area.
- **Foley Transit Station Area.** While not currently programmed, eventual construction of a passenger rail station is anticipated at Foley Boulevard at the BNSF railroad tracks. A station area plan the City has completed envisions increasing employment density near the station, including redevelopment with office, limited commercial, and some light industrial development. Tax-increment financing and tax abatement should be considered to assist with site preparation and infrastructure associated with redevelopment of certain sites within the station area. The City should also consider additional tools, such as transit improvement areas and grant dollars, as the state makes them available.
- **Northstar Business Park.** While it is unlikely that Federal Cartridge will vacate its site at Highway 10 and Round Lake Boulevard in the near future, the City should plan for its redevelopment if a portion of the site becomes available.

MAP 7-3: Job Growth Centers

CITY OF COON RAPIDS



Business Subsidy Policy. Tax Increment Financing (TIF) and tax abatement are important resources for encouraging private development projects that may not otherwise occur. The City should promote use of these subsidies to facilitate development of sites that are difficult to develop due to soil conditions or land assembly requirements. If these resources are used for job creation projects, they should be directed toward business types identified as "Primary Targets." Projects receiving these subsidies are subject to Minnesota State Statute 116J.993 (Minnesota Business Subsidy Law) and the City's Business Subsidy Policy. The City maintains guidelines for the use of TIF and tax abatement and should update these policies as necessary.

Legislative Support. City Staff should stay informed of state legislation affecting economic development and seek legislative support. This may include advocating for:

» Changes to tax abatement and tax increment financing laws to benefit the City

» Funding for Transit Improvement Areas and other tools to encourage transit-oriented development

» Establishing Business Improvement Districts to help fund public improvements

» Special legislation to enable certain economic development projects

» Other funding mechanisms for redevelopment and business development projects

Redevelopment

Because Coon Rapids is a largely developed community, most of its population and employment growth through 2040 will occur through redevelopment of previously developed sites. Chapter 2 of the *Coon Rapids 2040 Plan*, Land Use, establishes policies for future land use decisions for all areas of the city, including potential redevelopment areas. However, the City acknowledges that in certain areas of Coon Rapids, additional public facilitation and investment is necessary to ensure that redevelopment occurs in accordance with this plan. This is especially necessary along the approximately 7-mile long Coon Rapids Boulevard corridor. While City-assisted redevelopment will be necessary in other parts of Coon Rapids, it is expected that most of the City's redevelopment efforts will continue to be concentrated along Coon Rapids Boulevard in the coming years.

Coon Rapids Boulevard Overview

The Coon Rapids Boulevard corridor benefits from a number of committed businesses and institutions, relatively high traffic volumes, and stable residential areas. However, over the years, commercial development in Coon Rapids has gravitated toward more prominent locations with easier freeway access, changing the demand for development along the corridor. These changes in market needs have contributed to deterioration and disinvestment among some properties along the corridor. Continued disinvestment can affect the public's perception of the area and decrease the confidence of developers and investors. Despite its market challenges, potential exists for improvement along the corridor.

The original *Coon Rapids Boulevard Framework Plan*, adopted in 2000, presented ideas and concepts for the redevelopment and enhancement of Coon Rapids Boulevard through 2020. The Plan was developed as a community effort, involving the City Council, a Task Force consisting of the Planning Commission and Economic Development Commission, City Staff, and the public. It recommended a variety of changes to land uses and public enhancements along the entire length of Coon Rapids Boulevard. The primary recommendations included:

» Creating "Port Districts," or concentrated areas of redevelopment efforts. The plan proposed locating more intense commercial and residential development in these districts, while other areas along the corridor would redevelop with moderate-density housing and small-scale commercial uses.

» Installing streetscape elements, including a unified streetscape along the entire length of the corridor, gateway elements, and distinct themes for each Port district.

» Adopting architectural standards for new buildings.

Several of the Plan's recommendations have been implemented since 2000, including:

» Amending the City's comprehensive plan to reflect land use changes.

» Creating new zoning districts and zoning map amendments to encourage higher quality development.

» Strengthening the Housing and Redevelopment Authority's involvement, including acquisition and demolition of buildings and site cleanup in Port Riverwalk and Port Campus Square.

» Strengthening regulations addressing outdoor storage and vacant buildings.

» Painting traffic signal masts.

» Improvements to sidewalks and trails.

» Constructing the Coon Rapids Ice Center, Boulevard Park, and relocating July 4th activities to Port Campus Square

» Facilitating private development in several locations in accord with new zoning regulations.

The original *Framework Plan* recommended updating the *Framework Plan* at least every 10 years. The first update was completed in 2010. Many of the original *Framework Plan's* goals and principles remain relevant today. However, some policies are no longer relevant due to changes in market demands and priorities among the City and Anoka County. This section of the *2040 Plan* functions as the second update to the *Framework Plan* and provides a blueprint for continued revitalization of the Coon Rapids Boulevard corridor, addressing both private development and improvements to the public environment. It builds upon and updates the recommendations of the original *Framework Plan*. Going forward, it is expected that updates to the City's Comprehensive Plan address redevelopment policies for the Coon Rapids Boulevard corridor and function as regular updates to the original *Framework Plan*.

Coon Rapids Boulevard Inventory and Assessment

This section overviews both the physical characteristics of the Coon Rapids Boulevard corridor and development patterns.

Physical Characteristics. Coon Rapids Boulevard is a 6 ½ mile long major arterial roadway. Formerly the alignment of U.S. Highway 10, it is currently maintained by Anoka County and also known as County State Aid Highway 1. The roadway has two through lanes in each direction west of Egret Boulevard, as well as bus shoulder lanes and right and left turn lanes at major intersections. East of Egret Boulevard, the roadway has additional through lanes. The entire corridor is a divided highway with grass and concrete medians its entire length. Many sections of the corridor include a discontinuous system of frontage roads.

While the corridor used to include a majority of the city's commercial and institutional uses, it has been transformed due to the out-migration of many of the principal users to newer or more accessible commercial developments, including Riverdale, Woodcrest Drive, the Northtown area, and the Northdale-Hanson area. This transformation has meant that existing buildings have been converted to lower value uses, redeveloped to new uses, or remained vacant for extended periods of time. Portions of the corridor also include obsolete commercial uses and incompatible housing. The corridor's positive features include:

- **Several institutional anchors.** The corridor is home to several major institutions, including Mercy Hospital, Anoka-Ramsey Community College, and the entrance to Coon Rapids Dam Regional Park. These institutions can be catalysts for additional public and private investment.
- **Many stable local businesses.** While the corridor experienced out-migration of larger retail businesses several years ago and some of the replacement businesses contribute to a negative image, retail trends indicate significant support of locally-owned smaller businesses.
- **Stable surrounding residential areas.** The corridor is surrounded by well-established neighborhoods that make up its primary market for commercial development. While there are a handful of deteriorating properties in these neighborhoods, overall their housing stock is in very good condition.
- **Grass median.** Much of the corridor contains a wide grass median. While it does not contain trees, shrubs, or perennials, it provides some visual relief from the wide roadway.
- **Nearby wooded areas.** There are several large groups of mature trees along the entire corridor, adding variety to its appearance.
- **Lack of billboards.** The corridor has no billboards, minimizing clutter.
- **High traffic volumes.** The corridor carries a lot of traffic, with at least two through lanes in each direction, turn lanes, and bus shoulders. This traffic provides an additional market segment for commercial development.

Negative corridor features include:

» **Obsolete commercial districts and vacancies.** Many strip commercial developments along the corridor are functionally obsolete and have poor visibility and high vacancy rates.

» **Deteriorating buildings and eyesores.** Although it is not a widespread problem, the corridor contains a handful of deteriorating buildings. However, even a small number of distressed properties can contribute to disinvestment among surrounding properties.

» **Low- image replacement businesses.** Because of out-migration of many retail businesses, existing buildings along the corridor have been reoccupied with "low-rent" or "discount" retail uses. These uses can contribute to a negative image of the corridor.

» **Obsolete traffic patterns.** Discontinuous frontage roads and obscure access points have resulted in poor traffic circulation in some areas.

» **Relatively high speed limits.** The corridor has speed limits of 45 to 50 miles per hour, which can detract from the pedestrian environment and present challenges for new residential development.

» **Overhead utility lines.** Many sections of the corridor contain overhead lines, which affect visual quality and limit opportunities for additional landscaping.

» **Discontinuous sidewalks and trails.** While most of the corridor has either sidewalks or trails on both sides of the street, significant gaps exist.

» **Lack of landscaping treatments.** Most of the corridor, particularly the commercial districts, lacks trees, shrubs, or perennials.

» **Lack of identity and few "hardscape" treatments.** There are few "hardscape" features, such as street furniture along the corridor and few elements that provide an identity.

Development Patterns. Since 2000, a total of 518,400 square feet of new commercial space, and 333 new dwelling units have been constructed along the Coon Rapids Boulevard corridor. While many of these projects involved redevelopment of previously underutilized land, this level of construction activity suggests that a market exists for continued smaller scale commercial development and residential development over time. Table 7-8 lists major development projects along the corridor since 2000.

TABLE 7-8: Major Developments Since 2000, Coon Rapids Boulevard Corridor

Project	Address	Year Built	Size (square feet)	Number of Units
COMMERCIAL				
Culver's/convenience store	601-603 Coon Rapids Blvd.	2000	12,700	-
Medical office building	3867 Coon Rapids Blvd.	2000	15,100	-
Walgreens	2860 Coon Rapids Blvd.	2001	14,400	-
Auto Zone	2131 Coon Rapids Blvd.	2002	6,200	-
Medical office building	3750 Coon Rapids Blvd.	2002	23,100	-
Convenience store	430 Coon Rapids Blvd.	2002	6,500	-
U-Haul (reuse)	3467 Coon Rapids Blvd.	2002		-
Ace Hardware	9680 Foley Blvd.	2004	14,000	-
CVS Pharmacy	2017 Coon Rapids Blvd.	2004	15,700	-
Office buildings	300-320 Coon Rapids Blvd.	2005	14,800	-
$3 Car Wash	2550 Coon Rapids Blvd.	2006	3,000	-
McDonald's	3080 Coon Rapids Blvd.	2006	4,500	-
Medical office building	3833 Coon Rapids Blvd.	2007	31,000	-
Multi-tenant retail building	11650 Round Lake Blvd.	2007	11,200	-
Kwik Trip	9250 Springbrook Dr.	2010	8,200	
Coon Rapids Ice Center	11000 Crooked Lake Blvd.	2010	58,000	
Goodwill	3005 Coon Rapids Blvd.	2010	22,200	
Round Lake Shoppes		2012		
Cameron Medical Center	3777 Coon Rapids Blvd.	2012	32,000	
O'Reilly Auto Parts	2113 Coon Rapids Blvd.	2014	7,300	
Mercy Hospital Mother-Baby Center	4050 Coon Rapids Blvd.	2014	50,000	
Mercy/Allina Medical Office Building		2014	125,000	
Mercy Hospital Parking Ramp/ER Entrance			40,000	
SuperAmerica		2016	3,500	
RESIDENTIAL				
ACCAP townhouses	3685 Coon Rapids Blvd.	2003	-	8
Village townhouses	26xx Coon Rapids Blvd.	2004	-	13
Valencia Coach townhouses	36xx Coon Rapids Blvd.	2005	-	9
Villas on the Boulevard detached townhouses	110th Ln. and Dahlia St.	2007	-	36
Autumn Glen Senior Living	3715 Coon Rapids Blvd.	2013	-	100
River North Apartments	10940 Crooked Lake Blvd.	2015	-	167

Source: City of Coon Rapids

Goal #1: Land Use

Concentrate businesses in a limited number of nodes with residential, institutional, and open space uses between nodes. Encourage mixed-use development and infill housing to meet the community's needs and strengthening land use regulations for the corridor.

1-1 **Sense of Place and Community.** Improvements along the corridor should support a sense of community, encouraging interaction among neighbors. Amenities such as sidewalks, lighting, and landscaping can help foster a sense of place. In addition, identify and promote community-oriented events along the corridor.

1-2 **Pulse Nodes of Intensity.** Commercial development should be concentrated in a limited number of nodes. Four of these nodes, known as "Preservation Or Renovation Tracts," (PORTs), have been given a special zoning designation to ensure that redevelopment occurs in accordance with a master plan for each area, and are considered priorities for redevelopment. Consolidation of commercial uses allows for greater economic viability than dispersed strip commercial development patterns. Mixed and multi-use developments should be encouraged. Obsolete and underutilized commercial space should be eliminated.

1-3 **Infill Housing.** Commercial properties and incompatible single-family houses outside of PORT Districts and designated nodes should be encouraged to redevelop as compatible residential uses. New housing should fulfill the needs of the community, such as providing housing for seniors, and should fit in with the scale and character of the corridor. While the highest residential densities are envisioned in the PORT Districts, moderate to high density residential development is appropriate in areas between PORTs.

1-4 **Retail to Meet Market Demands.** New retail development should be designed in a way that considers the corridor's long-term position in the retail market.

1-5 **Green Spaces.** Open spaces should be integrated into new development, adding to the "green" image of the corridor and enhance recreational opportunities. Existing landscaping should be preserved and should be supplemented with new street trees and shrubs on both public and private properties.

1-6 **Good Design and No Blight.** The corridor serves as a gateway to surrounding neighborhoods and provides a first impression. Blight should be eliminated through design standards for new development, public purchase of dilapidated properties, and investment in public improvements.

Goal #2: Circulation System

The traffic circulation system should provide adequate capacity, but also convenient access to businesses and complement the community orientation of the corridor. It should include a complete sidewalk and trail system with linkages to the Mississippi River.

2-1 **Balanced Traffic Circulation.** Traffic circulation along and near the corridor should provide smooth traffic flow and access to businesses and neighborhoods.

2-2 **Frontage Road System.** The Access Management Study completed in 2010 proposes eventual elimination of several accesses and median crossings at non-signalized intersections along the corridor. It is envisioned that the existing frontage road system will remain, although frontage roads could be located to the rear of new developments as large areas are redeveloped. Retaining this network will enhance access and safety. Development plans should take into account these changes to access.

2-3 **Linkages to the Mississippi River.** Open space and sidewalk and trail connections should be provided, where feasible, between Coon Rapids Boulevard, area parks, the Mississippi River, and the Coon Rapids Dam Regional Park.

2-4 **Complete Sidewalk and Trail Network.** The corridor should include a continuous sidewalk and trail network for pedestrians and bicyclists and sidewalk connections to residential and commercial buildings.

Goal #3: Image and Appearance

Develop a unifying urban design theme with individual themes for each node and create a well-landscaped, pedestrian-friendly environment. This includes consistent signs, public art, underground utilities, and well-maintained properties.

3-1 **Continuous Design Theme.** The corridor should have a unifying, continuous design theme, reflecting its unique features, such as its relationship to the Mississippi River.

3-2 **Distinct Treatments in Ports.** Each of the four Port Districts should have a unique design theme, complementing the overall theme for the corridor.

3-3 **Pedestrian-Friendly Environment.** Corridor design should support a pedestrian-friendly environment. Building entrances should be connected to public sidewalks, parking lots should be located to the side or rear of buildings and screened from public view, and pedestrian-scale lighting and streetscape amenities should be provided. Rural sections of roadway with open ditches should be upgraded to urban roadways with curbs, gutters, and sidewalks.

3-4 **Trees and Landscaping.** The corridor should have a "green" appearance. Existing landscaping should be preserved and supplemented with new landscaping, including street trees and shrubs both in the public right-of-way and on private property.

3-5 **No Overhead Utilities.** Existing overhead utilities should be relocated or buried. No new overhead utilities should be permitted along the corridor.

Coon Rapids Boulevard Recommendations

This section establishes specific policies for the corridor.

Land Use and Development Policies. The *Framework Plan's* overall land use recommendation is that commercial and high-density residential development should be concentrated in a handful of nodes, or PORT Districts. These areas include: Port Evergreen (between Highway 47 and Foley Boulevard), Port Riverwalk (between East River Road and Egret Boulevard), Port Campus Square (between Crooked Lake and Mississippi Boulevards), and Port Wellness (between Round Lake Boulevard and the Anoka City limits). Land uses in each PORT are dictated by adopted master plans, which refine the future land uses outlined in this plan. Development within the PORTs must adhere to the adopted master plan, which further refine land uses allowed by the zoning district. Areas along Coon Rapids Boulevard in between the PORTs, which presently include a variety of land uses, are planned for primarily moderate density residential redevelopment. Some neighborhood commercial development is appropriate between the PORTs, but is expected to be concentrated at existing nodes at Hanson Boulevard, Xavis Street, and Pheasant Ridge Drive.

Chapter 2, Land Use of this plan, establishes future land uses for the corridor. Development policies for specific areas along Coon Rapids Boulevard are as follows:

- **Port Evergreen.** Areas along Coon Rapids Boulevard generally between Foley Boulevard and Highway 47 have experienced a fair amount of redevelopment in recent years. While some commercial development exists in this area, it is envisioned that office will continue to be the predominant land use in the future, with vacant and underutilized parcels redeveloping as such. Some supporting commercial uses, such as restaurants and hotels, are also planned along Coon Rapids Boulevard with neighborhood or convenience commercial uses near its intersection with Foley Boulevard. The single-family neighborhood north of Coon Rapids Boulevard and south of Highway 610 is slated for eventual redevelopment with high-density residential development. Because upgrades to Foley Boulevard and the potential construction of a commuter rail station will present important development opportunities, the areas north of Highway 610 near the Foley Park and Ride should be planned for transit-oriented development.

- **Port Riverwalk.** Areas along Coon Rapids Boulevard between the "Y" at East River Road and Egret Boulevard are priorities for redevelopment. The City demolished the Coon Rapids Shopping Center to make way for a major redevelopment on the south side of Coon Rapids Boulevard. Primarily moderate and high-density housing is planned for this area. Neighborhood commercial and small-scale office development is planned for the north side of Coon Rapids Boulevard. As redevelopment occurs, the street network should be modified to include a new street parallel to Coon Rapids Boulevard connecting Egret Boulevard and Avocet Street. Future development on the north side of Coon Rapids Boulevard would be served by a new street behind the development extending from Egret Boulevard to Avocet Street. Additional recommendations include the following:
  - Explore a new connection over Coon Creek between Avocet Street and Coon Rapids Boulevard Extension.
  - The HRA should continue to make strategic property acquisitions in this area to facilitate redevelopment.
  - Develop a refined master plan for the area to facilitate sale of the property in segments.
- **Port Campus Square.** The area between Crooked Lake Boulevard and Mississippi Boulevard is a priority for redevelopment. The Master Plan for Port Campus Square envisions relocating the intersection of 111th Avenue and Coon Rapids Boulevard to the east adjacent to a new city park. Realignment of this intersection also allows for assembly of parcels on the south side of Coon Rapids Boulevard for redevelopment as either commercial or residential uses. While the City's ice arena and future phases of a community center would occupy most of the land south of Coon Rapids Boulevard, residential development is planned near the intersection of Crooked Lake Boulevard and 109th Lane. The land along the south side of 111th Avenue is planned for a combination of stacked parking for a future community center and mixed-use development. A new north-south public street connection is planned between 109th Lane and 111th Avenue. The area along the north side of Coon Rapids Boulevard is planned for either commercial or residential redevelopment, while much of the Family Center Mall site on the northwest corner of Coon Rapids Boulevard and Crooked Lake Boulevard is suitable for redevelopment as housing. Other recommendations include the following:

- » The HRA should continue to make strategic property acquisitions in this area to facilitate redevelopment.
- » Develop a refined master plan for the area that incorporates redevelopment of the Family Center Mall.

» **Port Wellness.** While the area between Round Lake Boulevard and the west city limits, near Mercy Hospital, is generally a viable office and commercial district, several opportunities exist for redevelopment. Primarily office and institutional uses are planned for both sides of Coon Rapids Boulevard to accommodate future expansions of the hospital and additional medical office development. The City should consider expanding the PORT boundaries to include several properties east of Round Lake Boulevard, guiding areas fronting Coon Rapids Boulevard for commercial mixed-use development and areas to the north for residential mixed-use.

» **Other Areas of Coon Rapids Boulevard between Port Districts.** Areas along Coon Rapids Boulevard between the PORTs, which presently include a variety of land uses, are planned for a mixture of land uses, but primarily moderate to high density residential redevelopment due to the corridor's transit access. Some neighborhood commercial development is appropriate, but should be concentrated at existing nodes at Hanson Boulevard, Xavis Street, and Pheasant Ridge Drive, on parcels currently zoned for commercial and office development.

Sidewalks and Trails. A continuous 10-foot-wide trail exists along the south side of Coon Rapids Boulevard generally west of the East River Road split. East of East River Road, the sidewalk network is incomplete on the south side of the street. The north side of the corridor also has a discontinuous sidewalk system. Many areas lacking sidewalks have a worn path from pedestrian traffic, suggesting a need to fill in the gaps. While sidewalks should be constructed as redevelopment occurs, it may be difficult to simply fill in the gaps, since the existing sidewalks vary in their width, location, and design. It would be more realistic to construct a consistent sidewalk network as the roadway is reconstructed. In several locations, the existing right-of-way width is insufficient to accommodate both a reconstructed roadway and adequate sidewalks and trails. Proposed sidewalk and trail widths for the corridor include:

» **West of Dakotah Street.** 5' sidewalk on both sides.

» **Dakotah Street to Avocet Street (Coon Creek Regional Trail).** Continuous 10' trail on south side and 5' sidewalk on north side.

» **Avocet Street to Foley Boulevard.** 10' trail on north side. 10' trail on south side continues south along East River Road.

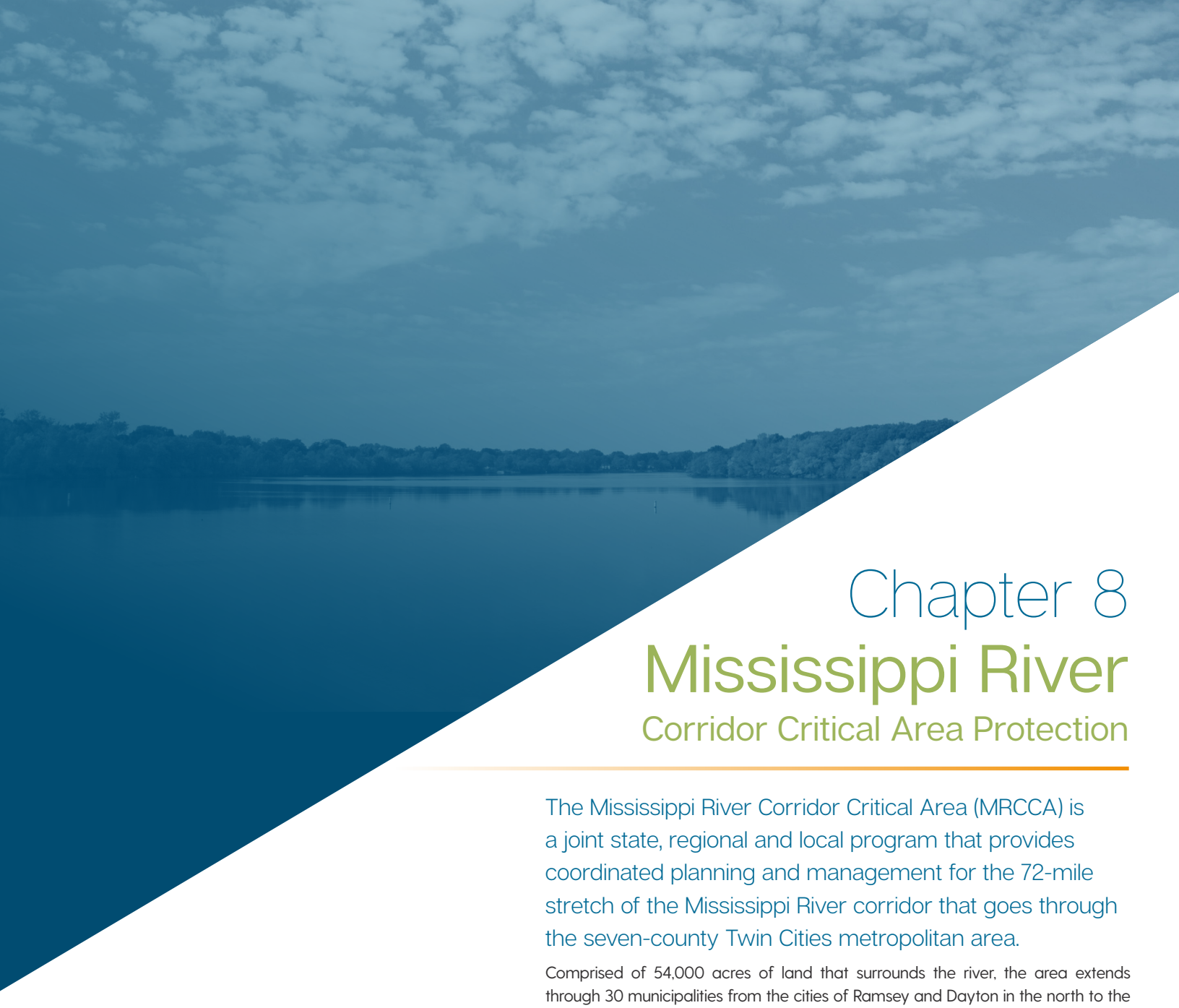
» **Foley Boulevard to East City Limits.** 5' sidewalk on both sides.

Physical Enhancements. Providing a consistent streetscape is an important goal of the *Framework Plan*. The *Coon Rapids Boulevard/East River Road Corridor Study* identifies types of enhancements that would improve visual quality along the corridor. It is anticipated that installation of these improvements would occur in conjunction with reconstruction of the roadway. The most significant enhancements are planned for the four Port Districts.

Noise Walls. The *Coon Rapids Boulevard/East River Road Corridor Study* proposes addition of one traffic lane in each direction along Coon Rapids Boulevard between Hanson Boulevard and East River Road. Use of federal funds for this expansion could trigger a requirement for noise walls in certain areas. Because noise walls could detract from the visual quality of the corridor, the City should seek alternative ways of mitigating negative impacts of the expansion. In particular, noise walls would detract from the sense of place in Port Riverwalk. The City may consider seeking a different source of funding or acquiring property to eliminate the need for noise walls.

Transit Service. Metro Transit bus service presently serves the corridor. However, the City should encourage the addition of service to commuter rail stations and other amenities. Increased frequency and improved transit stations are also long-term priorities. In addition, pedestrian and bicycle connections should be added between Coon Rapids Boulevard and the transit stations.

DICK'S
BEST BUY
DSW SHOES
JCPenney
SPEED LIMIT 45
SPEED LIMIT 45



Chapter 8
Mississippi River
Corridor Critical Area Protection

The Mississippi River Corridor Critical Area (MRCCA) is a joint state, regional and local program that provides coordinated planning and management for the 72-mile stretch of the Mississippi River corridor that goes through the seven-county Twin Cities metropolitan area.

Comprised of 54,000 acres of land that surrounds the river, the area extends through 30 municipalities from the cities of Ramsey and Dayton in the north to the Ravenna Township in the south. The MRCCA exemplifies many of the metro area's most significant natural and cultural resources and is home to a variety of land uses, including residential neighborhoods, parks, and river-related commerce, industry, and transportation. While the river corridor has been extensively developed, many natural areas and wildlife remain.

In order to manage and protect the Mississippi and its surrounding area's vital resources, Governor Wendell Anderson designated the MRCCA in 1976 by Executive Order 130 under authority of the Critical Areas Act of 1973. After being renewed by the succeeding governor, the designation was made permanent in 1979 by a Metropolitan Council Resolution. In 1988, Congress recognized the value in protecting the river's resources and established the Mississippi National River and Recreation Area, which shares the same boundaries of the MRCCA, and the park's Comprehensive Management Plan (CMP), signed by the Governor and the Secretary of the Interior, incorporates by reference the MRCCA program for land use management. Rather than institute a separate layer of federal regulations, MNRRA largely relies on the MRCCA to manage land use within the park. This reliance establishes a unique partnership and framework for land use management amongst the local, state and federal governments to protect the intrinsic resources of the Mississippi River Corridor. Three years later, a Minnesota Statute designated the MNRRA a state critical area with the Critical Areas Act. In 1995, the DNR was given the administrative responsibility and rulemaking authority for the MCRRA. Since then, the DNR has developed goals of the MRCCA program and carried out a rulemaking process and consultation with local governments, other agencies, and interest groups. In 2014, the DNR produced a final draft of the MRCCA rules, which were published December 27, 2016.

The City implemented the Mississippi River Corridor Critical Area Overlay District and continues to enforce the regulations set in place to promote orderly development and protect the natural resources and beauty in the corridor.

Designated goals of the MRCCA program include:

1. Protect and preserve the Mississippi River and adjacent lands that the legislature finds to be unique and valuable state and regional resources for the benefit of the health, safety, and welfare of the citizens of the state, region, and nation;
2. Prevent and mitigate irreversible damages to these state, regional, and natural resources;
3. Preserve and enhance the natural, aesthetic, cultural, and historical values of the Mississippi River and adjacent lands for public use and benefit;
4. Protect and preserve the Mississippi River as an essential element in the national, state, and regional transportation, sewer and water, and recreational systems; and
5. Protect and preserve the biological and ecological functions of the Mississippi River corridor.

A total of 30 communities, including the City of Coon Rapids, have land within the MRCCA. These communities currently regulate land use within the MRCCA through local MRCCA plans and ordinances. By the 1980s, all local governments in the MRCCA had adopted MRCCA plans.

Coon Rapids first adopted a MRCCA plan in 1979, which was included in the City's 2001 Comprehensive Plan update. During the 2008 Comprehensive Plan update process, the MRCCA plan, then called the Mississippi River Critical Area Plan in the Plan's Land Use chapter, was updated. Since 1979, many of the first plan's recommendations have been implemented, while several still require ongoing efforts and remained relevant in 2008 as well as today. The City implemented the Mississippi River Corridor Critical Area Overlay District and continues to enforce the regulations set in place to promote orderly development in and protect the natural resources and beauty in the corridor. Additional zoning regulations continue to be maintained to ensure limited commercial development associated with recreational activity are permitted in the corridor. The City has also done work to introduce appropriate riverbank vegetation and ensure adequate erosion control along the corridor by working with the Metropolitan Council, Department of Natural Resources, Anoka Conservation District, Army Corps of Engineers, and neighboring cities. Additionally, the City has continued to pay attention to water quality issues and ensure elimination of non-point sources of pollution, and encouraged an efficient erosion control permit process for homeowners.

This section of the *Coon Rapids 2040 Plan* updates the MRCCA Plan. The public input process for this plan was included in the outreach activities for the Comprehensive Plan. At a City Council retreat in April 2017, Councilmembers reviewed selected policies and goals from the 2008 Comprehensive Plan, including the section on the Mississippi River Critical Area. The items reviewed received overall positive responses and no policy or goal was heavily questioned.

In the fall of 2016, the City of Coon Rapids administered the National Citizen Survey through a partnership with the National Research Center, Inc. The National Citizen Survey is often used as a tool to measure a community's quality of life including residents' thoughts and opinions on community characteristics, city services and community engagement. While the survey did not specifically ask residents questions related to the MRCCA, it captured resident opinions within the three pillars of a community across eight central facets, one of which being the natural environment. The MRCCA is the most significant example of natural environment in the city.

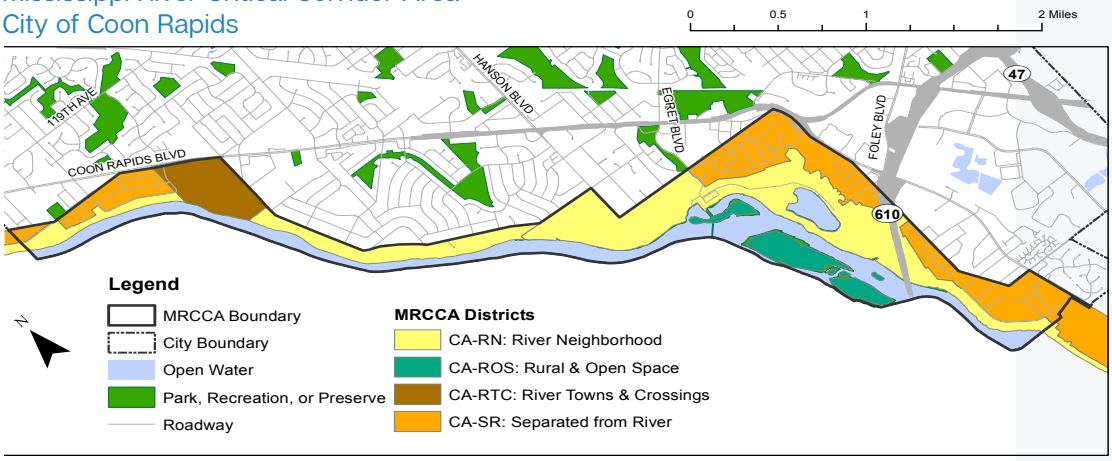
Respondents rated the natural environment very highly, with 78% of respondents rating the overall natural environment positively. Cleanliness and air quality also received high ratings.

During the spring and summer of 2017, the City of Coon Rapids invited residents to take the Comprehensive Plan Survey, an online survey about the future of the city as it relates to the 2040 Comprehensive Plan. The survey asked open-ended questions to gain resident input about their vision for transportation, housing, employment, parks, trails, and recreation facilities in the city over the next ten years. When asked what their favorite place is in Coon Rapids, the most mentioned places include the Coon Rapids Dam and other parks or trails. Areas like the MRCCA are highly valued by residents and the natural environment and its facilities should be maintained to continue to be important places in the city.

Districts

MAP 8-1: Districts

Mississippi River Critical Corridor Area
City of Coon Rapids



An executive order in 1979 established four land use districts within the MRCCA and standards and guidelines to assist local governments when preparing the plans and regulations that guide development. These districts are parts of the MRCCA that have similar characteristics. Because the original four districts became less consistent with development patterns as time went on, 2016 rules established six new districts that more accurately represent existing and planned future development. The six districts include: Rural & Open Space District, River Neighborhood District, River Towns & Crossings District, Separated from River District, Urban Mixed District, and Urban Core District. Each of the districts reflect the character and development along the river and recognize planned and future development. Different dimensional standards (building height, river setback, and bluff setback) are applied to each district. These standards are administered through local zoning ordinances, and some provisions default to the standards outlined in the district's underlying municipal zoning regulations.

These districts are important for managing the MRCCA because they help protect the Mississippi River as a natural and cultural resource. The standards defined in each district take the existing characteristics into account and keep buildings and other development away from sensitive shoreline areas and areas prone to soil erosion and slope failure. Keeping a distance between sensitive shoreline areas and the development helps to maintain the river's water clarity and quality and reduce sediment runoff. Height provisions help to preserve the natural views within the corridor.

Keeping a distance between sensitive shoreline areas and development helps to maintain the river's water clarity and quality and reduce sediment runoff. Height provisions help to preserve the natural views within the corridor.

The City of Coon Rapids has land in the MRCCA that is designated as four different districts: River Neighborhood, Separated from River, River Towns & Crossings, and Rural and Open Space. Much of the land directly adjacent to the river is designated as River Neighborhood, which is described as "developed residential lands and existing/planned parkland that are visible from the river, or that abut riparian parkland." In Coon Rapids, this district includes the single-family residences that back up on to the river, an apartment building along the river, and the entirety of the Coon Rapids Dam Regional Park.

More inland from the River Neighborhood District is the district called Separated from River, which is described as "land that is separated from and not visible from the river." This district includes mostly single family homes in the residential areas adjacent to the homes in the River Neighborhood District. It also includes the residential neighborhood adjacent to the Coon Rapids Dam Regional Park.

In the northern part of the MRCCA in Coon Rapids is the campus of Anoka-Ramsey Community College. This is the only land designated as the River Towns & Crossings district, which the DNR describes as "historic downtown and river crossing commercial areas, as well as existing institutional campuses." Anoka-Ramsey Community College is a 101.5-acre public campus with educational and recreational facilities as well as a bookstore, a performing arts center, a café, and lounge areas. Nestled into the scenic banks of the Mississippi, campus buildings have views of the river and a riverfront plaza creates opportunities for students, staff, and the public to engage with the river.

Just south of the Coon Rapids Dam are islands that are designated as a Rural & Open Space district, which is "rural undeveloped and developed low density residential land that is riparian or visible from the river, often contains tracts of high quality ecological resources." The two islands are a part of the Coon Rapids Dam Regional Park, and are highly wooded green spaces. The northernmost island is accessible to pedestrians via the Coon Rapids Dam walkway and contains a dam facility building, natural areas, and a long paved walkway that runs parallel to the shoreline, providing a unique view of the river. The southernmost island is only accessible via boat and is mostly open space and vegetated areas.

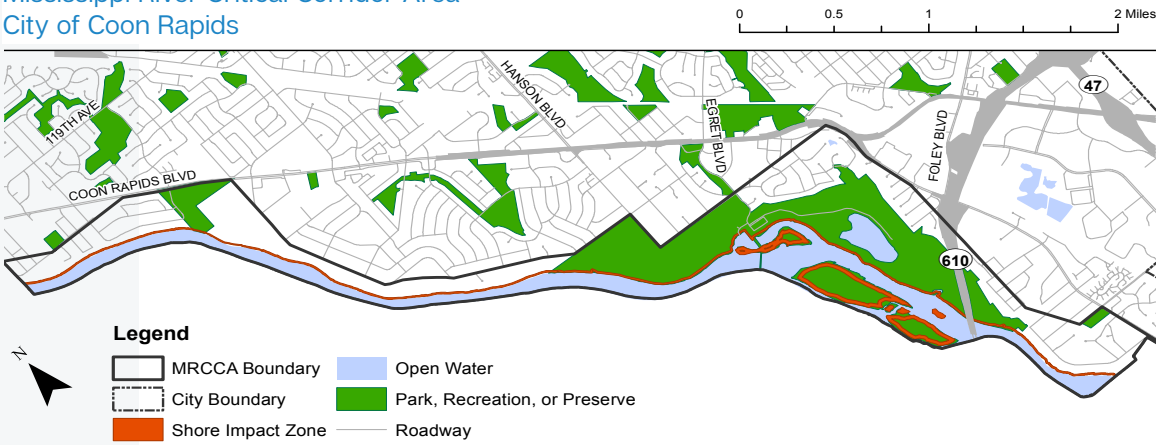
The future land use designations of properties within the MRCCA are consistent with districts within which they are located. Properties that are within the CA-RN district are either single family residential or part of Coon Rapids Dam Regional Park and are guided Single Family Residential or Park Recreation and Preserve. Properties that are within CA-SR district are also single family; in addition, there is an existing nursing home that is guided Residential Mixed Use. Properties that are within the CA-RTC are part of Anoka Hennepin Community College or a multi-family condominium and are guided Institutional or High Density Residential.

Primary Conservation Areas (PCAs)

General Overview. Primary Conservation Areas (PCAs) are the key natural and cultural resources and features that are to be protected through MRCCA plans and ordinance requirements. Examples of these resources and features include shore impact zones (SIZ), bluff impact zones (BIZ), floodplains, wetlands, gorges, areas of confluence with tributaries, natural drainage routes, unstable soils and bedrock, native plant communities, cultural and historic properties, significant existing vegetative stands, tree canopies, scenic views, publically owned parks, trails, and open spaces, among other resources. PCAs are important because they help ensure that important resources and features in the MRCCA are given priority consideration for protection by every municipality.

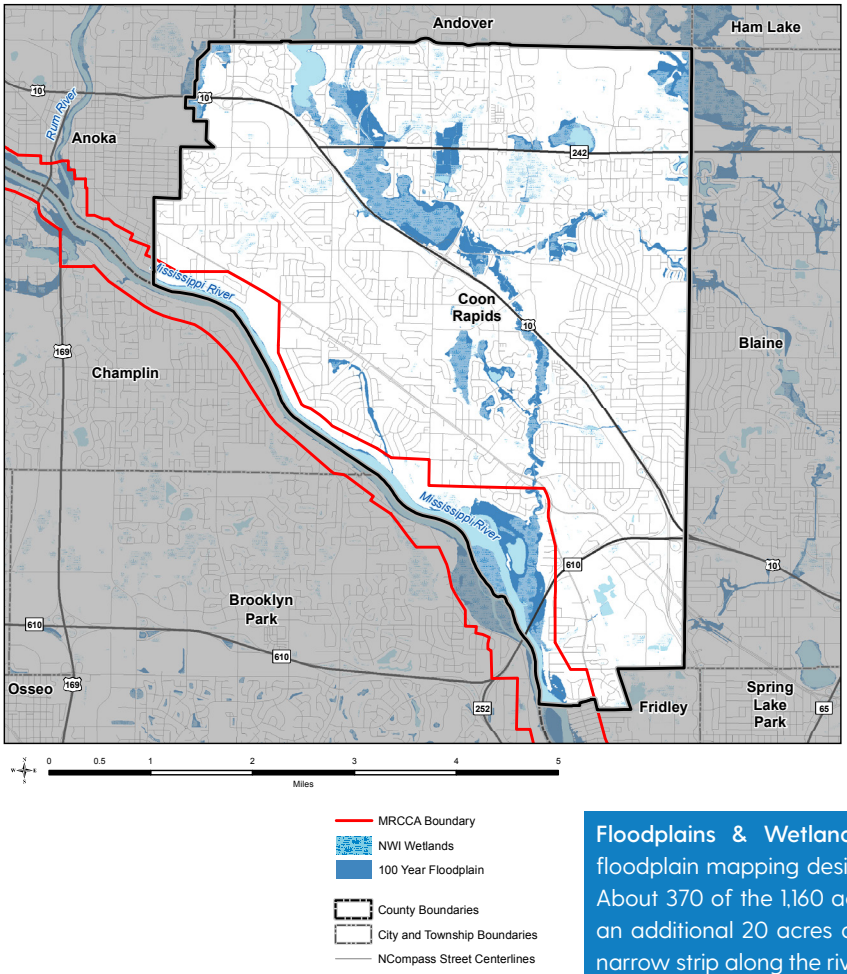
Communities in the MRCCA like Coon Rapids are required to include a section about each PCAs in their community.

MAP 8-2: Shore Impact Zones
Mississippi River Critical Corridor Area
City of Coon Rapids



Shore Impact Zone. A shore impact zone is defined as the 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. The shore impact zone in Coon Rapids is consistently approximately 50 feet wide from the water line. Along the edge of the islands in Coon Rapids Dam Regional Park, the shore impact zone is around 100 feet wide.

MAP 8-3: Mississippi River Critical Corridor Area - Wetlands & Floodplains City of Coon Rapids, Anoka County



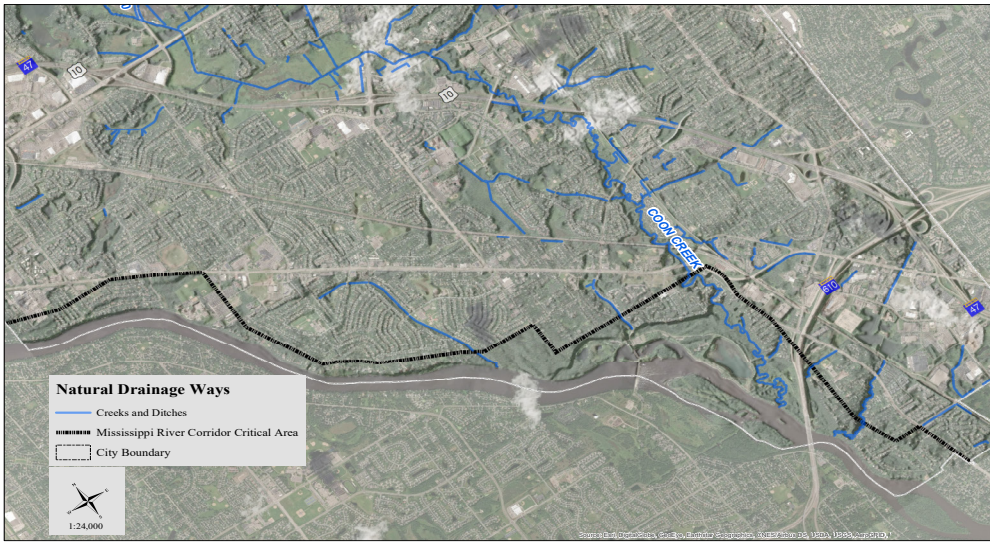
Floodplains & Wetlands. The Federal Emergency Management Agency (FEMA) floodplain mapping designates the 100 and 500 year floodplain areas in the corridor. About 370 of the 1,160 acres in the river corridor lie within the 100 year floodplain and an additional 20 acres are located in the 500 year floodplain. Floodplains include a narrow strip along the river from Anoka to the dam. Here, slopes and bluff lines limit the area subject to flooding. South of the dam, the bluff turns inland, exposing a broader area to the 100-year flood potential. The floodplain is particularly broad near Coon Creek. South of Pleasure Creek, the bluff runs adjacent to the river, leaving only a narrow area exposed to flooding.

About 25 homes were constructed in the floodplain before the City adopted floodplain zoning regulations. These properties experience occasional flooding that does not typically cause significant damage. City floodplain regulations do not allow new permanent structures within the 100-year floodplain unless special flood protection measures are provided.

Wetlands are generally located in the floodplain south of the dam. The "Water Resources" Chapter of the Comprehensive Plan addresses wetland locations and types in more detail.

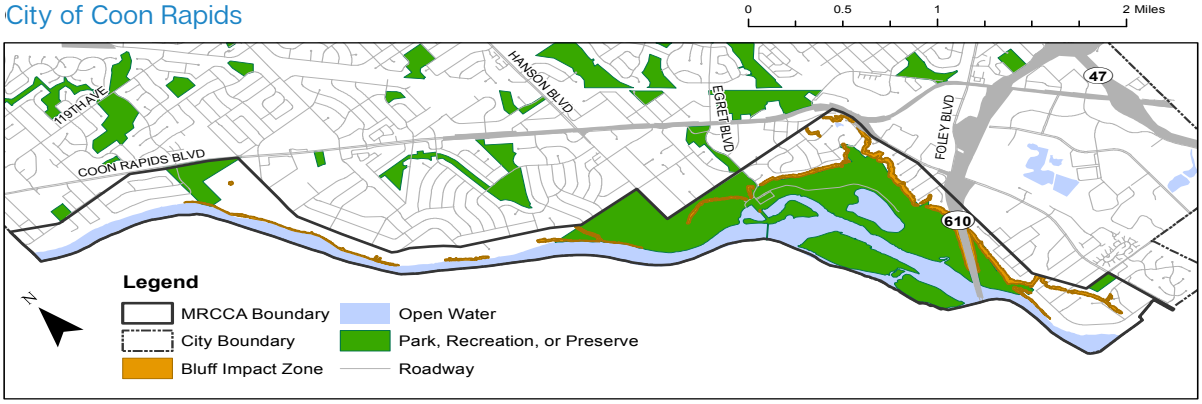
The corridor provides a habitat for a variety of species, including ducks, geese, songbirds and bank swallows, bald eagles, deer, fox, rabbit, woodchuck, raccoon, and muskrat. River fish species include northern pike, bass, catfish, and carp. The lake within the regional park is stocked with trout.

MAP 8-4: Natural Drainage Ways
Mississippi River Critical Corridor Area
City of Coon Rapids



Natural Drainage Ways. In Coon Rapids, natural drainage ways into the Mississippi River include Coon Creek and Pleasure Creek. Coon Creek starts in Ham Lake, a city northeast of Coon Rapids and runs east through Andover and down to Coon Rapids. The Creek runs down the central part of the city through Lions Coon Creek Park, Erlandson Park, Al Flynn Park, and Coon Rapids Dam Regional Park before emptying into the river, just south of the dam. Pleasure Creek runs through Blaine and Coon Rapids. The headwaters of Pleasure Creek are located at the stormwater pond near Jackson Street in Blaine. The confluence between Pleasure Creek and the Mississippi River is located just south of the Highway 610 Bridge.

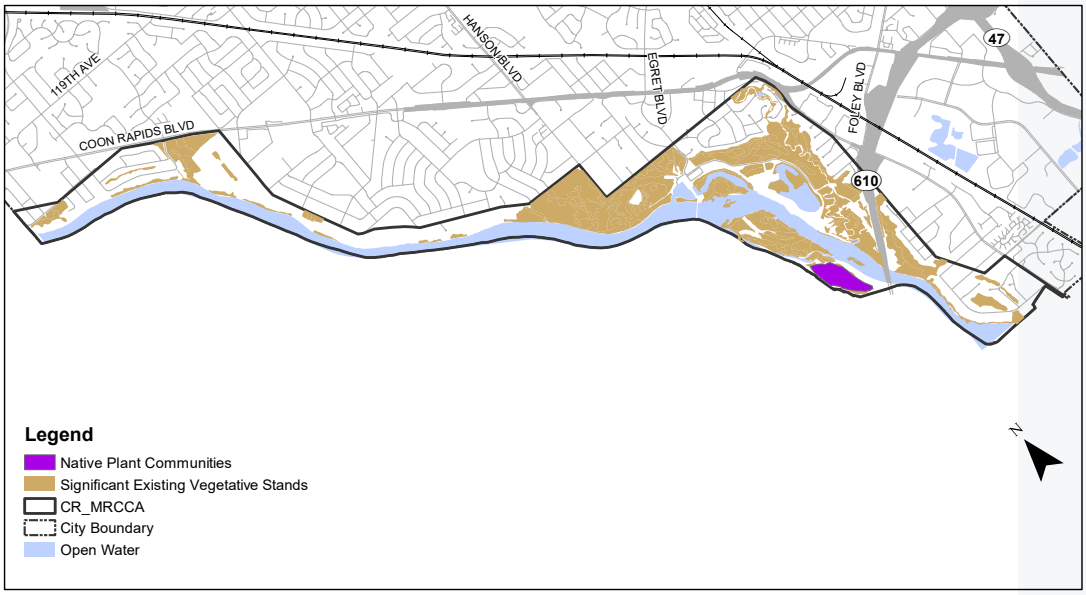
MAP 8-5: Bluff Impact Zones
Mississippi River Critical Corridor Area
City of Coon Rapids



Bluffs & Bluff Impact Zones. The protection of bluffs in the MRCCA is important to reducing erosion and slope failure, as well as maintaining wildlife habitat, native vegetation and the corridor's scenic character. As a PCA, bluffs and the associated bluff impact zones within 20 feet of the bluffs are regulated by the MRCCA program.

Throughout most of the corridor, the bluff ranges from 20 to 40 feet in height and rises directly from the river's edge. From the top of the bluff inland, the terrain is generally flat or gently sloping. This general character of the shoreline changes from approximately 2,000 feet north of the Coon Rapids Dam to the mouth of Pleasure Creek. Along this portion of the river, the bluff is set back from the river's edge, with the area between the river and the bluff subject to periodic flooding.

MAP 8-6: Existing Vegetative Stands
Mississippi River Critical Corridor Area
City of Coon Rapids



Native Plant Communities & Significant Existing Vegetative Stands. There are 19 different vegetative stands in the MRCCA. The corridor generally exhibits a mostly wooded forest character, with a variety of other vegetative environments like prairie, shrubs, sand flats, and wetlands. The wooded areas are mostly located in Coon Rapids Dam Regional Park and are full of hardwoods. Tree species include ash, cottonwood, elm, linden, maple, oak, and hickory, among others. Over 40% of the river corridor has significant tree cover. These hardwoods offer animal habitat and provide erosion control, especially those located on slopes and bluffs. Previous and current efforts to prevent and control elm and oak tree diseases have been generally effective in preserving these tree resources. Since 1980, the City's Critical Area regulations have controlled the loss of trees on bluff tops and slopes when land development occurs.

Most of the wetland and marshland is located in south of the dam in Coon Rapids Dam Regional Park, specifically along the edge of the river near the islands. These islands provide for a number of environments including marshes, sand flats, meadows, floodplain forests, and shrublands that harbor a variety of wetland vegetation and supports wildlife habitats. Cenaiko Lake in the park also offers a habitat for wildlife with an aquatic wetland environment.

Outside Coon Rapids Dam Regional Park, land is mostly developed with herbaceous and woody developed vegetation, but pockets of more intense vegetation stands exist throughout the corridor. Specifically, wooded areas with conifers, oaks, hickories, and other hardwoods, or fields with successional grasses and forbs are scatted throughout the developed areas of the MRCCA.

Coon Rapids Dam (Source: ABC Newspapers)

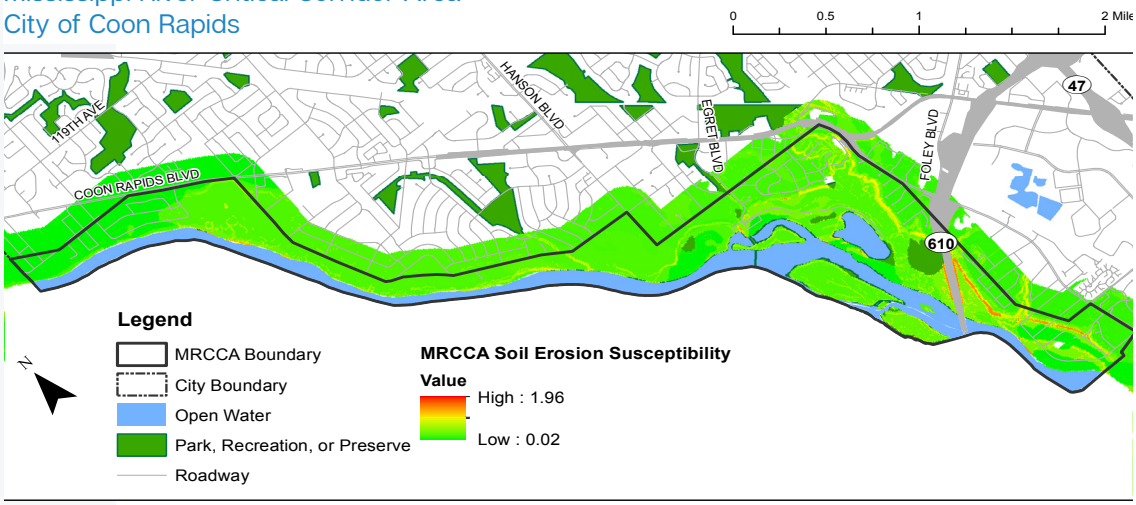
Cultural & Historic Properties. The Mississippi River forms the southwestern boundary of Coon Rapids. Originally called "Father of Waters" by Native Americans, the river has significance in United States history. The river has served as a transportation route since the first canoe. By 1000 A.D., Minnesota Native Americans used the river to trade with tribes in the Illinois and Ohio River valleys. In 1690, Father Lewis Hennepin was the first missionary and fur trader to explore the river through Coon Rapids. In 1821, soldiers used the river to float logs from the 200 foot tall white pines growing along the Rum River for the construction of Fort Snelling. This timber resource also supported a flourishing lumber industry north of Coon Rapids during the 1860s and 1870s. From the 1860s to the early 1940s, when construction of single family homes along the river began, much of the river corridor was used for livestock and crop production.

During 1912 and 1913, the Coon Rapids hydro-electric dam was built for one million dollars. At the peak of construction of the dam, 1,000 laborers worked on it for 24 hours a day. Completion of the dam required 800 railcar loads of crushed rock and 42,000 cubic feet of concrete to produce the structure which raised the level of the river 15 feet behind the dam. The dam produced electricity until 1966 and became regional park property in 1969. In the mid-1970s, a walkway was built across the top of the dam for pedestrian and bicycle use and a visitor center was built. In the 1980s, major construction occurred to assure the structural integrity of the dam, provide better and more efficient water level control gates, and to provide a new walkway across the river below the dam.

In 2012, the DNR and Three Rivers Park District entered into a Joint Powers Agreement (JPA). The JPA specified that the DNR is solely responsible for the reconstruction of the dam, for management of the dam as a fish barrier, and for setting the pool operation parameters. The District remains the owner of the dam and is responsible for its routine maintenance and daily operation. In 2013, the Dam underwent a two-year rehabilitation process that included installation of new water control gates and rehabilitation of an existing gate and construction of a new stilling basin.

State Historical Society records indicate that the Coon Rapids Dam is the only historic structure in the river corridor and that the corridor does not contain any significant archaeological or cultural resources.

MAP 8-7: Soil Susceptibility
Mississippi River Critical Corridor Area
City of Coon Rapids



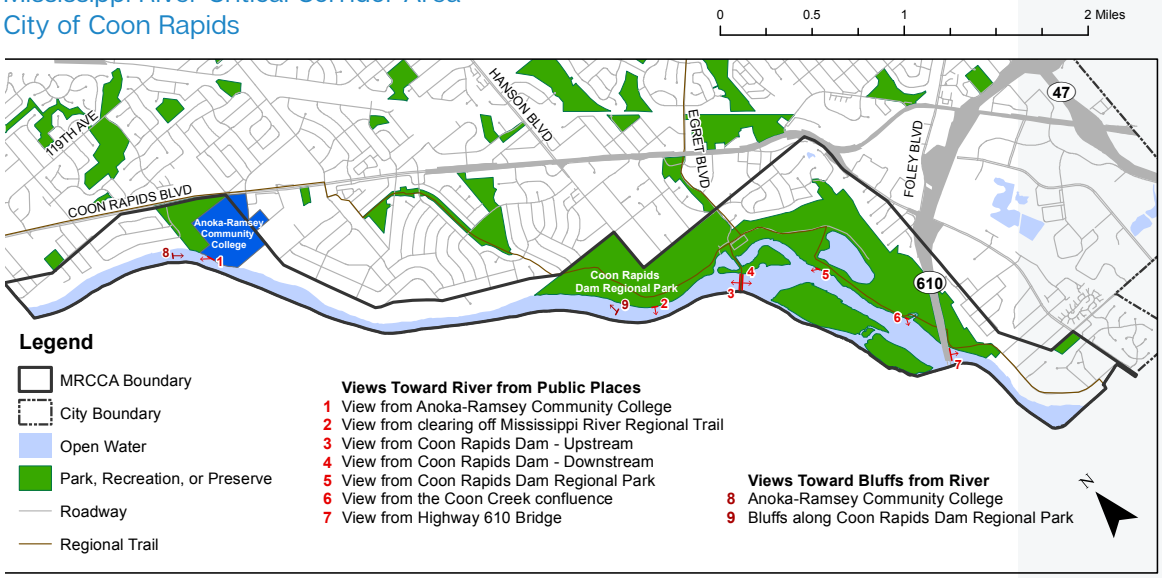
Unstable Soils & Bedrock. Overall, the soil in the MRCCA is mostly stable. Areas of unstable soil susceptible to soil erosion tend to be located along bluffs. Bluffs are found throughout the corridor, mostly the riverfront in the northern part of the city, by Anoka-Ramsey Community College, the residential neighborhoods, and in Coon Rapids Dam Regional Park. Unstable soil associated with bluffs are located around the outer edge of the park and through the southern portion of the park near the Highway 610 Bridge. South of the bridge, unstable soils are found along the bluffs on the outer edge of the parks adjacent to residential neighborhoods, and throughout the neighborhoods at the southernmost part of the city.

Public River Corridor Views (PRCVs)

Public River Corridor Views (PRCVs) is a term defined as "views towards the river from public parkland, historic properties, and public overlooks, as well as views toward bluffs from the opposite shore." Public views of the river corridor are an important scenic resource and the development of the term assists local governments and stakeholders with identifying and protecting these resources. They are important because, as a PCA, they help maintain public viewing access of the river corridor even as communities grow and development occurs. Local governments are required to identify these scenic resources and protect those identified views through ordinance requirements and ordinance administration.

The City of Coon Rapids has little public access to the river outside of the Coon Rapids Dam Regional Park and Anoka-Ramsey Community College. Most of the river frontage is privately owned with single-family homes backing up onto the river. PRCVs exist along the corridor where the public is able to access and view the river.

MAP 8-8: Public River Corridor Views
Mississippi River Critical Corridor Area
City of Coon Rapids



Views Toward River from Public Places. The following are selected views toward the river from public parkland, overlooks, and historic properties.

1. View from Anoka-Ramsey Community College

This view is from the river-facing plaza on the Anoka-Ramsey Community College Campus. Accessible by pedestrians visiting the public campus, this plaza provides an open view of the river. This view is particularly valuable because it shows where the river bends northward and shows a perspective of Champlin on the other side of the river. North of Coon Rapids Dam Regional Park, there are few public opportunities to view the river. The large-scale plaza and minimal tall vegetation allows for a close view of the river unrivaled by any other public place in the city's corridor. Shorter vegetation along the shoreline or within the Shore Impact Zone (SIZ) would be encouraged, however, as it would enhance shoreline habitat and help filter runoff without negatively impacting views.

2. View from clearing off Mississippi River Regional Trail

This view is from a clearing off the Mississippi River Regional Trail in the northern part of Coon Rapids Dam Regional Park. Accessible by bicyclists and pedestrians, the area provides a valuable river view upstream and downstream, and of Brooklyn Park on the other side of the river. The addition of tall vegetation and/or a structure could negatively impact this view. Shorter vegetation along the shoreline or within the SIZ would be encouraged, however, as it would enhance shoreline habitat and help filter runoff without negatively impacting views.

3. & 4. Views from Coon Rapids Dam

These views are from the Coon Rapids Dam which is made accessible for pedestrians and bicyclists via a trail from both the Coon Rapids and Brooklyn Park side of the Coon Rapids Dam Regional Park. These views are valuable because they are expansive river views from the Dam, a historical property in the corridor, and allow you to interact with the Dam. Removal of the Dam or the trail would diminish these views.

5. View from Coon Rapids Dam Regional Park designated viewing area

This view of the river is from a designated river viewing area located in the southern part of Coon Rapids Dam Regional Park near Cenaiko Lake. Accessible by bicycle and walking, the area provides an uninhibited view of the river upstream and downstream. This view is particularly valuable because of the clear view of Coon Rapids Dam, the only historic property in the corridor. Additionally, because of the wooded character of the riverfront in the park, open views are rare and should be protected. Shorter vegetation along the shoreline or within the SIZ would be encouraged, however, as it would enhance shoreline habitat and help filter runoff without negatively impacting views.

6. View from the Coon Creek confluence

This view is from a clearing in Coon Rapids Dam Regional Park adjacent to where Coon Creek merges with the Mississippi River. Accessible by bicycle and walking, the area is off the trail near the water's edge and provides an open view of the river. A similar view is also available from the bridge over Coon Creek. This view is particularly valuable because it demonstrates the large scale of the river, the confluence, and the Highway 610 Bridge. It is also an example of where the river is not screened with vegetation, and an open view of the river is accessible. Shorter vegetation along the shoreline or within the SIZ would be encouraged, however, as it would enhance shoreline habitat and help filter runoff without negatively impacting views.

7. View from Highway 610 Bridge

This view is from the southern side of the Highway 610 Bridge that has a path accessible to pedestrians and bicyclists via an offshoot of the Mississippi River Regional Trail that leads to the bridge. It is also somewhat available to motorists traveling on the highway, but is limited due to the high speed of traffic. This view is valuable because it is the highest view that is available in the city's corridor. It provides a unique large-scale expansive view of the river from above and of the river as its bends and flows southward. Removal of the bridge's pedestrian path or the construction of a tall railing could negatively impact the accessibility of the view.

Views Toward Bluffs from River. The following are views towards bluffs in the City's MRCCA that are accessible by a boat on the river or across from the opposite shore:

8. Anoka-Ramsey Community College

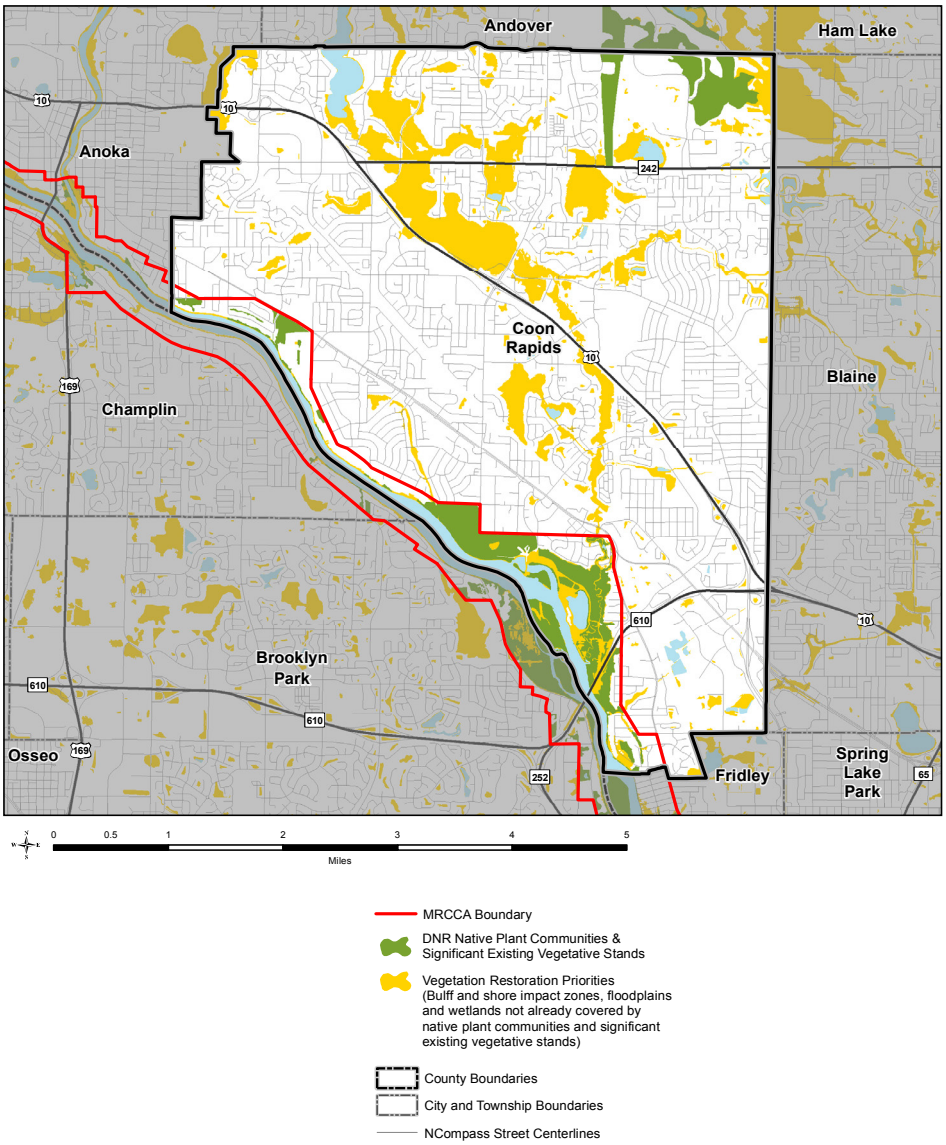
This view toward Anoka-Ramsey Community College from the river shows the bluffs that exist along the edge of the campus where it meets the river. The bluffs in this area start just north of the campus where the riverfront is heavily vegetated, and continues south where a clearing provides views of the river. This view is valuable because it shows different riverfront conditions, a view of Anoka-Ramsey Community College, and demonstrates a natural landscape. Removal of the vegetation would diminish this view.

9. Bluffs along Coon Rapids Dam Regional Park

This view of the bluffs along the northern part of Coon Rapids Dam Regional Park shows a natural riverfront edge that exists in few places along the corridor. The vegetation along the bluffs helps to prevent erosion and water pollution, while creating an attractive natural landscape. This bluff view is valuable because it is different from the riverfront condition of the residential area, which spans the majority of Coon Rapids' river corridor. Removal of the vegetation would diminish this view.

Priorities for Restoration

MAP 8-9: Vegetation Restoration Priorities
Mississippi River Critical Corridor Area
City of Coon Rapids, Anoka County



Restorative measures in the river corridor are often necessary for maintaining water quality and resource integrity. Development and redevelopment present opportunities to prevent erosion, stabilize slopes, and restore natural vegetation. Vegetation plays a large role in slowing stormwater runoff, preventing erosion, filtering nonpoint source pollution, preventing establishment of invasive species, protecting habitat, maintaining stability of bluffs and steep slopes, and maintaining corridor character consistent with each management district. Identifying priorities for natural vegetation restoration is important for maintaining the health of the river and its surrounding land and ensuring that new development or redevelopment does not have negative impact on the corridor.

Even though no formal studies or reports have been completed, priorities for vegetation restoration were identified through a GIS-based process that includes determining the primary conservation areas (PCAs) with no natural vegetation, overlaying native plant communities and significant existing vegetation stands, and reviewing areas where non-vegetative PCAs are still visible. The result is areas with no or limited natural vegetation that are particularly sensitive to vegetation removal or at risk of erosion which serve as a restoration priority areas. Restoration priority areas in Coon Rapids include a lot of the Coon Rapids Dam Regional Park between Cenaiko Lake and the river and along the bluffs by the Highway 610 Bridge. Priority areas also exist along the riverfront at the southern tip of the city and at the residential neighborhoods north of the park.

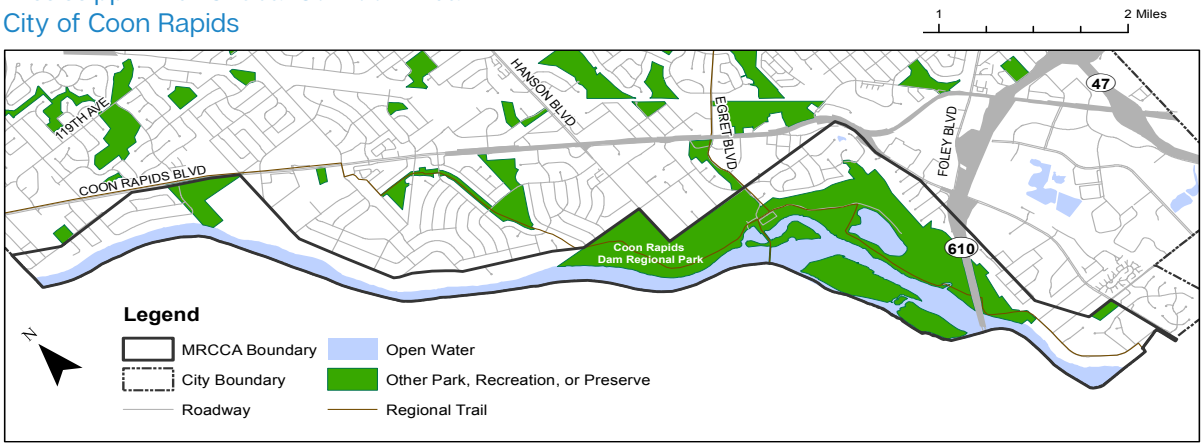
Water-Oriented Uses

Water-oriented uses such as barge terminals, recreational marinas, public recreational uses, and other river-dependent uses can provide a community with economic, recreational, and cultural benefits. They can also contribute to external impacts like traffic, hours of operation, noise, and surface water use. The characteristics of the river in Coon Rapids is not suitable for heavier uses such as barge traffic. However, other water-oriented uses are important because they provide an opportunity for residents and businesses to take advantage of the river and use it for purposes that require water access. Access to the river for water-oriented uses gives the community a unique advantage over others in the metro area.

In Coon Rapids, the land adjacent to the river is developed low-density residential, institutional, or park and recreational land. No commercial land use exists along the river; therefore, there is no existing or planned commercial or industrial water-oriented uses. However, marinas are an allowed use in the low density residential districts along the river, which includes the college. Water-oriented use of the river is solely boating; which is accessible by private docks along riverfront homes and by the public boat launch located in Coon Rapids Dam Regional Park. This public boat launch allows for public recreational use of the river. While the launch is heavily used in the summer, it has little impact on the river corridor and its surrounding land. Anoka County Parks Department which runs the Coon Rapids Dam Regional Park, is planning to expand the boat launch area to include docks. With small-scale floating docks, opportunities to publically access the river and store boats is increased while disruption to the river is minimized. When designed properly, dock construction can be done in a way that protects water quality, minimizes visual impact, and avoids increasing runoff and erosion.

Open Space and Recreational Facilities

MAP 8-10: Open Space and Recreational Facilities
Mississippi River Critical Corridor Area
City of Coon Rapids



Open space and recreational facilities are a crucial part of any community. Spaces such as parks, trails, scenic overlooks, natural areas, islands, and wildlife areas add to the quality of a community and increase public access to the river. Besides providing numerous environmental benefits, these types of facilities and spaces are important because they create recreational, community engagement, and leisure opportunities. They also provide the city with tourism, economic development, and public health benefits.

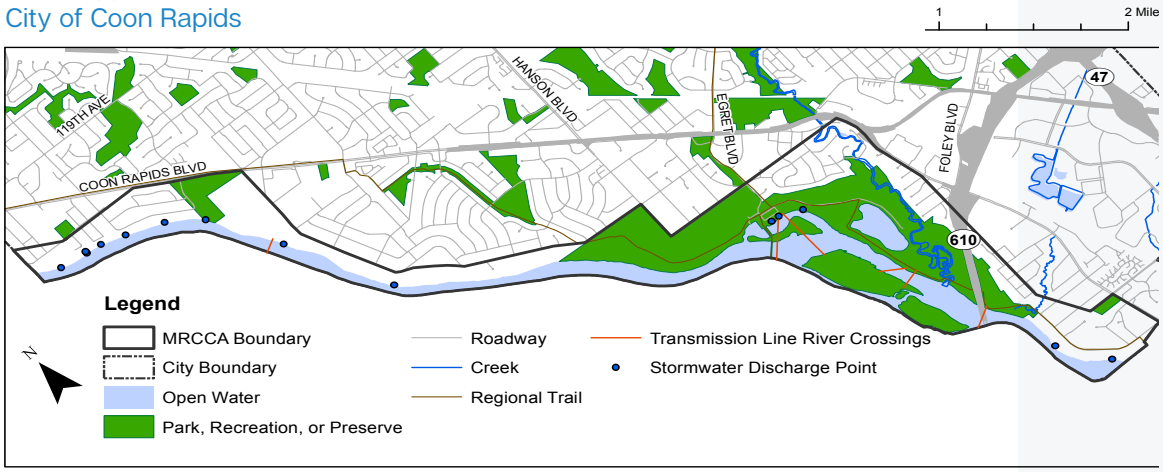
Municipalities in the MRCCA are required to encourage creation, connection, and maintenance of open space and recreation facilities, and identify potential public access points and trail locations in their plans. While the majority of the land surrounding the river is single-family homes, the Coon Rapids Dam Regional Park is a 446-acre park located right on the river. A popular, year-round destination for Anoka County, the park offers visitors many activities such as picnicking, fishing, cross country skiing, recreational boating, hiking, and biking. With a visitor center, observation areas, performance and picnic pavilions, trails, and a playground, the park and its facilities are a major draw for the city of Coon Rapids, and one of city residents' favorite places. Coon Rapids Dam Regional Park also offers a unique fishing experience with a stocked trout lake–Cenaiko Lake, and fishing along the Mississippi River, both above and below the dam. The park is currently the most important open space and recreational facility in the City's MRCCA; this will continue in the future.

The Mississippi River and the Coon Rapids Dam are major focuses of the park. Riverfront trails run the entire 2-mile river frontage and picnic areas and designated viewing areas allow for visitors to interact with the river. The dam itself has a paved pedestrian walkway extending from the park, which offers unique views of the river. The trails and the dam walkway provide access to the Mississippi River Regional Trail and the North Hennepin Regional Trail. A boat launch on the river provides visitors with recreational river boating opportunities.

The Coon Rapids Dam Regional Park is part of the Anoka County Parks System. The County has planned for the future of the park in its Master Plan and other documents. Besides ongoing maintenance, upgrades to a number of facilities, and the construction of additional facilities, few major changes are slated for the park. One of these upgrades includes the addition of the docks to the existing boat launch area on the river. This would allow for more recreational boating and boat storage opportunities. Redevelopment of the roadway, parking lot and picnic facilities are also planned. Downstream, a carry-in canoe launch and an emergency boat launch are needed. A new maintenance facility is also planned along with gatehouse replacement and visitor center remodeling. Related to the environmental impacts of development, addressing the high water damage and shoreline restoration in the corridor continues to be a challenge for Anoka County.

Transportation and Utilities

MAP 8-11: Transportation and Utilities
Mississippi River Critical Corridor Area
City of Coon Rapids



If not properly designed, transportation infrastructure and utilities such as power, gas, water, sewer and stormwater can have negative impacts on scenic views, wildlife habitats, and soil erosion. Development of these facilities must be conducted in a manner that minimizes impacts. The MRCCA plans developed by cities should describe methods for minimizing impacts to the corridor's resources from transportation and utility facilities.

In Coon Rapids, impact on the corridor due to transportation and public utility facilities is minimal. Within the MRCCA, roadways and their associated vehicles and transit are located at a distance from the river. Single-family homes and open space act as a buffer between the traffic and the river corridor. Along the southern portion of the MRCCA, a regional walking and bicycling trail runs along the riverfront, starting at the trailhead for the Mississippi River Regional Trail and continues through Coon Rapids Dam Regional Park and out of the city. These trails are 10' wide paved pathways for use by pedestrians and bicyclists and are around 40-150' from the shoreline. A naturalized buffer with vegetation and trees helps to maintain the shoreline. These existing transportation facilities are expected to remain in the future and no new facilities are planned for the future.

Six electrical transmission line facilities currently cross the river and there are no planned crossings that would require new right-of-way. There are 13 storm drainage system discharge points to the river including Coon and Pleasure Creeks, Riverview and Egret drainage channels, and nine storm sewer outfalls. The drainage channels and sewer outfalls have little visual impact on the public river corridor views, but electrical transmission lines can lower the quality of river views. However, there are few electrical line facilities in the corridor and most are south of the dam, where access to the water is more limited. Utilities can have an impact on primary conservation areas by making them more susceptible to soil erosion and loss of vegetation. Efforts should be made to ensure that the development of new utility facilities have minimal negative impact on public river corridor views and primary conservation areas.

Key Issues and Opportunities

The MRCCA will continue to be an important part of Coon Rapids in the future. Over the next ten years, few severe changes are likely to occur as the city and the riverfront is essentially fully developed. The residential neighborhoods along the river will be maintained. The riverfront location presents an opportunity for high value homes. Improvements to existing homes and the development of new homes may occur over the next decade. Coon Rapids Dam Regional Park is currently a highly valued asset for the community. With prime dam and riverfront access, the park provides city residents and visitors with an expansive space for leisure and recreational activities. This presents an opportunity to maintain this great resource and river access. As the planned park renovations occur, it will be a challenge to preserve the river views, public access, and recreational opportunities.

Maintaining environmental quality will continue to be a challenge as new development and changes occur in the MRCCA. Renovations to the area present the issues of managing stormwater, maintaining water quality, and reducing soil erosion. While future natural occurrences that impact the river and riverfront are unknown, area updates present an opportunity to combat these occurrences. With proper planning, ongoing maintenance, and a focus on the restoration of vegetation and the shoreline, actions can be made to protect the health of the river and preserve it as a natural and cultural resource for decades to come.

Goals and Policies

Designated goals of the MRCCA program include:

1. Protect and preserve the Mississippi River and adjacent lands that the legislature finds to be unique and valuable state and regional resources for the benefit of the health, safety, and welfare of the citizens of the state, region, and nation;
2. Prevent and mitigate irreversible damages to these state, regional, and natural resources;
3. Preserve and enhance the natural, aesthetic, cultural, and historical values of the Mississippi River and adjacent lands for public use and benefit;
4. Protect and preserve the Mississippi River as an essential element in the national, state, and regional transportation, sewer and water, and recreational systems; and
5. Protect and preserve the biological and ecological functions of the Mississippi River corridor.

General

Policies that recognize the importance of the MRCCA and help to further its goals include:

1. The City will give appropriate attention to water quality and ensure elimination of non-point sources of pollution.
2. Manage surface water drainage to maintain river water quality.
3. Improve quality of surface water runoff received by streets and watercourses through Best Management Practices. Manage the use of chemical fertilizers and application of salt to streets in winter.
4. Minimize direct overland surface water runoff.
5. Encourage and support special events that bring people to the river.
6. Promote tourism in the river corridor.
7. Encourage investments in river corridor improvements.

Districts/Land Use

Policies with the intent of guiding land use and development and redevelopment activities consistent with the management purpose of each district include:

1. The current zoning - predominantly low-density residential - should be maintained. No industrial and only limited commercial development associated with recreational activity should be permitted in the corridor. This should apply to each MRCCA District – River Neighborhood, Rural & Open Space, River Towns & Crossings, and Separated from River.
2. Minimize site alteration within the corridor.
3. Retain compatible, existing low density residential, recreational and institutional uses in the corridor and do not allow commercial or industrial development within any of the four MRCCA Districts.
4. Ensure new development in the river corridor has a relationship to the river, a need for a river location, or the capability of enhancing the river.
5. Preserve existing residential, institutional, and recreational land uses within the corridor.

Primary Conservation Areas (PCAs)

The Primary Conservation Areas (PCAs) within Coon Rapids' MRCCA include shore impact zones, floodplains and wetlands, bluff and bluff impact zones, significant existing vegetative stands, cultural and historic properties, and unstable soils and bedrock.

Policies with the intent of protecting, prioritizing, and minimizing the impact to PCAs are as follows:

General/Land Use

1. Protect all PCAs in Coon Rapids and minimize the impact from public and private development, as well as land use activities.
2. Support mitigation of impacts to PCAs through various land use tools such as subdivisions/ PUDs, variances, CUPs, and other permits.
3. 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 enable better protections or restoration of PCAs.
4. Prioritize permanent protection measures (such as public acquisition, conservation easement, deed restrictions, etc...) that protect the City's identified PCAs.

Shore impact zones

1. Enforce the zoning code restricting development within the shore impact zones.
2. Encourage native landscaping and restoration of natural shorelines.
3. Provide an uninterrupted vegetated shoreline where practical by encouraging preservation and replacement of natural plant materials.

Wetlands, floodplains, and areas of confluence with key tributaries

1. Protect wetlands in accordance with the Wetland Management Plan.

Natural drainage routes

1. Maintain the land around natural drainage routes and creeks to reduce river water pollution due to soil erosion.
2. Encourage new development and reconstructions to employ stormwater management practices on site to reduce stormwater runoff into the river.

Bluff and bluff impact zones

1. Restrict development along bluffs and in their associated bluff impact zones.
2. Encourage steep slopes to be used for open space uses.

Significant Existing Vegetative Stands

1. Identify and protect areas of significant vegetation, unique vegetative species and wildlife habitats within the corridor and retain existing vegetation and landscaping.
2. Protect natural resources with preservation areas on public land and work to restore wildlife habitat, particularly for threatened and endangered species, and preserve biological diversity in all areas of the corridor, especially development projects.
3. Removal of natural vegetation in the MRCCA is prohibited, as all development shall be located to preserve the natural features of the site and to preserve significant trees or plant communities (including remnant stands of native trees or prairie grasses or plant communities that are rare to the area or of particular value). Also to be preserved are trees with a diameter at breast height of 12 inches or larger.
4. Natural vegetation shall be restored to the extent feasible after any construction project is completed to retard surface runoff and soil erosion and to provide screening. Adequate erosion protection measures such as trees and vegetation plantings on slopes shall be used to ensure that soil loss levels do not degrade the protected water body.

Cultural and historic properties

1. Protect archaeological resources, historic structures, and cultural landscapes in their present condition.
2. Maintain pedestrian and bicycle access to the Coon Rapids Dam.

Unstable Soils & Bedrock

1. Restrict development within areas of unstable soils and bluff impact zones.

Public River Corridor Views (PRCVs)

Policies with the intent to protect and minimize impacts to PRCVs include:

2. The City will continue to enforce the controls on billboards that exist in the zoning ordinance. Specifically prohibited are off-premises advertising signs and billboards that would be visible from the river.
3. Structure site and location shall be regulated to ensure that riverbanks, bluffs and scenic overlooks remain in their natural state, and to minimize interference with views of and from the river, except for specific uses requiring river access.
4. The City will prevent development that blocks or has a significant negative impact on key scenic views and encourages design which preserves, enhances, or creates key scenic views, explicitly PRCVs identified in Coon Rapids' MRCCA plan, as well as those identified by other communities adjacent to or across the river from Coon Rapids.
5. Maintain existing natural landscaping and clearings in Coon Rapids Dam Regional Park that help to frame river views.
6. Require that riverfront development preserves a natural appearance while minimizing interference with views to and from the river.

Restoration Priorities

Policies with the intent of restoring native and natural vegetation and stabilizing soil include:

1. The City will work with the Metropolitan Council, Department of Natural Resources, Anoka Conservation District, Army Corps of Engineers, and neighboring cities to ensure adequate erosion control along the corridor.
2. The City will encourage property owners along the river to replace diseased trees with new plantings and introduce appropriate vegetation on river banks and steep slopes to control erosion.
3. Work with Anoka County to restore vegetation within the Vegetation Restoration Priority areas in Coon Rapids Dam Regional Park, including protection/enhancement of and along PRCVs identified in this plan.
4. The City will encourage an efficient erosion control permit process and City staff should be available to help homeowners prepare applications for erosion control permits.
5. Provide an uninterrupted vegetated shoreline where practical by encouraging preservation and replacement of natural plant materials, including protection/enhancement of and along PRCVs identified in this plan.
6. Control and prevent riverbank erosion by:
    - Regulating preservation of shoreline vegetation
    - Encouraging replacement of lost shoreline vegetation with native plant materials
    - Encouraging installation of systems to control existing areas of erosion
    - Continuing to assist homeowners to obtain required permits for erosion control
    - Providing needed erosion control measures at City storm drainage outlets
    - Utilize the CUP, variance, vegetation permit and subdivision/PUD process to restore vegetation in restoration priority areas as necessary
7. Evaluate proposed development sites for erosion prevention and bank stabilization issues and require restoration as part of the development process.
8. Protect native and existing vegetation during the development process, and require restoration if any vegetation is removed by the development process.
9. Sustain and enhance ecological functions during vegetation restorations

Water-Oriented Uses

Policies with the intent to protect water-oriented uses and minimize the conflict between those uses and other land uses include:

1. Require that riverfront development is compatible with riverfront uses, and preserves a natural appearance while minimizing interference with views to and from the river.
2. Access to the riverfront shall be incorporated, where appropriate, in new development and redevelopment activities within the Critical Area/MNRRA Corridor.
3. Maintain existing safety procedures for preventing recreational water use south of the Coon Rapids Dam.
4. Enforce that public river use be allowed only at designated locations along the river.
5. Protect existing water-oriented uses at Coon Rapids Dam Regional Park and other areas with current water-oriented uses.

Open Space & Recreational Facilities

Policies with the intent of encouraging the creation and maintenance of open space and recreational facilities and public access to the river include:

1. Preserve natural areas when designating parks and open space.
2. Maintain existing City, County, and State park lands and trail facilities within the corridor.
3. Encourage connections to the river corridor trail system and existing park land from more inland residential neighborhoods.
4. Pursue opportunities to increase pedestrian access and add parkland to the riverfront in the northern part of the corridor if redevelopment of large lot residential areas occurs. Encourage that land dedicate requirements be used to acquire land suitable for public river access.
5. Support facilities to provide enhanced visitor experiences at Coon Rapids Dam Regional Park.
6. Provide carefully designed, safe, and accessible public facilities that complement their river corridor context.
7. Provide high quality and sustainable open space, public plazas, historic landscapes, interpretive facilities, and related facilities in the river corridor responsive to Mississippi National River and Recreation Area location and resource protection policies.
8. Existing islands within the Corridor shall be preserved and managed as open space.
9. Identify and encourage the connection of land Separated from the River District (CA-SR) to existing and planned parks and trails for developable land within those districts.

Transportation & Public Utilities

Policies with the intent to minimize the impact of transportation facilities and public utilities on the MRCCA include:

1. Design new or modified transportation facilities to complement planned land and water uses and to not stimulate development incompatible with the river corridor.
2. Ensure future development emphasizes continuous open space, minimizes utility and infrastructure needs and crossings (including transportation river crossings and concentrates them at existing crossings where possible), and allows for scenic vistas, trails and walkways.
3. Encourage, where practical, the placing of utilities underground.
4. In planning and designing the construction or reconstruction of all public transportation facilities in the river corridor, give consideration to providing:
    - Scenic overlooks for motorists
    - Safe pedestrian crossings and facilities along the river corridor
    - Access to the riverfront in public ownership
    - Aesthetically pleasing details, including railings, lighting, paving, and landscaping
    - Any future utility crossings in existing rights-of-way
    - Public improvements to strengthen the link between the Coon Rapids Boulevard corridor and the river
5. Ensure that solar and wind generation facilities, public transportation facilities, and public utilities have minimal if any impact on PCAs and PRCVs.

Chapter 9
Implementation

This chapter of the *Coon Rapids 2040 Plan* addresses the way in which policies, objectives, and directions described in previous chapters will be accomplished in the City of Coon Rapids.

The Coon Rapids Vision of the Future

Coon Rapids will be a community with a slowly growing population of about 72,000 people by 2040. It will contend successfully with significant challenges of traffic, aging properties, aging city infrastructure, and environmental protection.

Housing. The city will have well-maintained neighborhoods with a variety of housing types for all age groups. Townhouses, senior apartments, and common interest communities will be available in all parts of town so that empty nesters can move out of their existing homes, if they choose to do so, and thereby make room for families with children.

Jobs. Job opportunities will be provided in a variety of locations but especially in the Evergreen Industrial Park, Northdale Industrial Area, and in the greater Riverdale area.

Transportation. Traffic will increase on Highway 10 as Andover, Oak Grove, Ramsey, and St. Francis grow. The Greater Minnesota Gateway project may add lanes to Highway 10 to move traffic through the city. Bus service, commuter rail, and improved pedestrian and bicycle facilities will provide transportation alternatives.

Coon Rapids Boulevard. Coon Rapids Boulevard will change from a seven-mile long strip of unevenly spaced and unrelated businesses to a street that is much more residential in character. Most of the new uses will be higher density townhouse and apartment development that will, hopefully, increase mass transit ridership on Coon Rapids Boulevard. Traffic calming measures will be taken along Coon Rapids Boulevard so that speeds and noise are reduced in a way that makes the street more compatible with new residential uses.

Natural Areas. Coon Rapids' large wetland and natural areas will be preserved through a combination of City, State, and watershed district regulations. New trails will be sensitively constructed to allow residents and visitors to enjoy the open space legacy of Coon Creek, the Mississippi River, and the city's many wetlands. The trail system will connect neighborhoods to each other and to the city's transit system.

The following sections lay out the tools and descriptions the Comprehensive Plan will use to address specific issues within the City of Coon Rapids, as well as an estimated timeframe for implementation.

Land Use

The 2040 plan establishes policies for future development in the City of Coon Rapids, guiding the amount, location, and intensity of future land uses to ensure compatibility with one another and the natural environment. Table 9-1 below explains how the City intends to accomplish this future vision. Official controls, including ordinances and fiscal devices, are the primary tool for implementing the City's land use policies.

Table 9-1: Land Use Implementation

	Tool	Description	Timeframe
1	Zoning Districts	The Metropolitan Land Planning Act requires that a community's official controls be consistent with its Comprehensive Plan. A community's zoning ordinance and map are the primary mechanisms for realizing the vision of its Comprehensive Plan. Overall, Coon Rapids' existing zoning districts allow for implementation of the policies established in Chapter 2 of this plan. The least dense residential district allows three dwelling units per acre and other districts allow up to 50 units per acre by right. Flexibility mechanisms are built into the zoning code in some districts to allow for even higher density in certain settings.	Ongoing
2	Zoning Map	Nearly all new development in the city will occur in areas that are well-served by existing infrastructure. The existing zoning map (Map 2-2 within Chapter 2 of this plan) allows for increased residential densities and intensification of land uses along transit corridors and other areas with infrastructure capacity. Any zoning map amendments to achieve consistency with the Future Land Use Map (Map 2-6 within Chapter 2) should be made by 2021.	Ongoing
3	Development Regulations	When the Planning Commission reviews proposals for new development, it should ensure that its decisions are based on the policies established in the 2040 Plan, particularly when a rezoning is requested. Over time, site plan regulations should be reviewed and updated to encourage high aesthetic quality, support a multi-modal transportation system, and ensure compatibility with the surrounding neighborhood.	Ongoing
4	Subdivision Regulations	The City's subdivision regulations require access to public services for all subdivided land and payment of park dedication fees to ensure implementation of the City's Parks, Open Space, and Trail Plan. The subdivision regulations also include standards for implementing proposed pedestrian and bicycle facilities.	Ongoing
5	Wetland Management	The City revised its regulations for protection and mitigation of wetlands after the Wetland Management Plan was adopted in 2004. The existing regulations allow for implementation of policies pertaining to wetland management.	Ongoing
6	Shoreland Zoning Regulations	While the City generally follows the shoreland zoning requirements recommended by the Department of Natural Resources, the City's zoning ordinance should be refined to reflect these requirements.	Ongoing
7	Mississippi River Corridor Critical Area	Ordinance updates related to the Mississippi River Corridor Critical Area recommended by the Chapter 9 of the 2040 Plan should be adopted as required by the Department of Natural Resources.	Ongoing
8	Plan Maintenance	Although most official controls are in place for implementing the Comprehensive Plan, the City's zoning ordinance should be reviewed at least every three years to ensure that the plan's policies are followed. In addition, the plan's policies should be reviewed periodically to reflect emerging trends.	Ongoing
9	Redevelopment	Staff will monitor the physical condition and economic viability of land uses to determine if there is potential for redevelopment consistent with Land Use Plan objectives. If there is redevelopment potential, fiscal tools such as tax-increment financing and tax abatement will be considered as a way to stimulate and facilitate redevelopment. This topic is addressed in Chapter 8 of this plan – Economic Competitiveness, as well as in Table 9-6 below.	Ongoing

Transportation

Several jurisdictions will be responsible for implementing the City's transportation plan. In addition to the City, included are Anoka County, the State of Minnesota/MnDOT, the Federal government and the Metropolitan Council. The Metropolitan Airports Commission is also responsible for protecting airspace.

Table 9-2: Transportation Implementation

	Tool	Description	Timeframe
10	Condition Monitoring	The City will monitor local conditions with respect to traffic levels, congestion, noise, safety, and adequacy of transportation infrastructure and service.	Ongoing
11	Advocacy	The City will advocate for improvements that serve Coon Rapids residents and businesses, and work with other government agencies to see that the needs of the City are met.	Ongoing
12	Capital Improvements	The City will undertake maintenance, including plowing and sweeping, of its part of the transportation system, as well as construct trails and sidewalks where the plan calls for the systems to be extended or gaps to be filled.	Ongoing
13	Plan Review	The City will review the plans of private developers and their contractors to assure that their street plans meet City standards.	Ongoing
14	Coordination with Anoka County	The City will work with Anoka County to study the need for transportation improvements, including the future needs of Coon Rapids Boulevard; designing and constructing improvements to Coon Rapids Boulevard and other County roads, and plowing/maintaining County designated streets. The City will also share police patrol responsibilities with Anoka County to enforce traffic laws and respond to accidents.	Ongoing
15	Coordination with Minnesota Department of Transportation (MnDOT)	The City will work with MnDOT to maintain, improve, and widen Highway 10, including related bridge work. The City will also look to the State of Minnesota to provide funds for maintenance and some construction projects.	Ongoing
16	Coordination with State of Minnesota	The City will share police patrol responsibilities with the State of Minnesota to enforce traffic laws and respond to accidents.	Ongoing
17	Coordination with Metropolitan Council	Work with the Metropolitan Council regarding their continued responsibility for operating the regional transit system, including Northstar Commuter Rail service.	Ongoing
18	Coordination with Federal Government	Access federal funding via both state and regional agencies for projects within the city.	Ongoing

Housing

This section describes the tools and methods the City of Coon Rapids will use to address the identified housing needs.

Existing housing needs include:

1. Maintenance assistance for low-income homeowners at or below 60% AMI;
2. Rental units for large families at all affordability levels;
3. Preservation of naturally occurring affordable housing within all bands of affordability, especially near existing and future transit stations.

Projected housing needs are focused on accommodating the affordable housing need allocation from 2021-2030. The needs are broken up into the 3 levels of income that will require accommodation:

1. Allocation of Affordable Housing Need below 30% AMI; 240 units;
2. Allocation of Affordable Housing Need between 31% and 50% AMI; 53 units;
3. Allocation of Affordable Housing Need between 51% and 80% AMI; 164 units.

Table 9-3 lists the public programs, fiscal devices, and other actions that the City of Coon Rapids will take to meet existing and projected housing needs. Sequence of use will vary by project and depend upon availability of funds, location, and specific gap-financing needs of each project.

Recommendations for implementation are categorized as short-term (within 1-3 years), medium term (3-5 years), long-term (more than 5 years), or ongoing policies.

Table 9-3: Housing Implementation

	Tool	Description	Timeframe	Maintenance Assistance for Homeowners at or below 60% AMI	Rental Units for Large Families at All Affordability Levels	Preservation of Naturally-Occurring Affordable Housing, all Bands of Affordability	Allocation of Affordable Housing Need Below 30% AMI: 240 Units	Allocation of Affordable Housing Need Between 31% and 50% AMI: 53 Units	Allocation of Affordable Housing Need between 51% and 80% AMI: 164 Units	Tools to Address General Housing Needs
19	Community Development Block Grant (CDBG)	Following HUD's schedule of annual CDBG allocations, the City will utilize the majority of its federal allocation to support reinvestment in the existing housing stock by providing deferred loans for housing rehabilitation needs to households earning 80% of area median income or lower.	Ongoing	X		X				
20	HOME Investment Partnerships Program (HOME)	The City will explore with Anoka County the application for HOME Funds to provide rental assistance to low and moderate income households that are in existing rental units suitable for large families. The City would also be open to using HOME funds as a development subsidy. The City will document this exploration and its results by 2023.	Medium-term		X		X	X	X	
21	Community Land Trust	The City does not currently make use of a community land trust, but would consider doing so for the purpose of developing and providing affordable housing along with other community assets.	Ongoing		X		X	X	X	
22	Referrals	The City will review and update the reference procedures and training for applicable staff, including a plan to maintain the ability to refer residents to any applicable housing programs outside the scope of our local services.	Short-term	X		X				
23	Coon Rapids Home Imrpovement Foudnation	The City offers several home improvement loan products, including incentive loans funds for both value-added improvements and housing maintenance.	Ongoing	X						X
24	Home for Generations	The City offers fixed, low-interest loans for participants in the City's Home for Generations II program that provides incentives for homeowners to undertake large scale, value-added remodeling projects.	Ongoing	X						X

	Tool	Description	Timeframe							
25	Tax Increment Financing (TIF)	The City will consider utilizing TIF to support the construction of affordable housing projects when a need for gap financing exists and the project meets other City development goals.	Ongoing		X		X	X	X	
26	Tax Abatement	The City will consider tax abatement for large rental housing project proposals if the project includes a significant proportion of affordable units, as well as when a need for gap financing exists and the project meets other City development goals.	Ongoing		X		X	X	X	
27	Livable Communities Demonstration Account (LCDA)	The City will strongly consider supporting/sponsoring an application to Livable Communities Account programs for multi-family rental proposals with units suitable for large families, and in areas zoned for high-density residential.	Ongoing		X		X	X	X	
28	Housing and Redevelopment Authority (HRA)	The City will use the HRA's authority to facilitate the production of housing through land assembly and financial assistance for affordable housing projects when a need for gap financing exists and the project meets other City development goals.	Ongoing		X		X	X	X	
29	Super RFP	The City will strongly consider supporting/sponsoring an application to Super RFP programs for affordable housing proposals in areas guided for high density residential uses.	Ongoing		X		X	X	X	
30	Housing Bonds	The City will consider issuing Housing Bonds to support affordable housing proposals when a need exists and the project meets other City development goals. However, there are competing priorities and limitations to city bonding authority.	Ongoing		X		X	X	X	
31	Environmental Clean-Up Funding	The City will strongly consider supporting/sponsoring an environmental clean-up grant application for an affordable large-unit rental project.	Ongoing		X		X	X	X	
32	Supporting Existence of Manufactured Homes	The City supports the Creekside Estates manufactured home park and promotes property maintenance to ensure sustainability.	Ongoing			X				
33	Land Bank Twin Cities	The City will participate in the Land Bank's "First Look" program and attempt to strategically acquire any foreclosed properties that are guided appropriately. The City will consider additional partnerships with the Land Bank on housing development.	Long-term				X	X	X	
34	Guiding land densities that support affordable housing	See the future land use plan and projected housing needs section of the housing chapter of this comprehensive plan.	Ongoing				X	X	X	

	Tool	Description	Timeframe							
35	Participation in Regional Council of Mayors	The Mayor of Coon Rapids will participate or designate an appropriate representative to actively engage in the Urban Land Institute Minnesota's Regional Council of Mayors group.	Ongoing							X
36	Participation in Housing Collaborative Institute	City staff will continue to be active members of the Housing Collaborative Institute.	Ongoing							X
37	Townhome Forum	The City will continue to host the Townhome Forum to provide assistance to Townhome owners and managers.	Ongoing							X
38	Zoning Ordinance	The City will review its zoning ordinance to identify any regulations that inhibit the housing priorities in this document.	Ongoing							X
39	Housing Improvement Areas (HIA)	The City will continue to facilitate this method of public financing for common area improvements associated with condominiums and townhome developments.	Ongoing							X
40	Scattered Site Acquisition Program	Using its HRA, the City will continue to acquire blighted single-family homes and sell the lots for construction of higher quality homes, including use of the Twin Cities Land Bank's 'First Look' program.	Ongoing							X
41	Property Maintenance/Rental Licensing	The City will continue its property maintenance and rental licensing programs to ensure long-term sustainability of the housing stock.	Ongoing							X
42	Home Remodeling Tour	The City will educate residents about making investments in their homes to ensure long-term sustainability of the housing stock.	Ongoing							X
43	Downpayment Assistance Program	The City will continue to offer its Downpayment Assistance program in conjunction with HUD 203(k) loans to incentivize purchase and rehabilitation of older single-family homes.	Ongoing							X
44	Fair Housing Policy	The City will communicate its fair housing policy and other fair housing resources to residents.	Ongoing							X
45	NOAH Preservation Tools	The City will explore new tools and policies to preserve naturally occurring affordable housing, such as 4d tax incentives.	Ongoing			X				
46	Preservation of Existing Tax Credit Properties	The City will explore partnerships to encourage preservation of existing low-income housing tax credit properties that could expire before 2040.	Ongoing			X				

Water Resources

The City will continue to adequately fund the operations and maintenance of its water supply system through its annual operating budget. Operating and capital costs are funded by user fees charged against residential and commercial customers.

The City will use its capital budget, operations and maintenance budget, and City ordinances and regulations to implement its wastewater plan.

Chapter 5 (Capital Improvement Plan) of the 2018 *City of Coon Rapids Sanitary Sewer Comprehensive Plan* illustrates the annual operations, maintenance and capital expenditures recommended by SEH Inc. The City will focus on lining RCP pipe, lift station upgrades, VCP service connections, inflow/infiltration mitigation, and televising and cleaning of existing sewer pipe over the next 10 years. Recommended sewer upsizing will occur with new or redevelopment projects.

Finally, the City will incrementally address storm water problems shown on Map 4-4 as funds are available each year from the Storm Water Drainage Utility.

Table 9-4: Water Resources Implementation

	Tool	Description	Timeframe
44	Drinking Water Quality and Quantity	The City will continue to adequately fund the operations and maintenance of its water supply system through its annual operating budget. Operating and capital costs are funded by the user fees charged against residential and commercial customers.	Ongoing
45	Wastewater	The City will use its capital budget, operations and maintenance budget, and City ordinances and regulations to implement its wastewater plan. The city will focus on lining RCP pipe, lift station upgrades, VCP service connections, inflow/infiltration mitigation, and televising and cleaning of existing sewer pipe in the long term.	Ongoing
46	Storm Water	The City established a Storm Water Drainage Utility in 2002 to provide funds for storm water control projects. These funds will be allocated and updated annually to address storm water issues.	Ongoing

Parks and Open Space

The City will make few additions to the parks system in the future except for the acquisition of land for trail expansion and the possible acquisition of natural areas. The Future Parks, Trails, and Open Space Map shows the envisioned parks and trail systems.

As such, the City will use a combination of regulations, routine maintenance, and capital improvements to implement the *Parks, Open Space, and Trail System Plan*.

Table 9-5: Parks and Open Space Implementation

	Tool	Description	Timeframe
47	Regulations	The City will use its subdivision regulations and zoning code to safeguard natural areas, protection areas, and the Mississippi River Critical Area. All regulations in place are intended to facilitate protection.	Ongoing
48	Maintenance	Annual maintenance and repair will be used to keep the City's parks in good, safe condition. Funds are available from the City's general fund, park dedication fees, and other sources to provide for maintenance and repair.	Ongoing
49	Capital Improvements	Large scale rehabilitation or development of park space, as well as acquisition of land for trail expansion, will be done through the City's capital improvement program. Major improvements envisioned include the following: Trail connection in the vicinity of Kennedy Park to link the 85th Avenue trail to the Mississippi Regional Trail providing connections to Coon Rapids Dam Regional Park. Construct a Coon Creek Regional Trail segment from Lions Coon Creek Park across Hanson Boulevard and extend to the west. Upgrade or redevelop neighborhood parks that have not been upgraded in recent years. Complete all remaining segments of the Coon Creek Regional Trail, including a grade separated crossing of Coon Rapids Boulevard and improved crossing of Northdale Boulevard.	Ongoing

Economic Competitiveness

Table 9-6 below summarizes Coon Rapids' Economic Competitiveness recommendations addressing both Business Development and Redevelopment. This implementation plan is intended to set up the economy of Coon Rapids for future success. Recommendations for implementation are categorized as short-term (within 1-3 years), medium term (3-5 years), long-term (more than 5 years), or ongoing policies.

Table 9-6: Economic Competitiveness Implementation

	Tool	Description	Time Frame
Business Development			
50	Annual Indicators	Produce annual reports on number/types of businesses, employees, wages, tax capacity, construction, retail sales, and other indicators of economic activity. Modify economic development policies to address the City's shortcomings.	Ongoing
51	Business Outreach	Visit existing industrial business to identify concerns and communicate City initiatives to the business community. Continue print and digital communications targeted toward businesses. Partner with Metro North Chamber of Commerce on quarterly Business Council meetings and explore other partnerships.	Ongoing
52	Business Targets	Target resources toward business with the greatest potential for creating wealth. Direct most City resources toward the primary targets and position the City to attract and retain both primary and secondary targets. Primary Targets: » Medical equipment and supplies manufacturing » Medical device manufacturing and related industries » Plastic product manufacturing » Instrument manufacturing » Metal working, machining, and specialized metals Secondary Targets: » Smaller data centers » Back office related to medical services and health care » Businesses creating skilled jobs at wage levels in excess of the metro area median	Ongoing
53	Financial and Technical Resources	Market available financial resources, such as SBA loans, revolving loan funds, industrial revenue bonds, tax abatement/tax increment financing, state resources, and technical assistance programs such as "Open to Business," to existing and new businesses. Continually evaluate incentive policies.	Ongoing
54	Revolving Loan Fund	Offer revolving loan funding to business capital costs using payments from past economic development loans. Loans should be directed toward businesses in the primary target areas and redevelopment projects in older commercial districts.	Ongoing
55	Workforce Development	Reinforce regional coalitions around regional talent development. Stay informed of workforce education and training programs and make connections between Anoka-Ramsey Community College and local businesses.	Ongoing
56	Land and Building Supply	Assess the City's land and building supply for job growth and facilitate land assembly in appropriate instances. Adopt small-area plans for redevelopment areas to ensure efficient land use and employment density. Periodically review zoning regulations to ensure consistency with target Industries and reflect changing business needs.	Ongoing
57	Tax-Increment Financing/Tax Abatement	Promote the use of tax-increment financing and tax abatement to assist with development and redevelopment of sites that are otherwise difficult to develop. Maintain business subsidy policies to guide use of TIF and tax abatement.	Ongoing
58	Regional Alignment	Clearly define roles of economic development organizations to avoid duplication and ensure consistency. Continue to build a City economic development brand in the context of regional branding and promotion.	Ongoing
59	Marketing	Maintain relationships with key real estate brokers and regional business and economic development organizations. Specific tactics include hosting commercial and residential real estate broker events and City participation in events such as the annual MNCAR Expo. Advertise available commercial and industrial land/buildings and business resources on the City's website.	Ongoing
60	Legislative Support	Seek support for legislation that would positively influence economic development in the city.	Ongoing

Redevelopment

	Tool	Description	Time Frame
61	Coordination with Anoka County	The City will coordinate the installation/maintenance of boulevard enhancements along Coon Rapids Boulevard, both in the interim and when the roadway is reconstructed.	Ongoing
62	Funding Options and Sources	The City will pursue funding sources for redevelopment and enhancement on the Coon Rapids Boulevard corridor.	Ongoing
63	Implement Coon Rapids Boulevard/East River Road Access Management Study	The City will work with Anoka County to implement the Access Management Strategy completed in 2010. This includes planning for eventual reconstruction of the roadway, elimination of several non-signalized intersections, and installation of landscaping and other aesthetic improvements.	Ongoing
64	Update and Implement PORT Master Plans	Focus redevelopment efforts and public improvements in PORT districts along Coon Rapids Boulevard.	Ongoing
65	Update River Rapids Overlay and PORT Zoning District Requirements	Increase the density for areas between the PORT districts to be consistent with the 2040 Plan's Future Land Use Map, disallowing intense commercial uses, eliminating floor area maximums, and streamlining the approval process for development projects.	Short-term
66	Sidewalks/Trails	Provide continuous sidewalks/trails on both sides of the entire length of Coon Rapids Boulevard, at least 5' wide on the north side and a 10' wide trail, where feasible, on the south side. Enhance pedestrian crossings with colored concrete and modify traffic signals to include pedestrian timers. Consider wider sidewalks in necessary locations.	Ongoing
67	Overhead Utilities	Remove, relocate or bury overhead utility lines along Coon Rapids Boulevard.	Ongoing
68	Streetscape	Work with Anoka County to implement streetscape improvements along the Coon Rapids Boulevard corridor. The streetscape plan may include streetlights, boulevard and median trees, planters, pedestrian enhancements, and bus shelters along the length of the corridor.	Medium-term
69	Frontage Roads	Maintain system of frontage roads to ensure adequate circulation as non-signalized accesses to Coon Rapids Boulevard are removed. Encourage relocation of frontage roads to rear of new large scale developments, where circulation and access to existing businesses is not affected.	Ongoing
70	Roadway Reconstruction/Noise Walls	Work with Anoka County to eventually reconstruct the roadway in accordance with the Coon Rapids Boulevard/East River Road Access Management Study. Avoid triggering requirement for noise walls when roadway is reconstructed.	Long-term
71	Realign Coon Rapids Boulevard Extension	Explore feasibility of a connection over Coon Creek between Coon Rapids Boulevard Extension and Avocet Street.	Long-term
72	Facilitate Specific Redevelopment Projects	Facilitate public or private assembly and redevelopment of blighted or underutilized parcels along Coon Rapids Boulevard as they become available. Continue HRA initiated development in PORT districts.	Ongoing
73	Other Redevelopment Areas	Assess the condition of properties along other older commercial corridors and use the City's HRA to facilitate redevelopment.	Ongoing

Mississippi River Corridor Critical Area (MRCCA) Protection

Table 9-7 lists the implementation actions for the river corridor within Coon Rapids. Short term actions are estimated to be implemented within about three years, medium term actions within three to ten years and long term actions in more than ten years.

Table 9-7: MRCCA Implementation

	Tool	Description	Time Frame
Districts and Land Use			
74	Education and Outreach	The City will ensure that information about the districts and zoning requirements is readily available to the public.	Short-term
75	Ordinance Updates	The City will update its local ordinances to reflect goals and policies of this plan and federal and state requirements, as well as its zoning map to show new MRCCA districts.	Short-term
Primary Conservation Areas (PCAs)			
76	Education and Outreach	The City will ensure that information on the location of PCAs, PCA-relevant ordinance requirements, and the procedure for submitting applications with potential impacts to PCAs are readily available to the public on the city website. The City will also include updates and changes to ordinance provisions in the city newsletter, website and social media accounts.	Short-term
77	Ordinance Updates	The City will develop procedures for evaluating land use applications for impacts to PCAs as well as procedures for determining appropriate mitigation and procedures for integrating DNR and local permitting of riprap, walls, and other hard armoring. The City will also establish evaluation criteria for protecting PCAs when a development site includes multiple types of PCAs and the total area of the PCAs exceeds the required set aside percentages.	Short-term
Public River Corridor Views (PRCVs)			
78	Education and Outreach	The City will ensure that information on the location of PRCVs, PRCV-relevant ordinance requirements, and the procedure for submitting applications with potential impacts to PRCVs are readily available to the public on the city website. The City will also specify how it will communicate vegetation management ordinance provisions to property owners, as well as actively communicating with other communities to protect views other communities have identified that are valuable (and vice versa).	Short-term
79	Ordinance Updates	The City will specify procedures for evaluating land use applications for impacts to PRCVs as well as procedures/methods for determining appropriate mitigation. The City will also develop administrative procedures for evaluating developmental impacts to PRCVs, as well as a visual analysis approach for evaluating CUPs for additional height in the RTC districts for PUDs and variances.	Short-term
Restoration Priorities			
80	Education and Outreach	The City will implement an outreach strategy to notify and educate property owners about restoration priorities and what it means if a restoration priority area exists on their property.	Medium-term
81	Ordinance Updates	The City will 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. Site plan review procedures to ensure consideration of restoration priorities identified in the MRCCA plan in all development requests. Processes for evaluating restoration priorities identified in this plan in land use application processes.	Medium-term

Water-Oriented Uses			
82	Ordinance Updates	The City will amend ordinances to provide for water-oriented/river-dependent uses, and will incorporate consideration of surface water impacts into the review process for water-oriented uses.	Short-term
Open Space & Recreational Facilities			
83	Capital Improvements	Anoka County will implement the renovations and upgrades it has planned for Coon Rapids Dam Regional Park, as well as continuing to maintain the Park and the portion of the regional trail system within the Park.	Long-term to Ongoing
84	Monitoring	The City will develop a system for reviewing, tracking, and monitoring open space as part of the subdivision process.	Ongoing
Transportation & Public Utilities			
85	Capital Improvements	Improvements to streets and sidewalks within the MRCCA are part of the general City street and sidewalk improvement program.	Ongoing
86	Ordinance Updates	The City will incorporate specific protective measures for the design and placement of essential or transmission services within local government jurisdiction. Such structures will minimize impacts to PCAs and PRVCs	Ongoing

Capital Improvement Program

The city of Coon Rapids does not have an adopted Capital Improvement Program (CIP). Therefore, a CIP cannot be provided as part of the 2040 Plan. While no formal CIP exists, this section lists capital improvements relevant to the 2040 Plan.

Transportation

» The City will undertake maintenance, including plowing and sweeping, of its part of the regional transportation system

» The City will construct trails and sidewalks where the plan calls for regional systems to be extended or gaps to be filled

Wastewater

» The City will use its capital budget, operations and maintenance budget, and City ordinances and regulations to implement its wastewater plan. The City will focus on lining RCP pipe, lift station upgrades, VCP service connections, inflow/infiltration mitigations, and televising and cleaning of existing sewer pipe in the long term.

Parks & Open Space

» Large scale rehabilitation or development of park space, as well as acquisition of land for trail expansion, will be done through the City's capital improvement program. Major improvements envisioned include the following:

1. Trail connection in the vicinity of Kennedy Park to link the 85th Avenue trail to the Mississippi Regional Trail providing connections to Coon Rapids Dam Regional Park
2. Construct a Coon Creek Regional Trail segment from Lions Coon Creek Park across Hanson Boulevard and extend to the west.
3. Upgrade or redevelop neighborhood parks that have not been upgraded in recent years.

» Complete all remaining segments of the Coon Creek Regional Trail, including a grade separated crossing of Coon Rapids Boulevard and improved crossing of Northdale Boulevard.

MRCCA Open Space & Recreational Facilities

» Anoka County will implement the renovations and upgrades it has planned for Coon Rapids Dam Regional Park

» The County will maintain the Park and the portion of the regional trail system within the Park

TURBAC JACK'S
Daily Ridiculous

LOCAL SURFACE WATER MANAGEMENT PLAN

CITY OF COON RAPIDS, MN

FINAL: September 2018

WSB Project No. 01431-600

Title Page

Certification

Table of Contents

SECTION 1: EXECUTIVE SUMMARY

SECTION 2: LAND AND WATER RESOURCE INVENTORY

SECTION 3: AGENCY COOPERATION

SECTION 4: ASSESSMENT OF PROBLEMS AND CORRECTIVE ACTIONS

SECTION 5: GOALS AND POLICIES

SECTION 6: IMPLEMENTATION PROGRAM

SECTION 7: FINANCIAL CONSIDERATIONS

SECTION 8: AMENDMENT PROCEDURES

SECTION 9: GLOSSARY

LIST OF APPENDICES

Appendix A – Figures

Figure 1: Location Map

Figure 2: Watershed Districts

Figure 3: Soils

Figure 4: Existing Land Use

Figure 5: Proposed Land Use

Figure 6: Wetlands and Lakes

Figure 7: Subwatershed Drainage Areas

Figure 8: Stormwater Infrastructure

Figure 9: Water Quality Monitoring

Figure 10: Groundwater Protection Areas

Figure 11: Surface Water and Groundwater Interaction

Figure 12: Trail System

Figure 13: MRCCA

Figure 14: MLCCS

Figure 15: Natural Resources

Figure 16: FEMA Flood Zones

Figure 17: Issue Locations

Figure 18: Drainage Sensitive Land

Appendix B – Relevant City Ordinances

Appendix C – MS4 Documents

Appendix D – Wetland Management Plan

Appendix E – Engineering Design Standards for Stormwater Management

Appendix F – Pond Aesthetic Treatment Reference Documents

Appendix G – Water Resource Related Agreements

Appendix H – Goose Management Plan

Appendix I – Coon Creek Watershed District Rules & DWSMA Infiltration Requirements

Appendix J – Wellhead Protection Plan (WHPP)

1. EXECUTIVE SUMMARY

1.1. Local Surface Water Management Plan Purposes

This Local Surface Water Management Plan (Surface Water Management Plan, LSWMP, SWMP, City plan, the plan) will serve as a comprehensive planning document to guide the City of Coon Rapids in conserving, protecting, and managing its surface water resources. This plan has been created to meet the requirements detailed in Minnesota Statutes 103B and Minnesota Rules 8410, administered by the Minnesota Board of Water and Soil Resources. This plan is also consistent with the goals and policies of the Metropolitan Council's *Water Resources Management Policy Plan*, and the watershed district having jurisdiction within the City: Coon Creek Watershed District. This plan may be periodically amended to remain current with local practices and policies. The purposes of the water management programs are to:

- Protect, preserve, and use natural surface and groundwater storage and retention systems;
- Minimize public capital expenditures needed to correct flooding and water quality problems;
- Identify and plan for means to effectively protect and improve surface and groundwater quality;
- Establish more uniform local policies and official controls and strive for regional uniformity in surface and groundwater management;
- Prevent erosion of soil into surface water systems;
- Identify the unique connection between surface water and groundwater and look for opportunities to promote groundwater recharge, where beneficial;
- Protect and enhance fish and wildlife habitat and water recreational facilities; and
- Secure the other benefits associated with the proper management of surface and groundwater.

The Coon Rapids Local Surface Water Management Plan addresses these purposes.

1.2. Executive Summary

The Coon Rapids Local Surface Water Management Plan is organized as follows:

- ***Section 1 Executive Summary*** provides background information and summarizes the plan contents.
- ***Section 2 Land and Water Resource Inventory*** details the physical setting including the history, natural resources, and land uses within the City.
- ***Section 3 Agency Cooperation*** outlines other governmental controls and programs that affect stormwater management.
- ***Section 4 Assessment of Problems and Corrective Actions*** presents the City's water management related problems and issues.
- ***Section 5 Goals and Policies*** outlines the City's goals and policies pertaining to water management.
- ***Section 6 Implementation Program*** presents the implementation program for the City of Coon Rapids, which includes defining responsibilities, prioritizing, and listing

the program elements.

- ***Section 7 Financial Considerations*** outlines the continued administration of this plan with respect to plan updates and amendments.

- ***Section 8 Amendment Procedures*** discusses the procedures to be followed if this plan is amended.

- ***Section 9 Glossary*** provides a list of commonly used terms from the plan.

- ***Appendices*** are included in the back of the plan. These documents are included because they provide supporting information to the main body of the plan, are useful information, and/or are required to be included in this plan update. Direct website links to relevant reports or documents are provided throughout the report as appropriate.

    - Appendix A – Figures
    - Appendix B – Relevant City Ordinances
    - Appendix C – MS4 Documents
    - Appendix D – Wetland Management Plan
    - Appendix E – Engineering Design Standards for Stormwater Management
    - Appendix F – Pond Aesthetic Treatment Reference Documents
    - Appendix G – Water Resource Related Agreements
    - Appendix H – Goose Management Plan
    - Appendix I – Coon Creek Watershed District Rules & DWSMA Infiltration Requirements
    - Appendix J – Wellhead Protection Plan (WHPP)

1.2.1. Summary of Water Resource Related Problems and Corrective Actions

Three of the City's top water resource related priorities are mitigating and preventing flooding, maintaining City assets and aging infrastructure, and addressing water quality requirements. Several waterbodies within the City have been listed as impaired waters and have Total Maximum Daily Loads (TMDLs) associated with them. The City will implement Best Management Practices (BMPs), as feasible, to address the TMDLs. There are localized flooding concerns throughout the City, which will be addressed by priority and if applicable, with street reconstruction projects. As flooding concerns are raised, the City will investigate and address issues. The City will look for project partnership opportunities with CCWD and other agencies as available.

To help prioritize projects related to water quality, flooding, and aging infrastructure maintenance, the City will continue to develop their CIP and will use the Implementation Table in **Section 6** of this Plan. Additional information on the City's water resource related problems and corrective actions can be found in **Section 4**.

1.3. Personnel Contacts

To implement this plan, a coordinated water resource management approach must be used. This approach utilizes the services of personnel within the City and surrounding communities, as well as personnel associated within Coon Creek Watershed District (CCWD) and Anoka Conservation District (ACD).

The primary implementation responsibility will lie with the appropriate staff members at the City. Assistance from the surrounding municipalities, CCWD, and ACD will also be expected. Outlined below is the contact information of personnel having responsibilities for overseeing or implementing various aspects of this Local Surface Water Management Plan.

City of Coon Rapids
Tim Himmer, Director of Public Works
Mark Hansen, Assistant City Engineer
11155 Robinson Drive NW
Coon Rapids, MN 55433
(763) 767-6479

Coon Creek Watershed District
Tim Kelly, District Administrator
12301 Central Avenue NE, Suite 100
Blaine, MN 55434
(763) 755-0975

Anoka Conservation District
Jamie Schurbon, Watershed Projects Manager
1318 McKay Drive NE, Suite 300
Ham Lake, MN 55304
(763) 434-2030

Minnesota Department of Natural Resources
Jason Spiegel, North Metro Area Hydrologist
Ecological and Water Resources
1200 Warner Road
St. Paul, MN 55106
(651) 259-5822
Email: jason.spiegel@state.mn.us

2. LAND AND WATER RESOURCE INVENTORY

2.1. Location and History

The City of Coon Rapids is located along the Mississippi River in the northern portion of the Twin Cities metropolitan area, primarily within southern Anoka County as shown on **Figure 1, Appendix A**. The City has a total area of approximately 23.3 square miles. There are several major transportation corridors within Coon Rapids – State Highway 47, State Highway 610, and U.S. Highway 10.

Coon Rapids is considered a developed community by the Metropolitan Council. Development that is expected to occur is at a steady growth rate and the seventh largest within the Twin Cities metropolitan area. **Table 2.1** shows the current and projected population through 2040.

Table 2.1 Coon Rapids Population

Year	Population	Households
2010	61,476	23,532
2016	62,726	24,235
2020	64,800	25,500
2030	68,400	27,500
2040	72,100	29,300

Sources: Metropolitan Council Population/Household Estimates

2.2. Physical Setting

2.2.1. Topography and Geology

The topography of the City can be described as gently rolling, with steeper areas near the Mississippi River. Storm water runoff from the City of Coon Rapids is generally directed from the northeast to the southwest into the Mississippi River.

The 2004 SWMP lists the City as being part of three regulating watersheds: Coon Creek Watershed District (CCWD), Lower Rum River Watershed Management Organization (Lower Rum WMO), and Six Cities Watershed Management Organization (Six Cities WMO). The Six Cities WMO was disbanded in 2011 and CCWD assumed watershed management responsibilities for parts of areas within Blaine, Coon Rapids, Fridley, and Spring Lake Park. CCWD also took over responsibility for the areas of Coon Rapids formally shown to be in the Lower Rum River WMO in 2013. As of today, the entire City is within the Coon Creek Watershed District. **Figure 2, Appendix A** shows the extent of the watershed districts. Specific drainage patterns are discussed in **Section 2.3.3**. As can be observed from the subwatershed delineation map, the City of Coon Rapids is divided into many small watersheds. The subwatershed delineations were created using City topographic mapping, storm sewer as-builts, aerial photos, and field investigations.

The Anoka Sand Plain Regional Hydrogeologic Assessment indicates that the geomorphology of the City is comprised of postglacial deposits that consist of peat and organic-rich sediment and Grantsburg Sublobe Deposits, which consist of very fine to medium sand and minor silt. The Anoka Sand Plain has an overall very high geologic sensitivity for surface water to reach the uppermost aquifer level. Additional information on the Anoka Sand Plain Regional Hydrogeologic Assessment can be found in the University of Minnesota digital library.

According to the Bedrock Geologic Map and Bedrock Topographic Map of the Seven-County

Twin Cities Metropolitan Area (Minnesota Geologic Survey 1986), the initial bedrock formations include St. Lawrence and Franconia formations, as well as Jordan sandstone, and the bedrock can vary from 600 to 700 feet above sea level.

Additional geological information can be found in the *Anoka County Geologic Atlas* located on the Minnesota DNR website.

2.2.2. Soils

The Soil Conservation Service (SCS) published the *Soil Survey of Anoka County Minnesota* in 1980. The *Soil Survey* provides mapping and physical properties for soil types found in Coon Rapids. The *Soil Survey* was added to the Soil Survey Geographic (SSURGO) Database in 2005, providing digital access to the information.

The City of Coon Rapids is entirely within the Anoka Sand Plain. Soils within this area generally have high infiltration rates and are a benefit for stormwater management. However, quick infiltration rates allow for unrestricted water movement through the soils without removing contaminants. This can create an increased susceptibility to ground water contamination. The hydrologic soil classification map is shown in **Figure 3, Appendix A**. The four soil classifications are defined as follows per the Minnesota Stormwater Manual:

> **Group A –** These soils have high infiltration rates even when thoroughly wetted. The infiltration rates range from 0.8 to 1.63 inches per hour. These soils consist chiefly of deep, well drained to excessively drained sands and gravel. Group A soils have a high rate of water transmission, therefore resulting in a low runoff potential.
>
> **Group B –** These soils have moderate infiltration rates ranging from 0.3 to 0.45 inches per hour when thoroughly wetted. Group B soils consist of deep moderately well to well drained soils with moderately fine to moderately coarse textures.
>
> **Group C –** These soils have slow infiltration rates ranging from 0.06 to 0.2 inches per hour when thoroughly wetted. Group C have moderately fine to fine texture.
>
> **Group D –** These soils have very slow infiltration rates ranging from 0 to 0.06 inches per hour when thoroughly wetted. Group D soils are typically clay soils with high swelling potential, soils with high permanent water table, soils with a clay layer at or near the surface, or shallow soils over nearly impervious material.

Roughly one-half of the City consists of Hubbard-Nymore association. This association is mainly a nearly level to gently sloping outwash plain that is dissected by drainageways and pitted by large depressions. This association contains mostly Group A soils.

The remainder of the City consists of Zimmerman-Isanti-Lino association. These soils are nearly level to undulating, excessively drained, somewhat poorly drained, and very poorly drained soils that are dominated by fine sands throughout. This association contains a mixture of Group A and B soils.

2.2.3. Climate and Precipitation

The climate within the Twin Cities Metropolitan Area is typical of a humid continental climate with moderate precipitation and wide daily temperature variations. Without the buffering influence of large bodies of water, cold winters and hot summers predominate. An area where climate change has been recorded in the Twin Cities is in rainfall intensities and rainfall depths. The Metropolitan Area has seen more intense rainfalls the last two decades and even the average rainfalls are shown to be more intense.

The total average annual precipitation in the Metropolitan Area is approximately 30.6 inches recorded over a 30-year period from 1981-2010. The total average annual snowfall is approximately 54.4 inches. Additional climatological information for the area can be obtained from the Minnesota State Climatology Office website..

Rainfall frequency estimates are used as design tools in water resource projects. Rainfall frequencies are summarized in *Technical Paper No. 40, Rainfall Frequency Atlas of the United States*, published by the U.S. Weather Bureau in 1961. This document was updated in 2013. Atlas 14 is the new document used as reference for rainfall frequencies. It has been adopted by the City and CCWD in their respective stormwater management rules. The annual probability percentage is the chance of each rainfall event occurring in a given year. **Table 2.2** lists rainfall frequencies for Coon Rapids.

Table 2.2 Atlas 14 Rainfall Depths and Frequency

Recurrence Interval (yrs)	24-hr Rainfall Depth (in)	Annual Probability
1	2.5	99%
2	2.9	50%
5	3.6	20%
10	4.3	10%
25	5.3	4%
50	6.2	2%
100	7.2	1%

The City of Coon Rapids uses the 10-year storm event for storm sewer design and the 100-year storm event for storage/ponding requirements and evaluating freeboard.

Additional precipitation information for the area can be obtained from the National Oceanic and Atmospheric Administration (NOAA) website.

2.2.4. Land Use

The City's existing land use practices include residential, commercial, industrial, and private and public open spaces. The majority of the City is single family residential with areas of commercial development along Coon Rapids Boulevard, Highway 10, and to the northwest of the City along Main Street and Riverdale Boulevard. **Figure 4, Appendix A** shows the existing land use for Coon Rapids. Existing land use data was analyzed from the Metropolitan Council Generalized Land Use dataset published in 2016.

Most of the residences and businesses are served by public water and sewer systems. The City still has some Individual Sewage Treatment Systems (ISTS), although these numbers are dwindling. These are anticipated to be abandoned and converted to City services within the next ten years, as feasible. The City's Wellhead Protection Plan (WHPP) describes the approach to handling existing ISTS in more detail. The WHPP can be found in **Appendix J**.

The City's proposed land use plan is currently being updated with the 2040 Comprehensive Plan. This is expected to be complete by the end of 2018. The Land Use Plan is central to the Comprehensive Plan. It guides how specific properties might develop. **Figure 5, Appendix A** shows the guided Land Use Plan for the current Comprehensive Plan Update, which projects land use to the year 2040 and becomes the basis of important local and regional planning decisions made by the City and outside agencies such as Metropolitan Council. According to state law, development proposals must conform to the land use plan or an amendment to the land use plan must be sought.

Land use data is an important factor for estimating surface water runoff. The hard or impervious

surface areas associated with each land use greatly affect the amount of runoff generated from an area. Future land use projections indicate areas that may be available for water resource enhancement and where improvements should be a priority. Significant changes in land use can increase runoff due to added impervious surfaces. However, changes in land use also allow for the construction of stormwater BMPs.

2.3. Water Resources Data

2.3.1. Wetlands

In 2005, the City completed a Wetland Management Plan that assessed approximately 260 water bodies using the Minnesota Routine Assessment Method (MnRAM). The Coon Creek Watershed District now serves as the Local Government Unit (LGU) for the Wetland Conservation Act (WCA) within the City. Regardless of the LGU, Minnesota's statutory wetland protection standards mean uniform wetland protection throughout the City. Wetlands and lakes under DNR jurisdiction have an added level of protection.

Wetlands provide several valuable functions. They are a critical part of the natural storm drainage system, help maintain water quality, reduce flooding and erosion, provide food and habitat for wildlife, and provide open spaces and natural landscapes for residents. Thus, wetlands are important physical, educational, ecological, aesthetic, recreational, and economic assets to the City. **Figure 6, Appendix A** presents the National Wetland Inventory (NWI) for Coon Rapids. The NWI map provides guidance on where wetlands occur in the City, though the NWI wetland boundaries cannot replace wetland delineations for determining legal wetland boundaries.

Coon Rapids seeks to use its wetlands as part of a natural stormwater drainage system while preserving the function and values of these wetlands. Using wetlands as part of the storm drainage system improves water quality, reduces flooding and erosion, and, in some cases, involves the restoration of previously drained wetland basins.

This involves balancing function and values against the City's need for economical implementation of its flood control system. Increases in water level, water level fluctuations or inundation times can change wetland characteristics. Though the WCA does not preclude these changes, the Minnesota Pollution Control Agency (MPCA) does not allow for inundation of wetlands or discharge to wetlands that cause an adverse impact. When considering wetland impacts, the watershed uses a function and values approach which means the type of wetland mitigation, not just the mitigation area, becomes important.

2.3.2. Major Water Bodies

There are several major water bodies that convey and store water within and through the City. These water bodies are the Mississippi River and associated wetlands, Coon Creek, Pleasure Creek, Springbrook Creek, Sand Creek, Crooked Lake, Cenaiko Lake, and McKay Lake. Most of these major water bodies are classified under the DNR Protected Waters. A DNR Protected Water is defined as those lakes, wetlands, and watercourses over which the DNR Division of Waters has regulatory jurisdiction. Protected Waters are designated based on the following, as defined in Minnesota Statute 103G.005, Subdivision 15:

- Water basins assigned a shoreline management classification by the commissioner, under sections 103F.201 to 103F.221, except wetlands less than 80 acres in size that are classified as natural environment lakes;
- Waters of the state which have been finally determined to be public waters or navigable waters by a court of competent jurisdiction;
- Meandered lakes, excluding lakes that have been legally drained;

- Water basins previously designated by the commissioner for management for a specific purpose such as trout lakes and game lakes pursuant to applicable laws;
- Water basins designated as scientific and natural areas under Section 84.033;
- Water basins located within and totally surrounded by publicly owned lands;
- Water basins where the State of Minnesota or the federal government holds title to any of the beds or shores, unless the owner declares that the water is not necessary for the purposes of the public ownership;
- Water basins where there is publicly owned and controlled access that is intended to provide for public access to the water basin;
- Natural and altered watercourses with a total drainage area greater than 2 square miles in area;
- Natural and altered watercourses designated by the commissioner as trout streams; and
- Public waters wetlands, unless the statute expressly states otherwise.

Public Waters Wetlands are all types 3, 4, and 5 wetlands as defined in United States Fish and Wildlife Service (USFWS) Circular No. 39 (1971 edition), not included within the definition of public waters, that are ten or more acres in size in unincorporated areas or 2.5 acres or more in incorporated areas.

Figure 6, Appendix A shows the locations of these water bodies.

2.3.3. Drainage Systems

The primary conveyance for all drainage districts is an extensive system of ditches and pipe infrastructure. **Figure 7, Appendix A** shows the City's subwatershed drainage areas and ditch system. The runoff generated in the City is routed to numerous public ditch systems, which all ultimately discharge to the Mississippi River. These ditch systems are largely intact, although some have been replaced with storm sewer and interconnected chains of ponds. The storm sewer infrastructure and ponds are shown in **Figure 8, Appendix A**. CCWD serves as the public ditch authority in the City. The City also has an agreement with CCWD that the watershed district will inspect various City-owned ditches.

2.3.4. Hydrologic Modeling (Water Quantity)

The City's hydrologic/hydraulic system consists of the Mississippi River, Coon Creek, Sand Creek, Pleasure Creek, Springbrook Creek, as well as other lakes, ponds, wetlands, and storm sewer pipe systems. As part of the 2004 SWMP, a modeling effort was completed for the City. Results of this model can be requested from the City. The area was divided into 13 subwatershed areas and was modeled for the 2-year, 10-year, and 100-year rainfall events. The City's model was replaced by the current CCWD district-wide hydrologic model. CCWD recently created a district-wide XPSWMM model to better assess floodplain risks and BMP capacity/performance. This model incorporated Atlas 14 storm events and is available from the District. The CCWD model is the most current for Coon Rapids and includes stormwater discharge rates and storage volumes. Model results can be requested from CCWD. The City will consider completing an assessment of the adequacy of available storage using CCWD's model as a starting point.

2.3.5. Monitored Water Quality and Quantity Data

The City will continue to support monitoring of surface waters within its jurisdictional boundaries

and outside these boundaries for waters to which the City discharges. Data will be obtained through cooperation and coordination with other various agencies, including the Minnesota Pollution Control Agency, cities adjacent to Coon Rapids, the Metropolitan Council, the Minnesota Department of Natural Resources, Coon Creek Watershed District, Anoka Conservation District and Three Rivers Park District.

Figure 9, Appendix A shows monitoring stations located within the City. Other water quality information can be found from CCWD, Metropolitan Council, ACD and the MPCA on the following websites:

- Coon Creek Watershed District Water Quality Research & Monitoring webpage.
- Metropolitan Council monitoring information, including the Citizen-Assisted Monitoring Program (CAMP), can be found on the Water Quality Management webpage.
- Anoka Conservation District Monitoring webpage.
- Minnesota Pollution Control Agency's Citizen Lake Monitoring Program (CLMP) webpage.

In 2005, Coon Rapids created a P8 model for existing and future water quality within the City. The results of the P8 water quality modeling effort can be requested from the City.

The City's 2005 P8 model has not been updated as part of this plan effort. To effectively monitor Best Management Practice (BMP) performance and water quality, the City of Coon Rapids has considered adopting the Stormwater Asset Management Program (SWAMP). This program uses construction as-builts, pond inventory, drainage areas, field inspections, and storm sewer maps to rank BMPs based on cost/benefit pollutant removal efficiency. Basins are prioritized based on a set of parameters and a schedule can be determined for maintenance needs. The program is continually updated to include new BMPs, updated stormwater infrastructure, or changed drainage areas. The City will be able to incorporate SWAMP to include the following:

- Scheduling, tracking, and storing MS4 infrastructure inspections
- Budgeting stormwater inspection and maintenance activities
- Tracking TSS and TP load reductions
- Prioritizing inspection and maintenance activities through a ranking system
- Providing information to the public on BMP maintenance priorities and schedules
- Demonstrating compliance for written procedure and treatment effectiveness requirements as part of the MS4 permit

The SWAMP will be done in coordination with the CCWD to remain consistent with their Total Maximum Daily Load (TMDL) and Watershed Restoration and Protection Strategies Report (WRAPS) studies and other water quality reports.

2.3.6. Impaired Waters

The MPCA is required to publish a list of impaired waters, these are lakes and streams in the state that are not meeting federal water quality standards. For each water body on the list, the MPCA is required to conduct a study to determine the allowable TMDL for each pollutant that exceeds the standards. Impaired waters in Coon Rapids, or those receiving discharge from Coon Rapids, are summarized in Table 2.3 below.

Table 2.3 – 2018 303(d) Listed Impaired Waters

Impaired Water	Affected Use	Pollutant	Year Added	TMDL Status
Crooked Lake (02-0084-00)	Aquatic Consumption	Mercury in Fish Tissue	2008	Complete
Coon Creek (07010206-530)	Aquatic Life, Aquatic Recreation	Invertebrate Index of Biotic Integrity, E. coli	2006, 2014	Complete
Sand Creek (07010206-558)	Aquatic Life, Aquatic Recreation	Invertebrate Index of Biotic Integrity, E. coli	2006, 2016	Complete
Springbrook Creek (County Ditch 17) (07010206-557)	Aquatic Life, Aquatic Recreation	Invertebrate Index of Biotic Integrity, E. coli	2006, 2014	Complete
Pleasure Creek (07010206-594)	Aquatic Life, Aquatic Recreation	Invertebrate Index of Biotic Integrity, E. coli	2006, 2014	Complete
Mississippi River (07010206-805)	Aquatic Consumption, Aquatic Recreation, Aquatic Life	Mercury in Fish Tissue, E. coli, Excess Nutrients	2002, 2006, 2016	Mercury: Complete E. coli and Nutrients: Underway

The City does not currently have any required phosphorus load reductions for lakes from approved TMDL studies. The 2007 Mercury TMDL is a statewide effort to reduce mercury for fish consumption. In 2016, the Coon Creek Watershed TMDL and WRAPS reports were approved. These reports designate categorical load reductions for Coon Creek, Sand Creek, Pleasure Creek, and Springbrook Creek based on specific flow zones. Sand Creek, Pleasure Creek, and Springbrook Creek were also listed in the Twin Cities Metro Area Chloride TMDL as High Risk Streams having at least one chloride concentration value within 10% of exceeding the water quality standard. These streams are a top priority for chloride reduction efforts for the City and CCWD.

The City will be required to update this surface water management plan to incorporate the findings of any additional approved TMDL study and will also be required to amend their MS4 permit and Storm Water Pollution Prevention Plan. This must be done within 18 months of the approved TMDL date.

2.3.7. Groundwater

The City of Coon Rapids, along with the Minnesota Department of Health (MDH) and Anoka County Environmental Services, developed a Wellhead Protection Plan (WHPP) that delineates drinking water supply management areas and wellhead protection areas. The City has adopted Part 1 of the WHPP, with Part 2 being completed by the spring of 2018. **Figure 10, Appendix A** shows the drinking water supply management areas (DWSMA) for the City, a few of which are generally described below. The DWSMA vulnerability is determined using geologic, soils and groundwater chemistry information. Additional information on the DWSMA vulnerability can be found in the WHPP in **Appendix J**.

Within the City, groundwater wells serve the City and private water needs. Each of these wells has a ground water appropriation permit from the DNR. **Figure 10, Appendix A** also shows the locations of the DNR permitted ground water appropriation sites within the City. Specific information related to each of these permits can be found on the DNR Water Use Permits webpage.

The City's WHPP describes the locations of these wells and how the vulnerability areas were delineated.

The City will be required to incorporate the requirements of the WHPP into their Stormwater Pollution Prevention Program (SWPPP) for areas located within vulnerable source water protection areas (NPDES MS4 General Permit). Vulnerable Source Water Protection areas are those areas susceptible to contamination of the water supply from activities at the land surface and are based on the following three components: geologic sensitivity, well construction maintenance and use, and water chemistry and isotopic composition.

For areas of vulnerability, the City will incorporate the guidance developed by the MDH on evaluating proposed stormwater infiltration projects in vulnerable source water protection areas. The City will also incorporate the guidance located within the Minnesota Stormwater Manual on designing infiltration BMPs while protecting groundwater and the wellhead protection standards set by CCWD. The full CCWD rules and infiltration requirements for groundwater protection can be found in **Appendix I.** The groundwater protection requirements will be of a particular concern in areas where infiltration is being considered in soils suitable for rapid infiltration adjacent to municipal and private wells.

Figure 11, Appendix A shows the surface water/groundwater interaction as analyzed by regional screening performed by the Met Council in their report, Evaluation of Groundwater and Surface-Water Interaction: Guidance for Resource Assessment. The Council intends on completing this process again in the future as new information becomes available.

2.3.8. Public Areas for Water Based Recreation and Access

There are a number of water bodies that provide both active recreation, such as fishing and boating, and passive recreation, such as walking. These recreational resources are outlined below:

Mississippi River: The Mississippi River provides boating, fishing, and hiking opportunities within the City. The Mississippi River is also a State Canoe Route operated by the DNR Division of Trails and Waterways.

Crooked Lake: A fishing pier and beach area are located at Crooked Lake. The beach has been closed since the early 1980s and will likely not reopen in the near future. Crooked Lake Park is to be reconstructed in 2018.

Coon Creek: Coon Creek runs through Lions Coon Creek Park, Erlandson Park, Robinson Park, Al Flynn Park, and Coon Rapids Dam Regional Park. The creek is encompassed by an expansive regional trail system with many local trail and accesses as well.

Coon Rapids Dam Regional Park: The Coon Rapids Dam Regional Park is located at the old dam site on the Mississippi River and is owned and maintained by Three Rivers Park District. The facility contains a boat and canoe launch, trails along the river, environmental education programs, and dam walkway and overlook. The Mississippi River is also a State Canoe Route operated by the DNR Division of Trails and Waterways.

Bunker Hills Regional Park: Bunker Hills Regional Park is located in northeastern Coon Rapids and provides a variety of passive recreational opportunities such as hiking and nature observation. Bunker Hills also has a City-owned golf course that will be adding drought-tolerant species to reduce irrigation needs.

Additional information regarding recreational opportunities within the City is available in the Parks, Open Space, and Trail System Plan found on the City's website. **Figure 12, Appendix A** shows the current City and regional trails along with the public and private ditches and park areas.

2.4. Natural Resources Data

2.4.1. Fish and Wildlife Habitat

Coon Rapids provides habitat for a variety of small mammals, reptiles, birds, amphibians, and insects. Maintenance of habitat for wildlife species is important in maintaining ecological stability in Coon Rapids' natural areas. The wetland inventory found in the City's Wetland Management Plan assesses a number of wetland functions such as floral diversity, wildlife habitat, and fisheries habitat for each wetland.

The DNR Natural Heritage database indicates there is a variety of unique fish and wildlife habitat within the City, much of which is located in Bunker Hills Regional Park, Coon Rapids Dam Regional Park, and along the Mississippi River, which is within the area designated as the Mississippi River Critical Area Corridor.

Additionally, Crooked Lake and Cenaiko Lake have been stocked with fish by the DNR with Cenaiko Lake being used as a trout fishery. The Crooked Lake Management Plan provides additional information about its lake management strategies. Pleasure Creek has a Rough Forage classification and the Mississippi River contains a variety of fish species.

The United States Geological Survey completed a study entitled "Water Quality, Physical Habitat, and Fish-Community Composition in Streams in the Twin Cities Metropolitan Area, Minnesota 1997-98." This study looked at 13 streams in the Twin Cities area, including Coon Creek and Sand Creek within the City of Coon Rapids. This study found that total instream habitat was greatest in five of the streams, including Coon Creek. Fish species richness was the fourth highest in Coon Creek. Sand Creek ranked lower in species richness. The results of this study determined that fish-community composition appeared to be affected by percent of impervious cover in the watershed, water chemistry, water temperature, geomorphology, substrate, instream habitat, and migration barriers.

2.4.2. Mississippi River Corridor Critical Area

The Minnesota State Legislature enacted the Critical Areas Act in 1973 and an executive order (79-19) was signed in 1976 declaring the Mississippi River Corridor Critical Area (MRCCA).

The executive order states the following purposes for the Critical Area designation:

- 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;
- To prevent and mitigate irreversible damage to this state, regional and national resource;
- To preserve and enhance its natural, aesthetic, cultural, and historical value for the public use;
- To protect and preserve the river as an essential element in the national, state and regional transportation, sewer and water and recreational systems; and
- To protect and preserve the biological and ecological functions of the corridor.

In 1976, four corridor districts were established, corresponding to the following different types of land use along the Mississippi River: rural open space district, urban developed district, urban open space district, and urban diversified district. Each district has its own set of guidelines. The Critical Area Act requires that each city having jurisdiction over land within the Critical Area develop a Critical Area Plan. Executive Order 79-19 includes the rules and guidelines that each city must incorporate in its Critical Area Plan.

The City of Coon Rapids has developed a Mississippi River Corridor Area Overlay District as part of City ordinances. A copy of this ordinance can be found in **Appendix B**. Additional information can be found on the DNR website.

The City of Coon Rapids' MRCCA Rulemaking Districts are shown in **Figure 13**. This data was developed by the DNR.

2.4.3. MLCCS

The Minnesota Land Cover Classification System, or MLCCS, categorizes urban and built up areas in terms of land cover rather than land use. MLCCS serves as a tool for City staff to integrate natural area preservation into land planning, land use, and zoning decisions. The City is dominated primarily by developed area with herbaceous areas as the next highest land classification. The remaining areas are planted/cultivated land and forested areas north of the City and along the Mississippi River and various creeks. **Figure 14, Appendix A** shows MLCCS coverage for Coon Rapids.

2.4.4. Unique Features and Scenic Areas

The City of Coon Rapids has many natural areas, water bodies, and regional parks. These are generally near Coon Rapids' open space and park land. Some of these areas contain rare and endangered species and special habitats. The DNR has jurisdiction over these areas. Based on state statute, any work within these areas is required to meet DNR permit requirements

Bunker Hills Regional Park located in the northeast corner of the City is designated as a DNR conservation corridor and shows areas of outstanding biodiversity significance. The conservation corridors represent areas designated by the DNR to be protected and to provide restoration of key natural habitats. These corridors are to be used by local agencies to prioritize areas for conservation.

The area along the Mississippi River is also designated as a conservation corridor by the DNR. A large section is designated as having poor biodiversity significance. **Figure 15, Appendix A** provides the locations of rare and biological features and conservation corridors within Coon Rapids. This data was published in the Minnesota County Biological Survey by the DNR.

The City has no wild and scenic rivers as defined by the State.

2.5. Floodplain Management

FEMA completed the map modernization process for its Flood Insurance Study (FIS) and Flood Insurance Rate Maps (FIRMs) to identify flood risk within Anoka County in 2015. Any Letter of Map Amendment (LOMA) and Letter of Map Revision (LOMR) can be located on the mapping function of FEMA's website.

The City of Coon Rapids has developed Floodplain Management Regulations. A copy of these regulations can be found in **Appendix B**. These regulations generally prohibit uses or activities within the floodplain that include structures or fill or that obstruct flood flows or cause increased flood elevations.

CCWD recently completed an update to their district-wide floodplain model to incorporate Atlas 14 rainfall data. The CCWD model identifies certain properties within the 100-year floodplain that are inconsistent with FEMA's flood maps. **Figure 16, Appendix A** illustrates the FEMA flood zones for the City of Coon Rapids and lists these areas of concern are impacted by CCWD's model and not FEMA.

2.6. Water Resources Related Agreements

This section summarizes those water resources related agreements the City of Coon Rapids has established with other entities. The City of Coon Rapids also had numerous agreements with private property owners for BMP maintenance. Agreements can be found in **Appendix G** of this SWMP or can be requested from the City.

2.6.1. Agreement with the City of Blaine to Accept Pleasure Creek Drainage Study

The agreement describes the acceptance for the Pleasure Creek Drainage Study.

2.6.2. Joint Powers Agreement with the City of Anoka

The agreement is in regard to combining efforts towards construction of storm drainage facilities for the cities of Anoka and Coon Rapids.

2.6.3. City of Anoka Stormwater Drainage System Agreement

The agreement describes the combination of efforts towards construction of stormwater drainage facilities in Section 5, Township 31, Range 24 in Anoka County.

2.6.4. Agreement with Coon Creek Watershed District to Inspect and Assess Select Ditches

The agreement describes work performed by CCWD on behalf of the City to inspect and assess ditches lateral to Public Ditches and considered to be private drainage ditches. The City is responsible for maintaining creeks, which includes bank stabilization, culvert replacement, and deadfall removal within the City boundaries.

2.6.5. Agreements for Rain Garden Maintenance

CCWD and ACD have agreements with homeowners to maintain rain gardens that are installed in City right-of-way. Rain gardens or BMPs installed by the City as part of a public project are not required to have an operation and maintenance agreement with the watershed. The watershed requires operation and maintenance agreements on any privately maintained BMP.

2.6.6. Joint Powers Agreement with Coon Creek Watershed District for the Lower Sand Creek Corridor Restoration Project

The project involves stabilizing 4200 linear feet of actively eroding streambank to help reduce erosion, and enhancing the habitat in and adjacent to the channel along a ½-mile stretch of Sand Creek near its confluence with Coon Creek near Lions Park.

2.6.7. Agreements with the Minnesota Department of Transportation

- Authorized Joint Powers Agreement with MnDOT for acquisition of real estate for storm drainage purposes for Project 79-25 and MnDOT Project SP 0-217-TH610-333, April 1990.
- Approved Joint Powers Agreement with MnDOT for acquisition of Pleasure Creek Detention Pond, September 1985.
- Authorized Joint Powers Agreement with MnDOT for Foleywoods Trunk Storm Sewer, December 1985.

- Approved Cooperative Construction Agreement with MnDOT for Pleasure Creek Storm Water Detention Pond, May 1985.

2.6.8. Private Maintenance Agreements

The City has entered into multiple agreements with private property owners for pond and/or BMP maintenance. CCWD requires private maintenance agreements for any non-public stormwater infrastructure project.

3. AGENCY COOPERATION

There are a number of local, State, and Federal agencies that have rules and regulations related to local water management. The City recognizes the roles of these other agencies and will cooperate, coordinate, and when possible partner with these agencies. This section describes the City's current surface water management program and practices and identifies the agencies and organizations having roles in the City's management of these resources. **Table 3.1** summarizes the City's and other agencies' respective regulatory controls related to water resources management and protection.

Current regulations and policies that govern surface water management within Coon Rapids include the engineering design standards document, which has incorporated MIDS, and previous surface water management plans. **Table 3.1** summarizes the City's regulatory controls regarding surface water.

Table 3.1 – Regulatory Control

Official Control	Responsibility	Mechanism
Stormwater Management including MIDS standards and CCWD wellhead standards	City, CCWD	City Ordinance 8-1200 Surface Water Management, City adoption of MIDS, Engineering Design Standards for Stormwater Management
Erosion and Sediment Control	City, CCWD, MPCA	City Ordinance 11-1207.1 (9) Erosion and 8-1200 Surface Water Management
Shoreland	City, CCWD, DNR	City Ordinance 11-1100 Environmental District Regulations
Floodplain	City, CCWD, DNR, FEMA, USACE	City Ordinance 11-1101 Floodplain Management
Wetlands	CCWD as LGU, DNR, USACE, BWSR	Public Waters Rules (MnDNR). Section 404 of the Clean Water Act (USACE). WCA. City Ordinance 11-1102 Wetland Management
Illicit Discharge	City, CCWD	City Ordinance 13-1400 Illicit Discharges and Connections to the Stormwater System
Wellhead and Source Water Protection	City, MDH, MPCA, DNR, CCWD, EPA	Coon Rapids Wellhead Protection Plan; Minnesota Rules Chapters 4720, 4725, and 1031.101; Federal Safe Drinking Water Act
Grading and Drainage – required for work involving more than 50 cubic yards of material or land disturbance greater than 5,000 square feet	City Grading Permit, CCWD	City Ordinance 8-1200 Surface Water Management
**Acronyms are defined in the sections below*		

Additional City ordinances relevant to surface water management include:

- 11-1001 Mississippi River Corridor Critical Area Overlay District
- 13-500 On-Site Sewage Treatment System Regulations

3.1. Support Agencies

This plan is in conformance with, but does not restate, all other agency rules that are applicable to water resource management. The following agencies deal with or regulate water resources throughout the City.

- Anoka County
- Anoka Conservation District (ACD)
- Coon Creek Watershed District (CCWD)
- Minnesota Department of Health (MDH)
- Minnesota Pollution Control Agency (MPCA)
- Board of Water and Soil Resources (BWSR) and the Wetland Conservation Act (WCA)
- Minnesota Department of Natural Resources (DNR)
- US Army Corps of Engineers (USACE)
- Minnesota Department of Agriculture
- US Fish and Wildlife Service
- Minnesota Environmental Quality Board
- Metropolitan Council
- Minnesota Department of Transportation (MnDOT)
- U.S. Environmental Protection Agency (EPA)
- Federal Emergency Management Agency (FEMA)
- Natural Resources Conservation Service (NRCS)
- U.S. Geological Survey (USGS)

While these other agencies' rules, policies, and guidelines are not all restated in this Plan, they are applicable to projects, programs, and planning within the City. The MPCA Minnesota Stormwater Manual, which is a document intended to be frequently updated, is also incorporated by reference into this LSWMP and can be found at on the MPCA website.

3.2. NPDES Permitting Process

The MPCA has designated the City of Coon Rapids as an NPDES Phase II MS4 community (MN Rules Chapter 7090). Coon Rapids' application for permit coverage was extended in 2013 (**Appendix C**). The permit outlines Coon Rapids' Stormwater Pollution Prevention Plan (SWPPP) to address six minimum control measures:

- Public education
- Construction site runoff control
- Public involvement

- Post-construction runoff control
- Illicit discharge detection and elimination
- Pollution prevention in municipal operations

The City's SWPPP contains several best management practices within each of the listed control measures. Some of these best management practices include:

- Inspection of outfalls
- Street sweeping
- Inspection of post-construction BMPs
- Storm sewer system mapping
- Resident education

Many of the goals and policies discussed in this local surface water management plan are directly related to requirements listed in the NPDES program. As a result, the implementation section of this plan repeatedly references items listed in the City's SWPPP, which can be requested from the City.

3.3. Comparison of Regulatory Standards

Applicable developing and redeveloping property within Coon Rapids is subject to review and approval from CCWD. The CCWD has established rules governing stormwater management and protection of natural resources. Currently these rules vary in content between the City design standards.

3.3.1. City of Coon Rapids

In 2015, Coon Rapids developed their Engineering Design Standards for Stormwater Management. This document was written to meet the City's goals outlined in the SWPPP and outlines additional requirements that were adopted from the Minimal Impact Design Standards (MIDS). These Design Standards are consistent with CCWD's permitting rules. A copy of these design standards can be found in **Appendix E**.

3.3.2. Coon Creek Watershed District Rules

CCWD is in the process of updating their rules. CCWD Rules and Regulations were last updated in 2009 and their plan was last updated in 2013. The City is committed to working with CCWD and will continue to coordinate for review and permitting of the stormwater management aspect of developments. CCWD is also the LGU for WCA.

One of the significant changes to CCWD's Watershed Plan update was the adoption of Atlas 14, the update to TP 40, providing the most recent data on rainfall depths and frequencies. The City has also adopted the use of Atlas 14 rainfall data for stormwater management practices. A copy of CCWD Rules can be found in **Appendix I**.

CCWD and the City have continually collaborated together on programs and projects to achieve common goals outlined in Section 5 of this plan. Some of these goals include maintaining awareness of needs and opportunities between Coon Rapids and CCWD and implementing programs and projects that meet the needs of all partners, align financially, and are a part of the overall watershed planning effort. Continuing and improving coordination between land use planning at the City and watershed planning at CCWD will result in better projects to meet agency goals and a more efficient use of public funds. Coordination and collaboration between entities is key to constructing cost effective BMPs to manage water quality concerns and preserve the City's natural resources in the future.

3.3.3. Wetland Management

Since 2014, CCWD has been the LGU for the Wetland Conservation Act and will continue to administer WCA permits. WCA regulations generally focus on the prevention or mitigation of wetland impacts, while watershed standards focus on wetland buffers and stormwater impacts.

3.3.4. Wellhead and Source Water Management

Wellhead and source water management is regulated by numerous agencies. The list below provides an overview of agency regulations and responsibilities related to groundwater protection.

- U.S Environmental Protection Agency – Groundwater protection is authorized by Federal laws including the Safe Drinking Water Act. The focus is on general groundwater protection activities, but actual implementation of these programs is administered by the states in cooperation with local governments.

- Minnesota Department of Natural Resources – Responsible for permitting the sustainable use of Minnesota's water supplies such as preliminary well assessment approvals and water appropriations permits. The DNR also promotes a groundwater hydrology program to monitor groundwater/surface water interaction and groundwater availability.

- Minnesota Department of Health – Manages and maintains safe drinking water supply and administers the Wellhead Protection Program. The City of Coon Rapids recently completed an update to their Wellhead Protection Plan.

- Metropolitan Council – The Metropolitan Council has developed the Twin Cities Metropolitan Area Master Water Supply Plan to provide a framework for sustainable long-term water supply planning. They also have collaborated with numerous agencies to complete studies and projects to identify key water supply issues and have completed the Twin Cities Area Groundwater Flow Model.

- Coon Creek Watershed District – Implements regulations for development related to groundwater protection and recharge. The CCWD also collaborates with other agencies to help fund projects related to groundwater/surface water interaction.

- Coon Rapids – The City of Coon Rapids is required to comply with all rules and regulations established by these agencies. The City has developed a Wellhead Protection Plan and Water Supply Plan and will continue to implement regional/state partnerships in the investigation of surface/groundwater connections.

4. ASSESSMENT OF ISSUES

4.1. Stormwater Management System Assessment

Previous sections of this LSWMP provide background on the physical and regulatory forces shaping surface water management in Coon Rapids. This section describes problems and challenges of specific waters, neighborhoods, or programs identified by the City, CCWD and other groups. Minnesota Statutes and Rules and Metropolitan Council guidance documents require "issues and corrective actions" or "problems and corrective actions" as elements of LSWMPs. The assessment includes stormwater management issues, both current and future, identified by the City, CCWD, and other state and federal agencies. Coon Rapids emphasizes the surface water management challenges ahead and that these challenges will test the City's financial and technical resources. See **Figure 17, Appendix A** for the locations of the issues described in this section. The City's priorities for addressing issues, in order, are:

1. Mitigating and preventing flooding
2. Maintenance of City assets and addressing aging infrastructure
3. Implementing water quality BMPs to meet TMDL requirements
4. Meeting MS4 requirements
5. Water resource education

4.2. Water Quality

4.2.1. **Issue:** Crooked Lake was placed on the MPCA's impaired waters list in 2008 for high mercury concentrations in fish.

Corrective Action: The EPA has approved the statewide TMDL mercury study. The MPCA has since prepared a plan to reduce mercury releases by 2025. This plan describes specific strategies that the State will employ to achieve the goals of the TMDL. No additional action by the City is needed.

4.2.2. **Issue:** The Mississippi River was placed on the MPCA's impaired waters list in 2002 for high mercury concentration in fish. Since that time, it has also been listed as impaired for PCB in fish tissue, fecal coliform and excess nutrients.

Corrective Action: The EPA has approved the statewide TMDL mercury study and no additional action by the City is needed. A TMDL is underway to address the PCB in fish tissue, fecal coliform and excess nutrients impairments. Once these are complete, the City will update this LSWMP to incorporate any required implementation activities.

4.2.3. **Issue:** Several creeks within Coon Rapids do not meet federal water quality standards and are considered impaired for invertebrate index of biotic integrity and E. coli. Coon Rapids was assigned categorical wasteload allocations for TSS, TP, and E. coli for each creek listed below.

- Coon Creek
- Sand Creek
- Springbrook Creek (County Ditch 17)
- Pleasure Creek

Corrective Action: In 2016, the Coon Creek Watershed TMDL and WRAPS Report were approved by the EPA and MPCA to address impairments for these creeks. Coon Rapids was assigned a categorical wasteload allocation for each creek. The City will continue to

collaborate and partner with CCWD to implement the recommended strategies outlined in the WRAPS report. The City has also implemented a Goose Management Plan (**Appendix H**) to protect water quality and meet TMDL requirements. Specific strategies are listed in **Table 6.1** of this plan.

4.2.4. **Issue:** Water quality of Crooked Lake associated with its aquatic invasive species (AIS) such as Eurasian watermilfoil and curlyleaf pondweed.

Corrective Action: Since 1996, the Crooked Lake Area Association (CLAA) has used a combination of association funds and AIS prevention and management grant dollars to apply herbicide treatments. Analysis of the water quality information for Crooked Lake indicates that water quality has improved over the years. In 2016, the CLAA partnered with CCWD and the DNR to complete a treatment for milfoil management. This is a project that was successful in removing almost all of it. The CLAA will also complete treatment for curlyleaf pondweed in the spring of 2018. The CLAA will continue to perform spot treatments as needed and will look to control the species below nuisance level. CCWD will continue to provide the lead for the AIS plan and any educational outreach. The City has been and will continue to provide cost share dollars towards AIS management of Crooked Lake.

4.2.5. **Issue:** The City anticipates that there may be additional, future impaired waters listed that will affect the City.

Corrective Action: The City will work with CCWD, ACD, MPCA and others to develop and implement future TMDLs that affect the City.

4.2.6. **Issue:** In 2007, the City was required by the MPCA to complete a loading assessment and a nondegradation report. The report estimates change in TSS and TP from development since 1990 and also future loading with development that could occur by 2020. The City was then required to complete a mitigation plan to address the changes in TSS and TP through increased development.

Corrective Action: The report concluded that by utilizing current stormwater management policies of the City and CCWD, TP and TSS loads will remain less than that from the 1990 conditions. The report outlined the following tasks for the City to pursue to account for increased runoff volume due to development:

- Consider implementation of regional volume reduction BMPs such as using ponds for irrigation or constructing regional infiltration facilities.
- Monitor infiltration rates in ponds.

As TMDLs are developed, loading reductions will be prioritized through any wasteload allocations assigned. The City will continue to use this Nondegradation Report as a reference. The Nondegradation Report can be found in **Appendix K**.

4.2.7. **Issue:** The Twin Cities Metro Area (TCMA) Chloride TMDL approved in 2016 lists Pleasure Creek, Sand Creek, and Springbrook Creek as High Risk Streams having at least one chloride concentration value within 10% of exceeding the current water quality standard.

Corrective Action: The City will continue to implement chloride best management practices such as reducing salt use on roadways, education to adjacent properties about correct salt application, and improving policies designating salt usage. The City will coordinate with CCWD on the monitoring of chloride levels within the streams and will also collaborate with CCWD as they complete their watershed-wide chloride study in 2019. The City will look to incorporate any implementation items that are identified.

4.3. Flooding and Stormwater Rate Control

4.3.1. **Issue:** Discrepancies have been found between FEMA's flood mapping and the Coon Creek Watershed District floodplain elevations from their district-wide model.

Corrective Action: The City will partner with CCWD to address any discrepancies between floodplain elevations and will consider undertaking a restudy of the FEMA analysis for existing conditions. The City will implement regulations going forward to help prioritize potential flooding concerns based on the discrepancies. The City and CCWD will also provide education to affected property owners on the implications of the difference in floodplain elevations. **Figure 16, Appendix A** shows properties that have been affected by CCWD's 100-year floodplain elevations, but are not currently shown in the FEMA floodplain.

4.3.2. **Issue:** Wet basements have been noted adjacent to the wetland located north of Xeon Boulevard and west of Xeon Street due to high groundwater.

Corrective Action: The City will perform periodic maintenance of the existing outlet channel to keep it free from overgrowth and debris. The problem appears to be mainly associated with the lack of functioning sump pumps on private property.

4.3.3. **Issue**: Ponding in backyard areas of the Bridgewater neighborhood, near 116th Avenue and Cottonwood Street, occurs during heavy rainfall events. The low point in this area is below the outlet elevation of the existing storm sewer.

Corrective Action: In 2004, the City completed backyard grading near these properties. The City also excavated the pond located west of Cottonwood Street in 2014. A coordination effort will be completed between the City and CCWD to model the system to determine potential flooding inputs in the area. The City will continue to monitor this area for flooding. A Capital Improvement Project is anticipated for this area in 2018 to construct larger storm sewer pipe that will be sized to address the 100-year storm event.

4.3.4. **Issue**: Pond 22-74-01 south of Coon Rapids Boulevard between Egret Boulevard and Grouse Street periodically overflows. The outlet was shown to be undersized for high flow scenarios.

Corrective Action: The City will monitor this location, and any mitigation efforts will be performed in accordance with the City's Common Drainage Problem Policy. One option to consider is to partner with CCWD and/or the Anoka Park District to construct a bypass pipe to convey high flows to a low point east of the Coon Rapids Dam Regional Park parking lot. The City will partner with CCWD to perform ditch maintenance as needed to provide additional conveyance for stormwater and to prevent erosion. This is a medium priority project.

4.3.5. **Issue**: Flooding has been reported in the backyard of 1975 129th Lane. All backyards in this neighborhood flow to a localized low area near this property.

Corrective Action: The City will monitor this location, and any mitigation efforts will be performed in accordance with the City's Common Drainage Problem Policy. This is a low priority project.

4.3.6. **Issue**: Flooding occurs in the low point of the backyards of 1353 and 1363 109th Avenue.

Corrective Action: The City will monitor this location, and any mitigation efforts will be performed in accordance with the City's Common Drainage Problem Policy. This is a low priority project.

4.3.7. **Issue**: Residents of Aspencrest Townhomes have experienced basement flooding due to high groundwater.

Corrective Action: The City will monitor this location, and any mitigation efforts will be performed in accordance with the City's Common Drainage Problem Policy. Periodic ditch maintenance to prevent blockage through the main flow area may be one option to consider. This is a low priority project.

4.3.8. **Issue**: Flooding occurs in the backyards of the houses between Palm Street and Norway Street and between 99th Avenue and 100th Avenue.

Corrective Action: Mitigation efforts will be performed in accordance with the City's Common Drainage Problem Policy. The City will consider in 2018 the construction of backyard catch basins and associated pipe necessary to drain private property low areas.

4.3.9. **Issue**: Localized backyard flooding issues may arise throughout the City.

Corrective Action: When specific issues are identified, the City will investigate the causes and address the issues in accordance with the City's Common Drainage Problem Policy. The City will also work with CCWD on the review and investigation of corrective actions for future flooding problems. Preventing property damage from flooding and erosion is a common goal for the City and CCWD and future projects to address localized flooding will be opportunities for partnerships as the issues occur.

4.4. Maintenance Issues

4.4.1. **Issue:** Pond 9-24-01 near Ivywood Lane overflows and periodically causes easement area flooding. The backyard easement areas near Marshland Park also experience flooding.

Corrective Action: CCWD will review and provide inspection services for the Marshland Park area. The channel will be inspected and scheduled maintenance of drainageways and outlets will be completed as necessary. This is a low priority project.

4.4.2. **Issue**: The ditch between Sycamore Street and Unity Street and 121st Lane and 122nd Lane, and all the way west to the BNSF Railroad track is overgrown with vegetation and causes water to back up. Numerous localized low areas have developed in the ditch over the years, and a number of private encroachments into the drainage and utility easements are present.

Corrective Action: The City will monitor and clean the culvert outlets along this ditch system. The City will review if a culvert realignment at Unity Street can be performed at the time of street reconstruction in the area. The City will coordinate with adjacent residents to remove built up vegetation from the ditch easement areas. This is a medium priority project.

4.4.3. **Issue:** The ditch segment between 119th Avenue and Grouse Street periodically floods the rear year drainage and utility easements of several private property owners. The ditch itself is fed by shallow groundwater causing water to be present most of the year. During spring snow melt, water flowing in the ditch can back up higher on private property due to

inefficiencies associated with the dual pipe culvert crossing located at 119th Avenue.

Corrective Action: The City will monitor the ditch in accordance with the Common Drainage Problem Policy. The dual pipe culvert crossing below 119th Avenue will be re-aligned as part of future park upgrades at Lions Coon Creek Park. Pipe outlets will be inspected and cleaned as appropriate. The City will work with adjacent private property owners to minimize fence and other private encroachments into the drainage and utility easement.

4.4.4. **Issue:** Residents have expressed concerns over maintenance responsibilities for private stormwater facilities.

Corrective Action: The City has met with numerous associations to discuss aesthetic treatments and required maintenance activities. Aesthetic treatments for all stormwater ponds shall follow guidelines approved by the City Council and shall be considered a shared financial responsibility between the City and those requesting the treatment. City policy may periodically provide for algae treatments on stormwater ponds conducted for aesthetic purposes. The City does not consider aesthetic treatments to be a basis for improvement in water quality. Guidelines for cost sharing in pond treatments is as follows:

- **No discharge from public infrastructure outside of the development area:** 100% private cost based upon the pro-rata contribution of adjacent property owners, with the basis being no (or minimal) public benefit.
- **Off-site public discharge into the basin:** 25% - 75% City contribution based upon the pro-rata flow distribution within the subwatershed (runoff generated in versus outside the immediate development).
- **Ponds completely located within the public realm and regional basins:** 100% City cost, but only if a public water quality benefit (as prescribed by the City Council) can be attained.

Some of these association meetings are listed below.

- Tralee Terrace, Water's Edge, and Bridgewater Village. Multiple meetings were held in 2015, 2016, and 2017 to discuss the stormwater ponds on the southwest corner of Coon Rapids Boulevard Extension and Palm Street and between Redwood Street and Palm Street. For the pond near Coon Rapids Boulevard, stormwater is from a combination of both public and private areas. Generally, removal of vegetation or debris from culvert ends, and excavation for sediment removal within the pond itself, would be a shared responsibility between the City and the Tralee Terrace Condominium Association. For the pond near Redwood Street, stormwater coming into this pond is entirely from private areas. Removal of vegetation or debris from culvert ends, and excavation for sediment removal within the pond itself, would be a shared responsibility between the Bridgewater Village, Tralee Terrace Townhomes, and Water's Edge Townhome Associations. The City is responsible for keeping the pond outlet structure clean and free of debris.

- Weston Woods of Bunker Hills. A meeting was held in 2017 to discuss aesthetic treatments and minor maintenance of the pond located on the west side of Crane Street across from 126th Avenue. City staff provided an email follow up.

- Alexandra's Cove located north of Highway 10 and along Crooked Lake Boulevard NW. Meetings were held in 2014, 2015, and 2016. CCWD performed a separate association presentation on pond ownership in the area. City staff performed two association presentations in 2016 to discuss floodplain and pond maintenance.

- De Gardner's Pond. The stormwater pond discussed is located south of 121st Avenue, north of 119th Lane, east of Tronson Creek, and west of Yellowpine Street. The pond captures runoff from public streets, therefore, the City has noted that it is responsible for regular maintenance of the inlet pipes and any additional maintenance such as bank erosion, sediment removal, and inlet/outlet repairs. The City also provided information to the Association to reduce fertilizer applications and establish a 20-foot-wide natural buffer around the pond to help limit algae growth.

- Nature's Cove Townhomes. The stormwater pond is located on the north side of 121st Avenue and east of Bluebird Circle. The City and CCWD conducted a site meeting in 2015 where they discussed pond aesthetics and noted buffer and fertilizer BMPs.

- Weston Woods. The stormwater pond is located on the south side of 97th Avenue and west of Holly Circle. The City and CCWD conducted a site meeting in 2015 where they discussed pond aesthetics and noted buffer and fertilizer BMPs.

- Ashley Oaks. The City and CCWD met onsite to inspect the stormwater pond located just northwest of the Ashley Oaks Townhome development. The City provided maintenance recommendations to the Association such as installing a trash guard to help prevent the outlet from clogging, removing point source-directed rainwater from downspouts to limit erosion, and regrade slopes to limit further erosion. The City also provided cost estimates to the Association for future stormwater pond maintenance including erosion and vegetation removal, sediment delta removal, and pond dredging. This pond is considered privately owned and maintained.

The City will continue to meet with associations as this issue comes up to provide education on stormwater pond functions, vegetative buffers, and maintenance responsibilities. The City will also look into developing a standard maintenance agreement for all private BMPs that are constructed. The City will continue to encourage the installation of a 15 to 20-foot-wide natural buffer around stormwater ponds.

4.5. Flooding and Stormwater Rate Control Between the City and Adjoining Entities

4.5.1. **Issue**: Increased flow rates from Coon Rapids into Springbrook Nature Center have resulted in general erosion and poor water quality. Improving the water quality and reducing the rate at which water enters the Nature Center have been identified as a priority of the CCWD.

Corrective Action: The City has investigated opportunities to provide additional stormwater rate control within its border upstream of the Springbrook Nature Center. No opportunities to reasonably address the problem were identified. However, the City will continue to work with Fridley, Blaine, and CCWD to address this issue. This is a medium priority project.

4.5.2. **Issue:** Outflow from a wetland complex in the northwest corner of the City behind Walmart discharges to the City of Anoka and is currently backing up. Large deposits of silty sediment are a result of this backflow.

Corrective Action: The City is currently investigating outfall conditions and the normal water level of the basin and will continue to monitor and clean as necessary. The City will collaborate with CCWD and the City of Anoka if any project is identified to feasibly correct this issue.

4.6. Impacts of Stormwater Quality on Fish and Wildlife Resources

4.6.1. **Issue:** There is a need for vegetation management on Crooked Lake due to the increases in the number of aquatic invasive species over the years and the continued prevalence of Eurasian Milfoil and Curly-Leaf Pondweed. CCWD has identified aquatic invasive species as a main issue in their Comprehensive Watershed Plan due to its impacts on native habitats and species.

Corrective Action: The City of Coon Rapids, the CLAA, and CCWD collaborated to create the Crooked Lake Comprehensive Management Plan 2014-2018. The goal of this plan was to identify and evaluate lake health trends and to develop strategies for the protection and enhancement of Crooked Lake. Some management activities included an annual plant survey, water quality monitoring, annual chemical treatment, and groundwater monitoring. A copy of this plan can be found on CCWD's website.

The CLAA partnered with CCWD and the DNR in 2016 to implement a treatment on Crooked Lake for milfoil. This treatment was deemed successful and small spot treatments over the years should keep the milfoil below nuisance levels. An additional treatment is expected to occur in 2018 to remove curlyleaf pondweed. As part of the milfoil treatment plan, native plants were reintroduced to Crooked Lake to promote growth of non-invasive species to out-compete with the milfoil. Preliminary results indicate that the transplant was successful with over 70 percent survival rate.

The City will continue to collaborate with the CLAA and CCWD to address AIS in Crooked Lake through regular monitoring and will work with CCWD to proactively manage any future sign of AIS in other waterbodies throughout the City. The City and CCWD will also continue to coordinate education components including newsletter updates and signs on fishing docks.

4.7. Adequacy of Existing Regulations and Programs to Address Adverse Impacts on Local Water Resources

4.7.1. **Issue:** The City has adopted ordinances related to floodplain regulation, illicit discharge, surface water management, native vegetation planting, minimal impact design standards (MIDS), wetland management and erosion control. These ordinances need to be kept up to date as requirements change. A copy of the ordinances can be found in **Appendix B**.

Corrective Action: The City will continually evaluate these ordinances and will update them as needed. The City will continue to enforce all ordinances as necessary. The City will also notify CCWD of water-related ordinances changes.

4.7.2. **Issue:** The City currently has limited funding sources available to complete projects related to water resources.

Corrective Action: Stormwater funds and special assessment funding are not adequate to implement the studies, programs, and capital improvements outlined in this plan. The City must apply for grants to fund the implementation of capital improvements identified in this management plan. The City will consider increasing the current stormwater utility rate to fund future implementation items. The City will also consider partnering with CCWD on watershed-wide projects.

4.8. Erosion and Sediment Control

4.8.1. **Issue**: High flows along Tronson Creek have resulted in periodic side slope erosion and silt deposition. Flooding has occasionally occurred in backyards on the south side of 1400 block of 120th Avenue. Tronson Creek is also consistently fed by shallow groundwater.

Corrective Action: The City will monitor this area, and any mitigation efforts will be performed in accordance with the City's Common Drainage Problem Policy. Individual property owners are responsible for upkeep and maintenance of drainage ditches on their property. This is a medium priority project.

4.8.2. **Issue**: The ditch east of Coon Creek Boulevard and north of 131st Avenue is flat and residents state that the ditch does not completely drain and that stagnant water is present. It has also been noted that sediment has accumulated in the ditch.

Corrective Action: The City will monitor this location, and any mitigation efforts will be performed in accordance with the City's Common Drainage Problem Policy. This is a medium priority project.

4.8.3. **Issue**: The Moore Park ditch, at the crossing of Magnolia Street south of 112th Avenue, is eroding.

Corrective Action: The City has previously installed geo-cell material along the ditch banks and bottom. The City, with the assistance of CCWD, will continue to monitor and inspect this ditch. Some geo-cell material has washed out over the years and has been removed by the City. Any continued mitigation efforts will be performed in accordance with the City's Common Drainage Problem Policy. This is a medium priority project.

4.8.4. **Issue**: Several private storm ponds in the Tralee Terrace area need vegetation and debris removal but are difficult to access and maintain.

- One pond at the southwest corner of Coon Rapids Boulevard and Palm Street – Because stormwater enters this pond from both public and private areas, it is the shared responsibility of the City and the Tralee Terrace Condominium Association to remove vegetation and debris from culvert ends and excavate sediment. Any desired algae treatments are the sole responsibility of the Tralee Terrace Condominium Association as these are for aesthetic purposes only and do not improve water quality.

- Two ponds between Redwood Street and Palm Street – Because stormwater entering these ponds is entirely from private areas, the City's only responsibility is to keep pond outlet structures clean and free of debris. Other maintenance activities are the shared responsibility of the Bridgewater Village, Tralee Terrace Townhome, and Water's Edge Townhome Associations.

Corrective Action: Establish access agreements with the applicable homeowners' associations. Implement an inspection and maintenance schedule for these ponds. Additional ponds throughout the City that are identified to have access issues will be identified by the City and options will be analyzed.

4.9. Impact of Land Use Practices and Development

4.9.1. **Issue:** The City of Coon Rapids is nearing full development. This can make it difficult for

the City to implement stormwater management BMPs to efficiently meet watershed water quality requirements on a site by site basis.

Corrective Action: In areas where project specific BMPs will not be feasible, the City will look into completing regional water quality improvement projects, such as water reuse BMPs, to help meet future stormwater management requirements. The City has also adopted the Minimal Impact Design Standards to create flexible treatment options for areas not suitable for site specific BMPs. The City shall collaborate with the CCWD and the Anoka Conservation District to help identify flexible treatment options, including regional water quality BMPs, to meet design standards.

4.10. Education Program

4.10.1. **Issue:** The City of Coon Rapids recognizes the need for local water education programs to increase public awareness of local water management and improve the quality of stormwater runoff.

Corrective Action: The City will continue to provide educational content and opportunities to staff, residents, businesses, developers, and others. These efforts may include trainings, regular notices in the City's monthly newsletter, articles in the local paper, postings on the City website, and flyers in the utility bill. The City will coordinate with CCWD and the ACD to improve the efficiency of educational efforts and reduce duplication. Educational topics may include, but are not limited to:

- Stormwater pond function and maintenance
- Wetland buffers
- Yard/pet waste management
- Illicit discharge to stormwater
- Utility easements related to location, purpose, encroachments/obstruction
- Controlling invasive species
- Sustainable groundwater and recharge
- Erosion and sediment control on small scale landscaping projects adjacent to impaired waters
- FEMA/CCWD model discrepancies
- Salt usage
- Benefits and care of native vegetation
- Wellhead protection and well sealing
- Know the Flow story boards

4.11. Identification of Potential Problems to Occur in the Next 20 Years

4.11.1. **Issue:** Inspecting and maintaining existing stormwater infrastructure throughout the City.

Corrective Action: The City of Coon Rapids is responsible for maintenance of its stormwater system in conformance with the MCPA's MS4 Program. This includes maintenance of pipes, outlets, constructed ponds, lakes, wetlands, ditches, swales, and other drainage ways. Proper maintenance will ensure that the stormwater system continues to provide the necessary flood control and water quality treatment. The City will look to develop and refine the inspection program to make better use of existing asset management technology. Refer to **Appendix B** for a copy of the City SWPPP. Other units of government are responsible for maintaining the stormwater systems under their control.

4.11.2. **Issue:** Increasing prevalence of polycyclic aromatic hydrocarbons (PAHs) in stormwater ponds from runoff of roadways and other surfaces. PAHs are considered toxic and presents challenges for disposal when pond dredging is needed.

Corrective Action: As stormwater ponds are inspected and maintained, the City will identify any ponds that are contaminated and follow protocol for disposal of dredged material. The City also bans the use of materials for paved surfaces that contain PAHs for future development and redevelopment.

4.11.3. **Issue:** Accumulation of debris and material on City streets.

Corrective Action: The City will continue to sweep debris and salt from streets twice annually and more frequently for those areas along lakes and streams. More information regarding street sweeping activities can be found in the SWPPP which is located in **Appendix B.**

4.11.4. **Issue:** Elevated levels of chloride concentrations have been found in stormwater ponds, surface water bodies, and groundwater throughout the Twin Cities Metro Area. At levels exceeding the water quality standards, chloride can be toxic to aquatic life and can make drinking water sources not economically feasible to treat.

Corrective Action: The City will continue to implement chloride best management practices such as reducing salt use on roadways, education to private business owners about correct salt application, and improve policies designating salt usage. The City will continue to track and implement ways to reduce road salt usage based on its MPCA Level 1 and 2 Smart Salt Certifications. The City will coordinate with CCWD on the monitoring of chloride levels in waterbodies throughout the City. The City will also collaborate with CCWD as they complete their watershed-wide chloride study in 2019 and will look to incorporate any implementation items that are identified.

4.11.5. **Issue:** Prioritizing inspection and maintenance of stormwater ponds as well as determining the performance of existing stormwater ponds throughout the City.

Corrective Action: The City of Coon Rapids will implement the Stormwater Asset Management Program (SWAMP) that identifies and prioritizes pond maintenance activities and BMP inspections. This program will need to be updated regularly to result in an updated prioritization of pond inspection and maintenance activities. In addition, the program will estimate the current treatment provided by each pond to determine if the desired amount of treatment is being achieved. This program will help meet the MS4 permit requirements related to the management of stormwater ponds.

4.12. Availability and Adequacy of Existing Technical Information to Manage Local Water Resources

4.12.1. **Issue:** Atlas 14 (updated precipitation probability information) was recently released by NOAA. Atlas 14 rainfall values for larger rain events are shown to have increased by as much as 30%. Changes this significant in precipitation can cause issues in the existing City stormwater system. CCWD has identified the changes in precipitation values to be a primary issue for the entire watershed as well.

Corrective Action: The City will collaborate with CCWD to continue to implement Atlas 14 in the review and approval of new or redevelopment projects. The City will coordinate with the CCWD, FEMA and the DNR on implementing Atlas 14 into its floodplain management regulations.

4.12.2. **Issue:** The City has mapped the majority of its storm sewer system. As new and redevelopment projects are completed, the storm sewer GIS database needs to continually be updated.

Corrective Action: The City will annually update its storm sewer GIS database to incorporate recent projects, BMPs, and associated storm sewer improvements.

5. GOALS AND POLICIES

5.1. Summary

The City of Coon Rapids has developed a number of goals and policies that conform to the overall purpose that is specified in Minnesota Statutes Section 103B.201. These goals and policies have been developed to complement CCWD, county, regional and State goals and policies and meet the City's interest in protecting and managing its valuable water and natural resources, recognizing the relationships between resource protection, land use management, development, redevelopment and fiscal responsibility. Specific standards related to Minimal Impact Design Standards (MIDS), Atlas 14, wetland management requirements, and infiltration standards are listed in the City's Engineering Design Standards for Stormwater Management document (**Appendix E**).

This section outlines the goals and policies specific to surface water management in Coon Rapids. Goals and policies are grouped by their relationship to the key issues listed below:

- Section 5.2 – Water Quantity
- Section 5.3 – Water Quality
- Section 5.4 – Wetland Management
- Section 5.5 – Erosion and Sediment Control
- Section 5.6 – Education and Public Participation
- Section 5.7 – Groundwater Protection
- Section 5.8 – Recreation, Fish, and Wildlife
- Section 5.9 – Maintenance and Inspection
- Section 5.10 – Public Ditch System
- Section 5.11 – Financial Management
- Section 5.12 – Mississippi River
- Section 5.13 – Collaboration with CCWD

5.2. Water Quantity

Goals

1. To limit public capital expenditures necessary to control excessive volumes and rates of runoff.
2. To control the rate of stormwater runoff from development to reduce downstream flooding and erosion.
3. To provide adequate storage and conveyance of runoff to protect the safety of the public and minimize property damage.
4. To implement the Common Drainage Problem Policy to address drainage issues reported by residents.
5. To identify and address inconsistencies between CCWD's floodplain model and FEMA's flood zones.

Policies

1. Development will follow the MIDS as outlined in the City's Engineering Design Standards.

2. The City prohibits filling activities within the 100-year floodplain that will cause an increase in flood elevations. Filling within the floodway is prohibited. Filling within the flood fringe is prohibited unless the filling meets FEMA, DNR, CCWD, and City Ordinance requirements.

3. At a minimum, existing flow rates must be maintained for new and redevelopment for the 1-year, 2-year, 10-year, 25-year and 100-year 24-hour Atlas 14 rainfall events.

4. Within Drainage Sensitive Uses Areas, rate control calculations must show that the post-development 100-year peak flow rate shall not exceed predevelopment 25-year peak flow rate (by subwatershed). A Drainage Sensitive Use Area is defined as all those land uses that depend on subsurface drainage (i.e., local draining of the soil profile) for their continuation. Drainage Sensitive Land in Coon Rapids includes areas around McKay Lake, Coon Creek southeast of Crooked Lake, and Public Ditch 54-4 north of Main Street. **Figure 18, Appendix A** shows these locations.

5. All hydrologic studies will be based on standard hydrologic criteria and ultimate or anticipated development of the entire tributary drainage area.

6. Drainage calculations for the 1-, 2-, 10-, 25-, and 100-year Atlas 14 critical events must be submitted and approved as part of any development applications prior to the issuance of applicable building or grading permits.

7. Soil infiltration rates used for BMP design shall be in conformance with the Minnesota Stormwater Manual and the City's Engineering Design Standards. Soil borings and/or post infiltration testing will be required to determine actual soil infiltration rates.

8. The design storm events shall be defined as having the following MSE 3 distributions:

Table 5-1: Design Storm Events

Event Frequency	Event Duration	Probability of Occurrence in Any Given Year	Rainfall Amount (inches)
1 – Year	24- Hour	99%	2.5
2 – Year	24- Hour	50%	2.9
5 – Year	24- Hour	20%	3.6
10 – Year	24- Hour	10%	4.3
100 – Year	24- Hour	1%	7.2
100 – Year	10-Day Runoff	1%	7.2 (inches of runoff)

9. The critical 1% chance event will be defined as the event that requires the greatest stormwater storage volume in a storage facility. These facilities include lakes, ponds, and their outlets.

10. Storm water facilities (i.e., ponds, pond outlet systems, and major conveyance systems) will be designed using a 100-year event.

11. All minor drainage systems and local storm water collection systems analyses and design will be based on the Rational Method for the 10-year event unless otherwise specified.

12. Detention facility design will include access for maintenance of the outlet structure and the facility in general. Adequate easements will also be required adjacent to ditches to prevent obstruction of flows.

13. The design of storm water facilities will consider and identify location(s) of overflow(s) that prevent property damage to adjacent properties from extreme water levels. A 2-foot freeboard is required above the HWL determined by the 100-year critical event.

14. Culvert crossings or storm sewer systems in County or State right-of-way may have a

design frequency that differs from the 10-year. Each agency shall be contacted to determine the appropriate design frequency.

15. The City will utilize natural ponding areas, such as wetlands and lakes, for the impoundment and treatment of surface water runoff based on waterbody type identified in the CCWD Rules in **Appendix I**. All surface water runoff must be pretreated prior to discharging into a waterbody.

16. The City intends to use both designated and non-designated areas on public property to store stormwater runoff. Non-designated areas include general depressions, areas lacking easements, low points, and streets where structures and/or property is not damaged and any inundation that occurs will only be temporary in nature to be limited to 48 hours.

17. Available dead storage volume of landlocked areas shall be established by estimating the water surface elevation resulting from back-to-back 100-year, 24-hour rainfalls and runoff.

18. Emergency overflows or outlets to drainage systems will be provided and clearly marked on site plans. Two feet of freeboard is required adjacent to any structures.

19. The City will encourage the development of enhanced infiltration practices wherever it is practical. The City will not maintain private infiltration areas. Maintenance of private infiltration areas will be the responsibility of the homeowner's association or landowner.

20. The City intends to assist in addressing problems associated with structural inundation caused to the extent outlined in **Section 4** through the implementation of the Common Drainage Problem Policy. The City will work with property owners to identify and implement economic solutions to minimize damage risks to existing structures in flood prone areas. The City's assistance can be through public improvements or technical advice for private flood proofing improvements as outlined in this plan.

21. Where the construction of a formal outlet is not practical for landlocked areas, the minimum building elevation shall be meet the requirements listed in Section 8.3 of the Engineering Design Standards found in **Appendix E**. Hydric soils shall be considered for all landlocked areas.

22. At least two feet of vertical separation is required from the low floor elevation above the 100-year high water elevation and the DNR Ordinary High Water level (if applicable). Drainage easements and outlots for ponds, lakes, wetlands, and streams shall encompass an area to two feet above the 100-year HWL. The City will consider requiring three feet of vertical separation from the 100-year HWL.

23. All development must conform to the CCWD standards in **Appendix I**. Applicable projects must provide documents for review and an approved permit. An approved permit is required for the following:

    a. Land disturbing activities of one acre or greater of cumulative impact
    b. Work adjacent to lakes or wetlands
    c. Activities upstream from land that is dependent upon removal of water from the soil profile for their continued use (Drainage Sensitive Land Uses)

24. The City will collaborate with CCWD to address inconsistencies in their floodplain model in comparison to FEMA's flood zones.

5.3. Water Quality

Goal

1. To maintain or improve the quality of water in lakes, streams, or rivers within or immediately downstream of the City.

Overall Policies

1. The City will require that new developments provide no net increase of total phosphorus (TP), total suspended sediments (TSS), or volume of runoff. Redevelopment projects will implement BMPs to provide a net reduction on TP, TSS, and volume of runoff in compliance with water quality and non-degradation guidelines set in the Engineering Design Standards and CCWD Rules.

2. The City will continue to implement its Goose Management Plan to prevent contamination of stormwater runoff prior to discharge into water bodies. This plan can be found in **Appendix H** of this SWMP.

3. The City will continue to implement a salt management plan by incorporating chloride BMPs listed in the TCMA Chloride Management Plan and provide staff training on salt usage and its impacts on water quality.

4. The City prefers regional stormwater treatment basins versus site-by-site treatment systems.

5. In the design and construction of new, or modifications to the existing stormwater conveyance systems, pretreatment of stormwater runoff must be provided prior to discharge.

6. The NURP design recommendations for the design of stormwater treatment basins are as follows:

    - A permanent pool (dead storage) volume below the principal spillway (normal outlet) which shall be greater than or equal to the runoff from a 2.5-inch storm over the entire contributing drainage area assuming full development.

    - A permanent pool average depth (basin volume/basin area) which shall be greater than four feet, with a maximum depth of < 10 feet.

    - An emergency overflow (emergency outlet) adequate to control the one percent frequency/critical duration rainfall event.

    - Basin side slopes above the normal water level should be no steeper than 3:1, and preferably flatter. A basin shelf with a minimum width of 10 feet and one foot deep below the normal water level is recommended to enhance wildlife habitat, reduce potential safety hazards, and improve access for long-term maintenance.

    - To prevent short-circuiting, the distance between major inlets and the normal outlet shall be maximized.

    - A flood pool (live storage) volume above the principal spillway shall be adequate so that the peak discharge rates from 2-year and 100-year, 24-hour events are no greater than pre-development basin watershed conditions.

- Retardance of peak discharges for the more frequent storms can be achieved through a principal spillway design which may include a perforated vertical riser, small orifice retention outlet, or compound weir.

7. In areas where NURP treatment basins are not feasible to construct and a variance from the CCWD and City has been acquired, the most updated MPCA NPDES ponding guidelines may be used.

8. For algae control on municipal storm ponds, the City will undertake the following:

   - Require BMPs from adjoining property owners as a prerequisite to treating their pond. This involves the property owners taking responsibility for improving the water quality of the pond by keeping yard and pet waste from entering the pond, limiting fertilizer and irrigation use, and maintaining a natural buffer around the pond.

   - Limits on annual spending for algae/storm pond chemical treatment will be established by the City. The process of performing aesthetic pond treatments was eliminated in 2015 due to the lack of water quality benefit and process for supporting data that such treatments were providing any lasting benefit to the ponds. The guidelines for algae treatments are outlined as follows:

     - **No discharge from public infrastructure outside of the development area:** 100% private cost based upon the pro-rata contribution of adjacent property owners, with the basis being no (or minimal) public benefit.
     - **Off-site public discharge into the basin:** 25% - 75% City contribution based upon the pro-rata flow distribution within the subwatershed (runoff generated in vs. outside the immediate development).
     - **Ponds completely located within the public realm and regional basins:** 100% City cost, but only if a public water quality benefit (as prescribed by the City Council) can be attained.

   - A vegetative buffer of at least 15 feet will be required around existing storm ponds.

   - The City will assist in educating residents about the function and purpose of stormwater ponds and buffers. The residents will be required to take the lead on this initiative through associations and/or adopt-a-pond program. This will assist in residents taking steps to reduce nutrient loadings into the pond.

9. Construction sites required to obtain NPDES Construction Permit coverage must be in compliance with the terms of that permit.

10. The City will sweep all the City streets at least twice annually and more frequently in sensitive areas. Sensitive areas include areas surrounding lakes and adjacent to rivers or creeks and areas in neighborhoods with no stormwater treatment. The City will collaborate with CCWD to create a map showing these priority areas.

11. The City will require skimmers in the construction of new pond outlets and will add skimmers to the existing system whenever feasible and practical.

12. Skimmer design shall provide for skimmers that extend a minimum of four inches below the water surface and minimize the velocities of water passing under the skimmer to less than 0.5 feet per second for a 1-year, 24-hour rainfall event.

13. The City will continue to work cooperatively with Anoka County to implement the Know Your Flow initiative to provide public information regarding the protection and

management of natural resources and coordination among agencies.

14. Natural buffers are required adjacent to wetlands and encouraged adjacent to 1st and 2nd order streams, lakes, and stormwater ponds for projects requiring stormwater management permits for new and redevelopment. These buffers will be promoted and encouraged for all existing properties adjacent to lakes, streams, ponds, and wetlands.

15. The City will coordinate and collaborate with various agencies to continue the water quality monitoring program including CCWD, ACD, Met Council, and the MPCA.

16. The City will eliminate known illegal connections to the City's stormwater conveyance system through the City's MS4 permit requirements and illicit discharge ordinance.

17. The City will work with neighboring municipalities and CCWD to require rate control and treatment prior to the discharge of storm water across municipal boundaries.

18. Future outlets to DNR Public Waters must first pass through a pretreatment BMP prior to discharging into the water body. Full NURP treatment will be required for those areas that discharge into certain streams, lakes, and/or wetlands as defined in CCWD's approval standards.

19. All on-site wastewater systems will be the responsibility of the owner. If an on-site wastewater system fails, the owner will be required to connect to the City's sanitary sewer system. The owner is also responsible for routine inspections.

20. A response plan to minimize the impact of hazardous spills on protected waters has been developed and will be implemented by the City as part of the MS4 permit requirements. Regular updates will be completed as part of MS4 permit renewals and as new information is gathered. Wellhead protection standards will be incorporated for specified areas located throughout the City.

21. Establish and enforce a proper pet waste disposal ordinance. Implementation could include the addition of pet waste clean-up stations within City-owned parks and trail corridors.

5.4. Wetland Management

Overall Goal

1. To coordinate and collaborate with CCWD to ensure conformance with the requirements of the Wetland Conservation Act (WCA) and no net loss of wetlands and their functions.

Overall Policies

1. The City discourages wetland disturbance. Wetlands must not be drained or filled, wholly or partially, unless replaced by restoring, enhancing, or creating wetland areas of an equal public value, as permitted by CCWD and WCA. Wetland sequencing will be strictly followed:

    - First priority is to avoid the impact
    - Where the impact cannot be avoided, then the impact must be minimized
    - Where the impact cannot be avoided, then the impact must be mitigated

2. The use of wetland banking opportunities will be pursued by the City in accordance with WCA and CCWD.

3. Coon Creek Watershed District is the LGU for wetlands within the City. The City will work cooperatively and coordinate as wetland projects arise.

5.5. Erosion and Sediment Control

Overall Goal

1. To prevent the discharge of sediment from construction sites, agricultural areas, and drainageways from entering the City's surface water resources and storm sewer system.

Overall Policies

1. The City requires the submission and approval of erosion control and grading plans prior to the issuance of any grading or building permits. The City will coordinate erosion control items with CCWD.

2. The City will require any development or redevelopment to comply with the erosion control and steep slope standards found in the City's Engineering Design Standards, which are included in **Appendix E.**

3. Coon Rapids will regulate new development, redevelopment, street reconstruction projects, and other land disturbing activities through its Stormwater Management and Erosion and Sediment Control Ordinance.

4. The City will periodically review its Erosion and Sediment Control ordinance and revise it as necessary.

5. Soil erosion shall be prevented through the installation of erosion control practices in accordance with MPCA's Best Management Practices Handbook.

6. All construction sites that are required to obtain a NPDES permit must comply with the erosion and sediment control conditions of that permit. Erosion and sediment control BMPs are to be installed before land disturbing activities begin and shall be maintained until the site is re-stabilized.

7. The City will coordinate with CCWD to prioritize and complete bank stabilization projects. Biologically-impaired reaches, such as in Sand Creek, Coon Creek, Springbrook Creek, and Pleasure Creek, are commonly caused by streambank erosion and overland runoff. Completing these types of projects will assist in addressing the impairments in these streams.

8. The City will provide staff the opportunity to complete staff training and certifications related to erosion control inspections and SWPPP procedures.

9. The City will repair erosion problems on City owned property and issue orders for private landowners to do the same when erosion problems transport sediment from the property in question.

5.6. Education and Public Participation

Overall Goal

1. To inform and educate the public concerning urban stormwater, wetlands, and water quality management and how to address to address these items.

Overall Policies

1. The City will continue to implement a public education program which utilizes the following media: city newsletters, community access cable TV, individual mailings, local grade school meetings, public works open house, Summer in the City series, and the City website.

2. The City will provide staff training and education related to the MS4 permit activities, BMP maintenance, and other stormwater-related topics.

3. Enact a public education and outreach program to satisfy the minimum control measures identified in the City's NPDES MS4 permit and to help implement TMDL goals.

4. The public education program will include close coordination with outside entities like CCWD, Anoka County, DNR, MPCA, translation services, and others.

5. The City will provide education to properties identified in **Figure 16, Appendix A** that are listed in CCWD's 100-year floodplain, but are not identified in the FEMA floodplain.

5.7. Groundwater Protection

Overall Goal

1. To promote recharge of groundwater by requiring infiltration where appropriate to mitigate for the increased impervious surfaces associated with development.

2. To protect drinking water and wells by restricting infiltration where underlying geologic formations might convey surface water directly into groundwater aquifers, such as DWSMAs as found in the Wellhead Protection Plan.

3. To promote consistent groundwater protection regulations between agencies including MPCA, DNR, CCWD, and MDH.

Overall Policies

1. The City will implement its approved wellhead protection plan.

2. Cooperate with state and regional agencies on groundwater monitoring, inventorying or permitting programs. These agencies could include the MPCA, MDH, DNR, and CCWD. The City's groundwater protection policies are intended to preserve groundwater levels and flow and protection of drinking water supplies.

3. The City will work towards groundwater protection through the implementation of floodplain and shoreland ordinances in conformance with State and County regulations and the infiltration standards set by the CCWD. These infiltration standards include regulated DWSMAs and Emergency Recovery Areas (ERAs).

4. The City will encourage the development of alternative stormwater management methods including vegetated swales and infiltration practices provided these methods do not pose an increased risk for groundwater contamination.

5. The City will cooperate with the Department of Health to ensure that all unsealed or improperly abandoned wells within the City are properly sealed. Technical requirements for the abandonment of these wells will be in conformance with the local and State

regulations.

6. The City will cooperate with the DNR as they monitor surface water/ groundwater interaction of the surficial aquifer as shown in the Anoka Sand Plain Regional Assessment. The DNR will communicate any lake level concerns and will provide collected information on the wells that have been authorized within the City.

7. The City will collaborate as necessary with various agencies to perform special studies related to groundwater protection and recharge. The City will also work with the agencies to fill gaps in assessments of groundwater data.

8. The City, with the help of local partners, will implement efforts to identify and evaluate the economic and technical feasibility of water supply approaches and best practices that increase water conservation, enhance groundwater recharge, and make the best use of groundwater, surface water, reclaimed wastewater, and stormwater.

5.8. Recreation, Fish, and Wildlife

Overall Goal

1. To protect recreational opportunities and fish and wildlife habitat for the benefit of its residents.

Overall Policies

1. The City will cooperate with the Minnesota Department of Natural Resources, the Corps of Engineers, the U.S. Environmental Protection Agency, the U.S. Fish and Wildlife Service, the Anoka County Parks, and other appropriate agencies in promoting public enjoyment and protecting fish, wildlife, and recreational resources in the City. The City's recreation and fish/wildlife policies focus on access, connectivity, preservation, and control of exotic and invasive species.

2. Restoration of the City's fish and wildlife resources will be undertaken as outlined in the City's Parks, Open Space, and Trail System Plan. Activities to restore and/or maintain the City's habitat resources include prescribed burning, weeding/brushing, seed harvesting and disbursement. A complete copy of this Plan is available from the City's Parks Department.

3. Activities related to recreation, parks, open space, and trails systems shall be consistent with the City's Parks, Open Space, and Trail System Plan.

4. The City will preserve wetlands that provide habitat for wildlife and spawning of fish.

5. The City will work to create wildlife corridors throughout the City, where feasible.

6. The City will create and encourage native buffers around lakes and wetlands to increase wildlife habitat whenever possible. The City currently has an ordinance in place to encourage the use of native vegetation when landscaping.

7. The City will continue to work with CCWD to implement their fish and wildlife policies.

8. The City will partner with CCWD and CLAA to implement items in the Crooked Lake Management Plan to manage aquatic invasive species.

9. The City will implement their goose management plan to reduce TP and E. coli loading to

lakes and streams.

10. The City will coordinate with local and state agencies to protect threatened and endangered plant and animal species.

5.9. Maintenance and Inspection

Overall Goal

1. To continue an active storm sewer system maintenance and inspection program through an asset management approach.

2. To address existing ponds and outlet structures lacking adequate easements for maintenance.

Overall Policies

1. The City will continue to implement an annual inspection and maintenance program as required by the City's NPDES MS4 permit. Infrastructure to be inspected includes outfalls, water quality BMPs, and stormwater ponds.

2. The City will require and enforce adequate access to ponding facilities including outlots and easements.

3. The City shall identify pond and outlet structure locations that present access issues to its maintenance staff and develop options to address. Options shall include, but not be limited to, easement identification/acquisition, additional grading or regrading, and review with adjacent infrastructure reconstruction, as well as private development or redevelopment projects.

4. The City will implement the Stormwater Asset Management Program (SWAMP) that identifies and prioritizes pond maintenance activities and BMP inspections. This program will need to be updated regularly to result in an updated prioritization of pond inspection and maintenance activities.

5. The City will continually perform inspections and maintenance on public roadways through reconstruction reviews and financial investments.

6. The City will implement the SWAMP to schedule and track MS4 inspections and prioritize maintenance activities in coordination with CCWD.

7. Operation and maintenance agreements shall be developed as part of all private BMPs if a watershed permit is triggered. If a watershed permit is not triggered, the City will require a maintenance plan that includes procedures for maintenance and funding be submitted prior to approval of private BMPs. City must also receive and approve a plantings/material plan prior to implementation.

8. The City will perform maintenance measures to assure proper function of the city-owned drainage systems as outlined in the MS4 permit requirements and City ordinances.

5.10. Ditch System

Overall Goal

1. To provide a mechanism for management of the private ditch system and coordinate with CCWD for management of the public ditch system.

Overall Policies

1. The City will continue to coordinate with CCWD to provide inspection, maintenance, and repair of all ditches in the City's jurisdiction. Ditches will be inspected to ensure unobstructed conveyance outlined in the Common Drainage Problem Policy.

2. The City will maintain the ditches in their jurisdiction in conformance with the City ordinances.

5.11. Financial Management

Overall Goal

1. To utilize available funding mechanisms to construct and maintain a sustainable stormwater management system.

Overall Policies

1. The City will utilize various funding sources including, but not limited to, CCWD cost sharing and grants, area charges, stormwater utility, and other grants to accomplish improvements listed in this plan and other surface water documents.

2. The City will pursue grants, donations, and in-kind contributions to help fund stormwater projects.

3. The City will educate residents on the financial responsibilities (City versus property owner) for certain drainage issues. These will be outlined in the City's Common Drainage Problem Policy.

4. The City will encourage the watershed district to finance intercommunity and regional issues and projects.

5. The City will financially partner with other agencies/groups to address water quality issues. These agencies could include, but are not limited to, the Crooked Lake Area Association, City of Andover, and City of Blaine.

5.12. Mississippi River

Overall Goal

1. To continue to protect and preserve the Mississippi River corridor, Mississippi River, and associated wetlands.

Overall Policies

1. Work cooperatively with Federal, State, and County agencies in the development of resource management and implementation plans affecting the Mississippi River.

2. The City shall apply the Mississippi River Corridor Critical Overlay policies.

3. The City will continue its partnership with USGS and neighboring cities to monitor the newly installed stream gauge. This will be used to monitor bank protection and emergency management planning.

5.13. Collaboration with CCWD

The City is committed to maintaining a working partnership with CCWD in the implementation of the City's goals and policies. The goals listed in this section are consistent with CCWD's goals summarized below:

1. To prevent property damage from flooding, erosion, or degraded water quality. (Consistent with Sections 5.2, 5.4, 5.5, 5.9, and 5.10)
2. To ensure balance between inflow, outflow and the storage of water and encourage a productive landscape. (Consistent with Sections 5.3 and 5.7)
3. To ensure that water is protected from contamination. (Consistent with Section 5.3, 5.4 and 5.5)
4. To efficiently serve many uses including the safety and enjoyment of the watershed's residents. (Consistent with Section 5.6)
5. To preserve and enhance wildlife. (Consistent with Section 5.4 and 5.8)
6. To be proactive in AIS management and minimize their impacts on native habitats and species. (Consistent with Section 5.8)
7. To implement changes in precipitation through the adoption of Atlas 14 rainfall values. (Consistent with Section 5.2)
8. To manage groundwater dependent ecosystems. (Consistent with Section 5.7)

6. IMPLEMENTATION PROGRAM

6.1. Overview

Coon Rapids has developed its implementation program to address issues identified earlier in this SWMP. This program reflects the needs and concerns of many stakeholders including the City Council, City Staff, citizens, and CCWD. The program also considers Coon Rapids' ability to fund these items through its general levy and stormwater utility. The implementation program consists of the following components:

- Capital Improvement Projects (CIP)
- Operation and Maintenance
- Official Controls
- Monitor and Study

Capital Improvements consist of "on-the-ground" projects intended to remedy issues identified as current problems and to continually provide storm system improvements, new/redevelopment, street reconstructions, parks projects, and more. The capital projects focus on TSS. E. coli and phosphorus reductions within the TMDL subwatersheds and any additional areas identified in the City's Non-Degradation Report. Projects within the TMDL subwatersheds are the highest priority for the City. Flood protection is also a high priority for CIPs.

Operation and Maintenance items consist primarily of the general maintenance of Coon Rapids' drainage system including ponds, storm sewer, creeks, and culverts. Operation and maintenance also includes activities related to NPDES MS4 Permit compliance such as BMP maintenance and inspections, annual meetings, SWPPP updates, and SWPPP implementation.

Official Controls include ordinance and policy revisions intended to achieve water quality and quantity benefits. Each proposed implementation item has a specific driver, which are identified in the tabulated implementation program in Section 6.2. Over time, codes must be updated to remain consistent with goals, policies and practices. City ordinances are revised as needed to stay current with the MS4 permit requirements and revisions to the watershed district rules.

Monitor and Study items consist primarily of projects designed to collect water resource data such as water quality monitoring projects, and projects to evaluate cost benefits for various stormwater treatments or planning opportunities. These types of projects also include relevant partnerships and collaborations with the City, specifically in terms of groundwater/surface water protection and recharge.

6.2. 10-Year Implementation Plan Priorities

Table 6.1 presents Coon Rapids' Implementation Program. More importantly, the Implementation Program aligns with the City's goals and policies presented in this SWMP. **Table 6.1** presents implementation items in each of the four functional areas of Capital Improvement Projects (CIP), Operation and Maintenance, Official Controls, and Monitor and Study. The implementation program incorporates Coon Rapids' SWPPP through direct reference of items that have a financial impact. The City will update the implementation program in conjunction with its annual MS4 public meeting. As the City's CIP is reevaluated, **Table 6.1** may be updated, which does not require an amendment to this SWMP.

TABLE 6.1

SURFACE WATER MANAGEMENT IMPLEMENTATION PLAN

No.	Project Description	10 Year Total Cost Estimate [1,3]	Possible Funding Sources [2]	Proposed Cost By Year[1]										Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
Capital Improvement Projects (CIP)														
1	Outlet channel maintenance - The City will perform routine maintenance of the existing outlet channel south of 119th Lane west of Xeon Street. The City will need to acquire permanent easements.	$100,000	Stormwater Utility Fund, CCWD, Grants, Special Assessments						$50,000		$25,000		$25,000	Issue 4.3.2 in Section 4
2	Lions Creek Park Improvement Project - The City will plan on constructing a culvert beneath 119th Ave NW to help alleviate drainage issues with homes along the adjacent wetland.	$150,000	Stormwater Utility Fund, CCWD, Grants, Special Assessments		$150,000									Issue 4.3.2 in Section 4
3	Bypass pipe construction - The City will consider partnering with CCWD and/or the Park District to construct a bypass pipe to convey high flows to a low point east of the Coon Rapids Dam Regional Park parking lot.	$200,000	Stormwater Utility Fund, CCWD, Grants, Special Assessments				$200,000							Issue 4.3.4 in Section 4
4	Lift station construction - Construct a small lift station to convey runoff from the wetland in the backyard of 129th Lane to prevent backyard flooding near homes.	$110,000	Stormwater Utility Fund, CCWD, Grants, Special Assessments									$110,000		Issue 4.3.5 in Section 4
5	Overflow swale construction - The low point adjacent to homes near 1353 and 1363 109th Avenue currently has no positive outlet. If flooding persists, the City will consider construction of an overflow swale from the low point.	$20,000	Stormwater Utility Fund, CCWD, Grants, Special Assessments					$20,000						Issue 4.3.6 in Section 4
6	Storm sewer sump pump and outlet - Construct a storm sewer sump pump and outlet to convey runoff to the drainage channel near the Aspencrest townhome property.	$120,000	Stormwater Utility Fund, CCWD, Grants, Special Assessments								$120,000			Issue 4.3.7 in Section 4
7	Connect to existing storm sewer through the construction of a new outlet to alleviate backyard flooding	$60,000	Stormwater Utility Fund, CCWD, Grants, Special Assessments	$60,000										Issue 4.3.8 in Section 4

No.	Project Description	10 Year Total Cost Estimate [1,3]	Possible Funding Sources [2]	Proposed Cost By Year[1]										Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
8	Ivywood Lane drainage ditch - This ditch will be regularly inspected. Periodic ditch and outlet maintenance will be performed as needed. Outlet maintenance could include regrading the adjacent ditch and constructing an emergency overflow. The emergency overflow would be constructed as part of the City's road improvement project for Crooked Lake Boulevard.	$130,000	Stormwater Utility Fund, CCWD, Grants, Special Assessments						$40,000				$90,000	Issue 4.4.1 in Section 4
9	Burlington Northern/Drake Street Ditch - Regrade the ditch channel from the large wetland complex and clear vegetation.	$70,000	Stormwater Utility Fund, CCWD, Grants, Special Assessments				$70,000							Issue 4.4.2 in Section 4
10	Stormwater ditch regrading - The City will clean the skimmer structure and regrade the ditch along Coon Creek Boulevard and 131st Avenue. Additionally, a buffer could be established to provide additional stormwater treatment and reduce the need for further maintenance.	$78,000	Stormwater Utility Fund, CCWD, Grants, Special Assessments			$78,000								Issue 4.8.2 in Section 4
11	Weston Woods Townhomes Ditch Repair - The City will remove the sediment deltas formed at the inlets to the pond and will look at options to repair the inlets and outlet. An emergency overflow to the pond will also be installed.	$20,000	Stormwater Utility Fund, CCWD, Grants, Special Assessments						$20,000					Issue 4.8.4 in Section 4
12	Stormwater Improvement Projects - Includes yearly sewer and stormwater improvement projects constructed in conjunction with City reconstruction projects and other roadway/redevelopment projects.	$400,000	Stormwater Utility Fund, CCWD, Grants, Special Assessments	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	$40,000	
13	Vegetation Management on Crooked Lake - Work with CCWD and CLAA to implement items listed in the Crooked Lake Management Plan. Including aquatic invasive species in-lake treatments.	$35,000	Stormwater Utility Fund, CCWD, Grants, Special Assessments	$3,000	$3,000	$3,000	$3,000	$3,000	$4,000	$4,000	$4,000	$4,000	$4,000	
14	Neighborhood Curb Cut Raingardens - Single-family lots between 85th Ave NW and East River Road NW Frontage Road provide various locations for curb-cut rain gardens to treat stormwater pollutants from private property. The City could partner with ACD, CCWD and local homeowners to provide assistance in cost and installation.	$60,000	Local Homeowners, Stormwater Utility Fund, CCWD, ACD, Special Assessments			$15,000		$15,000		$15,000		$15,000		Issue 4.2.3 in Section 4; Project analysis from ACD Springbrook Creek Stormwater Retrofit Analysis

No.	Project Description	10 Year Total Cost Estimate [1,3]	Possible Funding Sources [2]	Proposed Cost By Year[1]										Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
15	Iron Enhanced Sand Filter Bench - Pond 42 located north of 85th Ave NW along 85th Lane NW has space to install an IESF bench along the southern shore to provide additional stormwater treatment for dissolved constituents. Partner with CCWD and ACD. Because this is a private pond, coordination will be necessary with the responsible association.	$150,500	Stormwater Utility Fund, CCWD, ACD, Special Assessments							$150,500				Issue 4.2.3 in Section 4; Project analysis from ACD Springbrook Creek Stormwater Retrofit Analysis
16	Hydrodynamic Device - A hydrodynamic device could be installed to accept runoff from stormwater catch basins draining East River Road NW and the single-family and multi-family properties surrounding it. Located on the intersection of East River Road NW and 85th Ave NW. Partner with CCWD and ACD.	$115,300	Stormwater Utility Fund, CCWD, ACD, Special Assessments										$115,300	Issue 4.2.3 in Section 4; Project analysis from ACD Springbrook Creek Stormwater Retrofit Analysis
17	Hydrodynamic Device - A hydrodynamic device could be installed along the 84th Ln. NW storm sewer line to accept runoff from single-family properties draining to catch basins on 84th Ln. NW. Partner with CCWD and ACD.	$115,300	Stormwater Utility Fund, CCWD, ACD, Special Assessments								$115,300			Issue 4.2.3 in Section 4; Project analysis from ACD Springbrook Creek Stormwater Retrofit Analysis
18	Hydrodynamic Device - A hydrodynamic device could be installed along the 83rd Ln. NW storm sewer line to accept runoff from single-family properties draining to catch basins on Larch St. NW and 83rd Ln. NW. The device should be installed as far down the 83 rd. Ln. NW storm sewer line as possible, maximizing the drainage area to the practice. Partner with CCWD and ACD.	$58,600	Stormwater Utility Fund, CCWD, ACD, Special Assessments						$58,600					Issue 4.2.3 in Section 4; Project analysis from ACD Springbrook Creek Stormwater Retrofit Analysis
19	BMP Modification Along East River Road NW - Existing wet retention pond 53 is undersized for the drainage area and could be expanded for additional storage. The pond property is also privately owned, likely requiring a stormwater easement or potential outright purchase of the property for any stormwater treatment improvements.	$126,000	Stormwater Utility Fund, CCWD, ACD, Special Assessments							$126,000				Issue 4.2.3 in Section 4; Project analysis from ACD Springbrook Creek Stormwater Retrofit Analysis
20	Neighborhood Curb Cut Raingardens - Positioning the rain gardens is areas currently being undertreated for water quality. The City could partner with CCWD, ACD and local homeowners to provide assistance in cost and installation.	$46,000	Local Homeowners, Stormwater Utility Fund, CCWD, ACD, Special Assessments				$23,000				$23,000			Issue 4.2.3 in Section 4; Project analysis from ACD Sand Creek Stormwater Retrofit Analysis

SECTION VI

No.	Project Description	10 Year Total Cost Estimate [1,3]	Possible Funding Sources [2]	Proposed Cost By Year[1]										Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
21	Neighborhood Curb Cut Raingardens - Subwatershed located along Highway 610 along 88th Ave NW. Positioning the rain gardens uphill from existing catch basins will capture and infiltrate stormwater runoff before it enters the storm system. The City could partner with CCWD, ACD and local homeowners to provide assistance in cost and installation.	$52,500	Local Homeowners, Stormwater Utility Fund, CCWD, ACD, Special Assessments						$26,250			$26,250		Issue 4.2.3 in Section 4; Project analysis from ACD Pleasure Creek Stormwater Retrofit Analysis
22	Streambank Stabilization - Provide support for bank stablization effotrs where active erosion is identified during routine ditch inspections by CCWD. Partnership opportunity between the City, CCWD, ACD and others as needed.	$130,000	Stormwater Utility Fund, CCWD, ACD, Special Assessments					$37,000		$37,000		$56,000		Issue 4.2.3 in Section 4
23	Egret Storm line Re-Direct- Currently the Autumn Knolls stormwater pond is adjacent to the main storm sewer line that directs stormwater runoff from the en tire Egret network to Coon Creek. Though some water from the main line may be treated by the pond, the position of the pipe an d pond outfall likely creates a short-circuit scenario. By re-directi ng the storm line to a different part of the pond and installing a p roper outlet, the entire Egret network could be forced through th e Autumn Knolls pond before being discharged to Coon Creek.	$55,000	Stormwater Utility Fund, CCWD, ACD, Special Assessments			$55,000								Issue 4.2.3 in Section 4; Project analysis from ACD Lower Coon Creek Stormwater Retrofit Analysis
24	Infiltration Weir - Located south of 108th Ave and Butternut St. An outlet pipe set low in the landscape combined with channeliz ation of discharge from the surrounding stormwater pipes has sh ort-circuited the infiltration area. A simple weir structure would i ncrease the outlet elevation and provide additional infiltration. Additional engineering is required to determine which approach i s most feasible and to ensure that impacts to neighboring proper ties are minimized.	$15,000	Stormwater Utility Fund, CCWD, ACD, Special Assessments	$15,000										Project analysis from ACD Lower Coon Creek Stormwater Retrofit Analysis Project ID: LCC-15 Infiltration Weir
25	Coon Rapids Dam Regional Park Pond - The pond to the west of Highway 610 within the Coon Rapids D am Regional Park provides a great opportunity to provide storm water treatment for the entire catchment. Tasks for construction include inlet/outlet structures, excavation and expansion of the existing pond, and site restoration	$275,500	Stormwater Utility Fund, CCWD, ACD, Special Assessments								$275,500			Project analysis from ACD Lower Coon Creek Stormwater Retrofit Analysis

No.	Project Description	10 Year Total Cost Estimate [1,3]	Possible Funding Sources [2]	Proposed Cost By Year[1]										Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
26	Goose management activities outlined in the City's Goose Management Plan	$10,000	Stormwater Utility Fund, Grants, Special Assessments	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	
27	Neighborhood Curb Cut Raingardens - Subwatershed located south of Egret Blvd NW. Positioning the rain gardens uphill from existing catch basins will capture and infiltrate stormwater runoff before it enters the storm system. The City could partner with CCWD, ACD and local homeowners to provide assistance in cost and installation.	$108,000	Local Homeowners, Stormwater Utility Fund, CCWD, ACD, Special Assessments		$27,000			$27,000			$27,000		$27,000	
Operation and Maintenance														
28	Miscellaneous annual repairs to storm sewer infrastructure	$200,000	Stormwater Utility Fund	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	$20,000	
29	Easement acquisitions to create access to stormwater BMPs and address flooding/storage issues	$24,000	Stormwater Utility Fund			$8,000			$8,000			$8,000		
30	Provide chemical treatment to selected municipal storm pond, provided landowner cooperation is obtained	$10,000	Stormwater Utility Fund	$2,000		$2,000		$2,000		$2,000		$2,000		From 2004 Plan implementation table
31	Parking Lots & Street Cleaning - Sweep City maintained streets 2 times per year	$662,000	Stormwater Utility Fund	$66,200	$66,200	$66,200	$66,200	$66,200	$66,200	$66,200	$66,200	$66,200	$66,200	From SWPPP Implementation Table
32	Storm Sewer Inspection Program - Conduct one inspection of all City-owned ponds and outfalls prior to expiration date of the MS4 General Permit. Annually inspect 100% of structural pollution control devices.	$50,000	Stormwater Utility Fund	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	From SWPPP Implementation Table, Issue 4.11.1 in Section 4
33	Road Salt Application Review - The City will record the annual activities of the salt distribution program and adjust current practices as necessary.	$10,000	Stormwater Utility Fund	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	From SWPPP Implementation Table
34	Stormwater Training Program - Staff trainings to discuss the following topics: parking lot and street cleaning, storm drain systems cleaning, road salt materials management, fleet and building maintenance, park and open spaces and other stormwater-related topics. Includes MN Fall Maintenance Expo, MPWA Fall Conference, and miscellaneous safety trainings.	$15,000	Stormwater Utility Fund	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	$1,500	From SWPPP Implementation Table

SECTION VI

No.	Project Description	10 Year Total Cost Estimate [1,3]	Possible Funding Sources [2]	Proposed Cost By Year[1]										Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
35	TMDL Review & Implementation - Coon Rapids will work cooperatively with the Minnesota Pollution Control Agency and other outside organizations to develop and implement all future TMDL implementation plan(s) for impaired waters designated under Section 303(d), receiving MS4 discharges from within or adjacent to the City. This includes performance tracking towards TMDL goals.	$25,000	Stormwater Utility Fund	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	From SWPPP Implementation Table
36	Education Program: Coon Rapids and CCWD will collaborate to raise awareness by providing information on stormwater pollution prevention, effects of illicit discharges, best management practices, stormwater pond maintenance, pet waste management and outside entity resources available to City residents and business owners.	$32,000	Stormwater Utility Fund	$3,200	$3,200	$3,200	$3,200	$3,200	$3,200	$3,200	$3,200	$3,200	$3,200	Issue 4.4.4, 4.10.1 in Section 4
37	Storm Sewer System Mapping - Annually update storm sewer map for new development including new outfalls, storm sewer, and BMPs.	$8,000	Stormwater Utility Fund	$800	$800	$800	$800	$800	$800	$800	$800	$800	$800	
38	Illicit Discharge Inspections - Using the areas that the City identified as high-priority outfalls and areas around high-risk establishments, the City will integrate those sites into its annual MS4 inspection activities. As needed, City staff will televise a section of the sewer system, collect grab samples or perform other effective testing procedures to find illicit connection identified in the system.	$25,000	Stormwater Utility Fund	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	$2,500	
39	Regular Flood Monitoring - The City will continually monitor known issue areas related to flooding.	$5,000	Stormwater Utility Fund	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500	Issue 4.3.3, 4.3.5, 4.3.6, 4.4.1
40	Routine Ditch Maintenance - The City will continually perform ditch maintenance to prevent blockage through the main flow areas.	$25,000	Stormwater Utility Fund		$5,000		$5,000		$5,000		$5,000		$5,000	Issue 4.3.7, 4.4.2, 4.4.3, 4.8.3
41	Aesthetic Pond Treatment - The City will perform aesthetic pond treatments on stormwater basins as needed on a water quality basis and as outlined in Section 5.3.8.	$9,000	Stormwater Utility Fund			$3,000			$3,000			$3,000		
42	Stormwater Management Asset Program (SWAMP) - The City will implement this program to monitor BMP performance and water quality, prioritize inspection and maintenance activities, track TSS and TP load reductions, and schedule and record MS4 inspections.	$62,500	Stormwater Utility Fund	$22,000	$4,500	$4,500	$4,500	$4,500	$4,500	$4,500	$4,500	$4,500	$4,500	

No.	Project Description	10 Year Total Cost Estimate [1,3]	Possible Funding Sources [2]	Proposed Cost By Year[1]										Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
43	Pond Surveys - The City will annually complete pond surveys to schedule and prioritize the necessary maintenance projects. This efforts will be assisted by the SWAMP application.	$100,000	Stormwater Utility Fund	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	
44	Annual Pond Cleanout - The City will perform yearly cleanout of ponds identified for maintenance with the SWAMP program.	$500,000	Stormwater Utility Fund	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	$50,000	
Official Controls														
45	Ordinance updates - The City will continually evaluate their adopted ordinances related to floodplain regulation, illicit discharge, surface water management (MIDS), wetland management, and erosion control. Any necessary revisions will be made as regulations change.	$3,000	Stormwater Utility Fund	$300	$300	$300	$300	$300	$300	$300	$300	$300	$300	Issue 4.7.1 in Section 4
46	Standard Maintenance Agreement - The City will develop a standard maintenance agreement for all private BMPs that are constructed.	$2,000	Stormwater Utility Fund		$2,000									Issue 4.4.4 in Section 4
47	Goose Management Plan: The City will regularly evaluate their goose management plan and activities. Updates will occur as needed.	$5,000	Stormwater Utility Fund	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500	
48	Wellhead Protection Standards - The City will regularly evaluate their current wellhead protection standards and plan to remain consistent with local and regional updates.	$5,000	Stormwater Utility Fund	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500	
49	Native Vegetation - The City will look to encourage the use of native vegetation per Ordinance 2164 and will update language as necessary.	$5,000	Stormwater Utility Fund	$500	$500	$500	$500	$500	$500	$500	$500	$500	$500	
50	Develop and update a City policy to provide guidance on addressing localized backyard flooding issues.	$10,000	Stormwater Utility Fund	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	$1,000	Issue 4.3.9 in Section 4

SECTION VI

No.	Project Description	10 Year Total Cost Estimate [1,3]	Possible Funding Sources [2]	Proposed Cost By Year[1]										Comments
				2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	
Monitor and Study														
51	Undertake FEMA restudy analysis with CCWD. The purpose of this study is to help alleviate any discrepancies between FEMA flood elevation and the flood elevation from CCWD's district wide model.	$35,000	Stormwater Utility Fund, CCWD			$35,000								Issue 4.3.1 in Section 4
52	Cooperate with CCWD to identify and prioritize sites of streambank erosion. Ongoing study.	$50,000	Stormwater Utility Fund, CCWD	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	$5,000	
53	Evaluation of Potential Stormwater Infiltration Projects for Impacts within Source Water Protection Areas. Ongoing study.	$100,000	Stormwater Utility Fund, CCWD	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	$10,000	
54	Study potential locations to install new and emerging technologies designed to reduce E. coli. These projects would be credited towards the E. coli TMDL for Coon Creek, Sand Creek, Pleasure Creek and Springbrook Creek. Ongoing study.	$90,000	Stormwater Utility Fund, CCWD, ACD				$30,000				$30,000		$30,000	Coon Creek WRAPS Report
55	Identify stormwater ponds that are contaminated with PAHs as they are inspected and maintained. The City will prioritize cleanup and disposal as needed and will partner with CCWD and other agencies if applicable. See items 49-51 for costs related to this project. Ongoing project.	$40,000	Stormwater Utility Fund, CCWD, ACD	$8,000		$8,000		$8,000		$8,000		$8,000		
	TOTAL	$4,918,200		$332,000	$413,500	$433,500	$557,500	$338,500	$441,350	$569,000	$851,300	$458,750	$522,800	

[1] Cost estimates are preliminary and subject to review and revision as engineer's reports are completed and more information becomes available. Table reflects 2017 costs and does not account for inflation. Costs generally include labor, equipment, materials, and all other costs necessary to complete each activity. Some of the costs outlined above may be included in other operational costs budgeted by the City.

[2] Funding for stormwater program activities projected to come from following sources - Surface Water Management Fund, Developers Agreements, Grant Funds, General Operating Fund, or Special Assessments.

[3] Staff time is not included in the cost shown.

7. FINANCIAL CONSIDERATIONS

Implementation of the proposed regulatory controls, programs, and improvements that are identified in this plan will have a financial impact on the City. To establish how significant this impact will be, a review of the means and ability of the City to fund these controls, programs, and improvements is necessary. Outlined below is a list of various sources of revenue that the City will consider in implementing the water resource management efforts outlined in this plan.

For 2018-2027, the capital improvement projects, operation and maintenance programs, and studies are estimated to cost about $5,154,111 (**Table 6.1**). Potential funding sources are listed below:

- City's Stormwater Utility Fund
- Cost sharing due to collaboration and partnerships with Coon Creek Watershed District
- Special assessments for local improvements made under the authority granted by Minnesota Statutes Chapter 429.
- Revenue generated by Watershed Management Special Tax Districts provided for under Minnesota Statutes Chapter 473.882.
- Watershed District Levies from cooperation and partnership on projects with CCWD
- Grant monies that may be secured from various local, regional, County, State, or Federal agencies. This would include MnDOT, MPCA, Metropolitan Council, DNR, and others.
- Tax abatement
- Developer funds
- ACD Partnerships
- Neighboring cities
- Crooked Lake Area Association (CLAA)
- Other sources could include tax increment financing, state aid, etc.

The City will use funds generated from its Stormwater Utility as the primary funding mechanism for its implementation program including maintenance, repairs, capital projects, and studies. The City will continue to review the stormwater utility fee annually and adjust based on the stormwater related needs of the City and other available funding mechanisms. The City will coordinate annually with CCWD on upcoming cost sharing opportunities to address TMDLs and other water quality projects within the City. The City will also explore additional revenue sources as they become available and from those options listed above to cover additional funding needs.

8. AMENDMENT PROCEDURES

8.1. Review and Adoption Process

Review and adoption of this Surface Water Management Plan will follow the procedure outlined in Minnesota Statutes 103B.235:

> After consideration but before adoption by the governing body, each local government unit shall submit its water management plan to the watershed management organization[s] for review for consistency with the watershed plan. The organization[s] shall have 60 days to complete its review.
>
> Concurrently with its submission of its local water management plan to the watershed management organization, each local government unit shall submit its water management plan to the Metropolitan Council for review and comment. The council shall have 45 days to review and comment upon the local plan. The council's 45-day review period shall run concurrently with the 60-day review period by the watershed management organization. The Metropolitan Council shall submit its comments to the watershed management organization and shall send a copy of its comments to the local government unit.
>
> After approval of the local plan by the watershed management organization[s], the local government unit shall adopt and implement its plan within 120 days, and shall amend its official controls accordingly within 180 days.

8.2. Plan Amendments and Future Updates

This Local Surface Water Management Plan will be incorporated into the City's 2040 Comprehensive Plan update in 2018. The Plan is intended to be in effect for ten years, at which time an updated plan will be required. Following review by CCWD and Met Council and the formal adoption process outlined above, the Coon Rapids SWMP will be current.

The City may revise/amend the plan in response to City-identified needs. Minor changes to the plan will not require a re-submittal for agency review. Minor changes to the Plan shall be defined as changes that do not modify the goals, policies, or commitments expressly defined in this plan by the City. Adjustment to subwatershed boundaries will be considered minor changes provided that the change will have no significant impact on the rate or quality in which stormwater runoff is discharged from the City boundaries.

Significant changes to the local plan shall be made known to the following parties:

1. City Manager, Director of Public Works, and Assistant City Engineer
2. Coon Creek Watershed District
3. Metropolitan Council
4. Public within the City through a public hearing process

Any major changes to the Plan will be sent to CCWD and Metropolitan Council simultaneously for review and approval. Major amendments shall include updates to the City's goals and policies and ordinance updates related to stormwater management. The City's process shall be consistent with Policy 4.7, Certification and Approval of Local Water Management Plans, of the CCWD Watershed Management Plan. The Plan will be updated as necessary in response to the update of CCWD's Watershed Management Plan or subsequent rules.

9. GLOSSARY

ACD – Anoka Conservation District

BMPs – Best Management Practices

BWSR – Board of Water and Soil Resources

CCWD – Coon Creek Watershed District

City – City of Coon Rapids

CIP – Capital Improvement Projects

CLAA – Crooked Lake Area Association

CWPMP – Comprehensive Wetland Protection and Management Plans

DNR –Department of Natural Resources

DWSMA – Drinking Water Supply Management Area

FEMA – Federal Emergency Management Agency

FIS – Flood Insurance Study

FIRM – Flood Insurance Rate Map

GIS – Geographic Information System

IDDE – Illicit Discharge Detection and Elimination

IESF – Iron-Enhanced Sand Filter

ISTS – Individual Sewage Treatment Systems

LiDAR – Light Detection and Ranging

LGU – Local Governing Unit

LOMR – Letter of Map Revision

LSWMP – Local Surface Water Management Plan (also called the plan, City plan and SWMP)

MCBS – Minnesota County Biological Survey

MDH – Minnesota Department of Health

MIDS – Minimal Impact Design Standards

MLCCS – Minnesota Land Cover Classification System

MDOT – Minnesota Department of Transportation

MnRAM – Minnesota Routine Assessment Method for Evaluating Wetland Functions

MPCA – Minnesota Pollution Control Agency

MRCCA – Mississippi River Corridor Critical Area

MS4 – Municipal Separate Storm Sewer System

NPDES – National Pollutant Discharge Elimination System

NOAA – National Oceanic and Atmospheric Administration

NRCS – National Resources Conservation Service

NRI – Natural Resources Inventory

NWI – National Wetland Inventory

NWS – National Weather Service

PAHs – Polycyclic Aromatic Hydrocarbons

PPB – Parts Per Billion

SCS – Soil Conservation Service

SNA – Scientific and Natural Area

SOP – Standard Operating Procedure

SWAMP – Stormwater Asset Management Program

SWPPP – Storm Water Pollution Prevention Plan

TMDL – Total Maximum Daily Load

TP – Total Phosphorus

TSS – Total Suspended Solids

USFWS – United States Fish and Wildlife Service

WCA – Wetland Conservation Act

WHPP – Wellhead Protection Plan

WMO – Watershed Management Organization

WRAPS – Watershed Restoration and Protection Strategies Report (

COON RAPIDS
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August 1, 2019

Eric Wojchik
Metropolitan Council
390 Robert St. N.
St. Paul, MN 55101-1805

RE: Responses to items found to be incomplete, Coon Rapids 2040 Plan Submittal

Dear Mr. Wojchik:

In response to the letter from the Metropolitan Council dated January 31, 2019, the City of Coon Rapids has made revisions to its 2040 Plan submittal. The following narrative summarizes the Metropolitan Council's comments provided earlier this year and changes that have been made by City Staff.

Land Use (Eric Wojchik, 651-602-1330)
Communities with Existing or Planned Transitways or High Frequency Bus Corridors
The Plan is inconsistent with regional policy for minimum density of planned land use near the Riverdale Northstar Commuter rail station, which is a potential conformance issue that will need to be addressed. The 2040 Transportation Policy Plan (TPP) establishes minimum planned residential density of 20 units per acre for transit station areas. The Plan must include density minimums, targets and land use mix that addresses guidelines for minimum activity level.

- On Page 2-29, the Plan states that the City adopted the Riverdale Station Area Transit-Oriented Development Design Guidelines in 2007, which established development guidelines for the area surrounding the station. The Plan also indicates that "development of this site is anticipated in the short term with a minimum residential density of 20 units per acre within ½ mile of the rail station." However, the 2040 Plan guides this area as Residential Mixed Use (70% residential at 10-50 residential units per acre), which is both below the average minimum net residential density of 20 units per acre required by the TPP and the density intention stated on page 2-29. The Plan needs to demonstrate how the land use guiding is anticipated to achieve minimum development/redevelopment densities of 20 units per acre within 1/2 mile of the rail station. **Response: The Future Land Use Map was modified to include a "Transit Mixed-Use" overlay category that requires residential densities to fall between 20 and 50 units per acre. This category was also added to Table 2-7, Future Land Use Categories. Text on page 2-29 was also modified to eliminate "within ½ mile of the rail station," since some areas within that radius are not designated development/redevelopment areas.**

Community strength... for generations

- As currently drafted, the Residential Mixed Use guiding does not ensure that sites near the region's transit system are preserved by the Plan for projects at densities that are consistent with the regional investment, market context, and the minimum density required by the TPP. Additional land use detail and revisions to the Plan will align with the City's station area planning, and any such changes can demonstrate consistency and conformance with regional policy. **Response: As stated above, the Future Land Use Map was modified to include a "Transit Mixed-Use" overlay category that requires residential densities to fall between 20 and 50 units per acre.**

- Please keep in mind that the minimum density is an average of the minimum density of planned land uses for areas guided for development and redevelopment. The City could guide some locations at higher minimum densities (e.g., 40 units/acre) and some with lower (e.g., 15 units/acre). Aside from creating a new land use category, the Plan could differentiate among minimum densities based on location (e.g., within 1/4 mile of the station or along certain corridors). **Response: The addition of the "Transit-Mixed-Use" category to the designated development/redevelopment area near the transit station should address this issue.**

<u>Existing Land Use</u>
Some of the land uses in Table 2-4, Previously Planned Land Use, 2008, on page 2-11 do not match those in the corresponding map, Map 2-5, Previously Planned Land Use, on page 2-12. All tables and figures identifying previous land uses must use consistent titles throughout the Plan.

Advisory Comments
- The total acres in Table 2-8, Table 2-4, and Table 2-2 are slightly inconsistent with one another and must match. **Response: The acreages shown in each table have been corrected to total 14,975.**
- The title "Implementation" on page 2-34 is misspelled. Response: **This typo has been corrected.**
- Map 2-6, Future Land Use, on page 2-22, is titled as a Draft, dated 9/13/17. The City should ensure that the most recent, approved, Future Land Use Map is included in the official Plan and remove the "Draft" status from the Map prior to formal adoption of the Plan. **Response: This typo has been corrected.**

<u>Future Land Use</u>
The Plan is unclear whether the City requires 30% residential development for the Commercial Mixed Use land use category. For this land use category to contribute to residential density calculations or affordable housing need calculations, Table 2-7 should clearly state if a residential component is required for this land use (see Housing comments). **Response: Table 2-**

7 has been modified to included additional text in the Residential Mixed Use and Commercial Mixed Use categories stating that "% is estimate on district-wide scale; not requirement for individual projects."

Forecasts (Paul Hanson, 651-602-1642)
The Plan needs to include a sewer-service forecast table. Table 5-6 provided the portion of the forecasts that are on sanitary sewer. However, the numbers provided do not include the portion of the City that is unsewered and the numbers provided do not match the Council allocation as defined by the Table's source: Metropolitan Council 2040 Water Resources Policy Plan. The Table on the City's Community Page of the Local Planning Handbook provides the estimated service. The sum of sewer-service allocations need to match the City total forecasts. **Response: The 2020, 2030, and 2040 unsewered forecast totals shown for Coon Rapids by the Metropolitan Council within the Local Planning Handbook are 2,890 for Population, 1,080 for Households, and 200 for Employment. These forecast numbers are not accurate as the City has data that shows only 36 property addresses are currently not served by City sewer. The City expects four of these properties to connect to City sewer in 2019, thus reducing the total number of properties to 32 by 2020. Table 5-6 was updated to show unsewered forecasts based on actual City data.**

Transportation and Transit (Russ Owen, 651-602-1724)

- The Plan should identify the MV Bus Garage at 9385 Holly Street NW, as it is a transit support facility within City limits. **Response: Staff conducted a site visit and MV Bus Garage is not located at this address.**
- The following changes need to be made to the table on page 3-18, in Chapter 3:
    - Route 850 has 24 northbound and 25 southbound trips rather than the 8 and 7 cited.
    - Route 824 does not directly serve Coon Rapids and should be taken off the table or footnoted as service at Northtown, but outside of the City limits.
    - If footnoted, for consistency, the other routes serving Northtown but not directly serving Coon Rapids should be noted, they include routes 10, 25, and 825.
    - Route 824 does not directly serve Coon Rapids (see discussion above).
    - Route 805 has 14 northbound and 13 southbound trips.
    - Route 831 should be added to the table with 13 northbound and 12 southbound trips.

  Response: The above changes have been made to the table on page 3-18.
- The Plan should include discussion about whether the City has adopted access management guidelines or utilizes guidelines from MnDOT or the County to guide access management along Principal and Minor Arterial roadways. **Response: The City uses MNDOT and Anoka County Guidelines by default. All arterial roadways either MNDOT or Anoka County jurisdiction**.

Advisory Comments
Map 3-3, Existing Daily Traffic Volumes, states that it needs to be updated. If this is still the case, then it should be revised. If not, the red text should be removed. **Response: The text has been removed and the map updated.**

Wastewater (Roger Janzig, 651-602-1119)
The Plan must include the Sanitary Sewer Comprehensive Plan as a separate chapter or as an appendix to be considered complete. **Response: The final Sanitary Sewer Comprehensive Plan is included as an appendix to the 2040 Comprehensive Plan.**

The Plan must also include the following:

- A table that details adopted community sewered forecasts in 10-year increments to 2040, by households and employment broken down by Metropolitan Disposal System Interceptor, and Community and Subsurface Sewerage Treatment Systems, including:
    - Interceptor 7035
    - Interceptor 4-NS-525
    - Interceptor 4-NS-521
    - Interceptor 4-NS-522

  Response: This information is included in updated Table 5 (Population and Household Projections) of section 3.1 of the final Sanitary Sewer Comprehensive Plan.
- An electronic map or maps (GIS shape files or equivalent) showing the existing sanitary sewer system information for local sewer service districts by connection point and intercommunity connections. **Response: Figure 4-6 was developed to show intercommunity connections, and is included in the final Sanitary Sewer Comprehensive Plan. Figure 4-7 in the final Sanitary Sewer Comprehensive Plan contains information regarding the requested detail for local sewer service districts.**
- Describe the requirements and standards in your community for minimizing inflow and infiltration. Include a copy of the local ordinance or resolution that prohibits discharge from sump pumps, foundation drains, and/or rain leaders to the sanitary sewer system. Include a copy of the local ordinance or resolution requiring the disconnection of existing foundation drains, sump pumps, and roof leaders from the sanitary sewer system. **Response: City Ordinance Chapter 13-700 is included as Appendix D of the final Sanitary Sewer Comprehensive Plan**.
- Describe the sources, extent, and significance of existing inflow and infiltration in both the municipal and private sewer systems. Include the measured or estimated amount of Clearwater flow generated from the public municipal and private sewer systems.
    - For quantifying I/I, some communities have used the EPA guidance to determine the annual I/I and peak month I/I. **Response: Section 4.5.1 of the final Sanitary Sewer Comprehensive Plan has been updated to address this comment.**

Water Resources
Coon Rapids lies fully within the oversight boundaries of the Coon Creek Watershed District. The City submitted a draft Local Water Management Plan (LWMP) to the Council in March 2018. Council Water Resources staff reviewed and commented on the draft LWMP to the City and Watershed District in a letter dated April 2, 2018. The Plan contains a summary of the City's LWMP as Plan Chapter 5; however, the Plan needs to incorporate the complete final LWMP in a Plan Appendix to be considered complete for review. The Watershed District approved the LWMP on October 8, 2018. When available, we request that the City provide the date the City adopted the final LWMP. **Response: The Coon Rapids City Council formally adopted the final Local Water Management Plan (LWMP) on February 5, 2019.**

Community Wastewater Treatment and Subsurface Sewage Treatment Systems (SSTS) (Jim Larsen, 651-602-1159)
The Plan does not discuss the City's SSTS Program. Information contained in the 2018 Sanitary Sewer Comprehensive Plan (Comp Sewer Plan) dated December 1, 2017, submitted as a separate document for Council review on February 26, 2018, indicates that there are 32 properties in the City solely served by SSTS as of September 2017, and that there are no public or privately-owned Community Wastewater Treatment facilities in use in the City. The City's SSTS Ordinance (City Code Chapter 13-500) is available in Appendix D of the Comp Sewer Plan. The Ordinance is consistent with the Minnesota Pollution Control Agency Rules (Minnesota Rules Chapter 7080-7083) and Council 2040 Water Resources Policy Plan requirements.

- The Plan needs to incorporate a section on Community Wastewater Treatment and individual SSTS. Council staff suggest that "Section 4.5.4 Subsurface Sewage Treatment" of the City's 2018 Comprehensive Sewer Plan document be incorporated in the Chapter 5 - Wastewater section of the Plan, and the entire 2018 Comprehensive Sewer Plan document be included as a Plan appendix.
- Additionally, the SSTS section in the Plan needs to be augmented to include a map depicting the parcel location of the 32 properties served solely by SSTS in the City – a map of the Table 8 data presented on page 22 of the Comprehensive Sewer Plan.

Response: Figure 4-3 included within Appendix A of the Sanitary Sewer Comprehensive Plan has been updated to show the current SSTS locations.

Water Supply (Lanya Ross, 651-602-1803)
The City must provide the complete approved Local Water Supply Plan (LWSP) based on the MN Department of Natural Resources (DNR) template in an appendix to the Plan. The community prepared a draft LWSP that was submitted to both the DNR and the Council and reviewed under separate cover in a letter to the DNR dated February 27, 2018. That review found the draft LWSP to be complete and consistent with Water Resources Policy Plan (WRPP) policies related to water supply, including the policy on sustainable water supplies, the policy on assessing and

protecting regional water resources, and the policy on water conservation and reuse. The LWSP was subsequently approved by DNR, per a letter to the community on March 21, 2018.
Response: The complete approved Local Water Supply Plan (LWSP) is included as an appendix to the 2040 Comprehensive Plan.

Housing (Tara Beard, 651-602-1051)
Projected Housing Need

- Land guided to address the City's allocation of affordable housing need for 2021-2030 is not sufficiently described for review.
    - The Plan is not clear if the acres in the 2020, 2030, and 2040 columns of Tables 2-8 are cumulative or consecutive. Showing column headers as ranges (i.e. Existing – 2020, 2021-2030, and 2031-2040) would clarify if 72.1 acres of Residential Mixed Use will develop between 2020 and 2030 or if the difference between 72.1 and 2020's 19.7 acres (or 52.4 acres) is what will develop. **Response: Table 2-8 on page 2-20 has been modified to show consecutive absorption within each land use category by decade.**
    - Tables 2-8 and 2-10 must clarify if the 70% residential requirement for Residential Mixed Use has been applied to the acreages provided or not. **Response: A footnote has been added to Table 2-8 on page 2-21 stating that "acreages for Mixed Use categories represent the total for that category." Language has been added to Table 2-10 stating that the total number of housing units corresponds to 30% of the total acreage of the category.**
    - The Plan needs to clarify if Commercial Mixed Use requires residential development. While at least 70% of the land use must be commercial, an expected residential percentage must be required for this land use to contribute to the City's requirement to address their allocation of affordable housing need for 2021-2030. If the intention of the Commercial Mixed Use land use is to require a minimum of 30% residential development, please state that clearly, particularly in Table 2-7. **Response: Table 2-7 has been modified to included additional text in the Residential Mixed Use and Commercial Mixed Use categories stating that "% is estimate on district-wide scale; not requirement for individual projects."**
- Please note that after the land is determined to be adequately described for the Plan to be complete, enough land must be guided to meet the allocation of affordable housing need for the 2021-2030 time period, in order for the Plan to be consistent with Council housing policy.

<u>Implementation Plan</u>

- Plans must not only describe tools but must also indicate in what circumstances, if any, the City will engage them. For example, in the Implementation table, regarding the HRA, the opportunity and sequence of use is described as "The City can use the HRA's authority to

facilitate…" The Plan must state if the community will consider using HRA authority to address the housing needs in the table. **Response: Language in the implementation table has been strengthened in lines 19, 25, 26, 27, 28, 29, 30, and 31.**

- To be consistent with Council housing policy, all widely recognized tools must be considered to meet stated housing needs. Such tools not considered in the Plan include:
    - A local Fair Housing Policy (Fair Housing actions in the Plan are noted, but the consideration of a separately adopted local policy is not mentioned - please note that the Council will require a local Fair Housing policy as a requirement to draw upon Livable Communities Act (LCA) awards beginning in 2019. Since Coon Rapids is an LCA participating city, and to ensure that all the housing efforts deployed by the City address Fair Housing needs, the City should consider adopting a local Fair Housing Policy). **Response: Coon Rapids has since adopted a Fair Housing Policy and line 44 has been updated to state that the City will communicate fair housing resources to its residents.**
    - Intent to explore the preservation of low-income housing tax credit properties that could expire before 2040 with partners such as Minnesota Housing. **Response: Exploring partnerships to preserve existing tax credit properties has been added to the table as an implementation item.**
    - 4d tax incentives and other naturally occurring affordable housing tools to preserve naturally occurring affordable housing. **Response: NOAH preservation tools has been added to the table as an implementation item.**

Implementation (Eric Wojchik, 651-602-1330)
The Plan needs to include a summarized Capital Improvement Plan, along with a current zoning map and zoning category descriptions.

- Include a Capital Improvement Program (CIP) for transportation, sewers, parks, water supply, and open space facilities. Specify the timing, likely expenditure, and sequence of major local public investments. The CIP must align with development staging identified in other parts of the Plan and include budgets and expenditure schedules. The information on page 9-15 is helpful, but it should include any sequencing and expenditure for major projects. **Response: The City of Coon Rapids does not have or maintain a Capital Improvement Plan (CIP). A CIP therefore cannot be provided. Current zoning maps and category descriptions are included in the Lane Use chapter of the Comprehensive Plan.**

COON RAPIDS
Minnesota

11155 Robinson Drive NW, Coon Rapids, MN 55433
Web: coonrapidsmn.gov Phone: 763-755-2880

Please feel free to contact me with any questions or if you need additional information. I look forward to your review and approval of Coon Rapids' 2040 Plan.

Sincerely,

Matthew C Brown

Matt Brown
Economic Development Coordinator

2018 Sanitary Sewer Comprehensive Plan

2040 MCES Comprehensive Plan Update

Coon Rapids, Minnesota

COONR 141837 | July 18, 2019

SEH

Building a Better World for All of Us®

Engineers | Architects | Planners | Scientists

Building a Better World
for All of Us®

July 18, 2019

RE: 2040 MCES Comprehensive Plan Update
2018 Sanitary Sewer Comprehensive Plan
Coon Rapids, Minnesota
SEH No. COONR 141837 4.00

Mr. Tim Himmer
City of Coon Rapids
11155 Robinson Drive
Coon Rapids, MN 55433

Dear Mr. Himmer:

Please find enclosed the City of Coon Rapids Sanitary Sewer Collection System Comprehensive Plan for 2018 as required by the Metropolitan Council. As you know, the City's Comprehensive Plan is the part of a long-range planning document for future development of Coon Rapids and the regional metropolitan area. This document updates the previous Coon Rapids Sanitary Sewer Comprehensive Plan so the City can complete the wastewater section of their Metropolitan Council 2040 comprehensive plan update.

Our staff developed this draft based on conversations with your staff, our knowledge of the system and information from the previous comprehensive plan. In addition, we used the following information: the City's GIS database, current and future land use plans, water records and rehabilitation and planning data to update and model the City's current sanitary sewer collection system.

If you have any questions relating to this document, please contact me by email at wlueck@sehinc.com or at 651.490.2174.

Sincerely,

William Lueck, PE
Project Manager

bab
s:\ae\c\coonr\141837\4-prelim-dsgn-rpts\sanitary sewer comprehensive plan update.docx

2018 Sanitary Sewer Comprehensive Plan

2040 MCES Comprehensive Plan Update
Coon Rapids, Minnesota

SEH No. COONR 141837

July 18, 2019

I hereby certify that this report was prepared by me or under my direct supervision, and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

William Lueck, P.E.

Date: July 18, 2019 License No.: 40125

Reviewed By: Fasil Yitbarek Date: July 18, 2019

Short Elliott Hendrickson Inc.
3535 Vadnais Center Drive
Saint Paul, MN 55110

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1	William Lueck Short Elliott Hendrickson Inc. 3535 Vadnais Center Drive Saint Paul, MN 55110

Executive Summary

The Coon Rapids sanitary sewer collection system is part of the overall Minneapolis-Saint Paul Regional wastewater collection and treatment system program managed and operated by the Metropolitan Council Environmental Services (MCES). In addition to the interceptor collection system owned by the MCES, the local sanitary collection system is jointly owned under private ownership (service laterals and isolated lift stations) and the City of Coon Rapids. The MCES is required under state and federal requirements to ensure all wastewater throughout the Twin Cities Metropolitan area does not leave their interceptors and is properly treated before discharge to local receiving streams. In order to ensure the capacity of their interceptors, the MCES adopted a surcharge program to make sure all communities were properly maintaining their sanitary sewer collection systems and managing peak discharges caused by inflow and infiltration (I/I) in their sanitary sewer collection systems. The Coon Rapids system is adequately handling existing flows, but the sanitary sewer system continues to require capital improvements to maintain the existing level of service.

The City of Coon Rapids has established several goals toward improving their sanitary sewer collection system including the following:

- Developing an educational program for VCP services to inform residents of potential issues with their service connections, how that impacts the City's sanitary system, educating residents on ownership and maintenance responsibilities, and rehabilitation options. This includes service laterals with defects which allow inflow and infiltration and foundation drains and sump pumps connected to sanitary sewer services.
- Inspection, evaluation and potential rehabilitation for the 17 miles of RCP currently installed throughout the City.
- Implementation of a public education program regarding "flushable" wipes, to encourage residents to not flush them and educate residents of the negative impact of non-degrading wipes on the collection system.
- Continued inflow and infiltration (I/I) mitigation through existing programs as well as potential RCP sewer lining as identified above and continued manhole rehabilitation.
- Installation of fiber optic communications systems at all lift stations for uninterrupted communications.

A five part study of the Coon Rapids sanitary sewer collection system has been developed and identified in the following sections:

Introduction

The City of Coon Rapids is an established city located approximately 12 miles north of Minneapolis with an estimated 2014 population of 62,435. Population is projected to reach 69,200 residents by 2040, per Metropolitan Council projections. This Sanitary Sewer Comprehensive Plan will aid the City in future planning and development as well as aid the Metropolitan Council with their Capital Improvement Plan for 2040. The Metropolitan Council's 2040 Water Resources Policy Plan goal:

"To protect, conserve, and utilize the region's groundwater and surface water in ways that protect public health, support economic growth and development, maintain habitat and ecosystem health, and provide for recreational opportunities, which are essential to our region's quality of life.

System Inventory and Analysis

The City of Coon Rapids currently operates and maintains approximately 240 miles of gravity sanitary sewer ranging in size from 4-inches to 48-inches in diameter and sixteen lift stations with pressurized forcemains. As the system ages, more maintenance is necessary to keep up the same level of service and capacity of the gravity sewers and pumping stations. Coon Rapids has remained proactive on system maintenance to promote longevity of the sanitary sewer system and reduce sewer issues and claims due to failing systems.

Overall, the gravity system is in good condition. The condition of existing pipes in the system is based on the regular maintenance activities required and performed throughout the system, review of lined and rehabilitated pipe and miscellaneous pipe inspections. All televising records from lining and reconstruction projects are reviewed and catalogued so they can be linked in City GIS.

The most extensive rehabilitation work has been performed on the vitrified clay main pipes (VCP). VCP pipes are more susceptible to cracks and separated joints, causing root growth in the pipes and increased inflow and infiltration (I/I). Approximately 70 miles of VCP mains have been installed in Coon Rapids, up to the mid-1970s and subsequently lined between 2008 and 2017.

The City has spent considerable time, effort and resources to implement a Cured-in-Place-Pipe (CIPP) project to line the sewer mains every year, for the past nine years. The work involves lining VCP mainline sewer, performing spot repairs where necessary and documenting the condition of the sanitary sewer system. Root penetration, primarily from service laterals, in areas of the sewer system has created problems. These roots must be removed in an on-going program, as discussed in the operation and maintenance section of this report. RCP pipe is susceptible to I/I as well as hydrogen sulfide and microbial induced corrosion, and it is recommended to start an inspection/televising and lining program for the RCP throughout the City.

The City of Coon Rapid's wastewater sanitary sewer system contains sixteen sewage lift stations numbered 1 through 17. (Station 12 is no longer in use). The City's municipal lift stations are well maintained and monitored, but work is always needed on lift station repair and rehabilitation. Each lift station has recommended improvements of varying degrees that should be included in future capital improvement planning.

Continual work will improve quality of life for residents of Coon Rapids by maintaining water quality with the reduction of wastewater overflows and backups, lowering wastewater costs to each resident, and improve the local economy by promoting future growth and development. This will be accomplished through continued maintenance programs and rehabilitation of pipes, manholes and lift stations.

The City of Coon Rapids has excellent access to major MCES sanitary sewer interceptors. The primary interceptor serving Coon Rapids flows from north to south. The interceptor's northern terminus is located at the border between Andover and Coon Rapids in the vicinity of Crooked Lake Boulevard. This interceptor flows out of the community through a metering station between Fridley and Coon Rapids at 85th Avenue. This interceptor has an MCES branch that serves the City of Blaine. This branch generally follows Pleasure Creek from 89th Avenue and the railroad to the intersection of TH 10 and University Avenue. The MCES Interceptor collects flow from Coon Rapids

as well as portions of Blaine and Andover. Flows from Blaine and Andover are metered at the border between the communities and again as the interceptor leaves Coon Rapids and flows into Fridley. The City is billed based on the flow into Fridley minus the flows metered from Blaine and Andover.

The sanitary collection system was evaluated using an excel spreadsheet model, similar to the one used in the last comprehensive plan. The previous sanitary sewer spreadsheet model developed over ten years ago has been an effective tool for city staff to help with the decision making process as a result of future redevelopment projects throughout the City. The model was updated and used to simulate wastewater flow conditions by routing sewer flows through the developed sewer infrastructure comprised of pipes, manholes and lift stations. The model was used to evaluate current and future sewer capacities and provide recommendations for system modifications to accommodate future growth.

Comprehensive Plan with System Needs

The population of the City of Coon Rapids is projected for consistent growth over the next few decades. The Metropolitan Council predicts a Coon Rapids population of 69,200 by the year 2040. The Metropolitan Council also projects the number of households will be 28,200 in 2040 with an occupancy of 2.5 people per household. The information contained in this Comprehensive Sewer Plan is based on the ultimate land uses which are contained in the City's Land Use Plan.

Operation and Maintenance Plan

The purpose of the operation and maintenance plan is to serve as a guide to monitor, maintain, and rehabilitate the City's sanitary sewer collection system. The primary goals of the plan include, an efficient, well maintained system including continued compliance with local and regional standards and control of I/I entering into the system, the reduction in claims against the City related to sewer backups,. Specific recommendations in the plan include rehabilitation of system components with concerns related to safety, welfare of City residents and employees; rehabilitation of system components to improve system condition and efficiencies; development or expansion of maintenance programs to promote and improve periodic maintenance of the sewer system; establishing policies and ordinances to protect the City's sewer infrastructure; and equipment and staffing needs of the City.

Capital Improvement Plan

The Capital Improvement Plan (CIP) portion of the study identifies deficiencies which exist within the sanitary sewer collection system and associated lift stations. The plan identifies both operation and maintenance and capital expenditures recommended over the next 10 years to correct the deficiencies within the collection system and the associated lift stations. A summary of costs are included in Section 5.0.

Contents

Letter of Transmittal
Certification Page
Distribution
Executive Summary
Table of Contents

1 Introduction 1

2 System Inventory and Analysis 1

2.1 Existing Sanitary Sewer Collection System 1
2.2 System Analysis 5

3 Comprehensive Sanitary Sewer Plan Update 10

3.1 Population Trends 10
3.2 Future Land Use 10
3.3 Sanitary Sewer Design Rates 10
3.4 Redevelopment 11

4 Operation and Maintenance Plan 13

4.1 Purpose and Goals 13
4.2 Existing Public Works Utility Maintenance Division 13
4.3 System Needs 15
4.4 Recommended Maintenance Program 16
4.5 Policy and Ordinance Review 22

5 Capital Improvement Plan 26

5.1 Sewers 26
5.2 Capital Improvement Plan Cost Summary 38

List of Tables

Table 1 – Pipe Table 3
Table 2 – Flows Crossing Corporate Boundaries 4
Table 3 – Lift Station Acceptability Rating 9
Table 4 – Population and Household Projections 10
Table 5 – Population and Household Projections 10
Table 6 – Wastewater Flow Projections (MGD) Flows to MCES Interceptor 4-NS-52111

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Contents (continued)

Table 7 – Projected Average Day Water Demands – Flows to MCES Interceptor 4-NS-521 12
Table 8 – Cleaning and Jetting Schedule 17
Table 9 – Property Age By Decade 19
Table 10 – Coon Rapids Monthly Water Flows (Millions of Gallons) 22
Table 11 – Estimated Infiltration and Inflow 23
Table 12 – Subsurface Sewage Treatment Locations 25
Table 13 – Gravity Pipe Maintenance Summary 27
Table 14 – Private Property Rehabilitation Summary 28
Table 15 – Manhole Rehabilitation Summary 29
Table 16 – Redevelopment Areas – Recommended Pipe Upsizing 29
Table 17 – Lift Station Acceptability Rating 31
Table 18 – Estimated Cost of Lift Station Improvements 35
Table 19 – Capital Improvement Plan Cost Summary 38
Table 20 – Lift Station Cost Summary 39

List of Figures (as shown in Appendix A)

Figure 1-1 – Sanitary Sewer Drainage Districts
Figure 1-2 – Sanitary Sewer Pipe Material
Figure 1-3 – Sanitary Sewer Pipe Diameter
Figure 1-4 – MCES Interceptor
Figure 2-1 – Sanitary Lift Stations
Figure 3-1 – Future Land Use Map - Updated
Figure 4-1 – Sewer Maintenance Districts
Figure 4-2 – Maintenance Sewer Cleaning Areas and Footages
Figure 4-3 – SSTS Locations
Figure 4-4 – Residential Construction by Decade
Figure 4-5 – Residential Construction Pre-1970
Figure 4-6 – Inter City Connections
Figure 4-7 – MCES Interceptor Connections in Coon Rapids

Contents (continued)

List of Appendices

Appendix A Figures

Appendix B Sanitary Sewer Flow Tables

Appendix C Lift Station Evaluations

Appendix D City Ordinances

2018 Sanitary Sewer Comprehensive Plan

2040 MCES Comprehensive Plan Update

Prepared for City of Coon Rapids

1 Introduction

The City of Coon Rapids is an established city located approximately 12 miles north of Minneapolis with an estimated 2014 population of 62,435. Population is projected to reach 69,200 residents by 2040, per Metropolitan Council projections. This Sanitary Sewer Comprehensive Plan will aid the City in future planning and development as well as aid the Metropolitan Council with their Capital Improvement Plan for 2040. The Metropolitan Council's 2040 Water Resources Policy Plan goal:

"To protect, conserve, and utilize the region's groundwater and surface water in ways that protect public health, support economic growth and development, maintain habitat and ecosystem health, and provide for recreational opportunities, which are essential to our region's quality of life.

Sanitary sewage is collected in approximately 240 miles of sewer pipe ranging in size from 4-inches to 48-inches in diameter. The City is divided into sanitary sewer drainage districts and a map of those districts is contained as Figure 1-1 in Appendix A of this report. A map of the City Sanitary Sewer System, Figure 1-2, is also contained in Appendix A of this report.

There are 16 sewage lift stations which serve small isolated areas.

A MCES interceptor extends through the community from north to south which collects the City wastewater. Treatment of wastewater is provided by the Metropolitan Council Environmental Services (MCES) at the Metro Plant in St. Paul. The average daily flow (over the past 5 years) from Coon Rapids to the Metropolitan Council Environmental Services (MCES) system is approximately 4.9 million gallons per day (MGD).

2 System Inventory and Analysis

2.1 Existing Sanitary Sewer Collection System

The City of Coon Rapids currently operates and maintains approximately 240 miles of gravity sanitary sewer and sixteen lift stations with pressurized forcemain. As the system ages, more maintenance is necessary to keep up the same level of service and capacity of the gravity sewers and pumping stations. Coon Rapids has remained proactive on system maintenance to promote longevity of the sanitary sewer system and reduce sewer issues and claims due to failing systems.

2.1.1 Gravity System

The approximately 240 miles of gravity sewer system is comprised of a range of pipe sizes, ranging from 4” to 48” diameter. A table of pipe diameters, material, and install date is provided in Table 1. Maps of sewer size and material (Figure 1-2 and 1-3) are contained in Appendix A.

Overall, the gravity system is in good condition. The condition of existing pipes in the system is based on the regular maintenance activities required and performed throughout the system, review of lined and rehabilitated pipe and miscellaneous pipe inspections. All televising records from lining and reconstruction projects are reviewed and catalogued so they can be linked in City GIS.

The most extensive rehabilitation work has been performed on the vitrified clay pipes (VCP). VCP pipes are more susceptible to cracks and separated joints, causing root growth in the pipes and increased inflow and infiltration (I/I). Approximately 70 miles of VCP pipe have been installed in Coon Rapids, up to the mid-1970s and subsequently CIPP lined between 2008 and 2017.

Regular and extensive cured-in-place-pipe (CIPP) lining projects have been undertaken throughout the City to rehabilitate the VCP and increase system longevity. The lining process removes roots, stops I/I from cracks and broken pipe and provides structural integrity. The City has completed lining of the majority of VCP sanitary sewer.

Similar to the VCP sewer mains there are a large number of VCP service lines to individual properties that experience similar problems. The general CIPP lining projects do not provide rehabilitation for VCP service connections to individual properties. Property owners are responsible for the service connection to the gravity main. It is recommended that an educational program for VCP services be considered, to inform residents of ownership and maintenance responsibilities, potential issues with their service connections and how that impacts the City’s sanitary system and educate residents on rehabilitation options.

Table 1 – Pipe Table

Material	Diameter (in)	1955-1960	1960-1965	1966-1970	1971-1975	1976-1980	1981-1985	1986-1990	1991-1995	1996-2000	2001-2005	2006-2010	2011-Present	Unknown	Grand Total
CIP	6			0.004											0.004
	8		0.08	0.40											0.48
	10			0.71											0.71
	12			0.06											0.06
CIP Total			0.08	1.17											**1.25**
DIP	6													0.02	0.02
	8		0.01	0.03	0.17	0.02			0.08	0.13					0.44
	10			0.80	0.50			0.11							1.41
	12			0.30	0.48	0.02									0.80
	16									0.005					0.005
DIP Total			0.01	1.13	1.15	0.04		0.11	0.08	0.14				0.02	**2.67**
LVCP	8	0.10	22.06	37.82	1.57	0.10				0.06					61.71
	10	0.14	1.41	3.63											5.17
	12		0.66	1.53											2.19
	15		1.18	0.39											1.57
LVCP Total		0.24	25.30	43.36	1.57	0.10				0.06					**70.64**
PVC	4													0.01	0.01
	6						0.03		0.02	0.04		0.08			0.30
	8			10.39	19.46	17.01	26.88	28.07	13.46	8.34	9.31	1.61	0.05	0.62	135.21
	10			0.47	0.34	0.07	1.25	0.68		0.53					3.34
	12			0.43	1.84	0.08	1.01	0.45			0.43				4.24
	15				0.40			0.34	0.05	0.46					1.26
	18				0.06		0.38	0.23	0.28					0.01	0.97
	21						0.62								0.62
	Unknown							0.01			0.03			0.11	0.11
PVC Total				11.30	22.10	17.17	30.17	29.77	13.82	9.37	9.78	1.69	0.05	0.88	**146.10**
RCP	8			0.10	0.07										0.17
	12			0.25	0.13										0.38
	15			1.31	0.46										1.77
	18		0.76	1.20	2.05			0.15		0.03					4.19
	21		1.01	0.53		0.64									2.18
	24			0.71		0.95			0.26						1.91
	30		1.42	2.08						0.09					3.58
	36		2.27												2.27
	42		0.76												0.76
	48			0.01											0.01
RCP Total			6.22	6.19	2.70	1.59		0.15	0.26	0.12					**17.23**
Unknown	6										0.01				0.01
	8													0.17	0.17
	Unknown				0.01									0.18	0.20
Unknown Total					0.01						0.01			0.35	**0.38**
Grand Total		**0.34**	**32.32**	**68.35**	**27.58**	**18.94**	**30.17**	**30.03**	**14.15**	**9.68**	**9.79**	**1.69**	**0.05**	**1.25**	**238.27**

2.1.2 MCES System

The City of Coon Rapids has excellent access to major MCES sanitary sewer interceptors. The primary interceptor serving Coon Rapids flows from north to south. The interceptor's northern terminus is located at the border between Andover and Coon Rapids in the vicinity of Crooked Lake Boulevard. This interceptor flows out of the community through a metering station between Fridley and Coon Rapids at 85th Avenue. This interceptor has an MCES branch that serves the City of Blaine. This branch generally follows Pleasure Creek from 89th Avenue and the railroad to the intersection of TH 10 and University Avenue. Figure 1-4 illustrates the existing MCES Interceptor network.

The MCES Interceptor collects flow from Coon Rapids as well as portions of Blaine and Andover. Flows from Blaine and Andover are metered at the border between the communities and again as the interceptor leaves Coon Rapids and flows into Fridley. The City is billed based on the flow into Fridley minus the flows metered from Blaine and Andover.

Figure 1-4, listed previously, shows those facilities within Coon Rapids which are owned by the MCES. The MCES has several flow meters in Coon Rapids, which are used to measure the City's flow. The formula is as follows:

Coon Rapids Flow = M215 – M216 (Blaine) – M218 (Andover)

2.1.3 Flows Crossing Corporate Boundaries

There are several locations where the City receives flow from other communities. Primary connections to Andover and Blaine are metered. Other connections exist in the system in the area of southeast Coon Rapids where existing City sewers serve properties in the City of Blaine. This area includes the triangle that is created by Springbrook Drive, TH 47, and 85th Avenue NW. Businesses in this area include Red Lobster, Burger King, and Caribou Coffee. This area is not metered. If metering is desired, a temporary meter could be installed for one billing cycle to compare actual flows against billing rates.

A listing of metered locations and the destination for the flow passing through each point is presented in Table 2. The flows listed in Table 2 are the average MCES metered flows in MGD for 2016.

Table 2 – Flows Crossing Corporate Boundaries

From		To		2016 Metered ADF (MGD)	Estimated Average Flow from Coon Rapids (MGD)	Treatment Facility	MCES Interceptor Downstream
City	Point	City	Point				
Coon Rapids	M215	Fridley	---	8.45	4.	Metro	4-NS-521
Andover	M218	Coon Rapids	---	1.24	---	Metro	4-NS-525
Blaine	M216	Coon Rapids	---	2.58	---	Metro	4-NS-522

2.2 System Analysis

2.2.1 Sewer System

The ability of the City's sanitary sewer to convey the peak wastewater flow generated within the City was determined summing winter water use records per sewer district and checking flow rates compared to pipe sizes and slope. It is common that the summation of the winter water use records is less that actual metered sanitary flows. Differences come from the fact that not all water used/billed ends up in the sanitary sewer. To more accurately model the metered amount of flow in the City's sanitary system, per MCES meter data, a common multiplier was applied to the winter water use records to increase the amount of flow in the system, so that the total flow in the model equaled the metered flow.

Appendix B provides calculations of sewer capacity under existing and future redevelopment conditions. Flows were determined using most recent winter water use records with a multiplier to simulate average wastewater flows as well as predicted future flows for the redevelopment areas. Section 3.4 describes the planned development for the redevelopment areas of the City. The gravity sewer capacity of those areas were investigated in more detail, discussed in Section 3.4.

The City sewers are generally in good physical condition. The City has spent considerable time, effort and resources to implement a Cured-in-Place-Pipe (CIPP) project to line the sewer mains every year, for the past nine years. The work involves lining VCP mainline sewer, performing spot repairs where necessary and documenting the condition of the sanitary sewer system. Root penetration, primarily from service laterals, in areas of the sewer system has created problems. These roots must be removed on an on-going program, as discussed in the operation and maintenance section of this report. RCP pipe is susceptible to I/I as well as hydrogen sulfide and microbial induced corrosion. The City currently has 17.23 miles of RCP which should be considered for inspection, evaluation and potential rehabilitation.

2.2.2 Lift Stations

The City of Coon Rapid's wastewater sanitary sewer system contains sixteen sewage lift stations numbered 1 through 17. (Station 12 is no longer in use). Figure 2-1 in Appendix A displays the location of each station throughout the City. Table C-1 identifies the capacity of each station and Table C-2 the total detention time, both located in Appendix C.

The capacity and physical condition at each station was investigated in spring 2017. All lift stations must comply with the Minnesota Pollution Control Agency's capacity requirements as published in the Ten States Standards. The information for each station is presented in Appendix C.

The adequacy of each station was evaluated against the following nine (9) parameters:

- Station Hydraulic Capacity
- Safety
- Potential for Sewer Back-up
- Pump Review and Capacity
- Wet Well Physical Condition
- Valve Vault or Dry Well, Physical Condition
- Electrical Components

- Instrumentation/Control Issues
- Suitability of Location

An acceptability rating scale of 1 to 5 was established for the evaluation criteria described below for each of the sixteen (16) stations. A rating of 1 is excellent; a rating of 2 is good, meaning the station is better than the average lift station in the metropolitan area; a rating of 3 means it is similar to an average station in the metropolitan area; a rating of 4 is below average, and a rating of 5 is unacceptable and the condition should be corrected in the near future. It must be understood that rating scores are subjective and different individuals would likely give different scores for any given parameter. Also, no universal standard exists. However, since the goal of the rating system is to establish a sense of relative need rather than concise determinations, the evaluations are deemed suitable for this study.

2.2.2.1.1 Station Hydraulic Capacity

The criteria for determining the adequacy of the hydraulic capacity is twofold. One is conformance with the Ten States Standards which the Minnesota Pollution Control Agency has adopted as the state's guidelines. This standard requires a 30 minute hydraulic wet well detention at average daily flow.

The second criterion is that the number of starts for each pump should not exceed four (4) per hour. Many of the pump stations would benefit from increasing the vertical cycle distance from "lead on" to "lead off" which would reduce the number of starts. Communities do however choose to run pumps at a narrower cycle distance to reduce the retention time in pump stations. This is specifically problematic with smaller pump stations which have a higher sensitivity to peak events leading to high starts per hour during high flows.

2.2.2.1.2 Safety

Safety issues affect both the permanent constructed facility and operational procedures. Construction items address ladders, fall protection devices, presence of safety harnesses, safety grating, railings, the need to access subsurface structures during operation, and whether service vehicles and operating personnel can remain off the public streets during maintenance activities.

The operational procedures which the City employs do not necessarily require construction of permanent facilities, but may include use of portable equipment.

2.2.2.1.3 Potential for Sewer Back-up

The evaluation of the potential for sewer back-ups include three items: one is a review of the history of problems at the station, two is whether the stations contain standby power capability (either a generator or a receptacle for plugging to a standby generator) and three, whether the volume of the wet well plus the influent sewer contains adequate storage capacity to allow the sewer utility staff time to connect an emergency generator before wastewater would back-up into houses, in the event of a power outage. A detention time of one hour for the wet well plus gravity sewer is considered excellent. A detention time of 50 to 60 minutes is considered good, time of 40 to 50 minutes considered average, 30 to 40 minutes undesirable, and less than 30 minutes unacceptable. The previously presented Table C-2 shows the calculated detention time (hours) for each station. All lifts stations are rated to be good or excellent.

2.2.2.1.4 Pump Review and Capacity

Pump review is a review of pump capacity, pump age and maintenance record.

Pump capacity is a determination of whether the station has capacity to pump the peak hourly flow with the largest pump out of service.

Pumps are typically designed to operate for a period of fifteen years. Any pumps older than 15 years are subject to failure due to age.

Maintenance review is a summarization by the City staff of the amount of maintenance required on each pump.

2.2.2.1.5 Wet Well Physical Condition

The station physical condition evaluation addresses the physical condition of each station's concrete, hatches and miscellaneous metals. Steps into wet wells are considered unacceptable because they can become rusty and are not capable of being retrofitted with full restraints.

2.2.2.1.6 Valve Vault or Dry Well, Physical Conditions

The physical condition of the valve vault addresses the condition of the concrete, the steps, access into the station, piping and valves and the overall cleanliness of the structure.

2.2.2.1.7 Electrical Components

The electrical review evaluates the adequacy of the electrical service to each station, the adequacy of standby power, and the condition and accessibility of the pump control panel. Adequacy of electrical service considers the number of power outages and whether operation of the pumps causes dimming of lights in neighborhood.

2.2.2.1.8 Instrumentation/Control/SCADA

For this parameter, each station was reviewed against the following criteria:

- Whether the station has a standard touch screen with PLC for controller
- Whether the station has alarms for station high and low levels, pump motor over temperature, and pump seal failure
- Whether back-up pump controllers exist
- Whether SCADA transmits to the central control station

2.2.2.1.9 Suitability of Location

The suitability of location addresses each station's service area, maintenance accessibility, aesthetics, visibility and proximity to adjacent homes, potential for damage by the public and its position within right-of-ways, easements or City owned property.

Accessibility from a public street is considered very important.

The potential for public damage is a consideration of whether the station is susceptible to being struck by an automobile or to vandalism.

A private driveway to the stations is deemed important to allow operation and maintenance staff to function without being threatened by passing traffic.

For the visibility to neighbors and proximity to homes criteria, it is assumed that a lift station detracts from value or desirability of an adjacent home, and aesthetic treatment at the lift station mitigates this detriment.

All lift stations are located on Utility Easements or public right-of-way for maintenance access.

2.2.2.1.10 Acceptability Ratings

Table 3 ranks the condition of each station against the nine general parameters. The detailed review of all criteria for each of the 16 stations is contained in Appendix C.

Table 3 – Lift Station Acceptability Rating

Rating System									
1 – Excellent 2 – Good 3 – Average 4 – Below Average 5 – Unacceptable									
	Hydraulic Capacity	Safety	Back-Ups	Pump Review	Wetwell Physical Condition	Valve Vault Physical Condition	Electrical	SCADA	Location
Lift Station 1	3	1	2	2	2	3	3	2	2
Lift Station 2	3	5	2	4	2	2	4	3	2
Lift Station 3	3	2	3	3	2	3	1	2	2
Lift Station 4	4	3	3	2	3	2	3	2	2
Lift Station 5	3	1	2	4	3	2	3	2	1
Lift Station 6	4	1	2	2	2	4	3	1	1
Lift Station 7	3	1	2	4	3	3	3	2	1
Lift Station 8	4	1	3	2	1	1	3	3	2
Lift Station 9	4	2	3	1	2	3	2	2	2
Lift Station 10	3	2	2	3	3	3	2	2	2
Lift Station 11	3	5	2	1	2	2	3	3	1
Lift Station 13	4	2	3	1	3	2	3	3	1
Lift Station 14	4	1	2	3	2	1	2	3	2
Lift Station 15	4	1	3	4	2	3	2	3	2
Lift Station 16	3	1	2	1	3	3	1	1	1
Lift Station 17	4	1	2	1	2	3	1	1	1

Note: Lift Station 12 has been abandoned

3 Comprehensive Sanitary Sewer Plan Update

3.1 Population Trends

The projected population, household and employment numbers for the City of Coon Rapids, as published by the MCES *Thrive MSP 2040* forecasts are shown in the table below. MCES also has provided sewered and unsewered projections, summarized below.

Table 4 – Water Plan Population Projections

Year	Water Plan Population Estimate*
2020	65,896
2030	65,080
2040	--

Source: 2040 THRIVE MSP Water Resources Policy Plan. Produced by the Metropolitan Council

*Data obtained from planning documents for the Water Comprehensive Plan, interpolated from MCES data. See Table 7-2 in the Comprehensive Water System document, located in Appendix B.

Table 5 – Population and Household Projections

MCES Interceptor	Population			Households			Employment		
	2020	2030	2040	2020	2030	2040	2020	2030	2040
4-NS-521	2,280	2,500	2,715	957	1,050	1,133	3,718	3,852	3,952
4-NS-522	1,707	1,830	1,960	680	732	781	3,648	3,715	3,716
4-NS-525	55,060	58,020	61,065	21,744	23,455	24,984	17,793	19,212	20,902
7035	5,673	5,970	6,280	2,087	2,231	2,370	1,941	2,121	2,330
Unsewered	80	80	80	32	32	32	0	0	0
TOTALS	64,800	68,400	72,100	25,500	27,500	29,300	27,100	28,900	30,900

3.2 Future Land Use

The information contained in this Comprehensive Sewer Plan Update is based on the ultimate land uses which are anticipated to occur at full development. The Future Land Use Map (Figure 3-1), and the Sanitary Sewer Drainage Area Map are contained in Appendix A and the Sanitary Sewer Flow Tables are contained in Appendix B.

3.3 Sanitary Sewer Design Rates

The flow volumes calculated for the City using winter water usage, including future development flows, was compared to MCES flow projections through the planning year 2040. See the winter water usage flow calculations in Appendix B.

Table 6 – Wastewater Flow Projections (MGD) Flows to MCES Interceptor 4-NS-521

Year	Flow Projection (MCES)	Flow Projection (City)
2010 (Actual)	5.30	4.93*
2020	5.40	--
2030	5.48	--
2040	5.58	6.68

Source: 2040 *THRIVE* MSP Water Resources Policy Plan. Produced by the Metropolitan Council and City of Coon Rapids planning and sewer modeling

*Averaged metered flow volumes from MCES metering.

3.4 Redevelopment

As described in Section 2.2.1, the following areas are planned to be redeveloped and have the anticipated water demands shown in the table below. Development areas and projected average day demands were obtained from the Comprehensive Water System Plan, prepared by Bolton & Menk, Inc. The full report is located in Appendix B.

Table 7 – Projected Average Day Water Demands – Flows to MCES Interceptor 4-NS-521

Planning Area	Development Name	Estimated Years Until Developed	Proposed Land Use	No. of Units	Type of Unit	Gallons per Unit per Day	Projected Average Day Demand (gallons)
1A	Port Wellness	2	Institutional (Hospital)	50,000	Square Feet	0.1	5,000
1B	Port Wellness	0	Commercial (Medical Office)	125,000	Square Feet	0.1	12,500
1C	Port Wellness	0	Commercial (Medical Office)	32,000	Square Feet	0.1	3,200
1D	Port Wellness	1	Residential (Senior)	100	Dwelling Unit	112.5	11,250
2A	Port Campus Square	10	Residential	1,200	Dwelling Unit	250	300,000
2B	Port Campus Square	10	Commercial	150,000	Square Feet	.1	15,000
2C	Port Campus Square	10	Institutional	150,000	Square Feet	0.1	15,000
3A	Port Riverwalk	5	Residential	450	Dwelling Unit	250	112,500
3B	Port Riverwalk	10	Commercial	5,000	Square Feet	0.1	500
4A	Foley Blvd TOD	15	Industrial*	1,200	Dwelling Unit	1500*	1,800,000*
4B	Foley Blvd TOD	15	Commercial	20,000	Square Feet	0.1	2,000
5A	Port Evergreen	10	Industrial	400,000	Square Feet	0.1	40,000
5B	Port Evergreen	10	Residential	750	Dwelling Unit	250	187,500
5C	Port Evergreen	10	Commercial	50,000	Square Feet	0.1	5,000
6A	Northdale/Foley	15	Residential	300	Dwelling Unit	250	75,000
6B	Northdale/Foley	15	Commercial	25,000	Square Feet	0.1	2,500
7A	Riverdale Station	5	Residential	400	Dwelling Unit	250	100,000
7B	Riverdale Station	5	Commercial	15,000	Square Feet	0.10	1,500
8A	Pederson Floral	10	Commercial	4	Acres	1000	4,000
9	VFW Area Sites	20	Residential (High Density)	13	Acres	2025	26,325
10	DOT Mini Storage	20	Industrial	12	Acres	1500	18,000
11	East Sod Farm	Ultimate	Residential	77	Acres	750	57,750
12	West Sod Farm	Ultimate	Residential	90	Acres	750	67,500
Total Gallons							2,862,025

*Values changed per direction of City staff. Previous planning (as shown in Appendix B) showed a zoning of mixed use/TOD which has since been changed to industrial zoning.

Appendix B, Table B-1, shows existing sewer capacity using the most recent winter water use, with a multiplier to simulate wet weather flow so total flow matches the average flow over the past five years, 4.93 MGD (metered by MCES).

Tables B-2 and B-3 in Appendix B show future conditions flows without pipe upsizing recommendations and with pipe upsizing recommendations, respectively. The flows in the table

above were added to their respective flow areas and pipe capacity recalculated for the future additional flows. In both tables, the flows that are bolded red have the additional flows from the table above. In Table B-2, the pipes that are over capacity are also bolded red. Over capacity is defined as greater than 80% pipe capacity. In Table B-3, pipe upsizing recommendations are bolded red. These flow calculations assume the pipes (if upsized) are placed at the same elevation and slope as the existing pipes. The pipes were upsized to keep pipe capacity at or below 60% capacity.

A summary table of recommended pipe upsizing for full development is located in Section 5.0.

4 Operation and Maintenance Plan

4.1 Purpose and Goals

The purpose of an operation and maintenance plan is to serve as a guide to operate, monitor, maintain, and rehabilitate the City's sanitary sewer system.

Primary goals of the plan include

- Continue work to control the inflow and infiltration (I/I) of the system, which includes maintenance and rehabilitation of both sanitary pipes and manholes, with an overall goal of reduction of claims against the City related to sewer backups and continued compliance with local and regional standards for wastewater.
- Provide sufficient flow capacity throughout the sanitary sewer system to allow for future growth and development.
- Develop and adopt a comprehensive operation and maintenance plan and encourage adherence to the plan to stay on top of maintenance activities.

Specific recommendations in this plan include rehabilitation of system components with concerns related to safety and welfare of City residents and employees; rehabilitation of system components to improve system effectiveness; implementation of programs to periodically evaluate system condition; development or expansion of maintenance programs to ensure consistent maintenance of the sewer system; establishing policies and ordinances to protect the City's sewer infrastructure, including education on flushable rags and the impact on the system; and determining equipment and staffing needs of the City.

4.2 Existing Public Works Utility Maintenance Division

Coon Rapids Public Works has developed as infrastructure additions warranted additional staff and equipment. The growth of utility maintenance, specifically in the sewer area, has been primarily to conduct regular and timely maintenance on the aging system. Public Works staff, management staff and the elected officials of the community have worked together to develop an efficient staff that is cross-trained in various other aspects of duties assigned to all of Public Works.

4.2.1 Sewer Maintenance Districts

Maintenance staff has divided the City into ten sewer service districts to manage maintenance activities in the system. Figure 4-1 in Appendix A shows the service districts in the system.

4.2.2 Sewer Maintenance Equipment

The City has equipment typical of most communities the size of Coon Rapids. The list of equipment specific to sewer maintenance includes:

- Jetter with TV camera
- Combination Vactor/Jetter
- Portable 75kw Generator (1)
- Portable 60kw Generator (1)
- Trailer Mounted Jetter
- Utility Truck with Hoist

The City has sufficient sewer maintenance equipment to maintain the sewer system. There may be times when additional needs require contracting for additional services. Maintaining the current equipment mix with proper maintenance and rotation of equipment in/out of service will likely serve the community in an efficient manner for many years.

The City does have televising equipment as part of their jetting equipment. This equipment is best used to inspect sewers as they are cleaned to ensure that all debris has been removed. With current equipment, the City regularly televises approximately 8 miles of sewer pipe per year, as well as all pipe segments located in street reconstruction areas, for pipe 14-inches in diameter and smaller. Due to televising size limitations, it has been determined that televising larger quantities of pipe and televising larger diameter pipe is best performed with contract services.

4.2.3 Sewer Maintenance Staff

The public works utility staff includes one Utility Supervisor; two lead positions, one for sanitary sewer and the other for water; two plant operators and seven crew staff for routine maintenance of the City's water and sewer system.

Members of this staff are cross-trained to assist in other areas of public works. Areas of water system maintenance, snow plowing, and disaster clean-up are a few areas that sewer staff perform duties outside of sewer maintenance.

Staffing levels seem comparable to other communities based on the information included in the previous section. Discussions with City staff suggest that there is an adequate number of staff to perform the regular maintenance activities but at times does need to request additional support for sewer related activities.

4.2.4 Security and Vulnerability of Collection System

The City of Coon Rapids has readily available connections to MCES interceptors which leads to risk mitigation for the largest portions of the collection system within the City. Second criticality elements are lift stations. The City has taken measures to reduce risk based on redundant power sources and portable generators to maintain flow should power be disrupted. Consideration should be given to further protect the SCADA system from cyber threats which would also be needed for other City infrastructure, such as water treatment plants and wells. Consideration should also be included for updating portable generators and regularly maintaining permanent generators including new security features and technology, upgrades and maintenance.

4.3 System Needs

4.3.1 Gravity Sewer

Regular and extensive CIPP lining projects have been performed by the City of Coon Rapids. Throughout the history of lining VCP gravity sewer, approximately 70 miles of VCP have been lined. It is recommended to start addressing potential rehabilitation programs for the VCP service connections to individual properties to continue efforts to reduce root growth in the gravity system and remove I/I.

Previously, sewer maintenance staff had indicated that the majority of their time and budget was used in areas constructed of VCP, which led to the creation and implementation of VCP rehabilitation projects. Coon Rapids is not alone in the rehabilitation efforts; many communities have lined or replaced VCP sewer to eliminate the high maintenance needs often associated with these types of sewers. After 2017, the City will have completed the task of lining VCP sewer mains and can focus efforts on other rehabilitation and maintenance projects.

Regular maintenance in the sewer system typically includes cleaning using a combination of Jetter and Vactor trucks to remove debris from the sewer pipes. Root intrusion in joints of the pipe requires cutting and removal to remove obstructions in the pipe and allow flow of the sewage through the system. Once roots begin to enter sewers, it is very difficult to eliminate the recurring growth. The simple cutting of roots often promotes additional growth.

Most communities would consider typical routine maintenance of the sewer system to include:

- Televising sewer lines that have not yet been televised one time to develop a baseline inventory of the system and periodically thereafter to monitor system changes
- Cleaning of all sewer lines once every 3 or 5 years, depending on pipe material
- Cleaning “trouble spots” as needed.

The League of Minnesota Cities Insurance Trust (LMCIT) provides insurance coverage for the City to protect against claims resulting from sewer backups and other claims that may result from problems related to the City’s utility systems, and sewer mains. The LMCIT have noted increased claims in specific areas of sewer systems throughout the state. Specifically, they have identified VCP sewer systems as having higher than normal claims. They have suggested a cleaning of VCP sewer pipes every three years. Coon Rapids has made efforts to accomplish this recommendation in order to maintain insurance coverage, lower insurance costs and reduce maintenance problems.

In addition to routine maintenance, areas of the system need reviewing for rehabilitation and maintenance needs. Restaurant grease has also become an issue in some areas of the system, requiring more time and effort from the maintenance staff. If the problem continues to grow and more time and efforts are dedicated to the same trouble areas, the current maintenance staff will not be able to handle the increased work load. Outreach should be completed to private properties including homes and restaurants to educate on the effects of poor grease management.

Another issue gaining attention is the impact of flushable wipes on the sanitary sewer system. Coon Rapids, along with many other metro area cities is needing to spend extra money and maintenance time to deal with the negative impacts of flushable wipes in the system. Wipes can clog the pipes and damage pumps, resulting in higher costs to maintain the system. The LMCIT,

municipalities and other professional organizations are working to educate the public on the effect of wipes in the sewer system. At this point, no legislation has been changed, but the organizations listed above are working to change wipe packaging to clearly indicate that wipes should not be flushed. It is recommended Coon Rapids consider implementing a public education program similar to other municipalities to encourage residents to not flush the “flushable” wipes.

4.4 Recommended Maintenance Program

Proper monitoring and maintenance of the existing system is an important factor in the long-term viability of the system. Maintaining the system extends the life of the system and decreases the likelihood of sewer backups. Sewer backups often lead to property damage claims against the City. This results in increased costs to the City to pay claims and increases in insurance premiums.

4.4.1 System Cleaning

Cleaning practices vary from city to city depending on available budgets and the condition of the sewer system. Practices range from annual cleaning of all sewers to increased cleaning of known problem areas. Many communities have set goals of cleaning all of their system at least once every five years.

For reasons mentioned above, LMCIT recommends that cities clean all lined sewers every three years, or more often when conditions require, to minimize sewer back-ups. Similarly, they recommend that other sewer systems, that are not VCP and lined VCP, be cleaned every 5-7 years. These systems may require cleaning more often if problem areas are identified.

Since all the VCP sewer are lined, it is recommended to maintain the current jetting plan to clean all sewer every three years. This exceeds the recommendation of the LMCIT, and allows any defects to be caught before becoming a larger issue and potentially costing the City more to rehabilitate/repair.

A three year cleaning cycle results in cleaning approximately 80 miles per year. The City currently cleans 77-85 miles of sewer each year. The current program addresses problem areas regularly as well and areas not noted for problems. It recommended that the City continue the current program to clean all sewer mains on a regular basis.

The production rate per year is primarily controlled by three factors:

1. Number of Staff/Budget
2. Outside Influences
    a. Emergency Sewer Needs
    b. Emergency Water Needs
    c. Natural Disaster – Clean-up efforts.
    d. City Reconstruction Projects
    e. Other Utility priorities
3. Weather

Options to increase the amount of sewers cleaned would include:

1. Contract Services

2. Double Shift Current Staff
3. Increase Sewer Maintenance Staff

At this point in time, a three year cleaning cycle is more aggressive than recommended by the LMCIT, and no change to the cleaning cycle is recommended.

4.4.1.1 Cleaning/Jetting Schedule

It is important to continue promoting and supporting the work of sewer cleaning and jetting by:

- Continuing the annual cleaning of 80 miles of sanitary sewer in a manner that ensure that all sewers are cleaned a minimum of every 3 years.
- Clean up problem areas as deemed necessary and monitor regularly.

Attached as Figure 4-2, in Appendix A, is the schedule the maintenance staff uses for cleaning. It shows the drainage districts and pipe miles per district. The schedule for the past 6 years has been as follows and is currently planned to continue as such:

Table 8 – Cleaning and Jetting Schedule

Year	Drainage District
2012	3, 7, 8, 10
2013	2, 4, 9
2014	1, 5, 6
2015	3, 7, 8, 10
2016	2, 4, 9
2017	1, 5, 6

4.4.2 System Televising

The City currently televises sewers in areas where street rehabilitation or reconstruction is scheduled to occur. This allows the City to be efficient with infrastructure management and to avoid situations that require removing and patching portions of a newly constructed street.

Contracts for new sewer construction include the televising of the new sewer. A copy of the televising records is provided to the City at the end of the project.

It is recommended that Coon Rapids establish a televising program to regularly televise all sewers, sewer both in and outside of reconstruction areas. This would establish a “base line” televising database for all sewers in the community and then provide documentation to show changes, if any, as televising continues year after year. Post inspection, the televising records should be digitally attached to GIS information already developed, in line with what already is done, providing the City with a tool available to maintenance and engineering personnel. Televising provides baseline information for the sewer and validates service locations.

4.4.2.1 Televising Schedule

Beginning as soon as fiscally possible, the City should:

- Schedule PACP televising and documentation of 25 miles of sanitary sewer to coincide with cleaning activities and street reconstruction projects in a manner to complete the televising of all sewers in a ten year period. PACP data should be uploaded and included

with GIS data. O&M and structural ratings should be reviewed to identify conditions that worsen over time to include for rehabilitation.

- Continue televising sewers in streets slated for rehabilitation or reconstruction.
- Schedule repeat televising as necessary in high risk areas.
- Develop ongoing televising program - 10 year cycle.

4.4.3 Manhole Rehabilitation

The City currently installs I/I barriers on all manholes in areas of street reconstruction projects to remove I/I from the MH casting and adjusting ring portions of the system. These barriers extend over the adjusting rings and casting, preventing I/I from those areas that have many joints, are prone to cracking from loads and have root growth.

In conjunction with County street rehabilitation projects, minimum manhole rehabilitation to install I/I barriers in manholes that are in Anoka County project areas should be performed. To start the program, a coordinated effort would be needed for the City to know what manholes will be impacted by County projects, with plenty of time to collect the resources and funds needed to rehabilitate those manholes.

Prior to beginning major repair/rehabilitation work on City manholes, it is recommended to establish an inspection protocol and methodology to establish a baseline condition of the City's manholes. Following establishment of baseline conditions, manholes rated poorly should be programmed to be rehabilitated as part of the Capital Improvement Program.

In addition to rehabilitation at the top of the manhole, a lining program to address defects throughout the structure is recommended. A manhole lining program, with either a geopolymer or epoxy lining, is recommended to address cracks and leaks from top to bottom.

4.4.3.1 Manhole Rehabilitation Schedule

Beginning as soon as fiscally possible the City should:

- Establish a manhole inspection protocol and methodology
- Work with street reconstruction projects to assemble lists of manholes in project areas and plan to install I/I barriers on those manholes during the project. Implement a manhole lining program to address I/I in the entire structure
- Begin conversations with the County about working together to install I/I barriers on manholes in areas of County overlay projects.

4.4.4 Equipment

The general feeling is that the City has developed an equipment inventory and replacement plan that satisfies the needs of the community. Additional needs are often more efficiently contracted rather than owning specialized equipment. Examples of items often contracted for include televising and the jetting and cleaning of larger sewer lines.

4.4.5 I/I

The City should develop a private property inspection program to continue efforts to remove I/I from the sanitary sewer system. A large portion of work to reduce I/I has been undertaken, with the completion of VCP main lining. Other sources of I/I do exist, in manholes, illegal connections

to the sanitary sewer system, service connections, sump pumps and potential leaks/cracks/issues from older homes. See Figures 4-4 and 4-5 for residential construction information.

4.4.5.1 Private Property Inspections

Private properties have potential to be high contributors of I/I to the gravity sanitary system. A program to inspect foundation drains, cracks in sewer service, roots in sewer service and sump pump connections is recommended to continue work to remove I/I from the system. Illegal discharges to the system from foundation drains and sump pumps are easy ways to remove consistent I/I contributions. Modifications to the City ordinance should be considered to allow for inspection and require correction of code incompliance related to private property service laterals.

To date, the City has addressed I/I entering the collection system through mainline CCTV looking up service laterals during sewer rehabilitation projects and street reconstruction projects. When defects are observed, the City sends a letter to the property owner with a photo of the defect and requests they address it. In situations, where excavation is occurring near the defect, the City has gone ahead and addressed those defects with coordination with the property owner. An estimated 8 miles of roadway have been rehabilitated using this technique over the last ten years. Assuming that a service lateral exists ever 100 feet, 4,200 service connections were inspected at the mainline connection. Additionally, 72 miles of VCP have been lined. Using the same assumption as above, that would equate to an additional 3,800 services were inspected during that program. In total, approximately 8,000 service connections have been inspected at the connection point to the mainline sewer. This is approximately 33% of the total connections within the City. This process has not been documented or evaluated with respect to the year each property was developed. Future efforts should consider focusing efforts on buildings constructed prior to 1970. The Table below shows a per decade summary of the number of buildings constructed in Coon Rapids.

Table 9 – Property Age By Decade

Decade	Number of Properties
Un-Known	1027
Pre 1970	5776
1970-1979	2316
1980-1989	5405
1990-1999	3858
2000-2009	1529
2010-2019	209
Total	20120

4.4.5.2 VCP Service Connections

It is known that VCP service connections are weak points in the work to remove I/I. A lined gravity segment may still have I/I issues, stemming from cracked VCP service connections and root growth between the service connection and mainline. Root balls also can develop in the

service connection and enter the mainline, causing flow issues in lined (and unlined) segments. The cost of rehabilitating service lines will exceed the cost of mainline rehabilitation. The anticipated cost to line sewer services is estimated at $5,000-$10,000 per typical 60-70 foot long service line ($90-150 / linear foot), per recent capital improvement projects in the metro area.

4.4.5.3 Sewer Lining

The program to line VCP sanitary sewer mains has been completed. The next step to removing I/I from the gravity mains would be focus inspection and rehabilitation on RCP sewer. To determine if that would be a fruitful undertaking, a condition inventory of all gravity mains, including RCP, would need to be obtained, to determine any common issues or trouble areas in the system.

4.4.5.4 Manhole Rehabilitation

Another commonly overlooked area in the work to remove I/I is manhole rehabilitation. Manholes also crack and leak, have root growth, etc. and allow I/I to enter the gravity system. There are many options for manhole rehabilitation, ranging from replacement of adjusting rings and casting, full manhole lining to manhole replacement. Within the lining rehabilitation method, many products with different strengths/situational strengths exist on the market and can be installed at a very reasonable price. Manholes age just like pipe segments, it is recommended to assess the condition of the City's manholes with respect to age and then pursue a manhole rehabilitation project.

4.4.6 Lift Station Access Procedures

The City should maintain written maintenance procedures for accessing the lift stations. The procedures should include the following items:

- Maintain barriers or grating whenever structures are open - either temporary or permanent.
- Never enter a subsurface structure without a partner present.
- Follow confined space requirements.
- Check for applicable gases with appropriate meter.
- Operate appropriate ventilation, either portable or permanent.
- Maintain required light levels.
- Assure temporary lighting is intrinsically safe.
- Assure temporary ladders meet safety codes and are properly secured.
- Utilize fall protection and safety harnesses.
- Always carry an electronic communication device such as a radio.

4.4.7 Lift Station Maintenance

Lift stations represent a vulnerable component of the sanitary sewer collection system. It is important that the City maintain an active preventive maintenance program for each station. The program should consist of two parts: actions performed on a weekly basis and actions performed annually.

The following maintenance tasks should be performed and recorded weekly:

1. Visual site inspection.

2. Visual inspection of wet well.
3. Olfactory inspection of area surrounding lift station. Change charcoal filters once per year.
4. Observe pump operation cycle.
5. Record pump run times.
6. Monitor system alarms.
7. Inspect auxiliary equipment in dry well such as sump pump, dehumidifier, etc.

Continuing with the existing pump maintenance agreement, it is recommend the City have the pumps inspected by a pump professional once per year, which covers the following items:

1. Check electrical condition of insulation on power cable.
2. Check for function of control panel and any loose or faulty electrical connections.
3. Check voltage supply between all phases on the line side of the electrical control panel with pump off.
4. Check amperage draw on all phases of the pump motor.
5. Check voltage between all phases on the load side of the pump motor starter. Check control power.
6. Check condition and operation of motor thermal protectors.
7. Remove submersible pumps from lift station for physical inspection.
8. Check condition of upper shaft seals and inspect condition oil.
9. Check condition and operation of moisture sensors.
10. Check lower shaft seals and inspect condition of oil.
11. Change oil.
12. Check whether impeller is loose or worn.
13. Check all impeller wear rings.
14. Check for noisy upper and lower bearings.
15. Check damaged or cut pump cable.
16. Clean, reset and check operation of the pump alternator and level sensors.
17. Check for correct shaft rotation.
18. Reinstall pump and check for leakage at the discharge connection.
19. Observe one operating cycle.
20. Prepare inspection report.

See Appendix C for more detailed information on each Lift Station.

4.4.8 Lift Station Improvements

The previous Table 2 contains acceptability ratings for each sewage lift station in the City. Individual parameters in each of the sixteen stations contain a range of average to unacceptable ratings. Such deficiencies can most likely be corrected individually at each station. The decision

of which to pursue depends upon the severity of the individual deficiencies. A summary of the evaluations and recommended improvements for each station are located in Section 5.

4.5 Policy and Ordinance Review

Numerous issues arose out of discussions as this plan was prepared. Many of those issues are best resolved through a review and revision of maintenance policies and/or City Ordinance.

4.5.1 Inflow and Infiltration

City ordinance 13-701 lists certain waters that are not allowed to be discharged to the sanitary sewer, including runoff, subsurface drainage, and any ground water. Modifications to the City ordinance should be considered to allow for inspection and require correction of code incompliance, including penalties, related to noncompliant private property service laterals. The Ordinance is provided in Appendix D.

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 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.

The following data, provided by MCES, has been utilized to evaluate whether Coon Rapids is experiencing excessive I/I problem.

Table 10 – Coon Rapids Monthly Water Flows (Millions of Gallons)

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2011	164	148	166	164	185	167	176	169	155	155	155	162
2012	160	145	154	149	161	161	166	169	165	160	153	157
2013	153	138	150	152	155	152	156	153	147	150	145	152
2014	150	137	156	160	179	194	163	160	153	152	148	152
2015	157	146	160	150	161	154	154	148	144	148	142	148
2016	150	139	145	140	145	139	142	145	142	136	131	138
2017	137	124	133	131	175	135	134	134	130	134	127	130

Based on the above table, average daily flow (ADF), base sanitary flow (BSF) and peak flow were determined. Flows from January to April were used to determine the BSF.

Table 11 – Estimated Infiltration and Inflow

Year	Average Daily Flow (ADF) (MGD)	Base Sanitary Flow (BSF) (MGD)	Average I/I Rate	Peak Flow (MGD)	Peak I/I
2011	5.38	5.29	2%	5.97	11%
2012	5.20	4.95	5%	5.45	9%
2013	4.94	4.85	2%	5.03	3%
2014	5.22	4.84	7%	6.45	25%
2015	4.97	5.01	-1%	5.19	4%
2016	4.64	4.66	-1%	4.85	4%
2017	4.45	4.28	4%	5.66	24%

The City of Coon Rapids has been proactive in lining leaky sanitary sewer pipes and has completed lining of all existing VCP In the system. The City is now focusing on lining existing concrete pipe and recently completed lining of a 42'' Trunk Server, along Coon Creek. The City continues to invest in I/I reduction, primarily through annual lining projects completed as a part of their annual pavement management plan project. I/I is assumed to come from both private (25%) and public services (75%). Lining has been completed in areas of high groundwater and additional sewer segments are televised every year.

4.5.2 Grease Management

The City currently adheres to and enforces the 2015 Minnesota State Plumbing Code (Chapter 10) for installation of grease traps. City staff continues to devote extra time and resources to grease in the sanitary sewer system. Areas of known grease issues with grease traps should be monitored to determine program effectiveness. Further work to reduce the amount of grease in the system and/or maintenance solutions should be encouraged and promoted, and free up more maintenance time for regular work and other emergencies. City ordinances relating to grease management should be reviewed regularly to ensure they match with the plumbing code. Implementation of an educational program for grease management is recommended.

4.5.3 Sewer Services

Current City ordinances and policies indicate that the property owner is responsible for the sewer service line between the mainline in the street and building or home (Section 13-400 – Sewer Code-General and Section 13-600 – Public Sewer Usage Rules, Regulations, and Rates, see Appendix D). This is consistent with many other communities. The City has experienced some problems related to owner maintenance of sewer services. Most notably are sewer backups that occur because of debris left in mainline sewers after service cleaning. The City already requires property owners or their contractors to notify the City when maintenance is performed on services. The compliance with this is low and difficult to enforce. Options to address this issue include:

- Require permits for sewer service maintenance activities

- Require private maintenance companies to obtain a City license renewed on an regular basis

Permitting each service maintenance activity would be an added administrative activity that could become laborious. We recommend that the City develop a licensing program that requires maintenance companies to obtain a City license that is renewed periodically. Conditions of the permit should be notification of sewer maintenance staff of all activities on private and public sewers prior to performing the maintenance activity. Failure to comply would result in revoking of the license or prevent renewal in the future.

Another potential problem results after the City rehabilitates or inspects/televises mainline sewers as outlined in other portions of this report. The City's line will be restored to a condition superior to most services connected to the rehabilitated sewer pipe. This can result in a continuation of I/I and root intrusion into the mainline sewer via the sewer services. The City should continue notifying property owners of root intrusion from the service into the main line sewer and provide options/recommendations for rehabilitation.

Now that most of the most troublesome sewers (VCP) have been lined, it is recommended to investigate policy changes for the next round of street reconstruction project for VCP service rehabilitation. The next cycle of street reconstruction projects will most likely include full utility replacement, with a focus on water. One recommendation is to require service laterals in street reconstruction areas to be inspected and approved prior to reconnection to a rehabilitated system. The full reconstruction would allow for lowered prices of repair for homeowners, as work is already being done in the area.

In the interim time before the next street reconstruction cycle, policy should be reviewed to clarify language of service lateral ownership and address when and how frequently services should be inspected and repaired. A push to repair services in the next cycle of street reconstruction projects is recommended, and before the next cycle starts it would be advantageous to modify language in the ordinance to require inspection and repair to laterals before and during reconstruction projects, if necessary.

Lastly, it is recommended to start an educational program regarding service laterals. Informing residents ahead of time of potential construction/repair costs will make actual implementation of changed policy easier, since the residents know why the repairs are necessary.

4.5.4 Subsurface Sewage Treatment

The City of Coon Rapids currently has a database of addresses that currently use, or have on the property, a subsurface sewage treatment system (SSTS). The table below shows the status of properties with and/or using SSTS as of September 2017. See Figure 4-3 for a map showing locations of SSTS and ones with failures.

Table 12 – Subsurface Sewage Treatment Locations

Address	Date Pumped	Considered Failing
12320 Yucca Street 55433	11/15/2016	
8396 East River Road 55433	6/1/2015	
1931 Main Street 55448	1/16/2016	
11024 University Avenue 55448	7/1/2015	Yes
2309 Main Street 55448	10/1/2013	
1000 Northdale Blvd. 55488	10/1/2016	
11150 University Avenue 55448	1/1/2012	
8492 East River Road 55433	11/1/2014	
13161 Osage Street 55448	--	
685 123rd Avenue 55448	10/1/2016	
12691 Hanson Boulevard 55448	8/1/2016	
12451 Partridge Street 55448	--	
8372 Mississippi Boulevard 55433	5/25/2016	
9564 East River Road 55433	6/16/2016	
12208 Flintwood Street 55448	8/25/2015	
12031 Partridge Street 55448	Uninhabitable	Yes
9200 University Avenue 55448	10/6/2015	
949 89th Lane 55433	6/2/2016	
11140 University Avenue 55448	4/1/2015	
340 95th Avenue 55433	4/4/2015	
12760 Hanson Blvd. 55448	11/1/2016	
2120 131st Avenue 55448	11/1/2016	
3237 Coon Rapids Blvd. 55433	Unoccupied	
728 123rd Avenue 55448	4/1/2016	
10815 Direct River Drive 55433	Single tank	Yes
10550 Mississippi Blvd. 55433	Not Required - New Owner connecting to sewer	Yes
13132 Osage Street 55448	11/18/2013	
2477 Main Street 55448	11/16/2015	
9750 Egret Blvd	--	
13299 Hanson Boulevard	--	
Contact Station	--	
701 County Parkway A	--	
13175 County Parkway D	--	
13175 County Parkway D	--	
12780 Bunker Prairie Rd	--	
13101 County Parkway B	--	

Source: Data provided by the City of Coon Rapids, 4/16/2019

Chapter 13-500 of the City's Code of Ordinances describes the regulations for SSTS. This chapter is located in Appendix D. The ordinance adopts all rules 7080 and 7081 (and subsequent amendments) of the Minnesota Pollution Control Agency (MPCA).

Chapter 13-500 provides standards for the installation, maintenance and repair of all SSTS. All owners of a SSTS are required to have a permit for the SSTS as well as provide regular maintenance, which includes either pumping and removing sewage or at least every three years measuring the level of sludge and scum and taking appropriate actions.

Residents are required to connect to City gravity service, if service becomes available, if and when the SSTS fails or within one year of available service connection. No repairs or new SSTS are allowed once a property has the ability to connect to City gravity service.

No formal plan is currently in place to remove septic properties and connect to City sewer. The City has outlined when Compliance Inspections are required, which includes at replacement of an SSTS, when adding a bedroom to an existing structure, when the parcel with an SSTS is modified and prior to a property transfer.

5 Capital Improvement Plan

The purpose of a capital improvement plan is to serve as a guide to monitor, maintain, and rehabilitate the City's sanitary sewer system. Primary goals of the plan is to provide an efficient and well maintained system including continued compliance with local and regional standards for wastewater, including the control of inflow and infiltration (I/I) to the system and the reduction of claims against the City related to sewer backups and. Specific recommendations in this plan include:

- rehabilitation of system components with concerns related to safety, health, and welfare of City residents and employees;
- rehabilitation and update of system components to improve system effectiveness;
- implementation of programs to periodically evaluate system condition;
- development or expansion of maintenance programs to ensure periodic maintenance of the sewer system;
- establishing education programs, policies and ordinances to protect the City's sewer infrastructure; and
- equipment and staffing needs of the City.

5.1 Sewers

Rehabilitation of sewers in disrepair improves flow through the sewers and reduces maintenance expenditures on the system. The proper maintenance and rehabilitation of existing sewers extends the life of the sewer and reduces costly reconstruction of the system.

5.1.1 Pipes

The City of Coon Rapids has completed an effort to line all the public VCP sewer mains in the City.

It is recommended to continue to monitor, clean and televise all sewer pipes, including those that have been lined. Previously lined segments may have issues like minimal slope, sags or wrinkles in the liner that would impact the sanitary flow and require regular cleaning. Roots can also

intrude from service laterals into the lined segment, impacting flow. A program to line RCP is recommended as the next step in pipe rehabilitation. It is recommended to begin this program by televising all RCP to create a priority of rehabilitation. After assessing all RCP, a good rehabilitation plan will start with the most deteriorated pipes as well as the largest diameter RCP.

"Flushable" wipes have become a major issue in the sanitary sewer system, causing blockages in pipes as well as clogging lift stations and damaging pumps. Although these products are marketed as flushable, due to the impact to the system it is not recommended to dispose of these products in that manner. A program to education the public is a recommended first step to any policy change. If the public becomes aware this is an issue and can see the impact to the system, costs for cleaning/repairing the clogged pipes and pumps, habits may change.

5.1.1.1 System Cleaning Costs

Cleaning costs are estimated at $2,500 per mile when contracted. A program to clean 80 miles per year results in a contract cost of $200,000 per year. The actual cost to the City may be different depending on the amount of work accomplished with City forces versus private contractors.

5.1.1.2 System Televising Costs

The most efficient means to do this would be to develop a televising program that partially coincides with the cleaning program described above. It is recommended to televise sewers every 10 years, and that can be planned in conjunction with the cleaning schedule. Televising costs are estimated at $4,000 per mile. A program to televise 25 miles per year in conjunction with street construction programs results in a contract cost of $100,000 per year for a ten year televising cycle.

Table 13 – Gravity Pipe Maintenance Summary

Activity	Quantity	Cost	Frequency
Cleaning and Jetting	80 miles	$200,000/year	Annually
Televising	25 miles	$100,000/year	Annually[1]
[1]10-year program			

5.1.2 I/I

Continuance of an I/I program is anticipated to be completed through work within the public and private sewer system. Although Coon Rapids is hesitant to establish laws and regulations requiring private property inspections for service laterals, the City will support state, county and regional laws requiring such. Additionally, Coon Rapids intends to implement the following activities which will educate citizens about their ability to impact I/I.

1. Identify and explain what I/I is and what the impacts are to excessive I/I.
2. Identify what the City has done to mitigate I/I within the public system.
3. Identify what private property defects contribute to I/I.
4. Who owns what? Property owner is responsible for their service lateral from the home/building all the way to the main pipe.

5. Explain what should be done if a property has a back-up.
6. Consider whether the City can and should support a private insurance program for service laterals as a part of a sewer bill or for home owner's separate insurance.

5.1.2.1 Private Property Inspections

Table 14 – Private Property Rehabilitation Summary

Activity	Cost	Frequency
Property Inspection	$350/property	Once/After Correction of Defect
VCP Service Lateral Rehabilitation	$5,000-$10,000	50% of Properties

The City intends to support private property inspections through a voluntary basis during roadway reconstruction projects and as requested by home owners. Additionally, a program may be established to acquire bid prices, through roadway reconstruction projects or other means that property owners could use for service lateral replacement and rehabilitation.

5.1.2.2 Sewer Services

The City has experienced root problems with sewer services, similar to the roots problems from VCP segments. The property owner owns sewer services from the building to the sewer main and is responsible for the maintenance and rehabilitation of its service. The cost to line services would exceed the cost of lining mainline sewers. Options for rehabilitation include lining or excavation.

Lining and repair of VCP sewer services will result in a rehabilitated system that reduces maintenance costs for both the City and property owners. The City will benefit from the rehabilitation of sewer services through reduction of I/I and the minimization of root cuttings from service laterals that end up in the mainline sewer, often creating additional maintenance needs for the City or, in some cases, sewer backups.

The anticipated cost to line sewer services is estimated at $5,000-$10,000 per typical 60-70 foot long service line ($90-150 / linear foot), per recent capital improvement projects in the metro area.

A policy revision recommendation is to state more clearly the extents of sewer service ownership in one location in the City Code. Current definition of ownership is assumed based on multiple ordinances. A second recommendation is to review condition of wye connections during street reconstruction projects, so property owners can get a better rate for repair and minimize the cost and frustration of going back to an area to rehabilitate a connection.

5.1.2.3 Manholes

Manholes are oftentimes major contributors of I/I to the gravity sanitary system. Multiple repair/rehabilitation options exist, addressing all portions of the structure. Manholes age just like pipe segments, it is recommended to assess the condition of the City's manholes with respect to age and then pursue a manhole rehabilitation project.

Table 15 – Manhole Rehabilitation Summary

Activity	Cost	Frequency
Manhole Inspections	$90/unit	Baseline
I/I Barrier/Chimney Seal	$150/unit*	Project Driven
Manhole Lining**	$300/LF	Project Driven
*Cost in addition to setting MH frames as part of larger project. Assumed to occur during street reconstruction project **Assumed 20% of City manholes require rehabilitation at an average depth of 10-feet		

5.1.3 Estimated Cost of Upsized Sewer Pipes

The City has constructed the necessary trunk facilities to serve the community. The remaining undeveloped land in the community as well as future redevelopment areas will be served with sanitary sewer from existing mains with select segments upsized and/or extended to accommodate growth.

It is recommended to upsize certain pipes in the areas of redevelopment to ensure capacity for the projected additional flows provided by Community Development. The following table summarizes what areas would benefit from upsizing, including recommended length and diameter. All calculations were assumed with new pipe installed at same depth and grade as existing conditions. It should also be noted that development contributions will help pay for pipe upsizing.

Table 16 – Redevelopment Areas – Recommended Pipe Upsizing

	Existing Diameter (in)	Proposed Diameter (in)	Length (ft)	Cost/Foot*	Total Cost
Foley Boulevard TOD and Port Evergreen	8	10	415	$ 100	$ 41,500
	12	24	285	$ 200	$ 57,000
Port Wellness (Mercy Hospital)	8	12	380	$ 100	$ 38,000
Port Campus Square	10	15	1965	$ 130	$ 255,450
	8, 15	18	1660	$ 150	$ 249,000
West Sod Farm	8	10	180	$ 60	$ 10,800
Total					$ 635,150
	Note: *MnDOT 2016 Average Bid Price, excludes surface restoration				

5.1.4 Lift Station Improvements

The adequacy of each lift station was evaluated against nine parameters, described in Section 2 of this report.

Table 16 is a copy of the acceptability ratings of each sanitary lift station in the City that was initially presented as Table 3.

Table 17 – Lift Station Acceptability Rating

Rating System									
1– Excellent 2 – Good 3 – Average 4 – Below Average 5 – Unacceptable									
	Hydraulic Capacity	Safety	Back-Ups	Pump Review	Wetwell Physical Condition	Valve Vault Physical Condition	Electrical	SCADA	Location
Lift Station 1	3	1	2	2	2	3	3	2	2
Lift Station 2	3	5	2	4	2	2	4	3	2
Lift Station 3	3	2	3	3	2	3	1	2	2
Lift Station 4	4	3	3	2	3	2	3	2	2
Lift Station 5	3	1	2	4	3	2	3	2	1
Lift Station 6	4	1	2	2	2	4	3	1	1
Lift Station 7	3	1	2	4	3	3	3	2	1
Lift Station 8	4	1	3	2	1	1	3	3	2
Lift Station 9	4	2	3	1	2	3	2	2	2
Lift Station 10	3	2	2	3	3	3	2	2	2
Lift Station 11	3	5	2	1	2	2	3	3	1
Lift Station 13	4	2	3	1	3	2	3	3	1
Lift Station 14	4	1	2	3	2	1	2	3	2
Lift Station 15	4	1	3	4	2	3	2	3	2
Lift Station 16	3	1	2	1	3	3	1	1	1
Lift Station 17	4	1	2	1	2	3	1	1	1

Note: Lift Station 12 has been abandoned

One overall recommendation is to start installing fiber at all lift stations for uninterrupted communication. Fiber installation is recommended to be prioritized first for lift stations 2, 6, 8, 13, 14 and 15 based on current communication issues.

5.1.4.1 Station No. 1

The following items which are rated average will likely require correction within the next 6-10 years:

- Install pump or drain to drain valve vault.
- Upgrade electrical service by Utility. Area noted for frequent power outages.

Any parameter which received a rating of above average are not listed as requiring improvement during the next 10 years in the capital improvement plan.

The shrubbery around the station was overgrown at the time of this inspection. It is recommended to provide regular landscape management to keep the station accessible.

5.1.4.2 Station No. 2

Lift station 2 has deficiencies that need to be addressed. The City is currently planning to rehabilitate the station in 2018, thus no deficiencies are listed. One recommendation during design is to install fiber for communications.

5.1.4.3 Station No. 3

The following items which are rated average will likely require correction within the next 6-10 years:

- Install pump or drain to drain valve vault.
- Replace pumps.

Any parameter which received a rating of above average are not listed as requiring improvement during the next 10 years in the capital improvement plan.

During the inspection, it was noted that there have been concerns raised over settlement of the concrete slab and carbon vent breaking off. Both issues should continue to be monitored and rehabilitated as necessary. Also of note was the valve vault had standing water, almost to the top of the pipe.

5.1.4.4 Station No. 4

The following items which are rated average will likely require correction within the next 6-10 years:

- Replace safety grating on wet well access hatch.
- Control panel hangs off top slab. Pour extended concrete slab for panel.

Any parameter which received a rating of above average are not listed as requiring improvement during the next 10 years in the capital improvement plan.

5.1.4.5 Station No. 5

The following items which are rated poor should be corrected within the next 3-5 years:

- Replace pumps. Current pumps were installed in 2008.

The following items which are rated average will likely require correction within the next 6-10 years:

- Coat wet well to reduce grease buildup.

Any parameter which received a rating of above average are not listed as requiring improvement during the next 10 years in the capital improvement plan.

During the lift station inspection, it was noted that the valve vault manhole cover had a hole, allowing water to enter the valve vault. The cover should be replaced as soon as possible to prevent water from entering the structure.

5.1.4.6 Station No. 6

The following items which are rated poor should be corrected within the next 3-5 years:

- Install pump or drain to drain valve vault

Any parameter which received a rating of above average are not listed as requiring improvement during the next 10 years in the capital improvement plan.

During the lift station inspection, it was noted that the valve vault had standing water, almost to the top of the pipe.

In the interim, it is recommended to raise the lead pump start elevation 1.5-feet higher than current elevation. The increase in storage will improve station operation, detention time and reduce the number of pump starts per hour.

5.1.4.7 Station No. 7

The following items which are rated poor should be corrected within the next 3-5 years:

- Replace pumps. Current pumps were installed in 2009.

The following items which are rated average will likely require correction within the next 6-10 years:

- Install pump or drain to drain valve vault.
- Remove steps in wet well.

Any parameter which received a rating of above average are not listed as requiring improvement during the next 10 years in the capital improvement plan.

During the lift station inspection, it was noted that the valve vault had standing water, almost to the top of the pipe.

5.1.4.8 Station No. 8

The following items which are rated average will likely require correction within the next 6-10 years:

- Run fiber optic line for communication to SCADA.
- Update electrical service by Utility.

Any parameter which received a rating of above average are not listed as requiring improvement during the next 10 years in the capital improvement plan.

5.1.4.9 Station No. 9

The following items which are rated average will likely require correction within the next 6-10 years:

- Apply protective coating on fittings in valve vault.

Any parameter which received a rating of above average are not listed as requiring improvement during the next 10 years in the capital improvement plan.

5.1.4.10 Station No. 10

The following items which are rated average will likely require correction within the next 6-10 years:

- Install pump or drain to drain valve vault
- Coat wet well to minimize grease buildup.

Any parameter which received a rating of above average are not listed as requiring improvement during the next 10 years in the capital improvement plan.

During the lift station inspection, it was noted that the valve vault was half full of water. No drain is shown on the contract documents.

5.1.4.11 Station No. 11

The following items which are rated unacceptable should be corrected within the next two years:

- Replace access hatch and safety grate on wet well.

The following items which are rated average will likely require correction within the next 6-10 years:

- Update electrical service by Utility.

Any parameter which received a rating of above average are not listed as requiring improvement during the next 10 years in the capital improvement plan.

5.1.4.12 Station No. 12 – N/A

5.1.4.13 Station No. 13

The following items which are rated average will likely require correction within the next 6-10 years:

- Coat inside to wet well to reduce grease buildup.
- Run fiber optic line for communication to SCADA

Any parameter which received a rating of above average are not listed as requiring improvement during the next 10 years in the capital improvement plan.

5.1.4.14 Station No. 14

The following items which are rated average will likely require correction within the next 6-10 years:

- Coat inside to wet well to reduce grease buildup.
- Run fiber optic line for communication to SCADA.

Any parameter which received a rating of above average are not listed as requiring improvement during the next 10 years in the capital improvement plan.

In the interim, it is recommended to raise the lead pump start elevation 1-foot higher than current elevation. The increase in storage will improve station operation, detention time and reduce the number of pump starts per hour.

5.1.4.15 Station No. 15

The following items which are rated poor should be corrected within the next 3-5 years:

- Replace pumps including N style impellors and flush valves.

The following items which are rated average will likely require correction within the next 6-10 years:

- Run fiber optic line for communication to SCADA.

Any parameter which received a rating of above average are not listed as requiring improvement during the next 10 years in the capital improvement plan.

5.1.4.16 Station No. 16

The following items which are rated average will likely require correction within the next 6-10 years:

- Replace top rail brackets for pump in wet well.
- Apply protective coating on fittings on force main in valve vault.

Any parameter which received a rating of above average are not listed as requiring improvement during the next 10 years in the capital improvement plan.

5.1.4.17 Station No. 17

The following items which are rated average will likely require correction within the next 6-10 years:

- Apply protective coating on fittings on force main in valve vault.

Any parameter which received a rating of above average are not listed as requiring improvement during the next 10 years in the capital improvement plan.

5.1.5 Estimated Cost of Lift Station Improvements

Table 18 – Estimated Cost of Lift Station Improvements

Station	Repair/Upgrade	Quantity	Unit Cost	Estimated Cost
Lift Station 1	Valve Vault Drainage System	1	$ 10,000.00	$ 10,000.00
	Electrical Service Upgrade	1	$ 20,000.00	$ 20,000.00
	Fiber Optic Communication*	1	$ 100,000.00	$ 100,000.00
Lift Station 2	No Repairs Recommended			
Lift Station 3	Valve Vault Drainage System	1	$ 10,000.00	$ 10,000.00
	Lift Station Pumps	2	$ 20,000.00	$ 40,000.00

Station	Repair/Upgrade	Quantity	Unit Cost	Estimated Cost
	Fiber Optic Communication*	1	$ 100,000.00	$ 100,000.00
Lift Station 4	Wet Well Safety Grating/Access Hatch	1	$ 10,000.00	$ 10,000.00
	Concrete Slab	1	$ 5,000.00	$ 5,000.00
	Fiber Optic Communication*	1	$ 100,000.00	$ 100,000.00
Lift Station 5	Lift Station Pumps	2	$ 20,000.00	$ 40,000.00
	Controller	1	$ 10,000.00	$ 10,000.00
	Wet Well Coating	1	$ 25,000.00	$ 25,000.00
	Fiber Optic Communication*	3	$ 100,000.00	$ 100,000.00
Lift Station 6	Valve Vault Drainage System	1	$ 10,000.00	$ 10,000.00
	Controller	1	$ 10,000.00	$ 10,000.00
	Fiber Optic Communication*	1	$ 100,000.00	$ 100,000.00
Lift Station 7	Valve Vault Drainage System	1	$ 10,000.00	$ 10,000.00
	Lift Station Pumps	2	$ 20,000.00	$ 40,000.00
	Controller	1	$ 10,000.00	$ 10,000.00
	Fiber Optic Communication*	1	$ 100,000.00	$ 100,000.00
Lift Station 8	Electrical Service Upgrade	1	$ 20,000.00	$ 20,000.00
	Fiber Optic Communication*	1	$ 100,000.00	$ 100,000.00
Lift Station 9	Valve Vault Piping and Fitting Coating	1	$ 5,000.00	$ 5,000.00
	Fiber Optic Communication*	1	$ 100,000.00	$ 100,000.00
Lift Station 10	Valve Vault Drainage System	1	$ 10,000.00	$ 10,000.00
	Wet Well Coating	1	$ 25,000.00	$ 25,000.00
	Fiber Optic Communication*	1	$ 100,000.00	$ 100,000.00
Lift Station 11	Wet Well Safety Grating/Access Hatch	1	$ 10,000.00	$ 10,000.00
	Electrical Service Upgrade	1	$ 20,000.00	$ 20,000.00
	Fiber Optic Communication*	1	$ 100,000.00	$ 100,000.00
Lift Station 12	N/A			
Lift Station 13	Wet Well Coating	1	$ 25,000.00	$ 25,000.00
	Fiber Optic Communication*	1	$ 100,000.00	$ 100,000.00
Lift Station 14	Wet Well Coating	1	$ 25,000.00	$ 25,000.00
	Fiber Optic Communication*	1	$ 100,000.00	$ 100,000.00
Lift Station 15	Lift Station Pumps	2	$ 20,000.00	$ 40,000.00
	Fiber Optic Communication*	1	$ 100,000.00	$ 100,000.00
Lift Station 16	Wet Well Pump Rails	2	$ 2,000.00	$ 4,000.00
	Valve Vault Piping and Fitting Coating	1	$ 5,000.00	$ 5,000.00
	Fiber Optic Communication*	1	$ 100,000.00	$ 100,000.00

Station	Repair/Upgrade	Quantity	Unit Cost	Estimated Cost
Lift Station 17	Valve Vault Piping and Fitting Coating	1	$ 5,000.00	$ 5,000.00
	Fiber Optic Communication*	1	$ 100,000.00	$ 100,000.00

**Upgrade costs will vary based on distance from fiber optic source, control panel improvements may vary including purchasing of new PLC and programming (older control panels without touch screen) and ethernet module.*

5.2 Capital Improvement Plan Cost Summary

Table 19 – Capital Improvement Plan Cost Summary

	Quantity	Unit Cost	Cost per Year
Gravity Sewer			
Cleaning and Jetting	80 miles	$ 2,500.00	$ 200,000.00
Televising	25 miles	$ 4,000.00	$ 100,000.00
	Quantity	**Unit Cost**	**Capital Cost**
Lining			
RCP	17 miles	$ 400,000.00	$ 6,800,000.00
Private Property Inspections			
Property Inspections	20,500	$ 350.00	$ 7,175,000.00
VCP Service Connection*			
Service Rehabilitation**	LF	$ 150.00	$ 15,375,000.00
Manhole Rehabilitation			
Manhole Inspections	5,820	$ 90.00	$ 523,800.00
I/I Barrier/Chimney Seal***	5,820	$ 150.00	$ 873,000.00
Lining****	1,164	$ 300.00	$ 698,400.00
Total Yearly Maintenance Cost			**$ 300,000.00**
Total Capital Cost (excludes maintenance)			**$ 16,070,200.00**
Total Property Owner Cost			**$ 15,375,000.00**

*Assumed 50' of rehabilitation

**Costs paid by property owner

***Assumed installation is during a street reconstruction or internal chimney seals are used

****Assumed 20% of manholes in City require lining, assumed 10-foot depth

Table 20 – Lift Station Cost Summary

Lift Station	Cost
Lift Station 1	$ 130,000.00
Lift Station 2	N/A
Lift Station 3	$ 150,000.00
Lift Station 4	$ 115,000.00
Lift Station 5	$ 175,000.00
Lift Station 6	$ 120,000.00
Lift Station 7	$ 160,000.00
Lift Station 8	$ 120,000.00
Lift Station 9	$ 105,000.00
Lift Station 10	$ 135,000.00
Lift Station 11	$ 130,000.00
Lift Station 12	N/A
Lift Station 13	$ 125,000.00
Lift Station 14	$ 125,000.00
Lift Station 15	$ 140,000.00
Lift Station 16	$ 109,000.00
Lift Station 17	$ 105,000.00
Grand Total	**$ 1,944,000.00**

bab

Appendix A

Figures

Figure 1-1 - Sanitary Sewer Drainage Districts

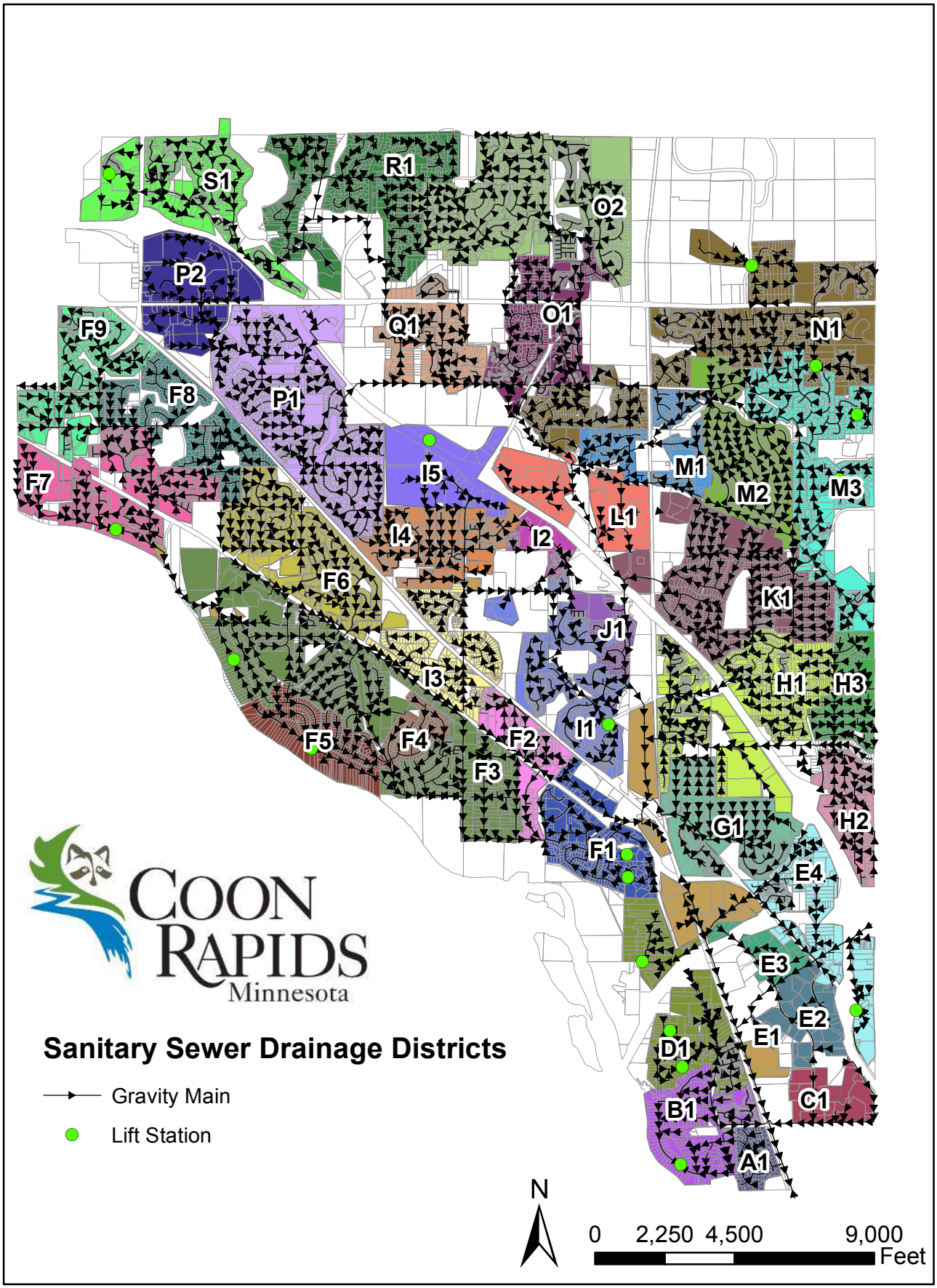


Figure 1-2 - Sanitary Sewer Pipe Material

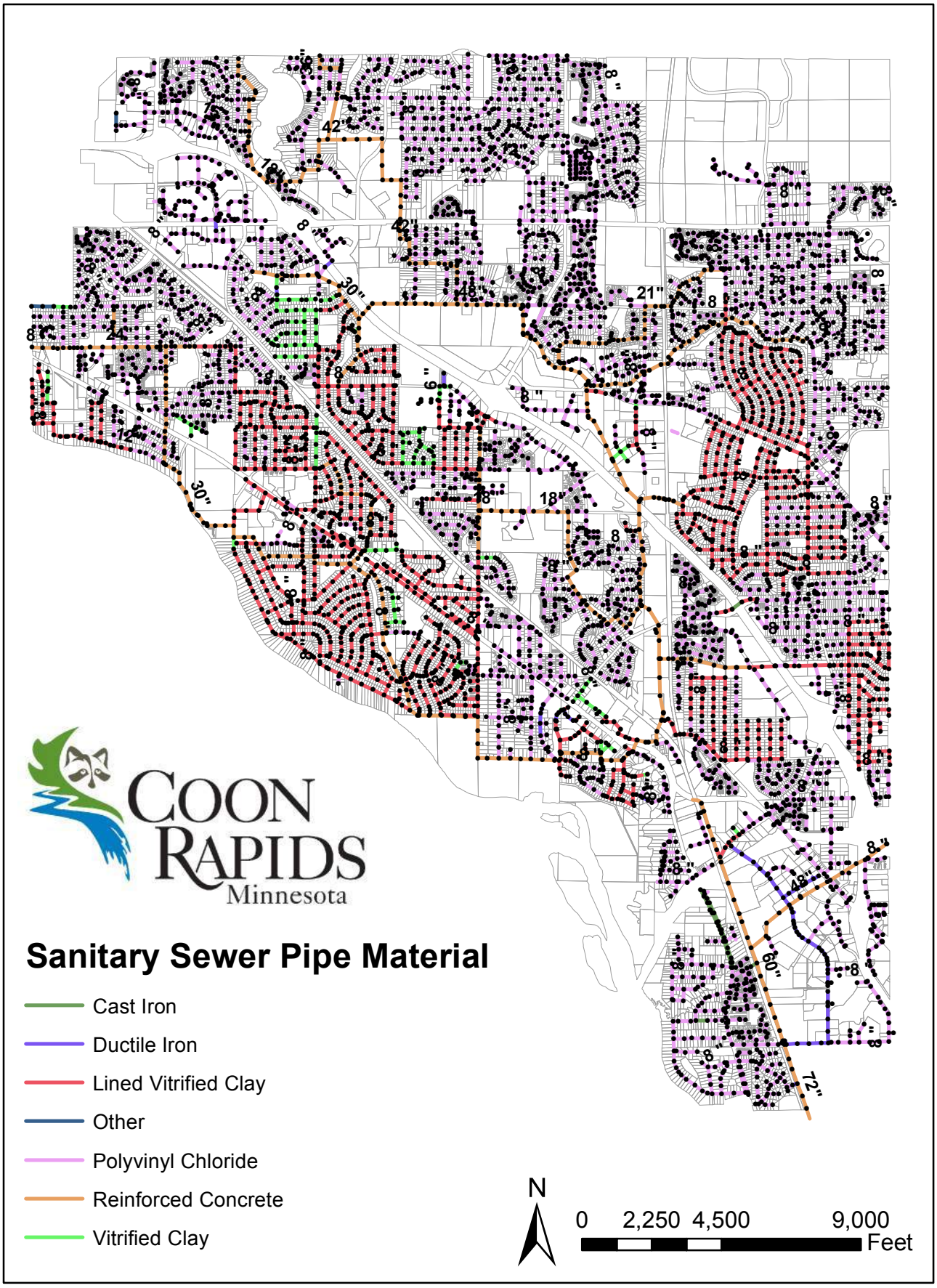


Figure 1-3 - Sanitary Sewer Pipe Size

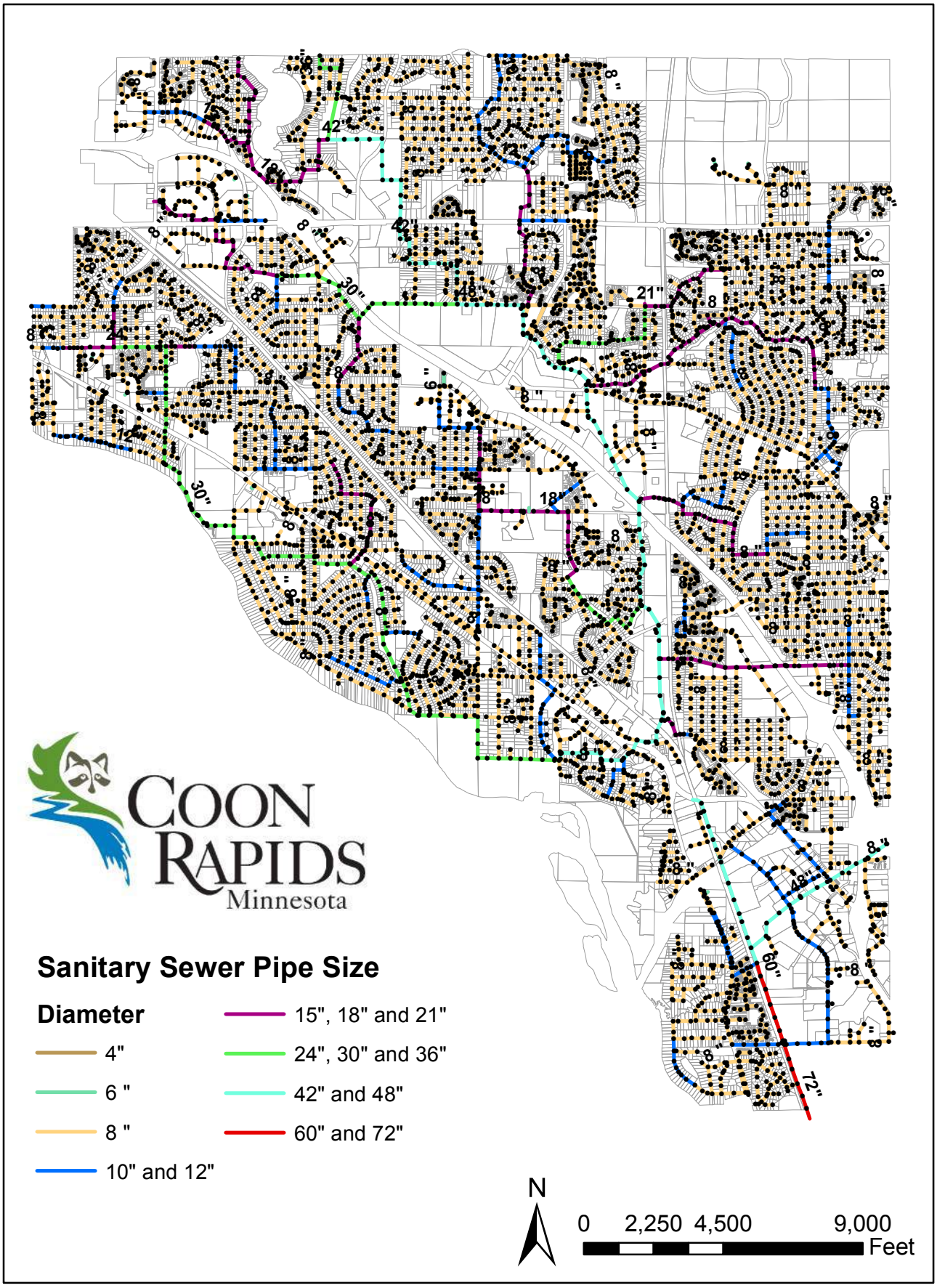


Figure 1-4 - MCES Interceptor

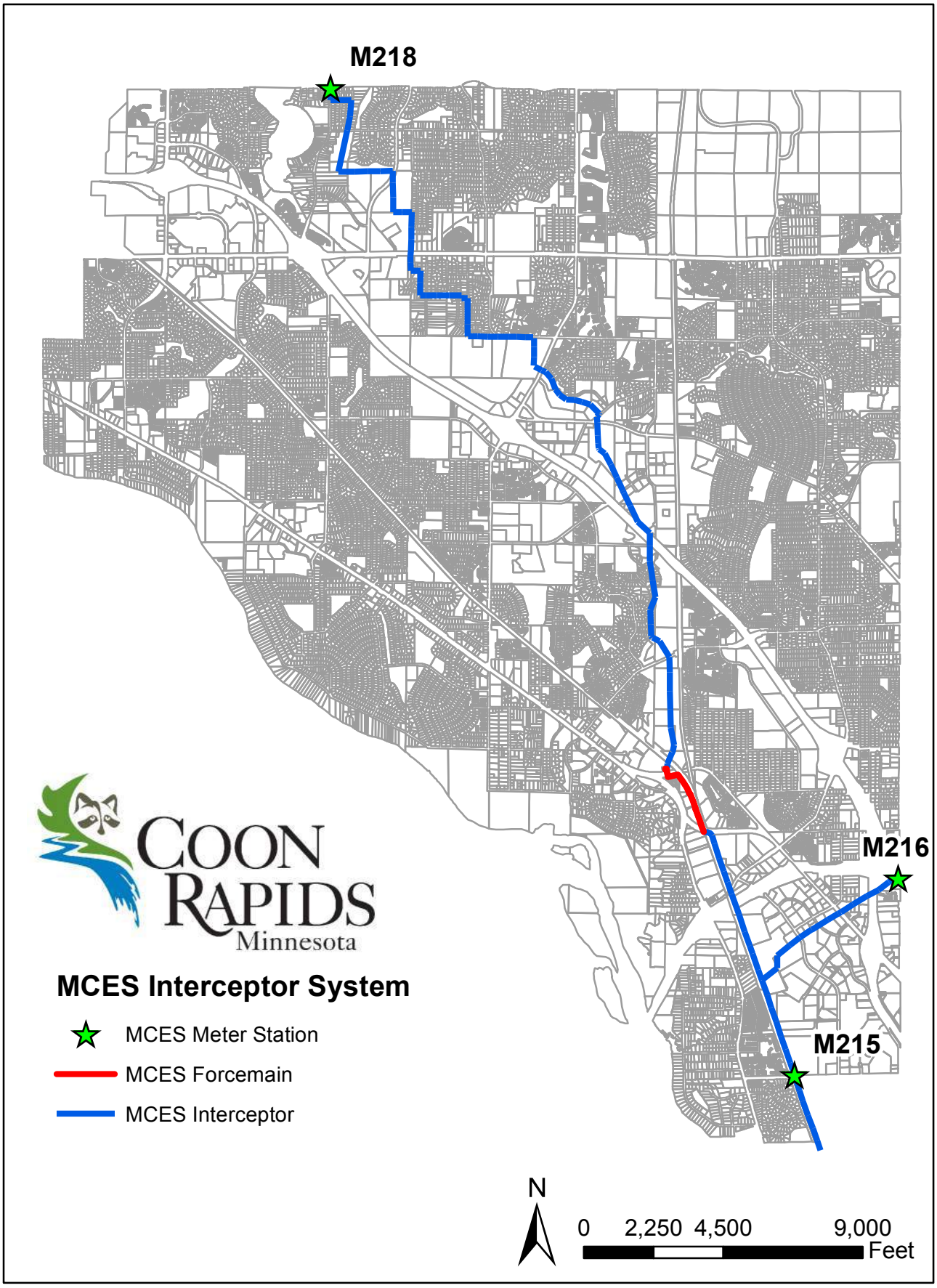


Figure 2-1 - Sanitary Lift Stations

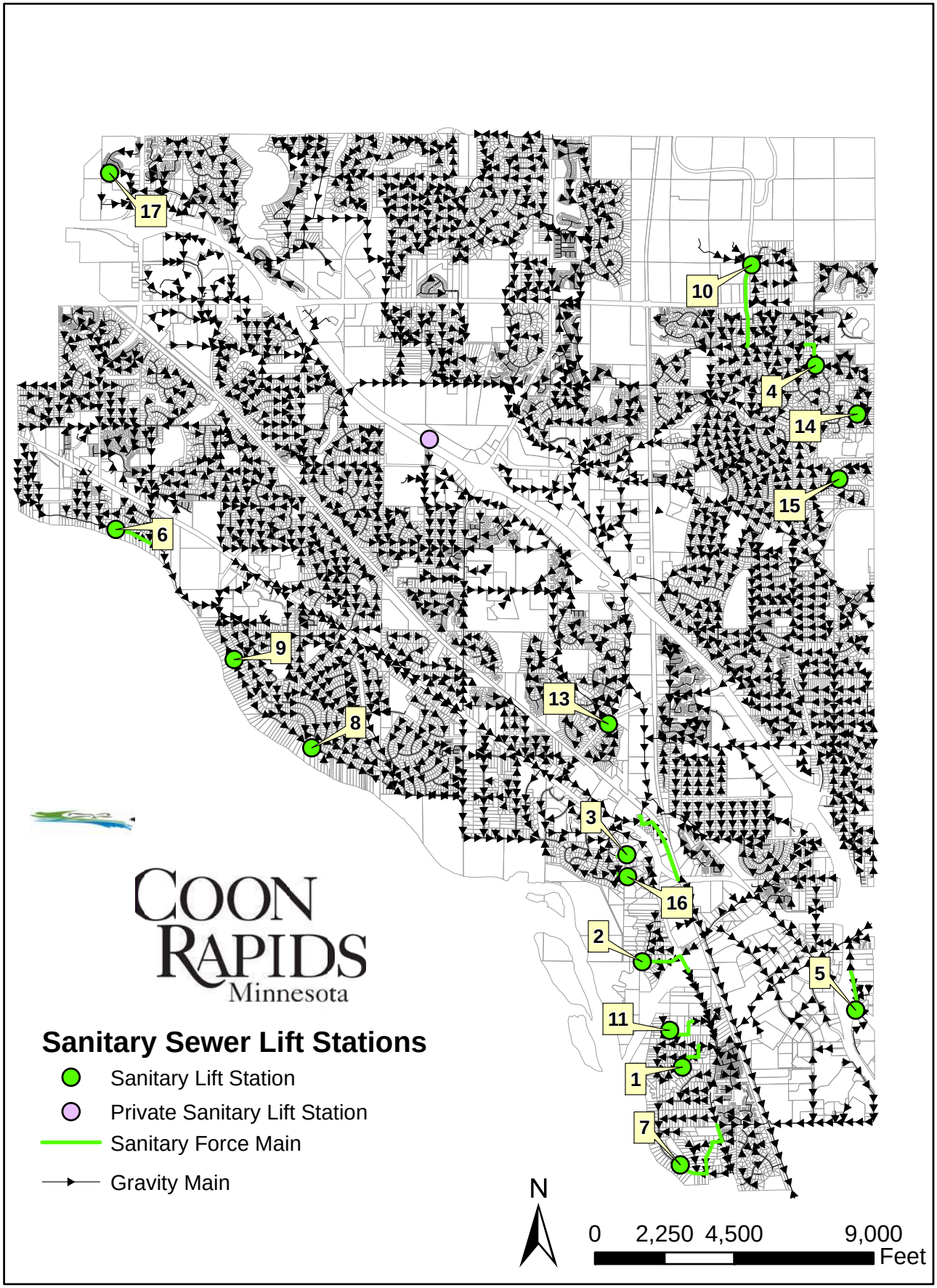


Figure 3-1
FUTURE LAND USE - DRAFT 9/13/17
CITY OF COON RAPIDS

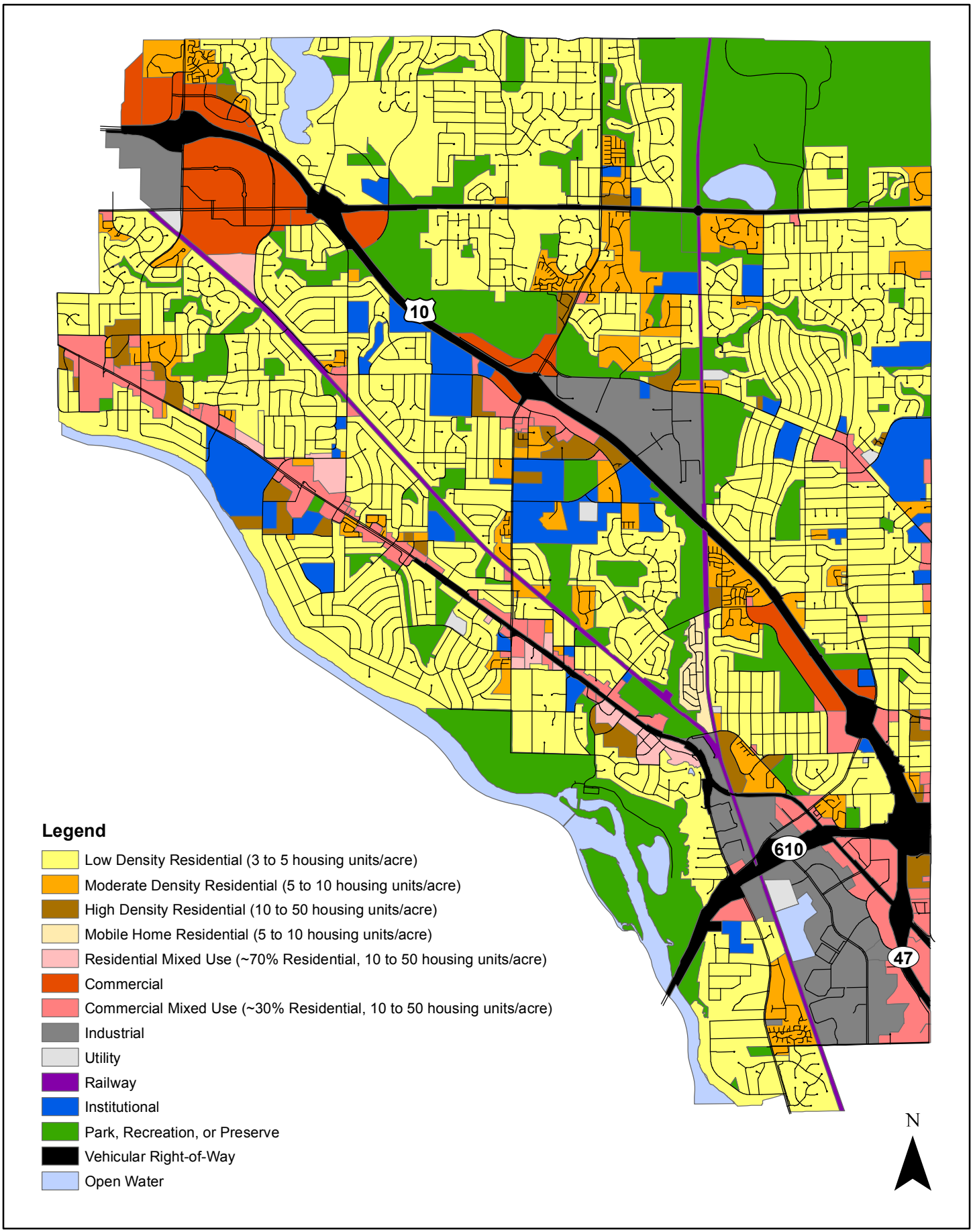


Figure 4-1 - Sewer Maintenance Districts

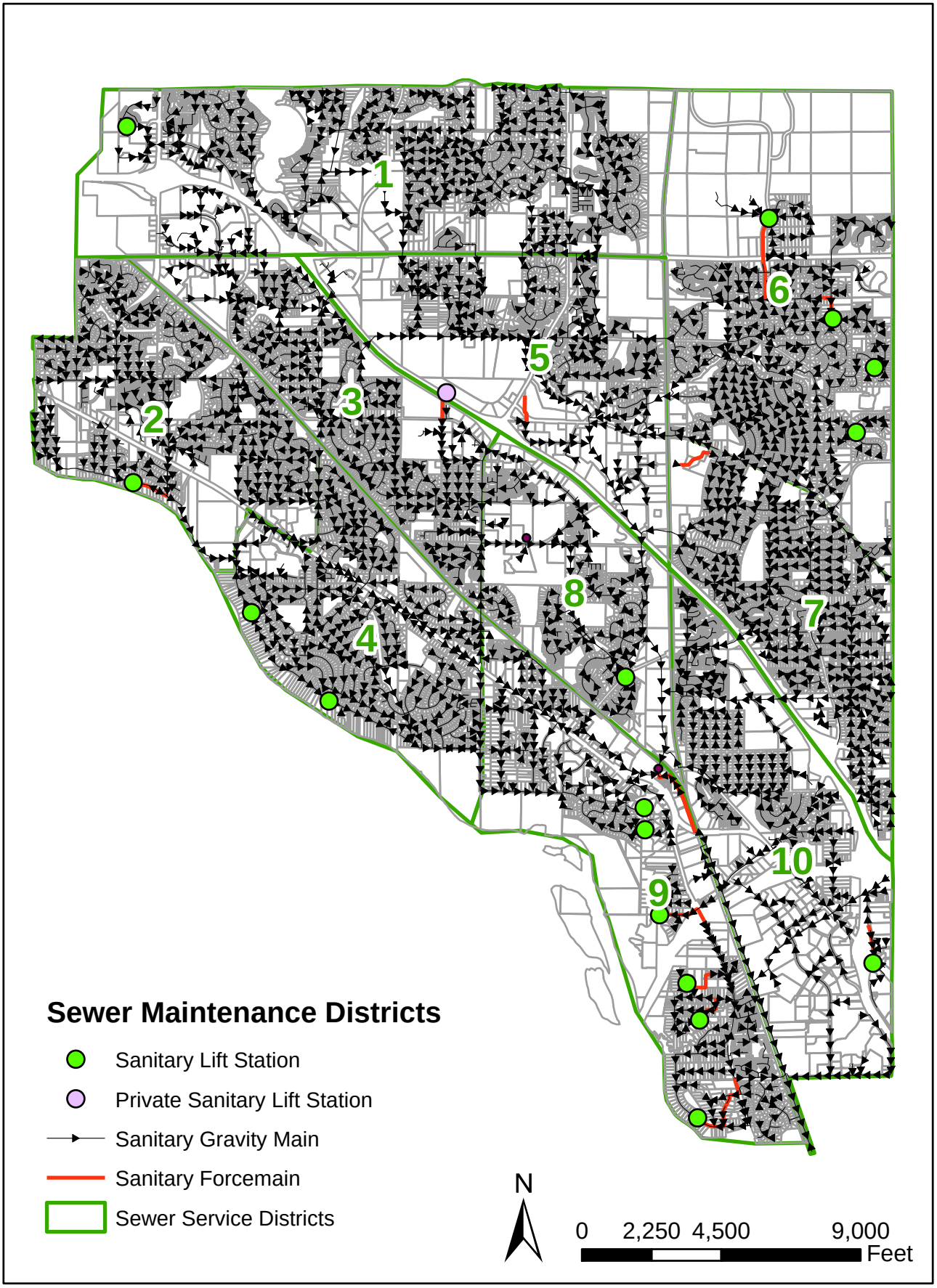
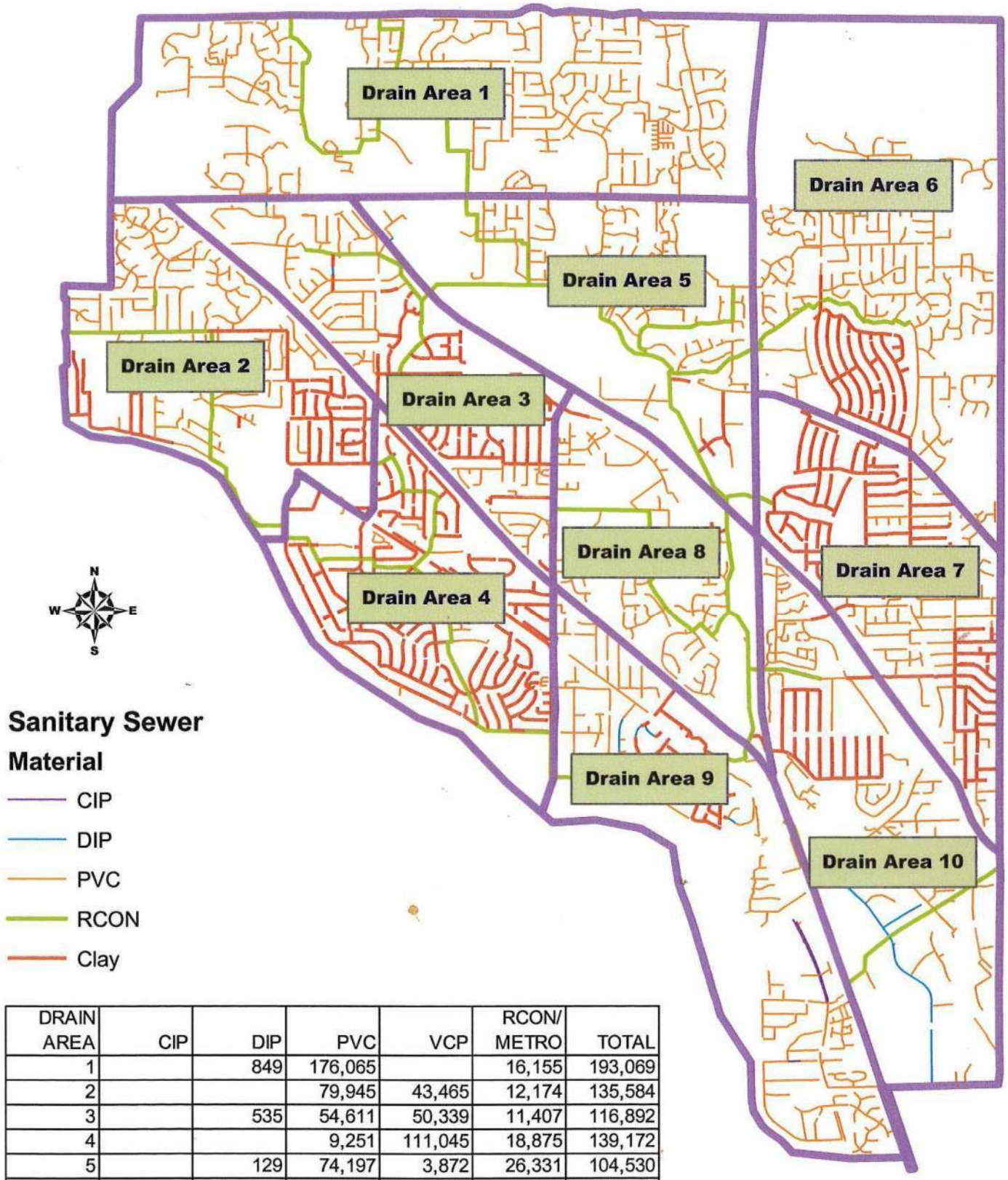


Figure 4-2
Footage of Sanitary Sewer by Drain Area



DRAIN AREA	CIP	DIP	PVC	VCP	RCON/ METRO	TOTAL
1		849	176,065		16,155	193,069
2			79,945	43,465	12,174	135,584
3		535	54,611	50,339	11,407	116,892
4			9,251	111,045	18,875	139,172
5		129	74,197	3,872	26,331	104,530
6			113,005	33,516	5,905	152,426
7			51,828	81,367	506	133,700
8		34	53,022	2,583	16,288	71,927
9	6,408	2,519	88,722	16,087	17,734	131,470
10		10,329	75,281	21,679	10,329	117,618

CITY OF COON RAPIDS
Public Works Division
1831 111th Avenue NW
Coon Rapids, MN 55433-3898

Figure 4-3 SSTS Locations

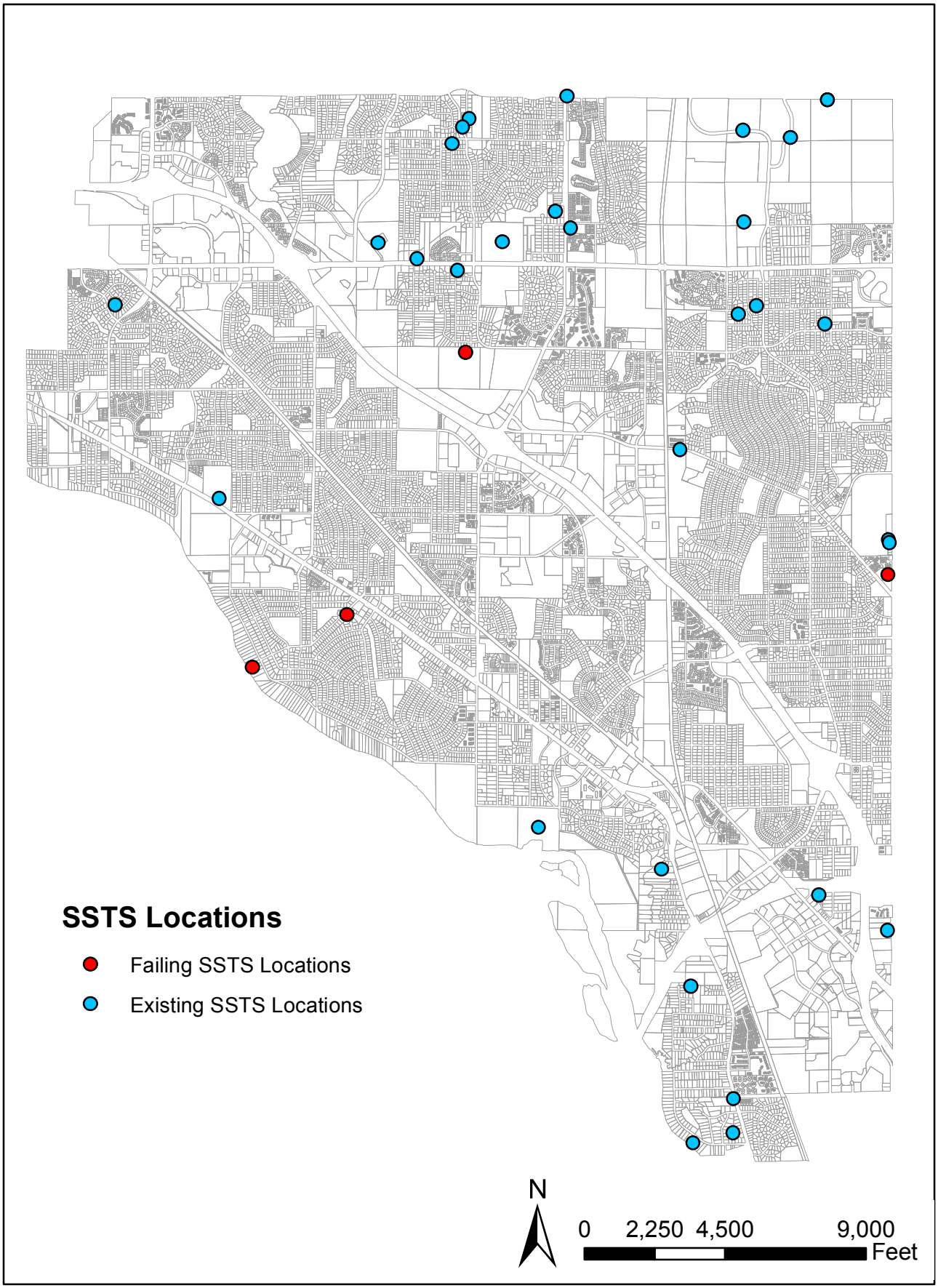


Figure 4-4 Residential Construction By Decade

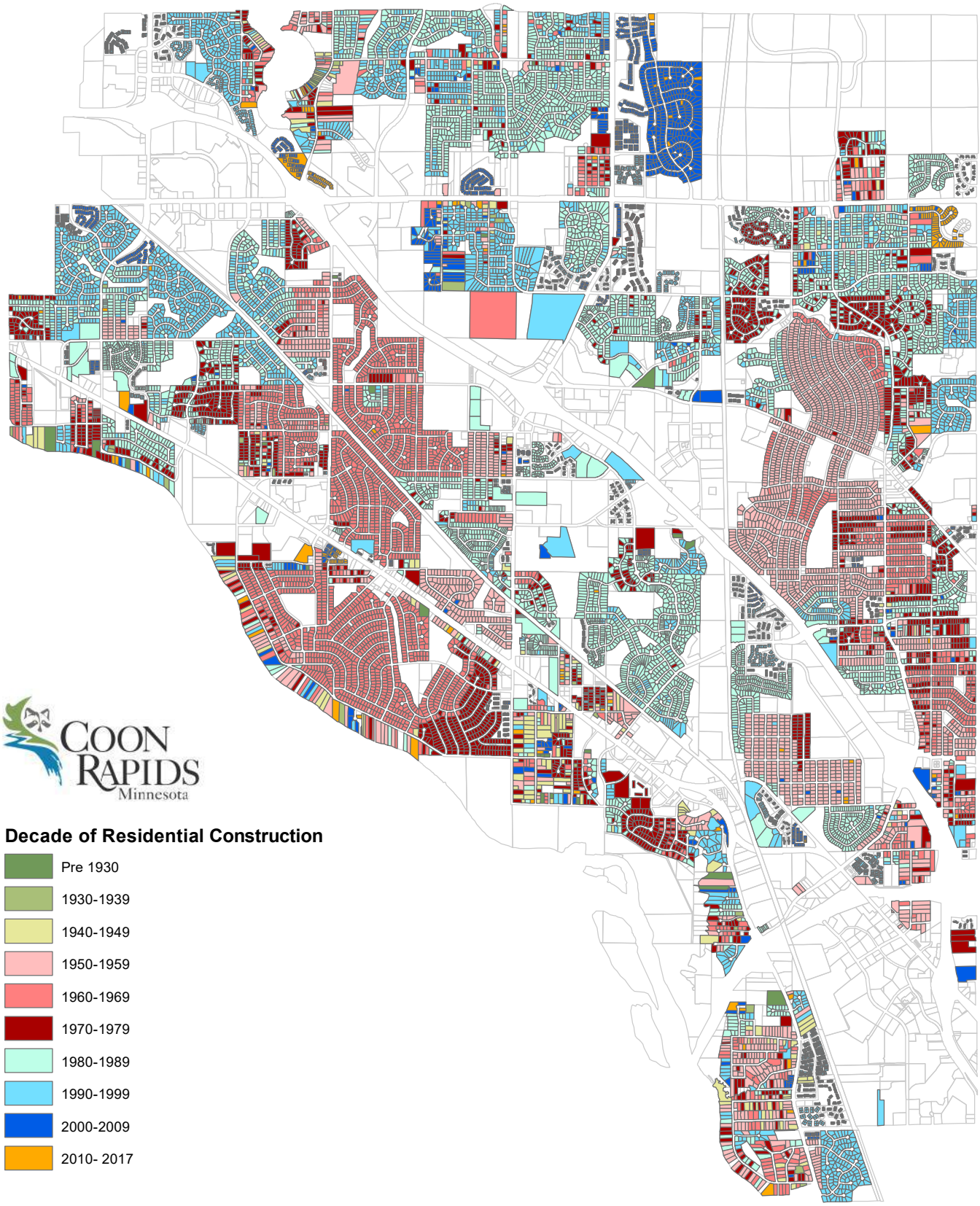
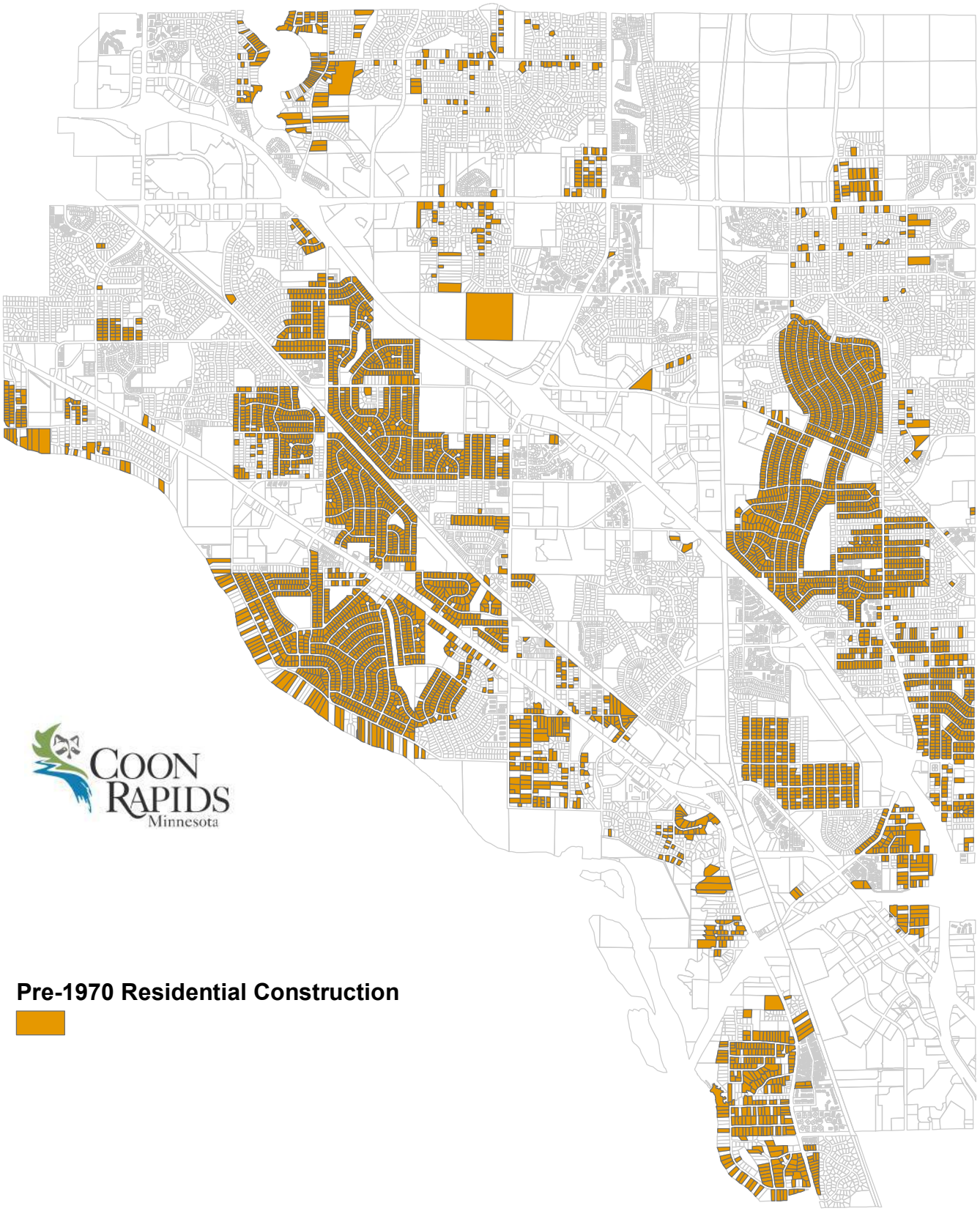


Figure 4-5 Residential Construction Pre-1970



Inter City Manhole Connections:

1) MH 11150. Coon Rapids flows to Anoka at 9th Ave via 121st Avenue (South Street)

2) MH 11149 and 11132. Anoka flows to Coon Rapids at 119th Avenue (Coon Rapids addresses along 9th Ave between 119th Ave and 121st Ave go to Anoka, then back to Coon Rapids

3) MH 11176. Coon Rapids addresses along 9th Ave south of Coon Rapids Blvd flow to Anoka, but we take 813 9th Ave

4) MH 10853. To MCES in Fridley

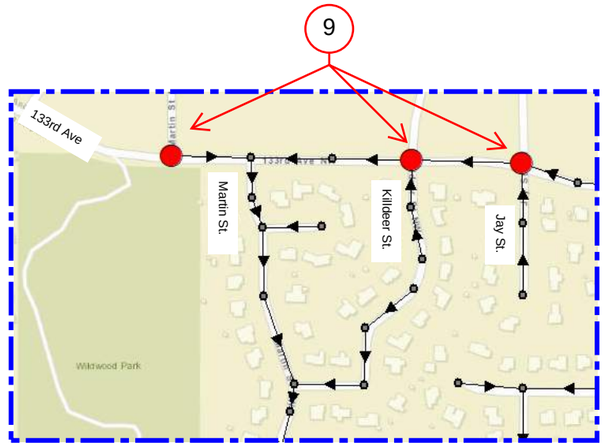
5) MH 13878. Springbrook Nature Center to Coon Rapids

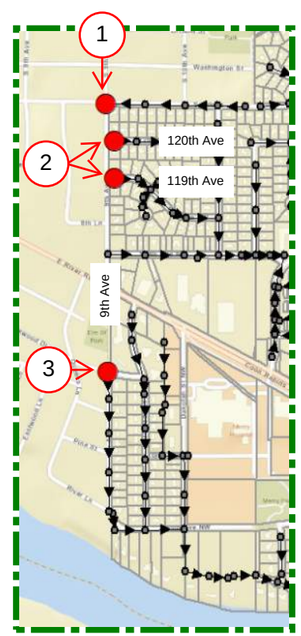
6) MH 49623. Blaine flows to Coon Rapids at the Pleasure Creek MCES line. Coon Rapids takes flow from the Burger King, Red Lobster, and Panera off of Springbroook Drive north of 85th Ave

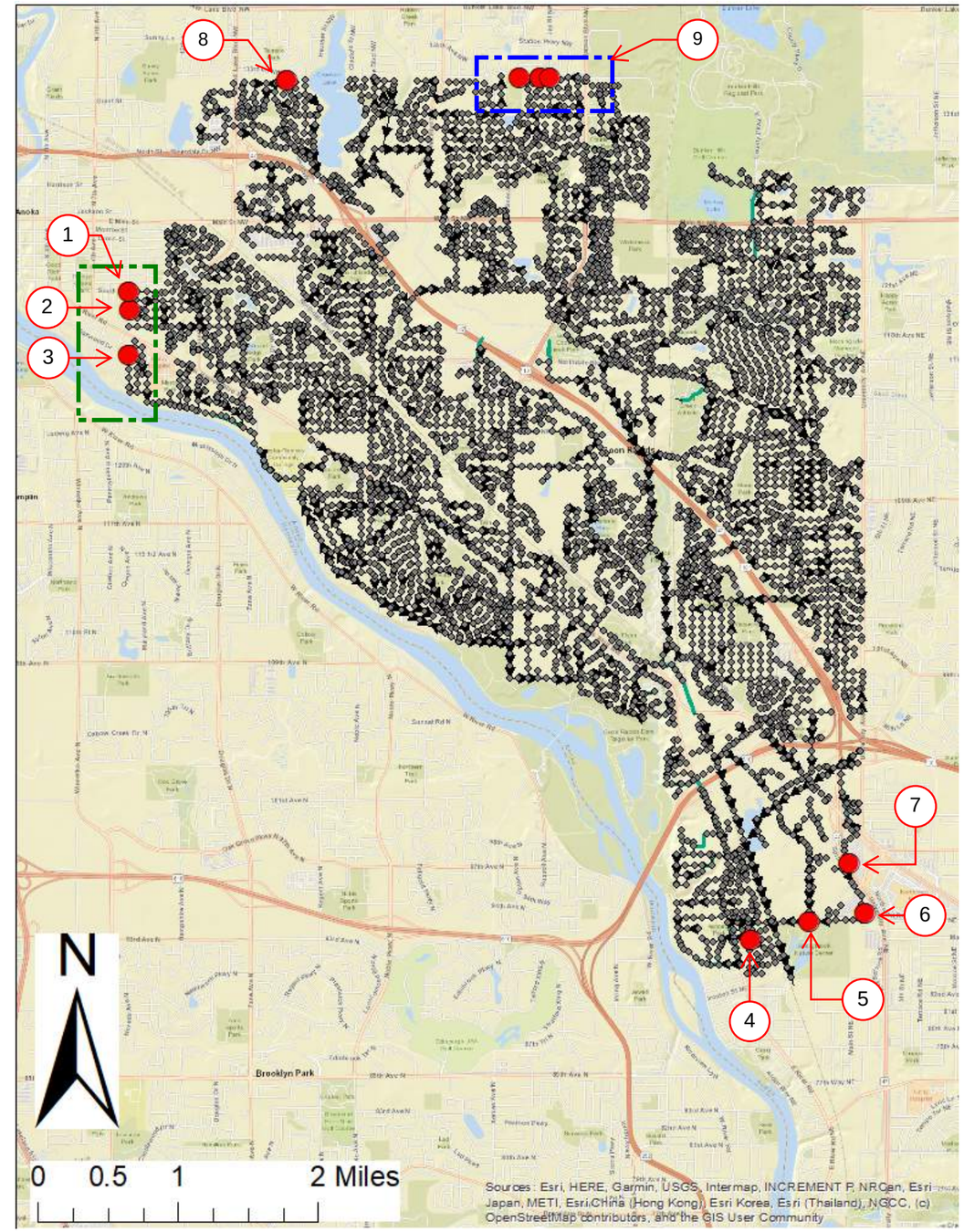
7) MH 13868. Coon Rapids Commercial to Blaine

8) MH 8821. Andover may or may not drain to Coon Rapids at Marigold Street. Andover does use the trunk line in Crooked Lake Boulevard

9) MH 9051,9053,9059. Andover to Coon Rapids







SEH

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TF: (800) 325-2055
www.sehinc.com

Project: COONR 141837
Print Date: 7/9/2019

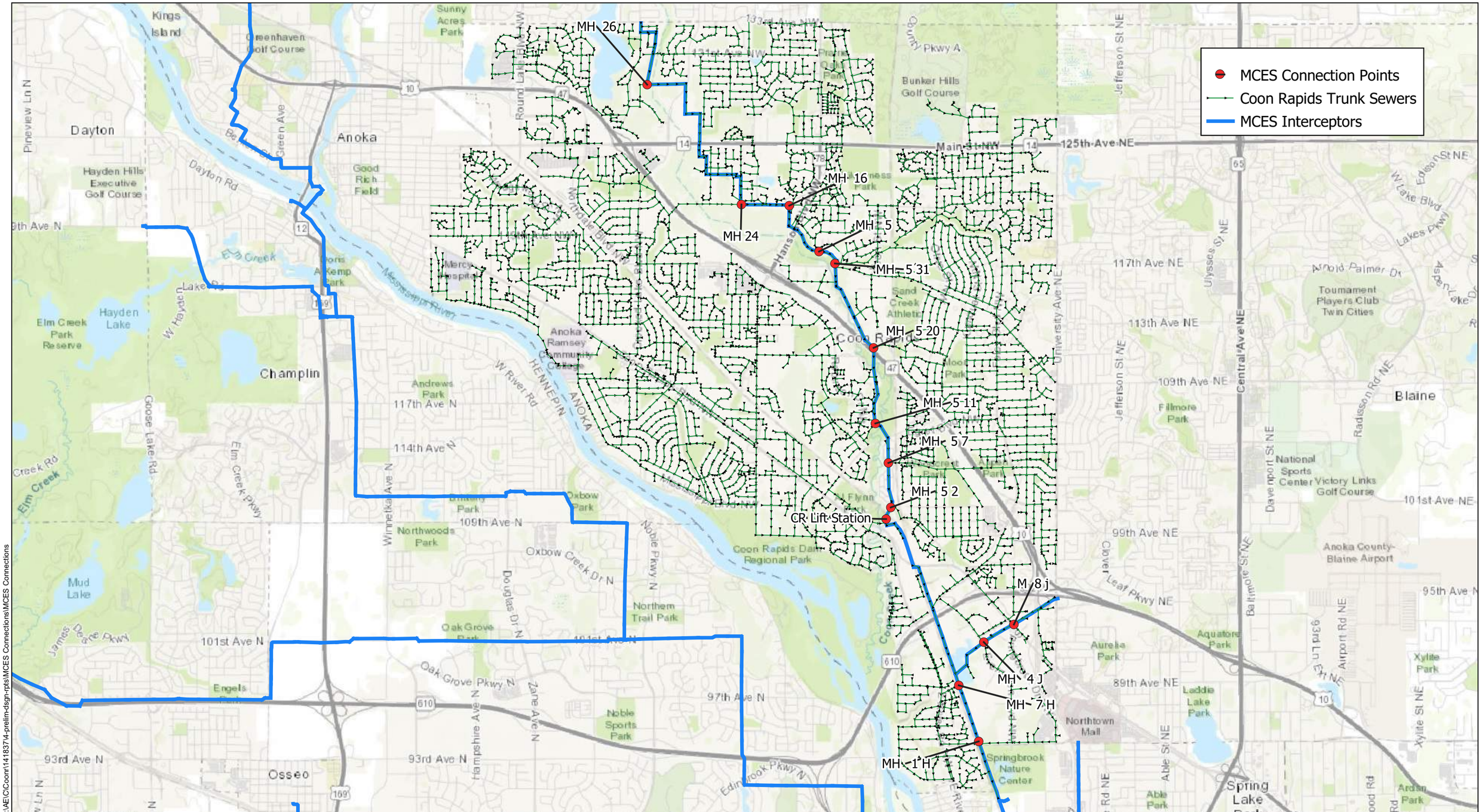
Inter City Sewer Connections

SANITARY SEWER COMPREHENSIVE PLAN

City of Coon Rapids, Minnesota

Figure 4-6

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.



S:\AE\C\Coonr\1418374-prelim-dsgn-rpts\MCES Connections\MCES Connections

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SEH No: 142011
Print Date: Jun 27, 2019

Map By: BAB
Projection: UTM Zone 15N

MCES Interceptor Connections in Coon Rapids

Coon Rapids, MN

Figure 4-7

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Appendix B

Sanitary Sewer Flow Tables

Appendix B - Table 1
EXISTING CONDITIONS FLOWS

From Node	To Node	Districts / SubDistricts	Water Usage (Jan)	Water Usage (Feb)	Water Usage (Dec)	Water Usage (Winter) (MGD)	Existing Avg Sewer Flow (MGD)	Cumulative Avg Flow (MGD)	Peaking Factor	Cumulative Peak Flow (MGD)	Cumulative Peak Flow (CFS)	Existing Pipe Size (in)	Existing Pipe Slope (%)	Pipe Capacity n=0.012 (CFS)	Percent Utilized (%)
MH#10853	MH#29494 (MCES)	A1	16335		46	0.0182	0.0212	0.0212	4.00	0.0849	0.13	8	0.66	1.07	12%
MH#29115	MH#29116 (MCES)	B1	50850		807	0.0574	0.0669	0.0669	4.00	0.2677	0.41	12	0.25	1.95	21%
MH#29114	MH#29113 (MCES)	C1	29504			0.0328	0.0382	0.0382	4.00	0.1529	0.24	12	0.32	2.20	11%
MH#10958	MH#28730 (MCES)	D1	60027	22	128	0.0669	0.0780	0.0780	4.00	0.3119	0.48	12	1.27	4.39	11%
Foley Boulevard TOD and Port Evergreen															
MH#28704	MH#28693 (MCES)	E4A	87588			0.0973	0.1135	0.1135	3.90	0.4426	0.68	8	9.700	4.11	17%
MH#10671	MH#28296	E4B	5099			0.0057	0.0066	0.0066	4.00	0.0264	0.04	8	1.400	1.56	3%
MH#27097	MH#13852 (MCES)	E4B	57450			0.0638	0.0744	0.0810	4.00	0.3241	0.50	12	0.550	2.89	17%
MH#28722	MH#13436 (MCES)	E3	17366			0.0193	0.0225	0.0225	4.00	0.0900	0.14	12	0.27	2.02	7%
MH#13461	MH#13436	E2	81568			0.0906	0.1057	0.1057	3.90	0.4121	0.64	12	0.220	1.83	35%
MH#13439	MH#28717	E1	930			0.0010	0.0012	0.0012	4.00	0.0048	0.01	8	1.700	1.72	1%
MH#11459	MH#19102	F9	50	113263	85	0.1260	0.1469	0.1469	3.90	0.5730	0.89	15	0.220	3.31	27%
MH#11438	MH#11427	F8	408	76953	404	0.0864	0.1007	0.2477	3.80	0.9411	1.46	30	0.060	10.98	13%
Pederson Floral and Flow NOT from LS 6															
MH#36693	MH#11491	F7		47495	80	0.0529	0.0616	0.3093	3.70	1.1444	1.77	30	0.060	10.95	16%
MH#11491	MH# 21897	F7		25550		0.0284	0.0331	0.3424	3.70	1.2669	1.96	30	0.060	10.98	18%
MH# 21897	MH#11224	F7		9176		0.0102	0.0119	0.3543	3.70	1.3109	2.03	30	0.041	9.07	22%
MERCY HOSPITAL and all Flow to LS 6															
MH#37096	MH#11178	F7		3596		0.0040	0.0047	0.0047	4.00	0.0186	0.03	8	0.900	1.25	2%
Mercy Hospital (MH#11178)	MH#11181	F7	22710	23928	23670	0.0781	0.0911	0.0957	4.00	0.3830	0.59	8	2.250	2.64	22%
MH#11169	MH#11181	F7		15347		0.0171	0.0199	0.0199	4.00	0.0795	0.12	8	4.800	3.86	3%
MH#11181	MH#11182	F7						0.1156	3.90	0.4510	0.70	8	0.219	0.82	85%
MH#11182	MH#11187	F7		1510		0.0017	0.0020	0.1176	3.90	0.4586	0.71	12	0.179	2.20	32%
MH#11187	MH#11214	F7		10098		0.0112	0.0131	0.1307	3.90	0.5096	0.79	12	0.348	3.06	26%
MH#11214	LS 6	F7		10327	137	0.0116	0.0136	0.1442	3.90	0.5625	0.87	12	1.660	6.69	13%
Total flow from LS 6															
LS 6	MH#11224	F7	22710	64806	23807	0.1237	0.1442	0.1442	3.90	0.5625	0.87				
Outlet of District F7															
MH#11224	MH#20694	F7		1081		0.0012	0.0014	0.4999	3.60	1.7997	2.78	30	0.075	12.27	23%
Port Campus Square															
MH#9646	MH#9638	F6		46747		0.0519	0.0606	0.0606	4.00	0.2423	0.37	10	0.282	1.70	22%
MH#9638	MH#11741	F6		7944		0.0088	0.0103	0.0709	4.00	0.2834	0.44	8	0.139	0.49	89%
MH#11741	MH#11745	F6		4684		0.0052	0.0061	0.0769	4.00	0.3077	0.48	15	0.159	2.81	17%
MH#11745	MH#13724	F6	10	55055	4795	0.0665	0.0776	0.1545	3.90	0.6025	0.93	18	0.240	5.62	17%
MH#13545	MH#13544	F5	49	38472	274	0.0431	0.0503	0.0503	4.00	0.2010	0.31	8	0.400	0.83	37%
MH#13543	MH#13544	F4	84	4	22875	0.0255	0.0297	0.0297	4.00	0.1190	0.18	8	1.810	1.78	10%
MH#13233	MH#13544	F3B	13	201476	3210	0.2274	0.2652	0.9196	3.20	2.9427	4.55	36	0.040	14.57	31%
MH#11042	MH#11041	F3A	9644	25645	70672	0.1177	0.1373	1.1369	3.10	3.5243	5.45	36	0.068	19.00	29%
VFW Sites															
MH#13333	MH#13340	F2			19416	0.0216	0.0252	0.0252	4.00	0.1006	0.16	8	0.49	0.92	17%
MH#13340	MH#13350	F2			1992	0.0022	0.0026	0.0277	4.00	0.1109	0.17	10	0.29	1.29	13%
MH#13350	MH#13514	F2			14559	0.0162	0.0189	0.0466	4.00	0.1864	0.29	12	0.23	1.87	16%
MH#13514	MH#11041	F2	4205		2038	0.0069	0.0081	0.0547	4.00	0.2187	0.34	12	0.270	2.02	17%
MH#11041	MH#10766	F2			32769	0.0364	0.0425	1.1793	3.10	3.6559	5.66	36	0.030	12.62	45%
Port Riverwalk and DOT Mini Storage															
MH#10766	MH#10732	F1	43842			0.0487	0.0568	1.2361	3.00	3.7084	5.74	42	0.043	22.79	25%
MH#10732	MH#26700	F1	27084			0.0301	0.0351	1.2712	3.00	3.8137	5.90	42	0.076	30.30	19%
MH#26700	MH#27092 (MCES)	F1	494		626	0.0012	0.0015	1.2727	3.00	3.8180	5.91	42	0.190	47.91	12%

Appendix B - Table 1
EXISTING CONDITIONS FLOWS

From Node	To Node	Districts / SubDistricts	Water Usage (Jan)	Water Usage (Feb)	Water Usage (Dec)	Water Usage (Winter) (MGD)	Existing Avg Sewer Flow (MGD)	Cumulative Avg Flow (MGD)	Peaking Factor	Cumulative Peak Flow (MGD)	Cumulative Peak Flow (CFS)	Existing Pipe Size (in)	Existing Pipe Slope (%)	Pipe Capacity n=0.012 (CFS)	Percent Utilized (%)
MH#26706	MH#26704 (MCES)	G1	96483		8872	0.1171	0.1365	0.1365	3.90	0.5323	0.82	15	0.85	6.51	13%
MH#12603	MH#12609	H3	42794			0.0475	0.0554	0.0554	4.00	0.2218	0.34	12	0.26	1.98	17%
MH#12623	MH#12609	H2	72847		168	0.0811	0.0946	0.0946	4.00	0.3784	0.59	12	0.22	1.83	32%
MH#13481	MH#13488							0.1500	3.90	0.5851	0.91	15	0.41	4.52	20%
MH#26300	MH#10112 (MCES)	H1	102375	100	94800	0.2192	0.2556	0.4056	3.60	1.4602	2.26	18	1.80	15.40	15%
MH#11913	MH#11917	I5			93164	0.1035	0.1207	0.1207	3.90	0.4707	0.73	15	0.15	2.73	27%
MH#12001	MH#11995	I4		6244	90570	0.1076	0.1254	0.2461	3.80	0.9353	1.45	15	0.14	2.64	55%
MH#11986	MH#11995	I3	64	7727	66341	0.0824	0.0960	0.0960	4.00	0.3842	0.59	12	0.65	3.14	19%
MH#11994	MH#12045							0.3422	3.70	1.2660	1.96	18	0.15	4.44	44%
MH#12051	MH#12050	I2	18		45629	0.0507	0.0591	0.0591	4.00	0.2366	0.37	10	0.28	1.27	29%
MH#12050	MH#9258							0.4013	3.60	1.4447	2.23	21	0.16	6.92	32%
MH#9340	MH#24294 (MCES)	I1		49	118960	0.1322	0.1542	0.5555	3.50	1.9442	3.01	24	0.11	8.20	37%
MH#9286	MH#9288 (MCES)	J1A			6421	0.0071	0.0083	0.0083	4.00	0.0333	0.05	8	0.50	0.93	5%
MH#9326	MH#9325 (MCES)	J1B			7106	0.0079	0.0092	0.0092	4.00	0.0368	0.06	8	0.64	1.06	6%
Foley-Northdale															
MH#10134	MH#10023 (MCES)	K1	83733	224	36964	0.1344	0.1567	0.1567	3.90	0.6110	0.95	18	0.93	11.07	9%
MH#10574	MH#10033 (MCES)	L1B			13280	0.0148	0.0172	0.0172	4.00	0.0688	0.11	8	0.22	0.62	18%
MH#10465	MH#9400 (MCES)	L1A			45327	0.0504	0.0587	0.0587	4.00	0.2349	0.36	8	0.50	0.93	39%
MH#30326	MH#12869	M3	131168	102	92	0.1460	0.1702	0.1702	3.90	0.6637	1.03	18	0.47	7.85	13%
MH#12869	MH#21505	M2	81976	21	12138	0.1046	0.1220	0.2921	3.80	1.1101	1.72	21	0.20	7.74	22%
MH#30295	MH#10402 (MCES)	M1	1	35	63307	0.0704	0.0821	0.3742	3.70	1.3846	2.14	21	4.900	38.32	6%
MH#10301	MH#21492 (MCES)	N1	112212	66	89590	0.2243	0.2615	0.2615	3.80	0.9938	1.54	24	2.01	35.04	4%
East Sod Farm															
MH#9138	MH#10038	O2	128	347	223666	0.2490	0.2904	0.2904	3.80	1.1035	1.71	18	0.22	5.38	32%
MH#9973	MH#9974 (MCES)	O1B	250		97462	0.1086	0.1266	0.4170	3.60	1.5011	2.32	21	3.40	31.92	7%
MH#9868	MH#9869 (MCES)	O1A			38481	0.0428	0.0499	0.0499	4.00	0.1994	0.31	8	1.58	1.66	19%
Riverdale TOD															
MH#9840	MH#9847	P2		76251	1096	0.0859	0.1002	0.0859	4.00	0.3438	0.53	18	0.11	3.81	14%
MH#9845	MH#9847	P2		5025		0.0056	0.0065	0.0056	4.00	0.0223	0.03	8	0.54	0.97	3%
MH#9847	MH#11447	P2						0.0915	4.00	0.3661	0.57	18	0.19	5.00	11%
MH#19895	MH#11096 (MCES)	P1	211	138161	199	0.1540	0.1795	0.2399	3.80	0.9117	1.41	30	0.12	15.52	9%
MH#9432	MH#9938	Q1		1298	57163	0.0650	0.0757	0.0757	4.00	0.3030	0.47	8	2.25	1.98	24%
West Sod Farm															
MH#8849	MH#8850 (MCES)	R1A		6109	100	0.0069	0.0080	0.0080	4.00	0.0322	0.05	8	0.40	0.83	6%
MH#8918	MH#8874 (MCES)	R1B		27061	26912	0.0600	0.0699	0.0699	4.00	0.2797	0.43	8	0.48	0.91	47%
MH#9234	MH#9235 (MCES)	R1C		1488	26362	0.0309	0.0361	0.0361	4.00	0.1443	0.22	18	0.05	2.57	9%
MH#9411	MH#30306 (MCES)	R1D		9018		0.0100	0.0117	0.1880	3.90	0.7332	1.13	18	0.05	2.43	46%
MH#8982	MH#30314	S1		135865	228	0.1512	0.1763	0.1763	3.90	0.6876	1.06	18	0.02	1.41	75%
TOTALS						**4.26**	**4.97**								

Appendix B - Table 2
FUTURE FLOWS - NO PIPE UPSIZING

From Node	To Node	Districts / SubDistricts	Water Usage (Jan)	Water Usage (Feb)	Water Usage (Dec)	Water Usage (Winter) (MGD)	Existing Avg Sewer Flow (MGD)	Cumulative Avg Flow (MGD)	Peaking Factor	Cumulative Peak Flow (MGD)	Cumulative Peak Flow (CFS)	Existing Pipe Size (in)	Existing Pipe Slope (%)	Pipe Capacity n=0.012 (CFS)	Percent Utilized (%)
MH#10853	MH#29494 (MCES)	A1	16335		46	0.0182	0.0212	0.0212	4.00	0.0849	0.13	8	0.66	1.07	12%
MH#29115	MH#29116 (MCES)	B1	50850		807	0.0574	0.0669	0.0669	4.00	0.2677	0.41	12	0.25	1.95	21%
MH#29114	MH#29113 (MCES)	C1	29504			0.0328	0.0382	0.0382	4.00	0.1529	0.24	12	0.32	2.20	11%
MH#10958	MH#28730 (MCES)	D1	60027	22	128	0.0669	0.0780	0.0780	4.00	0.3119	0.48	12	1.27	4.39	11%
Foley Boulevard TOD and Port Evergreen															
MH#28704	MH#28693 (MCES)	E4A	87588			0.0973	0.1135	0.1135	3.90	0.4426	0.68	8	9.700	4.11	17%
MH#10671	MH#28296	E4B	5099			**0.2382**	0.2777	0.2777	3.80	1.0553	1.63	8	1.400	1.56	**104%**
MH#27097	MH#13852 (MCES)	E4B	57450			**1.8658**	2.1756	2.4533	2.80	6.8691	10.63	12	0.550	2.89	**368%**
MH#28722	MH#13436 (MCES)	E3	17366			0.0193	0.0225	0.0225	4.00	0.0900	0.14	12	0.27	2.02	7%
MH#13461	MH#13436	E2	81568			0.0906	0.1057	0.1057	3.90	0.4121	0.64	12	0.220	1.83	35%
MH#13439	MH#28717	E1	930			0.0010	0.0012	0.0012	4.00	0.0048	0.01	8	1.700	1.72	1%
MH#11459	MH#19102	F9	50	113263	85	0.1260	0.1469	0.1469	3.90	0.5730	0.89	15	0.220	3.31	27%
MH#11438	MH#11427	F8	408	76953	404	0.0864	0.1007	0.2477	3.80	0.9411	1.46	30	0.060	10.98	13%
Pederson Floral and Flow NOT from LS 6															
MH#36693	MH#11491	F7		47495	80	**0.0569**	0.0663	0.3140	3.70	1.1617	1.80	30	0.060	10.95	16%
MH#11491	MH# 21897	F7		25550		0.0284	0.0331	0.3471	3.70	1.2841	1.99	30	0.060	10.98	18%
MH# 21897	MH#11224	F7		9176		0.0102	0.0119	0.3590	3.70	1.3281	2.05	30	0.041	9.07	23%
MERCY HOSPITAL and all Flow to LS 6															
MH#37096	MH#11178	F7		3596		0.0040	0.0047	0.0047	4.00	0.0186	0.03	8	0.900	1.25	2%
Mercy Hospital (MH#11178)	MH#11181	F7	22710	23928	23670	**0.1101**	0.1283	0.1330	3.90	0.5187	0.80	8	2.250	2.64	30%
MH#11169	MH#11181	F7		15347		0.0171	0.0199	0.0199	4.00	0.0795	0.12	8	4.800	3.86	3%
MH#11181	MH#11182	F7						0.1529	3.90	0.5962	0.92	8	0.219	0.82	**112%**
MH#11182	MH#11187	F7		1510		0.0017	0.0020	0.1548	3.90	0.6039	0.93	12	0.179	2.20	42%
MH#11187	MH#11214	F7		10098		0.0112	0.0131	0.1679	3.90	0.6549	1.01	12	0.348	3.06	33%
MH#11214	LS 6	F7		10327	137	0.0116	0.0136	0.1815	3.90	0.7078	1.09	12	1.660	6.69	16%
Total flow from LS 6															
LS 6	MH#11224	F7				0.1556	0.1815	0.1815	3.90	0.7078	1.09				
Outlet of District F7															
MH#11224	MH#20694	F7		1081		0.0012	0.0014	0.5418	3.50	1.8964	2.93	30	0.075	12.27	24%
Port Campus Square															
MH#9646	MH#9638	F6		46747		**0.3819**	0.4453	0.4453	3.60	1.6032	2.48	10	0.282	1.70	**146%**
MH#9638	MH#11741	F6		7944		0.0088	0.0103	0.4556	3.60	1.6403	2.54	8	0.139	0.49	**516%**
MH#11741	MH#11745	F6		4684		0.0052	0.0061	0.4617	3.60	1.6621	2.57	15	0.159	2.81	**91%**
MH#11745	MH#13724	F6	10	55055	4795	0.0665	0.0776	0.5393	3.50	1.8874	2.92	18	0.240	5.62	52%
MH#13545	MH#13544	F5	49	38472	274	0.0431	0.0503	0.0503	4.00	0.2010	0.31	8	0.400	0.83	37%
MH#13543	MH#13544	F4	84	4	22875	0.0255	0.0297	0.0297	4.00	0.1190	0.18	8	1.810	1.78	10%
MH#13233	MH#13544	F3B	13	201476	3210	0.2274	0.2652	1.3463	3.00	4.0389	6.25	36	0.040	14.57	43%
MH#11042	MH#11041	F3A	9644	25645	70672	0.1177	0.1373	1.5636	2.90	4.5344	7.01	36	0.068	19.00	37%
VFW Sites															
MH#13333	MH#13340	F2			19416	0.0216	0.0252	0.0252	4.00	0.1006	0.16	8	0.49	0.92	17%
MH#13340	MH#13350	F2			1992	0.0022	0.0026	0.0277	4.00	0.1109	0.17	10	0.29	1.29	13%
MH#13350	MH#13514	F2			14559	**0.0425**	0.0496	0.0773	4.00	0.3092	0.48	12	0.23	1.87	26%
MH#13514	MH#11041	F2	4205		2038	0.0069	0.0081	0.0854	4.00	0.3415	0.53	12	0.270	2.02	26%
MH#11041	MH#10766	F2			32769	0.0364	0.0425	1.6060	2.90	4.6575	7.21	36	0.030	12.62	57%
Port Riverwalk and DOT Mini Storage															
MH#10766	MH#10732	F1	43842			**0.1617**	0.1886	1.7946	2.90	5.2043	8.05	42	0.043	22.79	35%
MH#10732	MH#26700	F1	27084			0.0301	0.0351	1.8297	2.90	5.3061	8.21	42	0.076	30.30	27%
MH#26700	MH#27092 (MCES)	F1	494		626	**0.0192**	0.0224	1.8521	2.90	5.3711	8.31	42	0.190	47.91	17%

Appendix B - Table 2
FUTURE FLOWS - NO PIPE UPSIZING

From Node	To Node	Districts / SubDistricts	Water Usage (Jan)	Water Usage (Feb)	Water Usage (Dec)	Water Usage (Winter) (MGD)	Existing Avg Sewer Flow (MGD)	Cumulative Avg Flow (MGD)	Peaking Factor	Cumulative Peak Flow (MGD)	Cumulative Peak Flow (CFS)	Existing Pipe Size (in)	Existing Pipe Slope (%)	Pipe Capacity n=0.012 (CFS)	Percent Utilized (%)
MH#26706	MH#26704 (MCES)	G1	96483		8872	0.1171	0.1365	0.1365	3.90	0.5323	0.82	15	0.85	6.51	13%
MH#12603	MH#12609	H3	42794			0.0475	0.0554	0.0554	4.00	0.2218	0.34	12	0.26	1.98	17%
MH#12623	MH#12609	H2	72847		168	0.0811	0.0946	0.0946	4.00	0.3784	0.59	12	0.22	1.83	32%
MH#13481	MH#13488							0.1500	3.90	0.5851	0.91	15	0.41	4.52	20%
MH#26300	MH#10112 (MCES)	H1	102375	100	94800	0.2192	0.2556	0.4056	3.60	1.4602	2.26	18	1.80	15.40	15%
MH#11913	MH#11917	I5			93164	0.1035	0.1207	0.1207	3.90	0.4707	0.73	15	0.15	2.73	27%
MH#12001	MH#11995	I4		6244	90570	0.1076	0.1254	0.2461	3.80	0.9353	1.45	15	0.14	2.64	55%
MH#11986	MH#11995	I3	64	7727	66341	0.0824	0.0960	0.0960	4.00	0.3842	0.59	12	0.65	3.14	19%
MH#11994	MH#12045							0.3422	3.70	1.2660	1.96	18	0.15	4.44	44%
MH#12051	MH#12050	I2	18		45629	0.0507	0.0591	0.0591	4.00	0.2366	0.37	10	0.28	1.27	29%
MH#12050	MH#9258							0.4013	3.60	1.4447	2.23	21	0.16	6.92	32%
MH#9340	MH#24294 (MCES)	I1		49	118960	0.1322	0.1542	0.5555	3.50	1.9442	3.01	24	0.11	8.20	37%
MH#9286	MH#9288 (MCES)	J1A			6421	0.0071	0.0083	0.0083	4.00	0.0333	0.05	8	0.50	0.93	5%
MH#9326	MH#9325 (MCES)	J1B			7106	0.0079	0.0092	0.0092	4.00	0.0368	0.06	8	0.64	1.06	6%
Foley-Northdale															
MH#10134	MH#10023 (MCES)	K1	83733	224	36964	**0.2119**	0.2470	0.2470	3.80	0.9387	1.45	18	0.93	11.07	13%
MH#10574	MH#10033 (MCES)	L1B			13280	0.0148	0.0172	0.0172	4.00	0.0688	0.11	8	0.22	0.62	18%
MH#10465	MH#9400 (MCES)	L1A			45327	0.0504	0.0587	0.0587	4.00	0.2349	0.36	8	0.50	0.93	39%
MH#30326	MH#12869	M3	131168	102	92	0.1460	0.1702	0.1702	3.90	0.6637	1.03	18	0.47	7.85	13%
MH#12869	MH#21505	M2	81976	21	12138	0.1046	0.1220	0.2921	3.80	1.1101	1.72	21	0.20	7.74	22%
MH#30295	MH#10402 (MCES)	M1	1	35	63307	0.0704	0.0821	0.3742	3.70	1.3846	2.14	21	4.900	38.32	6%
MH#10301	MH#21492 (MCES)	N1	112212	66	89590	0.2243	0.2615	0.2615	3.80	0.9938	1.54	24	2.01	35.04	4%
East Sod Farm															
MH#9138	MH#10038	O2	128	347	223666	**0.3068**	0.3577	0.3577	3.70	1.3236	2.05	18	0.22	5.38	38%
MH#9973	MH#9974 (MCES)	O1B	250		97462	0.1086	0.1266	0.4843	3.60	1.7435	2.70	21	3.40	31.92	8%
MH#9868	MH#9869 (MCES)	O1A			38481	0.0428	0.0499	0.0499	4.00	0.1994	0.31	8	1.58	1.66	19%
Riverdale TOD															
MH#9840	MH#9847	P2		76251	1096	**0.1874**	0.2186	0.1874	3.90	0.7310	1.13	18	0.11	3.81	30%
MH#9845	MH#9847	P2		5025		0.0056	0.0065	0.0056	4.00	0.0223	0.03	8	0.54	0.97	3%
MH#9847	MH#11447	P2						0.1930	3.90	0.7528	1.16	18	0.19	5.00	23%
MH#19895	MH#11096 (MCES)	P1	211	138161	199	0.1540	0.1795	0.3414	3.70	1.2632	1.95	30	0.12	15.52	13%
MH#9432	MH#9938	Q1		1298	57163	0.0650	0.0757	0.0757	4.00	0.3030	0.47	8	2.25	1.98	24%
West Sod Farm															
MH#8849	MH#8850 (MCES)	R1A		6109	100	0.0069	0.0080	0.0080	4.00	0.0322	0.05	8	0.40	0.83	6%
MH#8918	MH#8874 (MCES)	R1B		27061	26912	**0.1275**	0.1486	0.1486	3.90	0.5797	0.90	8	0.48	0.91	**98%**
MH#9234	MH#9235 (MCES)	R1C		1488	26362	0.0309	0.0361	0.0361	4.00	0.1443	0.22	18	0.05	2.57	9%
MH#9411	MH#30306 (MCES)	R1D		9018		0.0100	0.0117	0.1880	3.90	0.7332	1.13	18	0.05	2.43	46%
MH#8982	MH#30314	S1		135865	228	0.1512	0.1763	0.1763	3.90	0.6876	1.06	18	0.02	1.41	75%
TOTALS						**7.12**	**8.31**								

Appendix B - Table 3
FUTURE FLOWS - WITH PIPE UPSIZING

From Node	To Node	Districts / SubDistricts	Water Usage (Jan)	Water Usage (Feb)	Water Usage (Dec)	Water Usage (Winter) (MGD)	Existing Avg Sewer Flow (MGD)	Cumulative Avg Flow (MGD)	Peaking Factor	Cumulative Peak Flow (MGD)	Cumulative Peak Flow (CFS)	Existing Pipe Size (in)	Existing Pipe Slope (%)	Pipe Capacity n=0.012 (CFS)	Percent Utilized (%)
MH#10853	MH#29494 (MCES)	A1	16335		46	0.0182	0.0212	0.0212	4.00	0.0849	0.13	8	0.66	1.07	12%
MH#29115	MH#29116 (MCES)	B1	50850		807	0.0574	0.0669	0.0669	4.00	0.2677	0.41	12	0.25	1.95	21%
MH#29114	MH#29113 (MCES)	C1	29504			0.0328	0.0382	0.0382	4.00	0.1529	0.24	12	0.32	2.20	11%
MH#10958	MH#28730 (MCES)	D1	60027	22	128	0.0669	0.0780	0.0780	4.00	0.3119	0.48	12	1.27	4.39	11%
Foley Boulevard TOD and Port Evergreen															
MH#28704	MH#28693 (MCES)	E4A	87588			0.0973	0.1135	0.1135	3.90	0.4426	0.68	8	9.700	4.11	17%
MH#10671	MH#28296	E4B	5099			**0.2382**	0.2777	0.2777	3.80	1.0553	1.63	**10**	1.400	2.83	58%
MH#27097	MH#13852 (MCES)	E4B	57450			**1.8658**	2.1756	2.4533	2.80	6.8691	10.63	**24**	0.550	18.33	58%
MH#28722	MH#13436 (MCES)	E3	17366			0.0193	0.0225	0.0225	4.00	0.0900	0.14	12	0.27	2.02	7%
MH#13461	MH#13436	E2	81568			0.0906	0.1057	0.1057	3.90	0.4121	0.64	12	0.220	1.83	35%
MH#13439	MH#28717	E1	930			0.0010	0.0012	0.0012	4.00	0.0048	0.01	8	1.700	1.72	1%
MH#11459	MH#19102	F9	50	113263	85	0.1260	0.1469	0.1469	3.90	0.5730	0.89	15	0.220	3.31	27%
MH#11438	MH#11427	F8	408	76953	404	0.0864	0.1007	0.2477	3.80	0.9411	1.46	30	0.060	10.98	13%
Pederson Floral and Flow NOT from LS 6															
MH#36693	MH#11491	F7		47495	80	**0.0569**	0.0663	0.3140	3.70	1.1617	1.80	30	0.060	10.95	16%
MH#11491	MH# 21897	F7		25550		0.0284	0.0331	0.3471	3.70	1.2841	1.99	30	0.060	10.98	18%
MH# 21897	MH#11224	F7		9176		0.0102	0.0119	0.3590	3.70	1.3281	2.05	30	0.041	9.07	23%
MERCY HOSPITAL and all Flow to LS 6															
MH#37096	MH#11178	F7		3596		0.0040	0.0047	0.0047	4.00	0.0186	0.03	8	0.900	1.25	2%
Mercy Hospital (MH#11178)	MH#11181	F7	22710	23928	23670	**0.1101**	0.1283	0.1330	3.90	0.5187	0.80	8	2.250	2.64	30%
MH#11169	MH#11181	F7		15347		0.0171	0.0199	0.0199	4.00	0.0795	0.12	8	4.800	3.86	3%
MH#11181	MH#11182	F7						0.1529	3.90	0.5962	0.92	**12**	0.219	2.43	38%
MH#11182	MH#11187	F7		1510		0.0017	0.0020	0.1548	3.90	0.6039	0.93	12	0.179	2.20	42%
MH#11187	MH#11214	F7		10098		0.0112	0.0131	0.1679	3.90	0.6549	1.01	12	0.348	3.06	33%
MH#11214	LS 6	F7		10327	137	0.0116	0.0136	0.1815	3.90	0.7078	1.09	12	1.660	6.69	16%
Total flow from LS 6															
LS 6	MH#11224	F7				0.1556	0.1815	0.1815	3.90	0.7078	1.09				
Outlet of District F7															
MH#11224	MH#20694	F7		1081		0.0012	0.0014	0.5418	3.50	1.8964	2.93	30	0.075	12.27	24%
Port Campus Square															
MH#9646	MH#9638	F6		46747		**0.3819**	0.4453	0.4453	3.60	1.6032	2.48	**15**	0.282	5.00	50%
MH#9638	MH#11741	F6		7944		0.0088	0.0103	0.4556	3.60	1.6403	2.54	**18**	0.139	4.28	59%
MH#11741	MH#11745	F6		4684		0.0052	0.0061	0.4617	3.60	1.6621	2.57	**18**	0.159	4.58	56%
MH#11745	MH#13724	F6	10	55055	4795	0.0665	0.0776	0.5393	3.50	1.8874	2.92	18	0.240	5.62	52%
MH#13545	MH#13544	F5	49	38472	274	0.0431	0.0503	0.0503	4.00	0.2010	0.31	8	0.400	0.83	37%
MH#13543	MH#13544	F4	84	4	22875	0.0255	0.0297	0.0297	4.00	0.1190	0.18	8	1.810	1.78	10%
MH#13233	MH#13544	F3B	13	201476	3210	0.2274	0.2652	1.3463	3.00	4.0389	6.25	36	0.040	14.57	43%
MH#11042	MH#11041	F3A	9644	25645	70672	0.1177	0.1373	1.5636	2.90	4.5344	7.01	36	0.068	19.00	37%
VFW Sites															
MH#13333	MH#13340	F2			19416	0.0216	0.0252	0.0252	4.00	0.1006	0.16	8	0.49	0.92	17%
MH#13340	MH#13350	F2			1992	0.0022	0.0026	0.0277	4.00	0.1109	0.17	10	0.29	1.29	13%
MH#13350	MH#13514	F2			14559	**0.0425**	0.0496	0.0773	4.00	0.3092	0.48	12	0.23	1.87	26%
MH#13514	MH#11041	F2	4205		2038	0.0069	0.0081	0.0854	4.00	0.3415	0.53	12	0.270	2.02	26%
MH#11041	MH#10766	F2			32769	0.0364	0.0425	1.6060	2.90	4.6575	7.21	36	0.030	12.62	57%
Port Riverwalk and DOT Mini Storage															
MH#10766	MH#10732	F1	43842			**0.1617**	0.1886	1.7946	2.90	5.2043	8.05	42	0.043	22.79	35%
MH#10732	MH#26700	F1	27084			0.0301	0.0351	1.8297	2.90	5.3061	8.21	42	0.076	30.30	27%
MH#26700	MH#27092 (MCES)	F1	494		626	**0.0192**	0.0224	1.8521	2.90	5.3711	8.31	42	0.190	47.91	17%

Appendix B - Table 3
FUTURE FLOWS - WITH PIPE UPSIZING

From Node	To Node	Districts / SubDistricts	Water Usage (Jan)	Water Usage (Feb)	Water Usage (Dec)	Water Usage (Winter) (MGD)	Existing Avg Sewer Flow (MGD)	Cumulative Avg Flow (MGD)	Peaking Factor	Cumulative Peak Flow (MGD)	Cumulative Peak Flow (CFS)	Existing Pipe Size (in)	Existing Pipe Slope (%)	Pipe Capacity n=0.012 (CFS)	Percent Utilized (%)
MH#26706	MH#26704 (MCES)	G1	96483		8872	0.1171	0.1365	0.1365	3.90	0.5323	0.82	15	0.85	6.51	13%
MH#12603	MH#12609	H3	42794			0.0475	0.0554	0.0554	4.00	0.2218	0.34	12	0.26	1.98	17%
MH#12623	MH#12609	H2	72847		168	0.0811	0.0946	0.0946	4.00	0.3784	0.59	12	0.22	1.83	32%
MH#13481	MH#13488							0.1500	3.90	0.5851	0.91	15	0.41	4.52	20%
MH#26300	MH#10112 (MCES)	H1	102375	100	94800	0.2192	0.2556	0.4056	3.60	1.4602	2.26	18	1.80	15.40	15%
MH#11913	MH#11917	I5			93164	0.1035	0.1207	0.1207	3.90	0.4707	0.73	15	0.15	2.73	27%
MH#12001	MH#11995	I4		6244	90570	0.1076	0.1254	0.2461	3.80	0.9353	1.45	15	0.14	2.64	55%
MH#11986	MH#11995	I3	64	7727	66341	0.0824	0.0960	0.0960	4.00	0.3842	0.59	12	0.65	3.14	19%
MH#11994	MH#12045							0.3422	3.70	1.2660	1.96	18	0.15	4.44	44%
MH#12051	MH#12050	I2	18		45629	0.0507	0.0591	0.0591	4.00	0.2366	0.37	10	0.28	1.27	29%
MH#12050	MH#9258							0.4013	3.60	1.4447	2.23	21	0.16	6.92	32%
MH#9340	MH#24294 (MCES)	I1		49	118960	0.1322	0.1542	0.5555	3.50	1.9442	3.01	24	0.11	8.20	37%
MH#9286	MH#9288 (MCES)	J1A			6421	0.0071	0.0083	0.0083	4.00	0.0333	0.05	8	0.50	0.93	5%
MH#9326	MH#9325 (MCES)	J1B			7106	0.0079	0.0092	0.0092	4.00	0.0368	0.06	8	0.64	1.06	6%
Foley-Northdale															
MH#10134	MH#10023 (MCES)	K1	83733	224	36964	**0.2119**	0.2470	0.2470	3.80	0.9387	1.45	18	0.93	11.07	13%
MH#10574	MH#10033 (MCES)	L1B			13280	0.0148	0.0172	0.0172	4.00	0.0688	0.11	8	0.22	0.62	18%
MH#10465	MH#9400 (MCES)	L1A			45327	0.0504	0.0587	0.0587	4.00	0.2349	0.36	8	0.50	0.93	39%
MH#30326	MH#12869	M3	131168	102	92	0.1460	0.1702	0.1702	3.90	0.6637	1.03	18	0.47	7.85	13%
MH#12869	MH#21505	M2	81976	21	12138	0.1046	0.1220	0.2921	3.80	1.1101	1.72	21	0.20	7.74	22%
MH#30295	MH#10402 (MCES)	M1	1	35	63307	0.0704	0.0821	0.3742	3.70	1.3846	2.14	21	4.900	38.32	6%
MH#10301	MH#21492 (MCES)	N1	112212	66	89590	0.2243	0.2615	0.2615	3.80	0.9938	1.54	24	2.01	35.04	4%
East Sod Farm															
MH#9138	MH#10038	O2	128	347	223666	**0.3068**	0.3577	0.3577	3.70	1.3236	2.05	18	0.22	5.38	38%
MH#9973	MH#9974 (MCES)	O1B	250		97462	0.1086	0.1266	0.4843	3.60	1.7435	2.70	21	3.40	31.92	8%
MH#9868	MH#9869 (MCES)	O1A			38481	0.0428	0.0499	0.0499	4.00	0.1994	0.31	8	1.58	1.66	19%
Riverdale TOD															
MH#9840	MH#9847	P2		76251	1096	**0.1874**	0.2186	0.1874	3.90	0.7310	1.13	18	0.11	3.81	30%
MH#9845	MH#9847	P2		5025		0.0056	0.0065	0.0056	4.00	0.0223	0.03	8	0.54	0.97	3%
MH#9847	MH#11447	P2						0.1930	3.90	0.7528	1.16	18	0.19	5.00	23%
MH#19895	MH#11096 (MCES)	P1	211	138161	199	0.1540	0.1795	0.3414	3.70	1.2632	1.95	30	0.12	15.52	13%
MH#9432	MH#9938	Q1		1298	57163	0.0650	0.0757	0.0757	4.00	0.3030	0.47	8	2.25	1.98	24%
West Sod Farm															
MH#8849	MH#8850 (MCES)	R1A		6109	100	0.0069	0.0080	0.0080	4.00	0.0322	0.05	8	0.40	0.83	6%
MH#8918	MH#8874 (MCES)	R1B		27061	26912	**0.1275**	0.1486	0.1486	3.90	0.5797	0.90	**10**	0.48	1.66	54%
MH#9234	MH#9235 (MCES)	R1C		1488	26362	0.0309	0.0361	0.0361	4.00	0.1443	0.22	18	0.05	2.57	9%
MH#9411	MH#30306 (MCES)	R1D		9018		0.0100	0.0117	0.1880	3.90	0.7332	1.13	18	0.05	2.43	46%
MH#8982	MH#30314	S1		135865	228	0.1512	0.1763	0.1763	3.90	0.6876	1.06	18	0.02	1.41	75%
TOTALS						**7.12**	**8.31**								

SECTION 7 - FUTURE WATER DEMANDS

7.1 Proposed Land Use Changes

City staff provided information on proposed expansion and/or redevelopment areas. Since the majority of Coon Rapids is built out, the majority of these areas consist of redevelopment opportunities, while some undeveloped land in the north central portion of the community remains.

There are 12 areas of proposed development as shown in Figure 7-1. Water demand projections are based on proposed land use and densities of development. Table 7-1 shows proposed land use and projected water demands. Assumptions used to project water demands are as follows:

- Commercial, Industrial, Institutional (Sq. Ft.): 0.1 gallons per square foot
- Residential (Senior): 1.5 person per unit, 75 gallons per capita day (gpcd)
- Residential (Unit): 2.5 person per unit, 100 gpcd
- Commercial (Acre): 1,000 gallons per acre per day
- Industrial(Acre): 1,500 gallons per acre per day
- Residential High Density (Acre): 12 units/acre, 2.25 persons per unit, 75 gpcd
- Residential Low Density (Acre): 3 units/acre, 2.5 persons per unit, 100 gpcd

Table 7-1
Projected Land Use

Planning Area	Development Name	Estimated Years Until Developed	Proposed Land Use	No. of Units	Type of Unit	Gallons per Unit per Day	Projected Average Day Demand (gallons)
1A	Port Wellness	2	Institutional (Hospital)	50000	Square Feet	0.1	5000
1B	Port Wellness	0	Commercial (Medical Office)	125000	Square Feet	0.1	12500
1C	Port Wellness	0	Commercial (Medical Office)	32000	Square Feet	0.1	3200
1D	Port Wellness	1	Residential (Senior)	100	Dwelling Unit	112.5	11250
2A	Port Campus Square	10	Residential	1200	Dwelling Unit	250	300000
2B	Port Campus Square	10	Commercial	150000	Square Feet	0.1	15000
2C	Port Campus Square	10	Institutional	150000	Square Feet	0.1	15000
3A	Port Riverwalk	5	Residential	450	Dwelling Unit	250	112500
3B	Port Riverwalk	10	Commercial	5000	Square Feet	0.1	500
4A	Foley Blvd TOD	15	Residential	1200	Dwelling Unit	250	300000
4B	Foley Blvd TOD	15	Commercial	20000	Square Feet	0.1	2000
5A	Port Evergreen	10	Industrial	400000	Square Feet	0.1	40000
5B	Port Evergreen	10	Residential	750	Dwelling Unit	250	187500
5C	Port Evergreen	10	Commercial	50000	Square Feet	0.1	5000
6A	Northdale/Foley	15	Residential	300	Dwelling Unit	250	75000
6B	Northdale/Foley	15	Commercial	25000	Square Feet	0.1	2500

7A	Riverdale Station	5	Residential	400	Dwelling Unit	250	100000
7B	Riverdale Station	5	Commercial	15000	Square Feet	0.10	1500
8A	Pederson Floral	10	Commercial	4	Acres	1000	4000
9	VFW Area Sites	20	Residential (High Density)	13	Acres	2025	26325
10	DOT Mini Storage	20	Industrial	12	Acres	1500	18000
11	East Sod Farm	Ultimate	Residential	77	Acres	750	57750
12	West Sod Farm	Ultimate	Residential	90	Acres	750	67500
Total Gallons							1,294,525

7.2 Projected Water Demands

Estimated population growth and water demand have been estimated for design years of 5,10,15,20 and ultimate build out. Two methods have been used to project future water demand:

- Met Council population estimates multiplied by the historical 10 year average per capita water demand.
- 2013 population multiplied by the historical 10 year average of per capita water demand, plus projected water demand of proposed development based on land use and density

Table 7-2 shows the projected design year water demands based on the two different methodologies:

Table 7-2
Projected Water Demands

Planning Year	Metropolitan Council Population Estimate	Per Capita Water Demand (gpcd)	Average Day Demand - Met Council Population (MGD)	Average Day Demand - Proposed Land Use	Max Day Peaking Factor	Maximum Day Demand - Met Council Population (MGD)	Maximum Day Demand - Proposed Land Use
5 Year (2019)*	65,970	128	8.44	8.11	2.85	24.07	23.11
10 Year (2024)*	65,600	128	8.40	8.67	2.85	23.93	24.71
15 Year (2029)*	65,100	128	8.33	9.05	2.85	23.75	25.80
20 Year (2034)**	65,000	128	8.32	9.10	2.85	23.71	25.92
Ultimate				9.22	2.85		26.28

* Population Based on Interpolation of Metropolitan Population Data

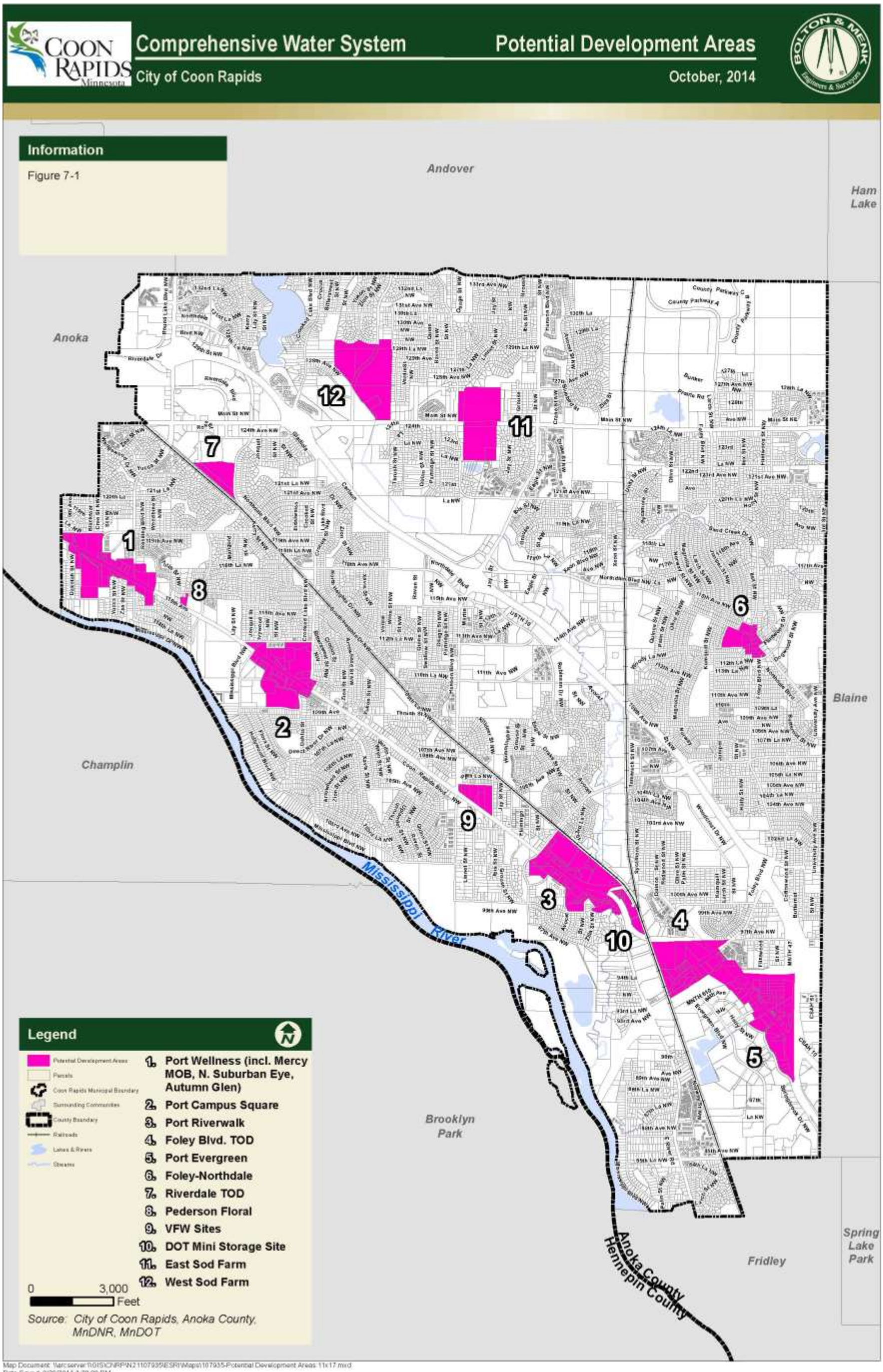
** Metropolitan Population unavailable beyond 2030

7.3 Water Conservation

Water conservation plays a critical role in ensuring we maintain a sustainable water resource. The Minnesota Department of Natural Resources requires public water suppliers to demand water reduction measures by January 1, 2015. In addition, these demand reduction measures will be required to be outlined in an upcoming update of the Water Supply Plan in 2015. No additional demand reduction measures should be required from the City of Coon Rapids to comply with these mandates. Currently, the City of Coon Rapids includes the following ordinances and rate structure that promotes water conservation:

- An on-going meter repair and replacement program has been established throughout the City
- The City uses leak detection surveys as needed to reduce leaking water mains
- An even/odd sprinkling restrictions have been imposed during June 1 and August 31 of each year
- A time of day or complete ban of outdoor water use can be imposed in an emergency
- An inclining block rate structure is currently used for water billing which imposes a higher unit rate for higher volumes of water used
- Educational materials on water conservation are available during Consumer Confidence Reports, public buildings, City website and as utility billing mailers

Figure 7-1, Potential Development Areas



Appendix C

Lift Station Evaluations

LIFT STATION INSPECTION REPORT

Building a Better World for All of Us®

Project: Sanitary Sewer Comprehensive Plan Update

Lift Station No: #1
Project No: COONR 141837

Date 06/07/2017 Time: 9:20 a.m. Weather: Sunny 72°

Inspection Team: BRH & DJS

Description:

923 88th Ave NW, on north side of street. Very quiet street.

Wet well is located in grass/landscape area behind curb on north side of street.

Valve vault is located in grass area behind landscape bushes that are surrounding wet well.

Site Access and Safety:

Access from street. Parking is right on the street approximately 5' from the wet well.

Access hatch is in good condition and has safety grates.

Pump Details:

Pump 1: Information from City

Submersible Flygt CP3102.090, 5 HP/FLA 14

Pump 2: Information from City

Submersible Flygt CP3102.090, 5 HP/FLA 14

Drawdown Results:

Pump 1:90.25 gpm

Pump 2:82.73 gpm

Measured Influent:11.28 gpm

Condition of Wetwell:

Good condition, coated, carbon filter vent.

Inside DIA 8'

Total depth 22.10', 1 incoming pipe.

Condition of Valve Vault:

Water inside of structure almost to top of pipe, otherwise in good condition.

Asbuilts do not show a drain.

Electrical and Controls Comments:

Touch screen controller is approximately 5' from the wet well, no generator.

Neighborhood has frequent power outages.

Other Comments:

Water level at controller 2.6', depth to water 17.51', transducer is 1.99' from invert.

Landscape bushes very overgrown and crowds the control panel and carbon filter vent.

LIFT STATION INSPECTION REPORT

Building a Better World for All of Us®

Project: Sanitary Sewer Comprehensive Plan Update

Lift Station No: #2
Project No: COONR 141837

Date 06/01/2017 Time: 2:00 p.m. Weather: Sunny 77°

Inspection Team: BRH & DJS

Description:

1100 93rd Ave NW, very quiet street.

Wet well is located in center of cul-de-sac.

Valve vault is also located in the cul-de-dac.

Site Access and Safety:

Access is in center of cul-de-sac. Wet well has 2 large covers and each cover also has an interior lid.

No safety grates or fall protection.

Pump Details:

Pump 1: Information from City

Submersible Flygt CP3085.092, 3 HP/FLA 9.6

Pump 2: Information from City

Submersible Flygt CP3085.092, 3 HP/FLA 9.6

Drawdown Results:

Pump 1: 146.89 gpm

Pump 2: 117.51 gpm

Measured Influent: 29.38 gpm

Condition of Wetwell:

Good condition, coated, vent pipe.

Inside DIA approx. 10' (could not measure or find plans).

Total depth 17.70', 3 incoming pipes (2 are services).

Condition of Valve Vault:

Good condition, dry.

Electrical and Controls Comments:

D152 controller, no generator.

Controller is off the end of the cul-de-sac behind the curb approximately 25’ from the wet well.

Other Comments:

Water level at controller 2.0’, depth to water 13.90’, transducer is 1.8’ from invert.

Controller being budgeted for replacement.

Loses power and communication during heavy winds.

No safety grates or fall protection. Lids are extremely heavy. Access is in center of cul-de-sac.

LIFT STATION INSPECTION REPORT

Building a Better World for All of Us®

Project: Sanitary Sewer Comprehensive Plan Update

Lift Station No: #3
Project No: COONR 141837

Date 06/01/2017 Time: 12:52 p.m. Weather: Sunny 75°

Inspection Team: BRH & DJS

Description:

1027 98th Lane NW, very quiet street.

Wet well is located at the end of the cul-de-sac directly behind the curb in a grassy area.

Valve vault is located in the street.

Site Access and Safety:

Access from street. Parking is right on the street approximately 5' from the wet well.

Access hatch is in good condition and has safety grates.

Pump Details:

Pump 1: Information from City

Submersible Flygt CP3127, 7.5 HP/FLA 30

Pump 2: Information from City

Submersible Flygt CP3127, 7.5 HP/FLA 30

Drawdown Results:

Pump 1: 167.10 gpm

Pump 2: 156.53 gpm

Measured Influent: 4.23 gpm

Condition of Wetwell:

Good condition, coated, carbon filter vent.

Inside DIA. 6'

Total depth 15.15', 1 incoming pipe.

Condition of Valve Vault:

Full of water. Asbuilts do not show a drain.

Electrical and Controls Comments:

Touch screen controller is approximately 5' from the wet well, no generator.

Electric and SCADA are very reliable.

Other Comments:

Water level at controller 3.5', depth to water 10.84', transducer is 0.81' from invert.

Concerns regarding the concrete slab has settled and the carbon vent possibly breaking off.

LIFT STATION INSPECTION REPORT

Building a Better World for All of Us®

Project: Sanitary Sewer Comprehensive Plan Update

Lift Station No: #4
Project No: COONR 141837

Date 06/07/2017 Time: 1:35 p.m. Weather: Sunny 83°

Inspection Team: BRH & DJS

Description:

12205 Flintwood St NW, at NE corner of Flintwood St NW and 121st Ave NW. Relatively quiet street.

Wet well is located in residents grass area behind sidewalk.

Valve vault is located in ped ramp.

Site Access and Safety:

Access from street. Parking is right on the street approximately 20' from the wet well.

Access hatch is in good condition other than some corrosion on bottom frame and has safety grates.

Pump Details:

Pump 1: Information from City

Submersible Flygt CP3152.091, 20 HP/FLA 51

Pump 2: Information from City

Submersible Flygt CP3152.091, 20 HP/FLA 51

Drawdown Results:

Pump 1: 734.45 gpm

Pump 2: 781.45 gpm

Measured Influent: 41.13 gpm

Condition of Wetwell:

Good condition, not coated, vent pipe.

Inside DIA. 10'

Total depth 35.49', 2 incoming pipes.

Condition of Valve Vault:

Good condition, dry.

Electrical and Controls Comments:

Touch screen controller is approximately 5' from the wet well, no generator.

SCADA and electric are good.

Other Comments:

Water level at controller 1.9', depth to water 32.00', transducer is 1.59' from invert.

Control panel hangs off of top slab. Wet well access hatch door hits control panel when open.

Wet well access hatch has some corrosion on the bottom frame. Valve vault MH is in ped ramp.

LIFT STATION INSPECTION REPORT

SEH

Building a Better World for All of Us®

Project: Sanitary Sewer Comprehensive Plan Update

Lift Station No: #5
Project No: COONR 141837

Date 06/07/2017 Time: 10:45 a.m. Weather: Sunny 77°

Inspection Team: BRH & DJS

Description:

100 Coon Rapids Blvd NW. SE corner of Hwy 47 and Coon Rapids Blvd.

Wet well is located in grass area at the end of a dedicated service drive.

Valve vault is located in grass area.

Site Access and Safety:

Access from dedicated service drive. Parking is right next to the wet well, generator and control panel.

Access hatch is in good condition and has safety grates.

Pump Details:

Pump 1: Information from City

Submersible Flygt CP3127.090, 10 HP/FLA 28

Pump 2: Information from City

Submersible Flygt CP3127.090, 10 HP/FLA 28

Drawdown Results:

Pump 1: 135.37 gpm

Pump 2: 142.89 gpm

Measured Influent: 15.04 gpm

Condition of Wetwell:

Good condition, not coated, vent pipe.

Inside DIA. 8'

Total depth 33.94', 1 incoming pipe.

Condition of Valve Vault:

Good condition, little water in the bottom probably due to hole in MH cover. Asbuilts do not show a drain.

Electrical and Controls Comments:

D152 controller is approximately 5' from wet well, Olympian generator.

Other Comments:

Water level at controller 2.5', depth to water 30.75', transducer is 0.69' from invert.

Wet well requires more cleaning due to excessive grease issue.

Water level indicator on controller hard to read but is being replaced.

Hatch lock is under handle which is flush with hatch and fills with water and freezes in winter making access very difficult. Outdated controller.

LIFT STATION INSPECTION REPORT

Building a Better World for All of Us®

Project: Sanitary Sewer Comprehensive Plan Update

Lift Station No: #6
Project No: COONR 141837

Date 06/01/2017 Time: 9:00 a.m. Weather: Sunny 64°

Inspection Team: MHO, BRH & DJS

Description:

3714 Mississippi Dr NW, on south side of street. Quiet street.

Wet well is located in residents yard in landscaped area.

Valve vault is located in grass area.

Site Access and Safety:

Access from street. Parking is right on the street approximately 5' from the wet well.

Access hatch is in good condition and has safety grates.

Pump Details:

Pump 1: Information from City

Submersible Flygt CP3127, 7.5 HP/FLA 22

Pump 2: Information from City

Submersible Flygt CP3127, 7.5 HP/FLA 22

Drawdown Results:

Pump 1: 465.34 gpm

Pump 2: 465.34 gpm

Measured Influent: 253.82 gpm

Condition of Wetwell:

Good condition, coated, carbon filter vent.

Inside DIA. 12'

Total depth 33.74', 2 incoming pipes.

Condition of Valve Vault:

Water over pipes, otherwise good condition. Asbuilts do not show a drain.

Electrical and Controls Comments:

D152 controller is approximately 8' from the wet well. Has a generator which is ran on Tuesdays.

SCADA and electric are very reliable.

Other Comments:

Water level at controller 2.25', depth to water 27.25', transducer is 4.24' from invert.

Outdated controller.

Ragging issue probably due to hospital.

LIFT STATION INSPECTION REPORT

Building a Better World for All of Us®

Project: Sanitary Sewer Comprehensive Plan Update

Lift Station No: #7
Project No: COONR 141837

Date 06/07/2017 Time: 10:10 a.m. Weather: Sunny 76°

Inspection Team: BRH & DJS

Description:

8375 Mississippi Blvd, on north side of street. Quiet street.

Wet well is located behind curb in dedicated service drive.

Valve vault is also located behind curb in dedicated service drive.

Site Access and Safety:

Access from dedicated service drive. Parking is right next to the wet well, generator and control panel.

Access hatch is in good condition and has safety grates.

Pump Details:

Pump 1: Information from City

Submersible Flygt CP3152, 15 HP/FLA 39

Pump 2: Information from City

Submersible Flygt CP3152, 15 HP/FLA 39

Drawdown Results:

Pump 1: 383.56 gpm

Pump 2: 383.56 gpm

Measured Influent: 33.84 gpm

Condition of Wetwell:

Good condition, coated, carbon filter vent.

Inside DIA. 8'

Total depth 19.76', 1 incoming pipe.

Condition of Valve Vault:

Water up to midpoint of pipes, otherwise good condition. Asbuilts do not show a drain.

Electrical and Controls Comments:

D152 controller is approximately 5' from the wet well, Detroit Diesel generator.

SCADA and electric have been good.

Other Comments:

Water level at controller 4.25', depth to water 13.24', transducer is 2.27' from invert.

Outdated controller.

Steps in wet well appear corroded.

LIFT STATION INSPECTION REPORT

Building a Better World for All of Us®

Project: Sanitary Sewer Comprehensive Plan Update

Lift Station No: #8
Project No: COONR 141837

Date 06/01/2017 Time: 11:20 a.m. Weather: Sunny 75°

Inspection Team: MHO, BRH & DJS

Description:

10320 Mississippi Blvd, on west side of street. Pretty quiet street.

Wet well is located behind curb in grass blvd.

Valve vault is located in road shoulder.

Site Access and Safety:

Access from road shoulder. Parking is on the shoulder of the street approximately 5' from wet well.

Access hatch is in good condition and has safety grates.

Pump Details:

Pump 1: Information from City

Submersible Flygt 3085.092, 3 HP/FLA 8.7

Pump 2: Information from City

Submersible Flygt 3085.092, 3 HP/FLA 8.7

Drawdown Results:

Pump 1: 234.76 gpm

Pump 2: 200.04 gpm

Measured Influent: 3.17 gpm

Condition of Wetwell:

Good condition, coated, carbon filter vent.

Inside DIA. 6'

Total depth 23.20', 1 incoming pipe.

Condition of Valve Vault:

Good condition, dry.

Electrical and Controls Comments:

Touch screen controller is approximately 5' from the wet well, no generator.

Other Comments:

Water level at controller 1.7', depth to water 20.43', transducer is 1.07' from invert.

Some power outages and communication issues. Recommend fiber.

LIFT STATION INSPECTION REPORT

Building a Better World for All of Us®

Project: Sanitary Sewer Comprehensive Plan Update

Lift Station No: #9
Project No: COONR 141837

Date 06/01/2017 Time: 11:00 a.m. Weather: Sunny 75°

Inspection Team: MHO, BRH & DJS

Description:

10749 Mississippi Blvd, on west side of street. Pretty quiet street.

Wet well is located behind curb in grass blvd.

Valve vault is located in center of street.

Site Access and Safety:

Access from road shoulder. Parking is on the shoulder of the street approximately 5' from wet well.

Access hatch is in good condition and has safety grates.

Pump Details:

Pump 1: Information from City

Submersible Flygt 3085.092, 3 HP/FLA 8.7

Pump 2: Information from City

Submersible Flygt 3085.092, 3 HP/FLA 8.7

Drawdown Results:

Pump 1: 188.41 gpm

Pump 2: 172.70 gpm

Measured Influent: 2.12 gpm

Condition of Wetwell:

Good condition, coated, carbon filter vent.

Inside DIA. 6'

Total depth 34.80', 1 incoming pipe.

Condition of Valve Vault:

Good condition, coated, some water in bottom but not up to pipes or valves.

Asbuilts show a 12" deep sump and a 2" pvc drain to wet well.

Electrical and Controls Comments:

Touch screen controller is approximately 5' from the wet well, no generator.

Electric has been good, SCADA pretty good.

Other Comments:

Water level at controller 1.8', depth to water 32.46', transducer is 0.54' from invert.

Overhead power cable is resting on top of light/SCADA pole.

Valve vault fittings have some corrosion.

LIFT STATION INSPECTION REPORT

SEH

Building a Better World for All of Us®

Project: Sanitary Sewer Comprehensive Plan Update

Lift Station No: #10
Project No: COONR 141837

Date 06/07/2017 Time: 2:00 p.m. Weather: Sunny 86°

Inspection Team: BRH & DJS

Description:

SE corner of Foley Blvd and 127th Ave. Fair amount of traffic with golf course nearby.

Wet well is located behind curb in concrete slab in grass blvd.

Valve vault is located by wet well in concrete slab.

Site Access and Safety:

Access from 127th Ave. Parking is on the street approximately 15' from wet well.

Access hatch is in good condition and has safety grates.

Pump Details:

Pump 1: Information from City

Submersible Flygt CP3153.091, 15 HP/FLA 44

Pump 2: Information from City

Submersible Flygt CP3153.091, 15 HP/FLA 44

Drawdown Results:

Pump 1: 408.23 gpm

Pump 2: 395.54 gpm

Measured Influent: 10.58 gpm

Condition of Wetwell:

Good condition, not coated, carbon filter vent.

Inside DIA. 6'

Total depth 18.64', 2 incoming pipes.

Condition of Valve Vault:

Half full of water otherwise in good condition.

Asbuilts do not show a drain.

Electrical and Controls Comments:

Touch screen controller is right next to wet well. Cummins generator.

SCADA and electric have been good.

Other Comments:

Water level at controller 2.9', depth to water 14.95', transducer is 0.79' from invert.

Frequent cleaning needed due to excessive grease. Golf course restaurant nearby.

LIFT STATION INSPECTION REPORT

Building a Better World for All of Us®

Project: Sanitary Sewer Comprehensive Plan Update

Lift Station No: #11
Project No: COONR 141837

Date 06/07/2017 Time: 8:55 a.m. Weather: Sunny 69°

Inspection Team: BRH & DJS

Description:

990 89th Lane NW, on south side of street. Very quiet street.

Wet well is located behind curb in resident's grass/landscaping.

Valve vault is located in access sidewalk to control panel.

Site Access and Safety:

Access from street. Parking is right on the street approximately 5' from wet well.

Access hatch with safety grates. Hatch is in poor condition (see Other Comments).

Pump Details:

Pump 1: Information from City

Submersible Flygt 3127.095, 10 HP/FLA 25

Pump 2: Information from City

Submersible Flygt 3127.095, 10 HP/FLA 25

Drawdown Results:

Pump 1: 336.32 gpm

Pump 2: 315.17 gpm

Measured Influent: 10.58 gpm

Condition of Wetwell:

Good condition, not coated, vent pipe.

Inside DIA. 6'

Total depth 24.82', 1 incoming pipe.

Condition of Valve Vault:

Dry, good condition. Has a drain.

Electrical and Controls Comments:

Touch screen controller (new in August 2016) is right next to wet well. No generator.

Other Comments:

Water level at controller 3.8', depth to water 20.75', transducer is 0.27' from invert.

Access hatch frame pretty rusted. City personnel stated they would like the hatch replaced due to it has 7 latches and the cover is bowed and difficult to open.

Neighborhood has frequent power outages.

LIFT STATION INSPECTION REPORT

SEH

Building a Better World for All of Us®

Project: Sanitary Sewer Comprehensive Plan Update

Lift Station No: #13
Project No: COONR 141837

Date 06/07/2017 Time: 11:20 a.m. Weather: Sunny 79°

Inspection Team: BRH & DJS

Description:

10396 Avocet St NW, on south corner of Egret Blvd NW and Avocet St NW. Quiet street.

Wet well is located behind sidewalk in resident's landscaped area.

Valve vault is located near wet well also in resident's landscaped area.

Site Access and Safety:

Access is behind city sidewalk. Parking is on the city sidewalk approximately 10' from wet well.

Access hatch is in good condition and has safety grates.

Pump Details:

Pump 1: Information from City

Submersible Flygt 3102, 5 HP/FLA 14

Pump 2: Information from City

Submersible Flygt 3102, 5 HP/FLA 14

Drawdown Results:

Pump 1: 323.63 gpm

Pump 2: 336.32 gpm

Measured Influent: 19.04 gpm

Condition of Wetwell:

Good condition, not coated, vent pipe.

Inside DIA. 6'

Total depth 24.35', 1 incoming pipe.

Condition of Valve Vault:

Good condition, dry. Has a drain.

Electrical and Controls Comments:

Touch screen controller is right next to wet well. No generator.

Other Comments:

Water level at controller 3.2', depth to water 20.90', transducer is 0.25' from invert.

Wet well requires more frequent cleanings due to grease.

Communication intermittently poor.

LIFT STATION INSPECTION REPORT

SEH

Building a Better World for All of Us®

Project: Sanitary Sewer Comprehensive Plan Update

Lift Station No: #14
Project No: COONR 141837

Date 06/07/2017 Time: 1:03 p.m. Weather: Sunny 84°

Inspection Team: BRH & DJS

Description:

75 119th Ave NW. On northeast corner of 119th Ave NW and Cottonwood St NW. Quiet street.

Wet well is located in resident's front yard in landscaped area.

Valve vault is located near wet well also in resident's landscaped area.

Site Access and Safety:

Access from street. Parking is on the street approximately 15' from wet well.

Access hatch is in good condition and has safety grates.

Pump Details:

Pump 1: Information from City

Submersible Flygt CP3085.092, 2.4 HP/FLA 10

Pump 2: Information from City

Submersible Flygt CP3085.092, 2.4 HP/FLA 10

Drawdown Results:

Pump 1: 160.76 gpm

Pump 2: 160.76 gpm

Measured Influent: 8.46 gpm

Condition of Wetwell:

Good condition, not coated, vent pipe.

Inside DIA. 6'

Total depth 23.34', 1 incoming pipe.

Condition of Valve Vault:

Good condition, dry.

Electrical and Controls Comments:

Touch screen controller is right next to wet well. No generator.

Electric has been good.

Other Comments:

Water level at controller 1.9', depth to water 19.84', transducer is 1.6' from invert.

Communication has intermittent fails.

LIFT STATION INSPECTION REPORT

Building a Better World for All of Us®

Project: Sanitary Sewer Comprehensive Plan Update

Lift Station No: #15
Project No: COONR 141837

Date 06/07/2017 Time: 12:30 p.m. Weather: Sunny 83°

Inspection Team: BRH & DJS

Description:

180 116th Lane NW. On southwest corner of 116th Lane NW and Cottonwood St NW. Quiet street.

Wet well is located in resident's front yard in landscaped area.

Valve vault is located near wet well and is also in resident's landscaped area.

Site Access and Safety:

Access from street. Parking is on the street approximately 20' from the wet well.

Access hatch is in good condition and has safety grates.

Pump Details:

Pump 1: Information from City

Submersible Flygt 3085.092-1764, 3 HP/FLA 8.7

Pump 2: Information from City

Submersible Flygt 3085.092-1764, 3 HP/FLA 8.7

Drawdown Results:

Pump 1: 198.83 gpm

Pump 2: 173.45 gpm

Measured Influent: 8.46 gpm

Condition of Wetwell:

Good condition, not coated, vent pipe.

Inside DIA. 6'

Total depth 24.85', 1 incoming pipe.

Condition of Valve Vault:

Good condition, dry. Has a drain.

Electrical and Controls Comments:

Touch screen controller is right next to wet well. No generator.

Electric has been good.

Other Comments:

Water level at controller 2.9', depth to water 21.20', transducer is 0.75' from invert.

Communication has intermittent outages/pump fails due to debris which requires frequent cleaning.

LIFT STATION INSPECTION REPORT

SEH

Building a Better World for All of Us®

Project: Sanitary Sewer Comprehensive Plan Update

Lift Station No: #16
Project No: COONR 141837

Date 06/01/2017 Time: 1:15 p.m. Weather: Sunny 77°

Inspection Team: BRH & DJS

Description:

1174 97th Lane NW. At the end of a cul-de-sac. Quiet street.

Wet well is located in a dedicated bit service drive.

Valve vault is located near wet well in grass area.

Site Access and Safety:

Access from dedicated service drive. Parking is on the service drive right next to the wet well.

Access hatch is in good condition and has safety grates.

Pump Details:

Pump 1: Information from City

Submersible Flygt CP3102.090, 5 HP/FLA 14

Pump 2: Information from City

Submersible Flygt CP3102.090, 5 HP/FLA 14

Drawdown Results:

Pump 1: 102.76 gpm

Pump 2: 87.04 gpm

Measured Influent: 4.23 gpm

Condition of Wetwell:

Good condition, not coated, vent pipe.

Inside DIA. 6'

Total depth 34.64'

Condition of Valve Vault:

Good condition, dry.

Electrical and Controls Comments:

Touch screen controller is right next to wet well. No generator.

SCADA and electric have been very reliable.

Other Comments:

Water level at controller 1.6’, depth to water 32.50’, transducer is 0.54’ from invert.

Valve vault forcemain fittings have some corrosion.

Wet well top pump rail brackets are rusted.

LIFT STATION INSPECTION REPORT

Building a Better World for All of Us®

Project: Sanitary Sewer Comprehensive Plan Update

Lift Station No: #17
Project No: COONR 141837

Date 06/01/2017 Time: 10:15 a.m. Weather: Sunny 75°

Inspection Team: MHO, BRH & DJS

Description:

13089 Vintage St NW. At the end of the street next to a parking area. Quiet street.

Wet well is located in a grass area adjacent to a parking area and bit trail.

Valve vault is located near wet well in grass area.

Site Access and Safety:

Access from parking area or bit trail. Parking at end of street/parking area approximately 10' from wet well.

Access hatch is in good condition and has safety grates.

Pump Details:

Pump 1: Information from City

Submersible Flygt 3102.095, 5 HP/FLA 14

Pump 2: Information from City

Submersible Flygt 3102.095, 5 HP/FLA 14

Drawdown Results:

Pump 1: 155.84 gpm

Pump 2: 139.96 gpm

Measured Influent: 5.29 gpm

Condition of Wetwell:

Good condition, not coated, vent pipe.

Inside DIA. 6'

Total depth 27.60', 3 incoming pipes.

Condition of Valve Vault:

Good condition, dry.

Electrical and Controls Comments:

Touch screen controller is right next to wet well. Has a generator which is ran on Tuesday's.

SCADA and electric have been very reliable.

Other Comments:

Water level at controller 2.9', depth to water 23.75', transducer is 0.95' from invert.

Valve vault forcemain fittings have some corrosion.

TABLE C-1 - Lift Station Capacity

Station No.	Avg. Daily W/W Flow	Max. Daily W/W Flow	MCES Peaking Factor	Peak Hourly W/W Flow (MCES Peaking Factor)	Average Pump Capacity	Wet Well Volume (below influent)	Wet Well DT	Starts/ Hour at Peak Flow	Ten States Standards Requirement	
	(gpd)	(gpd)		(gpd)	(gpm)	(gal)	(min)		DT (min)	Volume (gal)
1	13,521	27042	4.0	54,083	86	277	301.3	6.0	30	282
2	23,601	47202	4.0	94,404	132	707	322.6	6.7	30	492
3	4,088	8176	4.0	16,352	162	151	582.5	1.6	30	85
4	58,723	117446	4.0	234,892	758	648	182.1	11.1	30	1,223
5	19,712	39424	4.0	78,848	139	292	222.0	5.0	30	411
6	195,258	390516	3.8	741,980	465	1527	114.6	12.2	30	4,068
*6**	*230,258*	*460516*	*3.8*	*874,980*	*700*					
7	44,025	88050	4.0	176,100	384	347	638.4	13.0	30	917
8	5,435	10870	4.0	21,740	217	156	336.6	2.1	30	113
9	4,080	8160	4.0	16,320	181	163	440.3	2.7	30	85
10	4,620	9240	4.0	18,480	402	147	1587.3	2.8	30	96
11	11,400	22800	4.0	45,600	326	348	564.7	6.0	30	238
13	18,320	36640	4.0	73,280	330	186	137.7	11.1	30	382
14	20,000	40000	4.0	80,000	161	186	113.3	7.9	30	417
15	22,940	45880	4.0	91,760	186	170	86.2	12.1	30	478
16	4,490	8980	4.0	17,960	95	120	357.6	2.4	30	94
17	8,775	17550	4.0	35,100	148	176	247.0	4.6	30	183

*Future Conditions at LS 6 with addition of 35,000 gpd average daily flow

TABLE C-2 - Lift Station Detention Time Calculations

Station No.	Pump Rate 1	Pump Rate 2	Average Pump Rates (gpm)	Average Flow Rate (gpd)	Depth (ft)	Diameter (ft)	Top Elev. (ft)*	Floor Elev. (ft)	Invert Elev. (ft)	Wet Well Floor to Influent Sewer Invert (ft)	Wet Well Volume (gal)	Wet Well Detention Time (hr)	Forcemain Diameter (in)	Forcemain Length (ft)	Sewer Line Volume (gal)	Sewer Line Detention Time (hr)	Total Detention Time (hr)
1	90.25	82.72	86	13521	22.0	8	870.00	848.00	853.51	5.51	2,072	3.68	4	1,160	757	1.34	5.02
2	146.89	117.51	132	23601	17.5	10	858.50	841.00	850.00	9.00	5,287	5.38	4	1,840	0	0.00	5.38
3	167.1	156.3	162	4088	15.0	6	829.00	814.00	819.35	5.35	1,131	6.64	8	200	522	3.07	9.71
4	734.45	781.45	758	58723	35.0	10	895.00	860.00	868.25	8.25	4,847	1.98	8	988	2,580	1.05	3.04
5	135.37	142.89	139	19712	34.0	8	891.58	857.58	863.39	5.81	2,184	2.66	4	1,309	854	1.04	3.70
6*	465.34	465.34	465	195258	33.5	12	849.50	816.00	829.50	13.50	11,421	1.40	8	1,580	4,125	0.51	1.91
7	383.56	383.56	384	44025	20.0	8	821.40	801.40	808.31	6.91	2,598	1.42	12	2,880	16,919	9.22	10.64
8	234.76	200.04	217	5435	23.0	6	856.43	833.43	838.95	5.52	1,167	5.16	6	70	103	0.45	5.61
9	188.41	172.7	181	4080	34.8	6	866.00	831.20	836.98	5.78	1,222	7.19	4	39	25	0.15	7.34
10	408.23	395.54	402	4620	18.0	6	893.55	875.90	881.09	5.19	1,098	5.70	6	2,720	3,995	20.75	26.45
11	336.32	315.17	326	11400	28.8	6	850.70	821.88	834.19	12.31	2,603	5.48	6	1,271	1,867	3.93	9.41
13	323.63	336.32	330	18320	24.0	6	850.00	826.17	832.76	6.59	1,394	1.83	6	244	358	0.47	2.29
14*	160.76	160.76	161	20000	23.0	6	895.45	872.63	879.22	6.59	1,394	1.67	4	275	180	0.22	1.89
15	198.83	173.45	186	22940	24.5	6	890.22	865.63	871.65	6.02	1,273	1.33	4	154	101	0.11	1.44
16	102.76	87.04	95	4490	34.0	6	842.24	808.10	812.35	4.25	899	4.80	4	331	216	1.15	5.96
17	155.84	139.96	148	8775	27.5	6	872.19	844.69	850.93	6.24	1,320	3.61	4	285	186	0.51	4.12

Note: *Calculations performed for Lift Stations 6 and 14 have adjusted pump start elevations, recommended to improve efficiency of station.

Appendix D

City Ordinances

13-306 - Opening Fire Hydrants.

CHAPTER 13-500 - ON-SITE SEWAGE TREATMENT SYSTEM REGULATIONS

CHAPTER 13-400 - SEWER CODE-GENERAL

13-401 - Sewer Code.

Chapters 13-400 through 13-700, inclusive, shall comprise and be referred to as the "Sewer Code."

13-402 - Definitions.

Unless the context specifically indicates otherwise, the meaning of terms shall be as follows:

(1) "Sewage works" shall mean all facilities for collecting, pumping, treating, and disposing of sewage.

(2) "Sanitary sewage" shall mean any water-carried domestic waste, exclusive of footing and roof drainage, of any residence, industry, or commercial establishment, whether treated or untreated, and includes the liquid wastes produced by bathing, laundry, and culinary operations, and from toilets and floor drains. "Raw sewage" is sewage which has not been subjected to any treatment process.

(3) "Sewer" shall mean a pipe or conduit for carrying sewage.

(4) "Public sewer" shall mean a sanitary sewer in which all owners of abutting properties have equal rights and which is controlled by a public authority.

(5) "Storm sewer or storm drain" shall mean a sewer which carries storm and surface waters and drainage, but excludes sanitary sewage and polluted industrial wastes.

(6) "Sewage treatment plant" shall mean any arrangement of devices and structures used for treating sewage.

(7) "Industrial wastes" shall mean the liquid wastes from industrial processes and distinct from sanitary sewage.

(8) "Garbage" shall mean solid wastes from the preparation, cooking, and dispensing of food, and from the handling, storage, and sale of produce.

(9) "Properly shredded garbage" shall mean the wastes from the preparation, cooking, and dispensing of food that has been shredded to such degree that all particles will be carried

freely under the flow conditions normally prevailing in public sewers, with no particles greater than one-half inch in any dimension.

(10) "Building drain" shall mean that part of the lowest horizontal piping of a drainage system which receives the discharge from soil, waste, and other drainage pipes inside the walls of the building.

(11) "Building sewer" shall mean the extension from the building drain to the public sewer or to another place of disposal serving only the building drain from which the sewage originates.

(12) "B.O.D." (Denoting Biochemical Oxygen Demand) shall mean the quantity of oxygen utilized in the bio-chemical oxidation of organic matter under standard laboratory procedure in five (5) days at 20 degrees Centigrade, expressed in parts per million by weight.

(13) "pH" shall mean the negative logarithm of the hydroniumion concentration of a solution.

(14) "Suspended solids" shall mean solids that either float on the surface of, or are in suspension in water, sewage, or other liquids, and which are removable by laboratory filtering.

(15) "Natural outlet" shall mean any outlet into a watercourse, pond, ditch, lake, or other body of surface or ground water.

(16) "Water course" shall mean a channel in which a flow of water occurs, either continuously or intermittently.

(17) "Individual sewage disposal system" shall mean a sewage disposal system other than a public community system and which receives sewage from an individual establishment.

13-403 - Destructive Acts.

No unauthorized persons shall maliciously, willfully, or negligently break, damage, destroy, uncover, deface, or tamper with any structure, appurtenance, or equipment which is a part of the municipal sewage works.

13-404 - Entering Upon Property.

The City Engineer and other duly authorized employees of the City bearing proper credentials and identification shall be permitted to enter upon all properties for the purposes of inspection, observation, measurement, sampling, and testing in accordance with the provisions of the Sewer Code.

13-405 - Liability.

In addition to other penalties provided, any persons violating any of the provisions of the Sewer Code shall become liable to the City for any expense, loss, or damage occasioned the City by reason of such violation.

13-406 - Waste Disposal.

It shall be unlawful for any person to place, deposit, or permit to be deposited in an unsanitary manner upon public or private property within the City of Coon Rapids or in any area under the jurisdiction of said City, any human or animal excrement, garbage, or other objectionable waste.

13-407 - Unlawful Discharges.

It shall be unlawful to discharge into any natural outlet or to any storm sewer or storm drain, or in any area under the jurisdiction of said City, any sanitary sewage, industrial wastes, or other polluted waters, except where suitable treatment has been provided in accordance with the provisions of the Sewer Code.

13-408 - Toilet Facilities.

(1) The owner of each house, building, or property used for human occupancy, employment, recreation, or other purpose, abutting on any streets, alley or right-of-way is hereby required at his expense to install suitable toilet facilities therein and to connect such facilities directly with the proper sewer system in accordance with the provisions of the Sewer Code, within 90 days after date of official notice to do so.

(2) In the event that the owner is indigent and unable to connect to the City sewer system and there exists a present or foreseeable health problem, the City Council may, as provided by M.S. Chapter 429, order the connection as an improvement and assess the benefited property therefor. The owner shall execute an agreement providing necessary easements and holding the City harmless from the installation and operation thereof.

‹ 13-306 - Opening Fire Hydrants.

CHAPTER 13-500 - ON-SITE SEWAGE TREATMENT SYSTEM REGULATIONS ›

CHAPTER 13-500 - ON-SITE SEWAGE TREATMENT SYSTEM REGULATIONS[3]

Footnotes:

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***Editor's note—** Ord. No. 2144 , §§ 1, 2, adopted Aug. 18, 2015, repealed the former Ch. 13-500, §§ 13-501—13-516 and enacted a new Ch. 13-500, §§ 13-501—13-519 as set out herein. The former 13-500 pertained to similar subject matter and derived from Ord. No. 1812, 8/19/03; Ord. No. 1720, 12/05/00.*

13-501 - Purpose, Applicability, and Authority.

(1) The improper location, design, installation, use, and maintenance of subsurface sewage treatment systems (SSTS) adversely affect the public health, safety, and general welfare by discharge of inadequately treated sewage to the ground surface, surface waters, and ground waters.

It is the intent of this Chapter to establish clear, reliable and cost-effective technical standards and criteria for the proper siting, design, construction, installation, operation, maintenance, repair, reconstruction, inspection, enforcement and regulation of new and continued uses of subsurface waste treatment systems and devices.

(Ord. No. 2144 , 8-18-15)

13-502 - Definitions.

The following definitions apply to this Chapter of this Code in addition to the definitions contained in Minnesota Rules Chapters 7080 thorough 7083.

(1) "Baffle" means a device installed in a septic tank for proper operation of the tank and to provide maximum retention of solids, and includes vented sanitary tees and submerged pipes in addition to those devices that are normally called baffles.

(2) "Contaminant" means any physical, chemical, biological, or radiological substance or material in water which tends to degrade the environment by contributing toxicity, constituting a hazard or otherwise impairing its usefulness.

(3) "Contamination" means the presence of certain infections or toxic agents or certain hazardous characteristics capable of causing disease or other harm.

(4) "Failed or Failing Individual Sewage Treatment System" means any SSTS that discharged sewage to a seepage pit, privy, cesspool, drywell or leaching pit and any system with less than the required vertical separation distance define in MN Rules 7080.1500.

(5) "Groundwater or Ground Water" means subsurface water in the vadose (unsaturated)and paretic (saturated) zones occurring naturally in soil and rock formations, whether or not capable of yielding such water to wells, and shall specifically mean that subsurface water present in the saturated zone defined by perched, free, or confined ground water surface.

(6) "Imminent Threat to Public Health of Safety" means situations with the potential to immediately and adversely impact or threaten public health or safety. At a minimum any, ground surface or surface water discharges of sewage or sewage effluent into storm water drains, ditches or other drainage systems and any system causing sewage backup into a dwelling or other establishment. In addition, any SSTS systems with unsecured, weak, or damaged maintenance access covers or electrical wiring shall constitute an imminent threat.

(7) "Pollutant" means a contaminant whose form concentration or other attribute in an environmental medium such as soil or water, exceeds established, acceptable criteria and standards prescribed by the Minnesota Pollution Control Agency and, therefore, may be capable of causing disease injury or death in humans, animals or plants, contribution to the risk thereof, otherwise degrading the environment or creating a public nuisance.

(8) "Public Nuisance, or Public Health Nuisance" as defined in Minn. Stat. Ch. 145A, as amended, and shall be restricted in this Chapter to those conditions in which wastes, wastewaters, sewage septage, sludge and other releases or related activities contribute to the annoyance or endangerment of persons or the degradation of the environment and which require appropriate preventory, control or abatement to resolve.

(9) "Subsurface sewage treatment system (hereafter known as SSTS)" means either an individual subsurface sewage treatment system as defined in subpart 45 or a midsized subsurface sewage treatment system as defined in part 7080.0020, subpart 4, as applicable.

(10) "Water Table" means the highest elevation in the soil where all voids are filled with water, as evidenced by presence of water or soil mottling or other information.

(Ord. No. 2144 , 8-18-15)

13-503 - Administration.

Standards for the installation, maintenance and repair of SSTS are as established herein. Adoption of Minnesota Pollution Control Agency rules 7080 and 7081 and any subsequent amendments thereto in the most current editions are hereby adopted by reference and shall be part of this Chapter as if set forth herein.

(Ord. No. 2144 , 8-18-15)

13-504 - Design of SSTS.

All new, rebuilt or otherwise modified individual sewage treatment systems located in the City shall be designed by a person licensed by the State as being qualified to design such systems. Proof of such certification shall be provided to the City at the time the design of the SSTS is submitted to the City. The design shall be done in accordance with the applicable chapter requirements of MN Rules 7080.1700 or 7081.0080 and 7081.0230.

Any lot platted after April 1, 1996 shall include an evaluation and space for a second soil treatment area. The design shall be submitted to and approved by the City prior to issuance of any permits for the subject site.

(Ord. No. 2144 , 8-18-15)

13-505 - Unlawful Facilities and Systems Failing to Protect Ground Water.

Except as hereinafter provided, it shall be unlawful to construct or maintain any privy, privy vault, septic tank, cesspool, or other facility intended or used for the disposal of sewage. A holding tank with a valid operating permit is allowed if the City finds extenuating circumstances. Any repair rejuvenation or remediation of SSTS shall require design review, approval, permits and inspections as contained in this Chapter. Any failed or failing system that is not protective of ground water, shall be brought into compliance within 18 months after receiving notice from the City.

(Ord. No. 2144 , 8-18-15)

13-506 - Connection to Public Sewer System.

When a public sewer becomes available to a property served by a private sewage disposal system, a direct connection shall be made to the public sewer in compliance with this Chapter at the time of failure of the private sewage system or within one year after sewer service becomes available, whichever occurs first. Failure of a property owner, after written notice by the City to comply with this Section may be deemed a violation of this code. "Owner" shall include the purchaser at any mortgage foreclosure sale, and assigns. After the public sewer is available to a property, no new construction or repair of existing private systems shall be allowed.

(Ord. No. 2144 , 8-18-15)

13-507 - Installation of SSTS.

The installation of an SSTS shall occur only at the location approved by the City. Installation of the system at any other location shall require submission to and approval of revised design and location plans by the City. The system shall only be installed by a person or company licensed by the State as qualified to install such a system. The technical standards contained in MN Rules 7080 and 7081 are in effect in the date of passage of this Chapter.

(Ord. No. 2144 , 8-18-15)

13-508 - Permit Requirements.

No person shall install, repair, or alter an SSTS without first obtaining a permit as provided herein. Application, provided by the City, must be completed in writing prior to issuance of a permit. A Management Plan as defined in Minnesota Rule 7080.1100. Subd. 46 is required for all new and replacement SSTS at the time of application. Permit fees are established by resolution of the City Council.

(Ord. No. 2144 , 8-18-15)

13-509 - SSTS Design.

For any proposed building site, the landowner shall submit a preliminary, and field site evaluation. A minimum of one soil boring, and two percolation test results for the SSTS soil treatment system per MPCA 7080.1710 and 7080.1720 must be submitted. The site analysis must show the existence of adequate land area for the SSTS taking into account seasonably saturated soils, soil types and conditions, topographic features, flooding potential and mandatory setback requirements as dictated by City ordinance and any applicable State and Federal regulations. The evaluation of the soils and the soil boring and percolation tests for the SSTS shall be submitted to the City for review and approval prior to any preliminary or final plat approval or waiver of platting or permit issuance. Failure to provide the information required by this Section shall be grounds for denial of the building and septic permits.

(Ord. No. 2144 , 8-18-15)

13-510 - Shoreland and Flood Plain Regulations.

The design and installation of any SSTS within a designated shoreland or flood plain area shall be in accordance with Chapter 11-1100 of the City Land Use Regulations and any other applicable Federal, State or flood plain regulations.

(Ord. No. 2144 , 8-18-15)

13-511 - Inspection and Testing.

No part of an individual sewage treatment system shall be covered until it has been inspected and approved by the City. 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 City. The City shall cause such inspections as necessary to determine compliance with this Chapter. It shall be the responsibility of the permittee to notify the City that the system is ready for inspection. If the integrity of the system is threatened by adverse weather if left open and the City is unable to conduct an inspection, the permittee may, after receiving permission from the City, document compliance with the ordinance by photographic means that show said compliance and submit that evidence to the City prior to final approval being sought.

(Ord. No. 2144 , 8-18-15)

13-512 - Compliance Inspection Required.

An SSTS compliance inspection is required:

(1) For a new 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.

(4) Prior to the transfer of real property.

(Ord. No. 2144 , 8-18-15)

13-513 - Maintenance and Operating Regulations of New and Existing SSTS.

(1) Operating Permit. An operating permit shall be required of all owners of new holding tanks, Type IV and Type V systems: MSTS and other SSTS that the department has determined requires operational oversight. Owners of Class V wells shall submit inventory information to the U.S. Department of Environmental Protection Agency (EPA) and Class V wells shall be identified as such in property transfers.

(2) SSTS Maintenance. The owner of a sewage tank or tanks, shall regularly, but not less frequently than every three years inspect and measure the accumulations of sludge, and scum. If the tank(s) is pumped, no measurement is needed. All sewage generated by such shall be disposed in accordance with MN Rules 7080 and 7081 standards. Upon successful completion of SSTS maintenance per the applicable maintenance plan for the system or under per MN Rules 7080.2450, the licensed pumper/inspector shall submit a sewage system maintenance log sheet to the City's Inspection Division within 30 days with the appropriate recording fee. The log sheet must be completed in its entirety and all information recorded must be verified in writing by the signature and date of the licensed pumper/inspector completing the maintenance. The log sheet must also state the condition of and work done on the following. A paid invoice from a licensed pumper detailing the required information shall also be accepted when submitted by the property owner or owners agent.

(a) The sewage of a septic tank(s) has been thoroughly pumped by a license pumper to remove all solids and scum in accordance with the requirements of Minnesota Rules Chapter 7080. EXCEPTION: Pumping is not required if a licensed pumper or licensed private inspector determines that accumulated sludge and scum layers do not exceed the levels required for pumping per Minnesota Rules Chapter 7080.

(b) An SSTS evaluation shall be completed by the licensed pumper/inspector verifying that the baffles and tank(s) are in working order and in substantial compliance with Minnesota Rules Chapter 7080 and if there is any evidence of SSTS surface discharge or failure.

(Ord. No. 2144 , 8-18-15)

13-514 - System Abandonment.

All systems shall be abandoned in accordance with Minnesota Rules Chapter 7080.2500 Septage and waste mixed with septage including all solids and liquids shall be removed and disposed of in accordance with Minnesota Rules Chapter 7080.2450 subpart (6).

Access for future discharge to the system shall be permanently denied accordance with Minnesota Rules 7080.2500.

(Ord. No. 2144 , 8-18-15)

13-515 - Schedule for Initial Permits.

The owner of any SSTS within the City shall obtain an operational permit at the time the system is put into service, and shall maintain said maintenance plan or operational permit under the conditions of Section 13-511 of this Chapter, until use of the SSTS has been abandoned or terminated.

(Ord. No. 2144 , 8-18-15)

13-516 - Systems Causing Imminent Threat to Public Health or Safety.

The owner of any SSTS defined as causing an imminent threat to public health or safety shall immediately replace modify or reconstruct the SSTS in conformance with MPCA rule 7080. Any repair rejuvenation or remediation of SSTS shall require design review, approval, permits and inspections as contained in this Chapter. A holding tank with a valid operating permit is allowed if the City finds extenuating circumstances apply. SSTS permitted under the National Pollution Discharge Elimination System are exemption from this Section.

(Ord. No. 2144 , 8-18-15)

13-517 - Violation and Penalties.

(1) Misdemeanor. Any person who fails to comply with the provisions of this Chapter may be charged with a misdemeanor and upon conviction, shall be punished as provided by law. A separate offense shall be deemed committed each day during or upon which a violation occurs or continues.

(2) Civil action/injunctive relief. In the event of a violation or threat of violation of this Chapter, the City may institute appropriate civil or administrative actions or proceedings to include actions seeking damages, declaratory relief, or injunctive relief to prevent, restrain, correct, or abate such violations or threatened violations, and the Building Official in conjunction with the City Attorney is authorized to institute such action.

(Ord. No. 2144 , 8-18-15)

13-518 - Conflict Resolution.

If a documented discrepancy arises on the depth of the periodically saturated soil between licensed SSTS businesses, the dispute resolution procedures outlined in Minnesota Rules 7082.0700, Subp. 5 must be followed.

(Ord. No. 2144 , 8-18-15)

13-519 - Severability.

If any section, subsection, sentence, clause, phrase, or portion of this Chapter is for any reason held invalid or unconstitutional by any court or administrative agency of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision and such holding shall not affect the validity of the remaining portions thereof. If a regulatory body or a court of competent jurisdiction should determine by a final, non-appealable order that any permit, right or registration issued under this Chapter or any portion of this Chapter is illegal or unenforceable, then any such permit, right or registration granted or deemed to exist hereunder shall be considered as a revocable permit with a mutual right or registration, respectively, except for conditions relating to the term of the permit and the right of termination. If a permit, right or registration shall be considered a revocable permit as provided herein, the permittee must acknowledge the authority of the City Council to issue such revocable permit and the power to revoke it.

(Ord. No. 2144 , 8-18-15)

CHAPTER 13-600 - PUBLIC SEWER CONNECTIONS

13-601 - Minnesota Plumbing Code Incorporated by Reference.

The Minnesota Plumbing Code, Minnesota Rules Chapter 4715, filed with the Secretary of State and the Construction Codes and Licensing Division, Department of Labor and Industry, is hereby adopted by the City of Coon Rapids and is incorporated in the City Code as completely as if set out here in full.

[Revised 4/19/11, Ordinance 2071]

13-602 - Sewer Connection Charges.

No person shall make or cause to make any connection to the Coon Rapids municipal sewer system, unless the property has been fully assessed for sewer service or there has been paid to the City for the improvement fund and in lieu of assessment charge equal to the original assessment which would have been made against the premises for the project providing such service to the premises updated in accordance with the Construction Cost Index for the Minneapolis area.

In addition to the assessment or in-lieu charges, the sewer connection charges established by resolution of the City Council shall be payable prior to the issuance of a sewer connection permit. The permit shall expire as of December 31 of the year in which it is issued. Upon application for a new permit, the charges previously paid shall be credited against the then prevailing connection charge.

The City Council may, by resolution, from time to time establish or modify such connection charges.

Said sums shall be used to defray improvement or maintenance costs, for depreciation, or for any other purposes deemed appropriate by the City from time to time.

13-603 - Reserved.

Editor's note— The previous § 13-603 was repealed by the City of Coon Rapids.

13-604 - User Rates.

(1) Sewer usage charges shall be established from time to time by resolution of the City Council.

[Revised 9/19/95, Ordinance 1538]

(2) Users who reside in single family and two family residential properties, condominiums, quads and townhouses, who are directly billed for sewer charges by the City, and who file with the City on January of each year an affidavit in form prepared by the City verifying that the users meet one of the following requirements are entitled to a reduced sewer charge:

[Revised 9/19/95, Ordinance 1538]

(a) Are 62 years of age or members of a household in which one of the spouses is 62 years of age or older and the other is not gainfully employed; or

[Revised 9/19/95, Ordinance 1538]

(b) Occupy the unit with not more than two other persons who are also 62 years of age or older or occupy the unit with a person under 62 years of age who is not gainfully employed; or

(c) Occupy a unit which qualifies for 1b classification pursuant to Minnesota Statutes Section 273.13, Subdivision 22(b); or

[Revised 10/5/93; Ordinance 1465]

(d) Have received an award letter from the Social Security Administration indicating that the individual is 100 percent disabled and entitled to Social Security benefits for such disability; or

(e) Have received an award letter and/or formal statement from any other pension administration indicating that the individual is 100 percent disabled and entitled to benefits from that pension administration for such disability.

[Revised 10/5/93, Ordinance 1465][Revised 9/19/95, Ordinance 1538]

13-605 - Meters for Private Water Supply Systems.

All users other than residential users, who operate and maintain a private water supply system shall install a meter for recording water used and shall comply with the requirements of Section 13-302 of the City Code relating to the reading and reporting of such readings to the City.

Until such time as the user has installed such a meter, the City shall quarterly estimate the number of gallons of water used which estimate shall be final and binding upon the user for the purposes of this Chapter.

13-606 - Payment of Sewer Connection Charge.

The sewer connection charge shall be payable at the time of application for the permit for construction of the building sewer as provided below. The sewer service charge shall be payable as of the day of approval of the connection between the building sewer and the building drain or the connection between the building sewer and the public sewer, whichever connection would permit use of the public sewers. In the case of construction of the building sewer without connection to either the building drain or the public sewer, the sewer service charge shall become payable 90 days after approval by the Chief Building Official of construction of the building sewer.

13-607 - Permit Required.

No person shall uncover, make any connections with or opening into, use, alter, or disturb any public sewer or appurtenance thereof without first obtaining a written permit from the Chief Building Official and otherwise complying with the terms of this Chapter and the conditions accompanying the permit. Prior to issuing any permit, the Chief Building Official shall consult with the Director of Public Services and obtain his approval.

13-608 - Classes of Permits and Fees.

(1) Residential and commercial service: ..... $15.

(2) Establishments producing industrial wastes: ..... $25.

Permit and inspection fees shall accompany the application.

13-609 - Application.

Application for such permit shall be made in writing to the Chief Building Official on such form as he may from time to time designate and shall include such information as he may require.

13-610 - Red Permit Card.

The City shall furnish a red permit card with permit number which shall be prominently displayed on property where the sewer connection is being made for the duration of the work.

13-611 - Owner Responsible for all Costs.

All costs and expense incidental to the installation and connection of the building sewer shall be borne by the owner. The owner shall indemnify the City from any loss or damage that may directly or indirectly be occasioned by the installation of the building sewer.

13-612 - Separate Building Sewers.

Every building shall 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. However, where one building stands at the rear of another on an interior lot and no private sewer is available or can be constructed to the rear building through an adjoining alley, court, yard, or driveway, the building sewer from the front building may be extended to the rear building and the whole considered as one building sewer for permit purposes only.

13-613 - Old Building Sewers.

Old building sewers may be used in connection with new buildings only when they are found, on examination and test by the Chief Building Official, to meet all requirements of this Chapter.

13-614 - Who May Tap Lines.

Only the City crews or a contractor authorized by the City may tap into the City sewer line.

13-615 - Connections.

Connections to a public sewer shall only be done by a contractor licensed by the City.

13-616 - Building Sewers.

A building sewer may be constructed, except for connection to the public sewer, by the owner of the building served by such sewer or other licensed contractor under the following conditions:

(1) OSHA Regulations Incorporated by Reference. The Safety and Health Regulations for Construction, Departm Labor, Occupational Safety and Health Administration, Federal Register, Volume 37, Number 243, Part 2, De 16, 1972, Subpart P-Excavations, Trenching, and Shoring, Sections 1926.650 through 1926.653 inclusive, are adopted by the City and incorporated as part of this Chapter as completely as if set out here in full. If any pe shall fail to comply with the requirements of the Regulations, the Chief Building Official may, by written dire cause the stopping of all work in the trench until there is compliance, including sheeting and bracing if orde Each one-half hour of work in the trench after written directive to stop shall constitute a separate violation h

(2) The owner or licensed contractor shall first obtain a permit as required by this Chapter.

(3) The requirements of this Chapter relative to materials and workmanship shall in all cases apply to such installation.

(4) Before covering or backfilling such building sewer, the owner or contractor must obtain inspection and approval of such building sewer construction by the Chief Building Official.

(5) In no case shall the owner or contractor be permitted to carry out construction within street rights-of-way or to connect directly to a public sewer lateral or stub.

(6) In cases where the owner or contractor chooses to construct a building sewer without connecting to either the public sewer or the building drain, such construction shall be permitted if carried out in accordance with this Section, provided that connection to either the building drain or the public sewer shall not be made until the owner or contractor has obtained a second permit. The connection shall be inspected and approved by the Chief Building Official before the connection is covered or backfilled.

(7) If the Chief Building Official has reason to believe that the owner is not competent to do the work contemplated by this Chapter, the owner shall demonstrate his skill, training, knowledge, and experience to the satisfaction of the Chief Building Official. In the event the Chief Building Official concludes that said owner is not competent, no permit shall be issued until a licensed plumber or contractor is retained. If a permit was issued prior to such determination, the permit shall be revoked until compliance with this Section is proven.

13-617 - Establishment of Strength Charges.

For the purpose of paying the costs allocated to the City each year by the Commission that are based upon the strength of discharge of all industrial users receiving waste treatment services within or served by the City, there is hereby approved, adopted, and established, in addition to the sewer charge based upon the volume of discharge, a sewer charge upon each person, company, or corporation receiving waste treatment services within or served by the City, based upon strength of industrial waste discharged into the sewer system of the City (the "strength charge").

13-618 - Establishment of Strength Charge Formula.

For the purpose of computation of the Strength Charge established by Section 13-617 hereof, there is hereby established, approved, and adopted in compliance with the Act the same strength charge formula designated in Resolution No. 76-172 adopted by the governing body of the Commission on June 15, 1976, a copy of such Resolution being on file in the office of the City Clerk, such formula being based upon pollution qualities and

difficulty of disposal of the sewage produced through an evaluation of pollution qualities and quantities in excess of an annual average base and the proportionate costs of operation and maintenance of waste treatment services provided by the Commission.

13-619 - Strength Charge Payment.

It is hereby approved, adopted, and established that the Strength Charge established by Section 13-617 hereof shall be paid by each industrial user receiving waste treatment services and subject thereto before the 20th day next succeeding the date of billing thereof to such user by or on behalf of the City, and such payment thereof shall be deemed to be delinquent if not so paid to the billing entity before such date. Furthermore, it is hereby established, approved, and adopted that if such payment is not paid before such date an industrial user shall pay interest compounded monthly at the rate of two-thirds of one percent per month on the unpaid balance due.

13-620 - Establishment of Tax Lien.

As provided by Minnesota Statutes, Section 444.075, Subdivision 3, it is hereby approved, adopted, and established that if payment of the Strength Charge established by Section 13-617 hereof is not paid before the 60th day next succeeding the date of billing thereof to the industrial user by or on behalf of the City, said delinquent sewer strength charge, plus accrued interest established pursuant to Section 13-619 hereof, shall be deemed to be a charge against the owner, lessee, and occupant of the property served, and the City or its agent shall certify such unpaid delinquent balance of the County Auditor with taxes against the property served for collection as other taxes are collected; provided, however, that such certification shall not preclude the City or its agent from recovery of such delinquent sewer strength charge and interest thereon under any other available remedy.

CHAPTER 13-700 - PUBLIC SEWER USAGE RULES, REGULATIONS, AND RATES

13-701 - Discharge to Sanitary Sewers.

No person shall discharge or cause to be discharged any storm water, surface water, ground water, or runoff, subsurface drainage, cooling water, or unpolluted industrial process waters to any sanitary sewer.

13-702 - Discharge to Storm Sewers.

Storm water and all other unpolluted drainage shall be discharged to such drains as are specifically designed as storm sewers, or to a natural outlet approved by the City Council. Industrial cooling water or unpolluted process waters may be discharged, upon approval of the City Council, to a storm sewer, or natural outlet.

13-703 - Permitting Sanitary Sewage Flow to Storm Drains.

No person shall in any way permit any sanitary sewage to flow into any public storm drain from any premises owned by him or under his control.

13-704 - Prohibited Discharges into Public Sewers.

Except as hereinafter provided no person shall discharge or cause to be discharged any of the following described waters or wastes into any public sewer:

(1) Any liquid or vapor having a temperature higher than 150 degrees Fahrenheit.

(2) Any water or waste which may contain more than 100 parts per million, by weight, of fat, oil, or grease.

(3) Any gasoline, benzene, naptha, fuel oil, or other flammable or explosive liquid, solid, or gas.

(4) Any garbage that has not been properly shredded.

(5) Any ashes, cinders, sand, mud, straw, shavings, metal, glass, rags, feathers, tar, plastics, wood, paunch manure, or any other solid or viscous substance capable of causing obstruction to the flow in sewers or other interference with the proper operation of the sewage works.

(6) Any waters or wastes having a pH lower than 6.0 or higher than 9.0 or having any other property to corrode or abrade, cause materials to be deposited or attached to the walls of sewers, or having any other property capable of causing damage or hazard to structures, equipment, and personnel of the sewage works.

(7) Any waters or waste containing a toxic, poisonous, or radioactive substance in sufficient quantity to injure or interfere with any sewage treatment process, constitute a hazard to humans or animals, or create any hazard in the sewage treatment plant.

(8) Any waters or wastes containing suspended solids of such character and quantity that unusual attention or expense is required to handle such materials at the sewage treatment plant.

(9) Any noxious or malodorous gas or substance capable of creating a public nuisance.

13-705 - Waste Interceptors.

Grease, oil, and sand interceptors shall be provided when they are necessary for the proper handling of liquid wastes containing grease in excessive amounts or any flammable wastes, sand, and other harmful ingredients; except that such interceptors shall not be required for private living quarters or dwelling units. All such interceptors shall be of a type and capacity approved by the City Engineer, and shall be located as to be readily and easily accessible for cleaning and inspection.

13-706 - Maintenance at Owner's Expense.

Where installed, all grease, oil, and sand interceptors shall be maintained by the owner, at his expense, in continuously efficient operation at all times.

13-707 - Other Prohibited Discharges.

The admission into the public sewers of any of the following waters or wastes is prohibited except upon the written approval of the City Engineer:

(1) The admission into the public sewers of any waters or wastes having:

(a) A five day Biochemical Oxygen Demand greater than 300 parts per million by weight.

(b) Containing more than 350 parts per million by weight of suspended solids.

(c) Containing any quantity of substances having the characteristics described in Section 13-704.

(d) Having an average daily flow greater than two percent of the average daily sewage flow of the City, is prohibited except upon written approval of the City Engineer.

13-708 - Preliminary Treatment.

The owner shall provide, at the owner's expense, such preliminary treatment of waste as may be necessary to:

(1) Reduce the Biochemical Oxygen Demand to 300 parts per million by weight.

(2) Reduce the suspended solids to 350 parts per million by weight.

(3) Rectify any violation of Section 13-704.

(4) Control the quantities and rates of discharge of such waters or wastes.

Plans, specifications, and any other pertinent information relating to proposed preliminary treatment facilities must be submitted for the approval of the City Engineer and of the Minnesota Pollution Control Agency of the State of Minnesota, and no construction of such facilities may be commenced until said approvals are obtained in writing.

[Revised 11/8/06, Ordinance 1935]

13-709 - Maintenance at Owner's Expense.

Where preliminary treatment facilities are provided for any waters or wastes, they shall be maintained continuously in satisfactory and effective operation by the owner at his own expense.

13-710 - Manholes.

The owner of any property served by a building sewer carrying industrial wastes shall install a suitable control manhole in the building sewer to facilitate observation, sampling, and measurement of the wastes. Such manhole, when required shall be accessibly and safely located, and shall be constructed in accordance with plans approved by the City Engineer. The manhole shall be installed by the owner at his expense, and shall be maintained by him so as to be safe and accessible at all times.

13-711 - Testing and Analysis.

All measured tests and analysis of the characteristics of water and wastes to which reference is made in this Chapter shall be determined in accordance with methods employed by the Minnesota Department of Health, and shall be determined at the control manhole provided for in Section 13-710, or upon suitable samples taken at said control manhole.

In the event that no special manhole has been required, the control manhole shall be considered to be the nearest downstream manhole in the public sewer to the point at which the building sewer is connected.

13-712 - Payment for Unusual Strength Discharges.

No statement contained in this Chapter shall be construed as preventing any special agreement or arrangement between the City and any industrial concern whereby an industrial waste of unusual strength or character may be accepted by the City for treatment subject to payment therefore by the industrial concern.

13-713 - Right to Meter Sewage Flow.

The City reserves the right to meter sewage flow or to base estimated flow on water usage, and for this purpose reserves the right to meter any private water systems.

13-714 - Water Meters.

Any water meter installed for use or used as a basis for the computation of sewer rates shall be installed and maintained in good operating condition at all times, such installation and maintenance to be without expense to the City. Any such meter shall be of a type obtained from the City and shall accurately measure all water received on the premises. Installation of and maintenance of such meter shall be made in accordance with plumbing regulations of this City.

13-715 - Additional Meters.

If the lot, parcel of land, or premises discharges normal sewage or industrial waste into the sanitary sewage system, either directly or indirectly, and it can be shown to the satisfaction of the City Council that a portion of the water measured by the water meter does not and cannot enter the sanitary sewage system, then, and in that event, the City Council may permit or require the installation of other or additional meters in such manner that the quantity of water which actually could enter the sewer system may be determined. In such case the charges or rates shall be based upon the amount of water which can enter the sanitary sewage system.

13-716 - Information on Water and Sewer.

The owner, occupant, or person in charge of any premises shall supply the City with such information as the City may reasonably require related to use of water, use of sewer, or sewer rates. Willful failure to provide such information or willful falsification of such information shall constitute a violation of this Chapter, as shall willful failure to comply with any requirement or order issued pursuant to this Chapter.

13-717 - Estimating the Charge.

If the owner, occupant, or person in charge of any premises shall fail to provide information as provided in Section 13-719 hereof, or shall fail or refuse to comply with any requirement of this Chapter, the charge for such premises shall be estimated and billed in accordance with such estimate.

13-718 - Non-metered Units.

For a fraction of a quarter the charges and rates for non-metered units shall be the pro rata amount of the established flat charge.

13-719 - Payment of Bills.

Bills for charges for the use and service of the sewage system shall be prepared by the City in accordance with usual and customary practice. All bills shall be payable at the Coon Rapids City Hall. Bills shall be rendered quarterly.

13-720 - Code Section 13-304.

Payment for sewer services shall be made in the same manner as provided in City Code Section 13-304.

13-721 - Revenues.

All revenues derived from these rates and charges shall be credited to the Public Utility Fund. Such revenue shall be used only for the purpose of paying the cost of operating and maintaining the sewage system, paying charges made by the Metropolitan Sewer Authority, providing an adequate depreciation fund, and paying costs of meter-reading, billing, collection, and other similar or related sewer operating expenses, provided that any surplus above such needs may be transferred to the general fund by Council action.

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SEH