Hennepin County

Comprehensive Plan 2040

DRAFT

Last updated: June 12, 2018

Prepared to meet the requirements of the Metropolitan Land Planning Act and the Metropolitan Council's 2040 Regional Development Framework, Thrive 2040.

Adopted by the Hennepin County Board of Commissioners on xx, xx, 2019

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Introduction

Hennepin County Overview

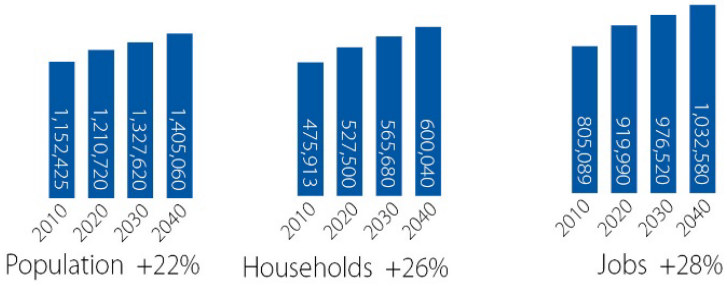
Hennepin County is the largest of Minnesota's 87 counties in terms of population, budget, and estimated market value. It encompasses 611 square miles, more than 100 lakes, 45 cities, 22 school districts, and one unorganized territory (Fort Snelling). Each has varying levels of partnership and jurisdiction with the county.

The diversity of land and communities in Hennepin County makes us unique, as well as a great place to live and work. We have a high-density downtown, growing suburbs, and rural areas where farms, lakes, and open spaces prevail. Residents have a wide variety of choices in housing, transportation, and lifestyle. Almost a quarter of Minnesota's residents have chosen Hennepin County as home.

The county has more than 1.2 million residents, including approximately 40 percent of the state's residents of color. Almost 17 percent of county residents ages five or older speak a language other than English at home, and nearly 13 percent of the county's population is foreign-born. Along with that diversity comes significant disparities by race and ethnicity — some of the largest in the nation — in employment, educational attainment, health, and socioeconomic status.

The county has one-third of the state's jobs and approximately 42,000 businesses including some of Minnesota's largest employers – Allina Health System, Best Buy, Cargill, Carlson Companies, General Mills, Mall of America, Medtronic, Super Valu, United Health Group, University of Minnesota, US Bank, and Target Corporation.

In addition, the county is home to the Minneapolis-St. Paul International Airport, the prestigious University of Minnesota, and the Mall of America — the largest shopping center in the United States.

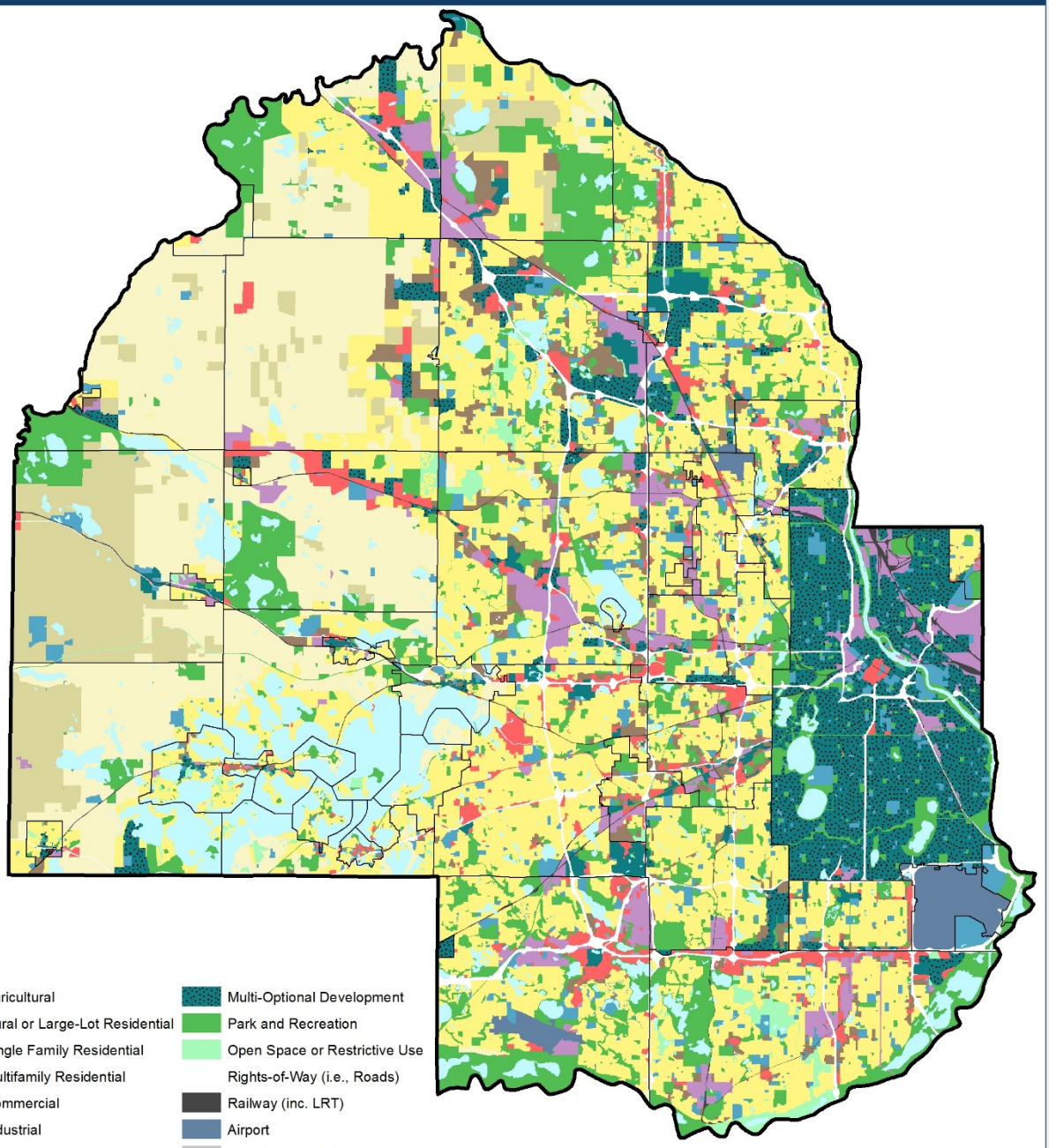


Hennepin County Forecasts 2040
(Source: Metropolitan Council)

Strategic investments and partnerships that leverage geographic diversity, infrastructure, the strength of the local economy, and increasingly diverse human capital are essential to the continued success and wellbeing of Hennepin County and its residents.

Planned Land Use - 2030

HENNEPIN COUNTY
MINNESOTA



- Agricultural
- Rural or Large-Lot Residential
- Single Family Residential
- Multifamily Residential
- Commercial
- Industrial
- Institutional
- Mixed Use
- Multi-Optional Development
- Park and Recreation
- Open Space or Restrictive Use
- Rights-of-Way (i.e., Roads)
- Railway (inc. LRT)
- Airport
- Vacant or Unknown
- Open Water

Disclaimer: This map (i) is furnished "AS IS" with no representation as to completeness or accuracy; (ii) is furnished with no warranty of any kind; and (iii) is not suitable for legal, engineering or surveying purposes. Hennepin County shall not be liable for any damage, injury or loss resulting from this map.

N

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Hennepin

Publication date: 11/20/2017

Data source: Metropolitan Council

Process

The Metropolitan Council, acting as the designated regional planning agency under the Metropolitan Land Planning Act, every 10 years develops a regional development framework and associated system and policy plans.

Regional development guide

Thrive MSP 2040 was adopted as the regional development guide on May 28, 2014. Thrive identifies five outcomes (stewardship, prosperity, equity, livability, and sustainability) that set the policy direction for the region's system and policy plans.

System and policy plans

The statutory-required system plans for this region include the *2040 Transportation Policy Plan*, *2040 Regional Parks Policy Plan*, and *2040 Water Resources Policy Plan*. The policy plans (the *Housing Policy Plan* and *Master Water Supply Plan*) establish a shared vision for regionally important issues, but are not considered regional systems.

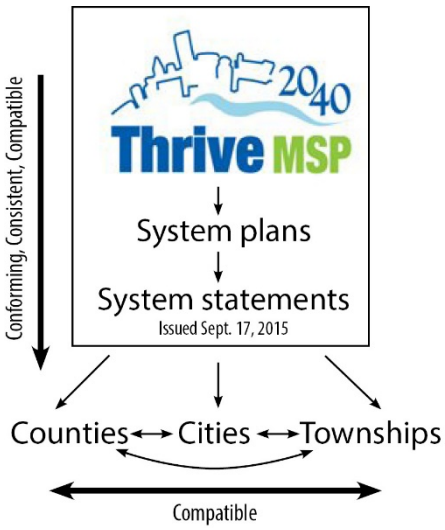
Local comprehensive plans

Local governmental units in the seven-county region are required to develop a comprehensive plan, fiscal devices, and official controls that conform to Thrive 2040 and the related system plans — the *2040 Transportation Policy Plan*, *2040 Regional Parks Policy Plan*, and *2040 Water Resources Policy Plan*.

Metropolitan Council review

The Metropolitan Council reviews comprehensive plans of all local governmental units, focusing on three primary areas:

- **Conformance** with metropolitan system plans
- **Consistency** with adopted policy plans
- **Compatibility** with plans of affected and adjacent jurisdictions



Partner agency review

Each city, township, and county reviews the comprehensive plans of government units adjacent to it or within its borders. Hennepin County reviews comprehensive plans for compatibility:

- plans within the county
- plans from adjacent cities and townships
- plans from adjacent counties: Anoka, Carver, Dakota, Ramsey, and Scott

Hennepin County

As a local unit of government, Hennepin County is required to develop a comprehensive plan that, at a minimum, responds to the system statement provided by the Metropolitan Council. Hennepin County received a system statement from the Metropolitan Council in September of 2015.

Hennepin County does not have land use authority, and as such, is not required to prepare a land use component.

Our sections include:

- Transportation (Mobility 2040 Plan)
- Regional Parks and Trails
- Water Resources
- Mississippi River Critical Corridor Area
- Implementation

Organizational structure

Development of the comprehensive plan was guided by the Hennepin County Comprehensive Plan Policy Advisory Committee (PAC), an external advisory committee with members appointed by Hennepin County commissioners. The PAC met periodically from mid-2016 through 2018.

Outreach and engagement

Outreach and engagement for the comprehensive plan was conducted in two phases. Phase one focused on receiving input and guidance from internal and external thought leaders — experts in regional and local affairs — through hosting of a series of idea forums, roundtables, and targeted interviews. Phase two focused on sharing the draft document and receiving feedback from internal staff, external partners, and the general public.

Timeline

2014	Thrive MSP 2040 comprehensive plan adopted by the Metropolitan Council
2015	Metropolitan Council develops regional system plans — transportation, water resources, and regional parks
	Metropolitan Council distributes system statements to counties, cities, and townships
2016	Hennepin County updates our comprehensive plan
2018	Hennepin County releases our plan for jurisdictional review (six months)
2018	Hennepin County submits plan to Metropolitan Council by 12/31/2018

HENNEPIN COUNTY
MINNESOTA

Mobility 2040

A plan for an integrated, multi-modal transportation system

May 2018

Transportation vision: To promote economic vitality and enhance quality of life by developing and operating a safe, environmentally responsible and multimodal transportation network.

Hennepin County Transportation
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- Access Management & Spacing Guidelines
- Entering Sight Distance Guidelines
- Typical Roadway Sections
- Turn Lane Needs Guidelines

Acknowledgements

Mobility 2040 was prepared by Hennepin County Public Works with assistance from Short Elliot Hendrickson (S.E.H.) and in coordination with local municipalities and other transportation partners. Mobility 2040 is a component of the Hennepin County 2040 Comprehensive Plan.

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The plan and supporting materials can be found at:

https://www.hennepin.us/your-government/projects-initiatives/comprehensive-plan

What Is Mobility 2040

Our transportation system has an enormous impact on our way of life, on the air we breathe, on our health, and on the vitality of our communities. Transportation choices influence decisions about where to live, shop, attend school, work, and enjoy leisure. They affect well-being, budgets, and the time we spend with our families.

We need to think of transportation as more than a means to move people, goods and information, but also a way to build healthy, opportunity-rich communities for all. Our transportation investments can be a vehicle to promote public health, sustainability, equitable opportunity, and economic vitality. When properly designed and maintained, our transportation system can improve safety, provide opportunities for active lifestyles, improve the natural environment, link people to opportunity, connect people to crucial services and social supports, and stimulate economic development.

Transportation System Overview

Valued at over $5.4 billion, our system includes 2,200 lane miles of roadways, 651 miles of bikeways, 379 miles of sidewalks, and 147 bridges. It also has 55 miles of rail corridors, two light rail transit lines, one bus rapid transit line, and one commuter rail line.

Continued investment will ensure that the existing system is well maintained while also improved to provide for the safe and efficient movement of people, goods, and information throughout the county.

Target Field Station in downtown Minneapolis

Washington Avenue using a Complete Streets design

Lowry Avenue Bridge crossing the Mississippi River

Mobility 2040 is Hennepin County's multi-modal long-range transportation plan providing overarching guidance for the county's transportation system.

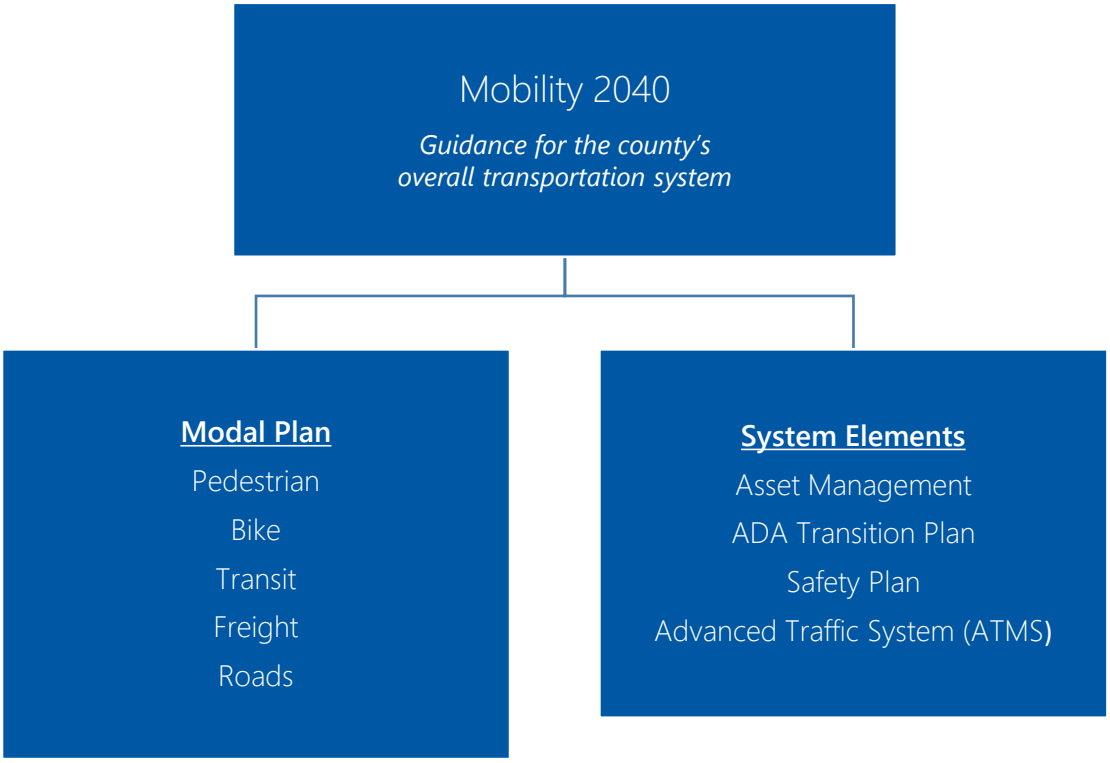
Mobility 2040 represents our focus on an integrated, seamless transportation system to serve people — all people — efficiently, affordably and safely.

Mobility 2040 provides guidance to enhance and expand transportation access for all while ensuring that transportation investments are efficient and support broader county goals, including growing our economy, reducing disparities, improving health, enhancing livability, and protecting the natural environment.

Mobility 2040 also serves as the transportation component of Hennepin County's Comprehensive Plan as required by Mn Stat. 473, and is consistent with and supports the plans, programs and initiatives of our transportation partners.

Mobility 2040 answers the question, "What are we trying to achieve?" It does not answer the question, "How will we do it?" The "how" is addressed in our modal and supporting elements plans and programs.

Mobility 2040: A Family of Plans Approach



Modal Plans and System Elements

Mobility 2040 follows a family of plans approach where Mobility 2040 provides overarching guidance for transportation decisions that filter down into specific plans and programs for each part of the transportation system. While we are involved in most aspects of the transportation system, our role varies depending upon mode.

- Pedestrian Plan
- 2040 Bicycle Plan
- Sales and Use Transportation Tax Plan
- Freight Study
- 2030 Transportation System Plan
- Safety Plan
- ADA Transition Plan
- Asset Management
- Advanced Traffic Management Sysem (ATMS)
- Complete Streets Policy
- Cost Sharing Policy

Full documents can be found at https://www.hennepin.us/your-government/projects-initiatives/comprehensive-plan

Beyond Transportation

Key Supporting Plans and Initiatives

Through internal and external partnerships, Hennepin County uses multimodal transportation investments to leverage our investments in community and economic development, environment and natural resources, affordable housing, community health, and employment.

Leveraging investments to meet multiple goals will maximize our return on investment and move us towards being a more prosperous, livable, connected, resilient and equitable county.

Land Use

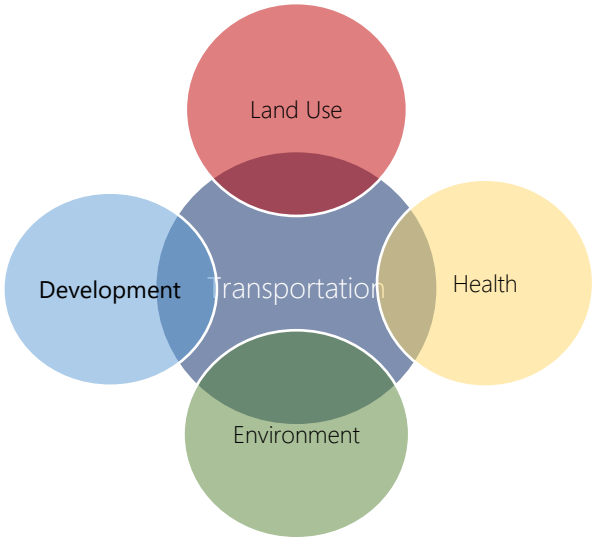
Transportation facilities and services have enormous effects on land use patterns, and the form, function, and location of land use development affects the need for transportation facilities. This is a long-standing relationship evidenced by the history of railroad towns and automobile-oriented suburban development. Strong integration and collaboration between transportation and land use will enable us to better manage growth, improve the efficiency of travel, and contain infrastructure costs.

Transit Oriented Development (TOD)

Established in 2003, the Hennepin County Transit Oriented Development (TOD) program provides needed capital to housing and economic development projects along transit corridors. From 2003 to 2017, over $36 million has been awarded, leveraging over $1 billion in public and private investment.

Community Works

Hennepin County Community Works partners with cities and other agencies, businesses, neighborhood organizations and residents to build the long-term value of communities, create and sustain great places, and make quality investments in redevelopment, transportation, public works infrastructure, parks, trails and the environment. Over $89 million has been invested in Community Works program areas, leveraging $883 million in public and private investment.



Active Living

Active Living provides safe, desirable and convenient opportunities to integrate physical activity into daily routines through biking, walking or taking transit, while building healthier and safer communities. Since 2006, Hennepin County has been a national leader in developing an Active Living program. Success continues to grow through Active Living Hennepin County, a partnership with cities, community organizations and other agencies to address policy change through infrastructure planning, targeted workshops and supportive tools (model policies, guidelines, toolkits).

Health in All Policies

Health in All Policies (HiAP) institutionalizes the consideration of health, eliminating disparities, and sustainability into decision-making across all sectors and at all levels to improve the health of communities and people.

Natural Resources Strategic Plan

Hennepin County's natural resources strategic plan guides the county and its partners in responding to natural resource issues and developing internal and external policies, programs and partnerships that improve, protect and preserve natural resources.

What We Heard

To inform development of the Hennepin County Comprehensive Plan and Mobility 2040, the county invited internal staff and observers of local and regional affairs, or "thought leaders" to share their thoughts and perspectives about the key issues and challenges facing the county. Between September 2016 and January 2017, four special meetings were devoted to panel discussions, or "idea forums" where participants were asked to share key issues and challenges facing Hennepin County over the next 10 to 20 years — as well as what they would recommend Hennepin County do to address these issues and challenges to remain successful. For more information, visit www.hennepin.us/your-government/projects-initiatives/comprehensive-plan

Idea Forum Panelists

Tawanna Black	Northside Funders Group
Susan Brower	MN State Demographer
Ed Ehlinger	MN Health Commissioner
Dr. Yingling Fan	University of Minnesota
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Dr. Sharon Pierce	MCTC
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Sharon Sayles Belton	Thompson Reuters
Deidre Schmidt	CommonBond
Charlie Zelle	MN Transportation Commissioner

Guidance

Policy Advisory Committee (PAC)

The Hennepin County Board of Commissioners established the Hennepin County Comprehensive Plan Policy Advisory Committee (PAC) to provide guidance and oversight for development of the Hennepin County Comprehensive Plan.

Technical Advisory Committee (TAC)

A technical advisory committee composed of subject matters experts was assembled to provide technical guidance for development of Mobility 2040.

Big Ideas to Explore

Augmented reality – Move service to people, not people to service

New innovative partnerships

3-D printing

Reverse globalization trends impacting logistics

Use waste heat from industry as energy for heating and cooling

With technology and changing demographics, expectations for engagement are changing

Last mile connection

Use TNTs

Drones, inspections and deliveries

Roadside plantings, habitat and biodiversity

Internet of Things (IoT) + shared mobility services = more travel choices

Adopt a Smart Cities model for integrating technology with services

Sharing economy, finding efficiencies and using excess capacity in systems (Uber, Airbnb)

Support local food production and access to reduce GHG emission

Make destinations great – housing, jobs, greenspace, arts/culture – and connect them with transportation

Explore electric vehicle fleets and charging stations

Flexible design – convert parking ramps to housing

Big data – improve service with "real time" information

Autonomous vehicles and sharing economy

Reclaim streets for other uses (greenspace)

Delivery systems, e-shopping + same day delivery = more traffic/freight

Explore district energy concept

Explore new funding mechanisms, user fees, pricing and PPPs

Reimagine infrastructure and use design to connect people, places, and infrastructure

Promote digital equity, provide equitable access to high-speed internet

Create mobility hubs

Address the spatial mismatch between people and jobs – jobs that are transit accessible

How Things Are Changing

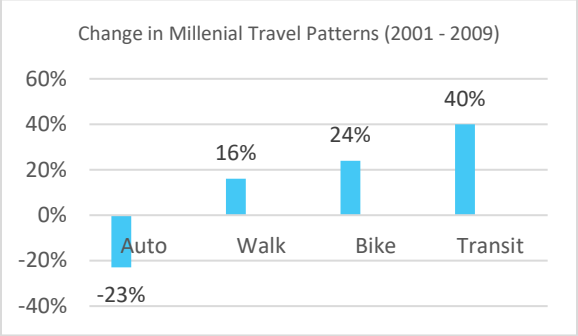
Key Trends and Challenges

Hennepin County is facing many changes from shifts in travel behavior, demographics, technology, and the environment. These shifts will affect how people, goods, and information move in the future. It is important that we proactively plan to address these changes to achieve our transportation vision.

Changing Transportation Preferences

Transportation preferences are changing. In the region, people are driving less, using a variety of transportation modes and showing a clear preference for living in walkable, transit-accessible neighborhoods.

Challenge: Hennepin County residents expect new and diverse mobility options that are affordable and available throughout the county.



Source: Federal Highway Administration "National Household Driving Trends 2001-2009"

Aging Population

Meeting the needs of an older population will require adjusting our services and infrastructure.

In 1990, 1 in 10 Hennepin County residents were aged 65 or older. By 2040, it is estimated this will increase to 1 in 3.

Challenge: Create a transportation system that provides safe, accessible and affordable transportation options to enable our growing senior population to age in place and remain healthy, active and socially connected.

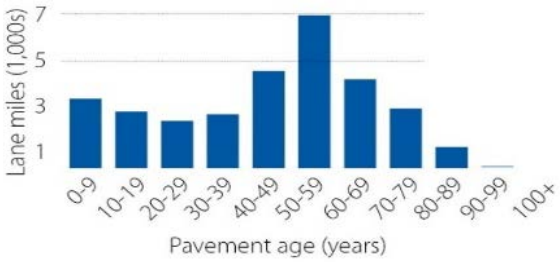
Continued Growth

We are the largest county in the state and projected to lead the region in population, household and job growth through 2040.

Challenge: Accommodating projected growth will place pressure on the county to maintain our existing transportation systems and to provide additional travel choices.

Aging Infrastructure

More than 30% of our roads are more than 50 years old and are nearing the end of their useful life. Ongoing maintenance, rehab and replacement is estimated to cost $2 billion.



Challenge: As we rehab and replace infrastructure, we need to explore new ways to incorporate new technologies, innovations, and adaptations.

Changing Climate

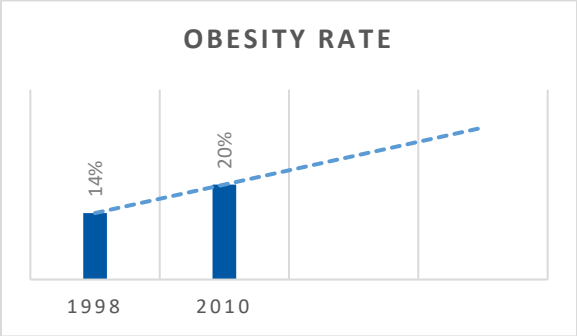
Increased temperature variation, precipitation levels, and the frequency of extreme weather events are impacting design, construction, maintenance and operations of our transportation system resulting in increased lifecycle costs.

Minnesota historic rain events 1866-2014

Challenge: We will need to explore emerging technologies and employ innovative practices to reduce the impact of the transportation system on the air we breathe, the water we drink, and the natural resources we enjoy.

Increasing Health Concerns

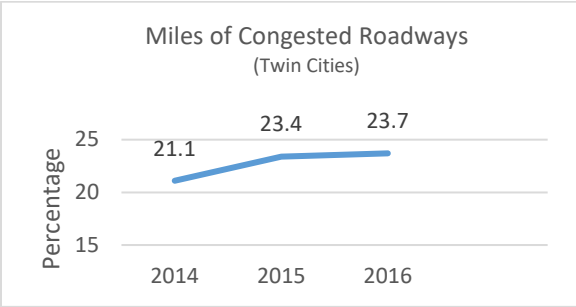
Health is linked to transportation. Investing in bicycle infrastructure, sidewalks, and transit creates opportunities for people to live active lifestyles. Hennepin County through its Activity Living program and Health in All Policies initiative is promoting active multi-modal transportation to help reduce obesity rates.



Challenge: Improve the health of Hennepin County residents by providing opportunities for physical activity, multi-modal access to nutritious, affordable foods, safe places to walk and recreate, and reducing exposure to traffic-related air pollution.

Economy

Economic growth in Hennepin County depends on an efficient, reliable, and affordable transportation system to maintain competitive commute times, retain and attract businesses, and support efficient movement of freight.

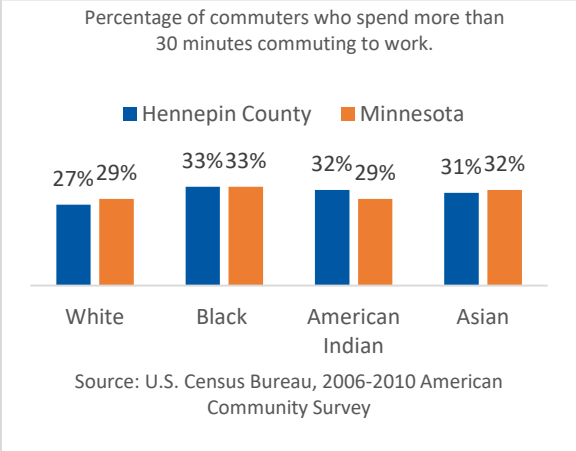


Source: Metropolitan Freeway System Congestion Report

Challenge: Use technology and innovation to support economic growth and personal and freight mobility by making more efficient use of the transportation system and preserving and maintaining our aging infrastructure.

Growing Disparities

People of color in Minnesota and Hennepin County are more likely to use public transportation and are also more likely to spend 30+ minutes commuting to work compared to their white counterparts.



Challenge: Provide a multimodal transportation system that is affordable and accessible to reduce the cost of transportation for cost-burdened households. We also must ensure that shared mobility and other technological advances are available to all residents regardless of economic status.

Technology

Technology is enabling the rise of a sharing economy and is redefining how, where, and when we work, travel and communicate. The transportation sector is relying on data to drive decisions, and on technology to reimagine how we move people and goods. Mobile access to everything from traffic data to transit schedules informs our travel choices.

Technological advances are changing residents' lives and how the county does business and the services we provide.

Challenge: While technological advancements have the potential to improve safety, mobility, and efficiency, we must recognize that without proactive planning and policy interventions, the technologies could result in increasing sprawl, vehicle miles traveled (VMT), and greenhouse gas (GHG) emissions, and limiting access for disadvantaged communities.

For more information on transportation trends, visit https://www.hennepin.us/your-government/projects-initiatives/comprehensive-plan to view the Transportation Trends Report.

How Will We Be Guided

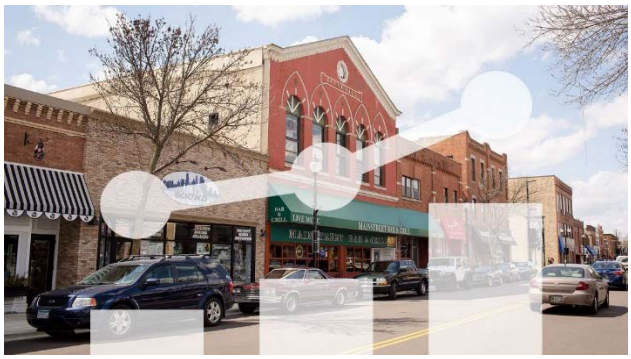
Our goals and objectives will guide investment and policy decisions to achieve our transportation vision, and our established performance indicators will measure and track our progress towards year 2040.

Addressing transportation challenges requires changing the way transportation is planned and managed. Increased focus on system performance, continuous improvement, innovation, and stronger partnerships is necessary to further integrate transportation elements to meet communities' mobility needs.

Transportation Vision

Hennepin County's transportation network promotes economic vitality and enhances quality of life by developing and operating a safe, environmentally responsible and multimodal transportation network.

Our transportation system is part of an integrated network of facilities that are owned, funded, and managed by federal, state, regional, and local entities. It is critical that these systems work together in a seamless fashion. The goals and objectives contained in this plan serve Hennepin County, but are also consistent with those of our primary partners at the federal, state and regional levels.



Federal – MAP 21 and FASTACT

- Improves mobility on America's highways
- Creates jobs and supports economic growth
- Accelerates project delivery and promotes innovation

State – MN Go Guiding Principles

- Leverage public investments to achieve multiple purposes
- Ensure accessibility
- Build to a maintainable scale
- Ensure regional connections
- Integrate safety
- Emphasize reliable predictable options
- Strategically fix the system
- Use partnerships

Regional – Transportation Policy Plan

- Transportation System Stewardship
- Safety and Security
- Access to Destinations
- Competitive Economy
- Healthy Environment
- Leveraging Transportation Investments to Guide Land Use

Hennepin County Transportation Goals

- Preserve and modernize our transportation system
- Improve safety, reliability, and comfort for all transportation users
- Provide affordable transportation choices and convenient access to destinations
- Improve our transportation system to enhance our quality of life, health, livability, and competitiveness
- Create a transportation system that protects and enhances the environment

Goals, Objectives and Performance Indicators

The adopted goals from the Hennepin County Transportation System Plan (TSP) 2030 were refined to reflect changes in policy, new initiatives, and needs of residents and businesses.

Our goals and objectives are intended to guide investment and policy decisions. A *goal* is a broad statement that describes a desired end state. An *objective* is a specific measurable statement that supports achievement of a goal. A *performance indicator* monitors progress towards the long-term goal and objectives.

Goal: Preserve and modernize our transportation system

Objectives

- Preserve and maintain the existing system to ensure it is in a state of good repair
- Prioritize preservation and maintenance of the existing system over system expansion
- Consider life-cycle costs to ensure we can maintain what we build
- Maximize the efficiency and effectiveness of our system through technological innovation
- Utilize right-of-way to expand access to communications and improve the movement of information, goods, people, and services

Performance Indicators

Indicator	Definition	Desired Trend	Baseline (2017)	Target (2040)
Preservation	Bridge Sufficiency Rating	↓	5.4%	4% with sufficiency rating less than 50
	Pavement Serviceability Rating (PSR)	↑	63.2%	67% of pavements with PSR > 3.0
	Overlay lane miles	↓	149	110
Modernization	% of signals connected	↑	TBD	100%
	Complete streets	↑	TBD	100%

Supporting plans, programs and partnerships

Americans with Disabilities Act (ADA) Transition Plan

2040 Bicycle Transportation Plan

Pedestrian Plan

Bridge Maintenance Program

Advanced Traffic Management System (ATMS)

Complete Streets Policy

Capital Improvement Program (CIP)

Goal: Improve safety, reliability and comfort for all transportation users

Objectives

- Improve safety and comfort for all system users, especially the disabled, elderly and youth
- Safely integrate modes through design, education, and enforcement
- Reduce congestion and improve travel time predictability and reliability for all system users to ensure the on-time delivery of goods and most efficient use of time
- Reduce the transportation system's vulnerability to natural and man-made incidents and threats

Performance Indicators

Indicator	Definition	Desired Trend	Baseline (2017)	Target (2040)
Safety	Crash rates (per million vehicle miles)	↓	3.35 per mvm	1.68 per mvm
Reliability	Hours to Plow	↓	4:19hrs Rural-4:30hrs Urban	5hrs
	Average Commute Time	↓	22.2 minutes	Below national average
Congestion	Volume to capacity ratio (all roadways)	↓	TBD	v/c < 1
	Intersection (county) LOS	↑	TBD	LOS D or better

Supporting plans, programs and partnerships

County Roadway Safety Plan

2040 Bicycle Transportation Plan

Pedestrian Plan

Advanced Traffic Management System (ATMS)

Capital Improvement Program (CIP)

Travel Demand Management programs

Goal: Provide affordable transportation choices and convenient access to destinations

Objectives

- Expand multi-modal travel options for people of all ages and abilities to connect to jobs and other opportunities
- Operate our system to efficiently and cost-effectively connect people and freight to destinations
- Provide a transportation system that is affordable and available to all users, regardless of mode of choice, ability or economic status
- Create connectivity within and between transportation modes to improve mobility
- Reduce transportation costs, especially for people in areas of poverty

Performance Indicators

Indicator	Definition	Desired Trend	Baseline (2017)	Target (2040)
Affordability	Housing + Transportation Cost Index	↓	44%	45% or less
Choices	% bike to work	↑	1.8% (2016)	3.4%
	Walk to work	↑	3.4% (2016)	N/A
	Regional Transit Ridership	↑	27 million	Double
	Vehicles miles traveled (VMT)	↓	2 billion	Reduce to 2000 levels
	Mode split (downtown Minneapolis)	↓	60% SOV	Less than 60% SOV
Access	# of households within ½ mile of transitways (FTA New Starts)	↑	TBD	TBD

Supporting plans, programs and partnerships

Americans with Disabilities Act (ADA) Transition Plan

2040 Bicycle Transportation Plan

Pedestrian Plan

Sales and Use Transportation Tax Plan

Transit Oriented Development (TOD) Program

2040 Bicycle Transportation Plan

AHIF, HOME, CBDG

Goal: Improve our transportation system to enhance quality of life, health, livability, and competitiveness

Objectives

- Create healthy and livable communities by including pedestrian, bicycle, and transit facilities in roadway projects
- Strengthen the connection between land use planning and transportation to promote orderly growth and development
- Target our transportation investments to create opportunities for people to live active and healthy lifestyles
- Link transit, bicycle, pedestrian and road projects to housing, jobs and recreational opportunities
- Provide convenient, affordable access to destinations, especially for residents experiencing high transportation and housing cost burden
- Implement context-sensitive projects that respect cultural, historic and natural resources
- Use transportation investments to support broader county goals including growing our economy, reducing disparities, improving health, enhancing livability, and protecting the natural environment

Performance Indicators

Indicator	Definition	Desired Trend	Baseline (2017)	Target (2040)
Quality of Life Livability	Change in per-parcel estimated market value	↑	TBD	TBD
	ADA pedestrian ramps in compliance	↑	53%	100%
Health	# of mile of bicycle facilities built	↑	18 miles	20 miles/year
Competitiveness	# of jobs	↑	919,990 (2020)	1,032,580 (2040)

Supporting plans, programs and partnerships

Americans with Disabilities Act (ADA) Transition Plan

2040 Bicycle Transportation Plan

Pedestrian Plan

Sales & Use Transportation Tax Plan

Transit Oriented Development (TOD)

AHIF, HOME, CBDG

Natural Resources Strategic Plan

Complete Streets Policy

Goal: Create a transportation system that protects and enhances the environment

Objectives

- Reduce energy use and/or use alternative power to reduce emissions and benefit air and water quality
- Decrease the risk of flooding for facilities through location and adaptive design
- Minimize exposure to natural and man-made hazards
- Mitigate the negative stormwater impacts that degrade the region's valuable gray and green infrastructure
- Use transportation projects as opportunities to restore or improve natural resource features and habitat
- Promote the installation of stormwater BMPs, sustainable landscapes and improve the tree canopy in transportation corridors
- Explore and implement road salt reduction strategies
- Improve air quality by encouraging alternate modes of transportation and shorter commutes

Performance Indicators

Indicator	Definition	Desired Trend	Baseline (2017)	Target (2040)
Environment	Wetland acres preserved/restored	↑	TBD	TBD
	Roadway salt use	↓	TBD	TBD
	Trees planted versus removed	↑	N/A	Planted > Removed
	National Ambient Air Quality Standards (NAAQS)	↑	Attained	Attainment
	Vehicle mile traveled (VMT)	↓	2 billion	Reduce to 2000 levels

Supporting plans, programs and partnerships

Natural Resources Strategic Plan

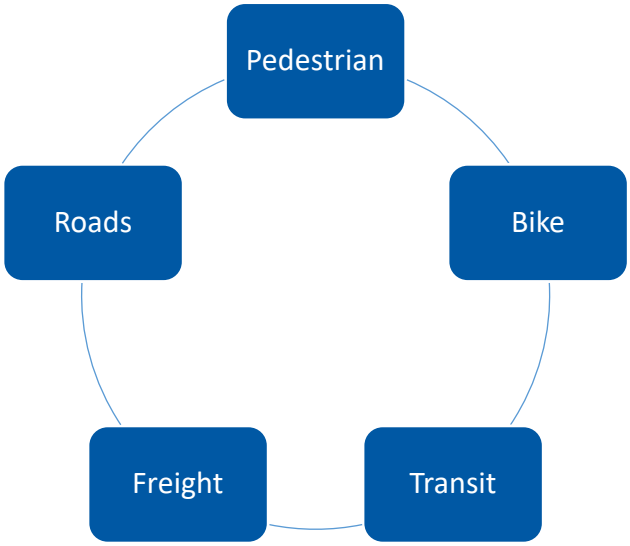
Sustainable Landscape Guidelines

Our Transportation System

To remain a competitive county with a high quality of life, we need to invest in transportation infrastructure that maximizes mobility, accessibility, public health benefits, social interaction, and community cohesion. We also need to improve transportation networks in ways that offer competitive travel choices for people and goods, promote clean energy, create better balance and connectivity among modes, and enhance affordability.

Integrated Multimodal System

People and goods move easily and safely throughout the county and the region, via an integrated system of transportation.



The county collaborates with partners to provide an integrated multimodal transportation system that is designed, built, operated, and maintained in a manner that provides mobility options for a wide range of users, contributes to safe communities for all, promotes economic competitiveness, and helps to safeguard and enhance our natural resources and environment. We do this by:

- Delivering a multimodal transportation system that is integrated, connects people to places, and leverages other investments to maximize return on investment
- Maintaining and preserving infrastructure that facilitates the efficient movement of people, goods, and information
- Employing technology and innovation
- Coordinating with cities to support density and growth in the urban area and meet the diverse transportation needs of our residents and businesses
- Providing opportunities for people to make active transportation choices by increasing the convenience, accessibility, safety, and comfort of taking transit, walking and biking
- Providing transportation choices and modes that use less energy, produce fewer pollutants and reduce greenhouse gas emissions
- Monitoring and measuring performance to continuously improve our transportation system

Transportation modes

The current modes composing the transportation system in Hennepin County include pedestrian, bicycling, transit, freight (trucks, rail, air and water), and roads. These modes are discussed later in this chapter.

Future considerations

Emerging modes include autonomous and connected vehicles and mobility as a service (Maas).

Vehicle technologies are advancing rapidly with a trend toward vehicles that are zero-emission, autonomous, and connected, which will cause us to rethink the way in which roads, sidewalks, and curb space are allocated, and can potentially help to facilitate a more comprehensive implementation of Complete Streets concepts that provide safe space for everyone and every mode.

An autonomous vehicle (AV), also known as a self-driving car, is a vehicle that is capable of sensing its environment and navigating without a human. The potential benefits of AVs include increasing mobility for the elderly, the disabled, and the transit-dependent; eliminating many vehicle accidents; improving bicycle and pedestrian safety; revolutionizing delivery services and logistics; and reducing parking.

Connected vehicles (CVs) can communicate with each other through in-vehicle and wireless technology and can communicate with smart infrastructure and other connected devices like smartphones or wearable technology. CVs can further improve safety across modes and transportation system operations.

Mobility as a Service (MaaS) is providing people with on-demand access to a wide range of public and private shared mobility services where access can be purchased as needed. While shared mobility is not a new concept, technology has allowed for explosive growth in recent years with on-demand rideshare, dynamic carpooling, ridehailing, bikeshare, carshare, and microtransit.

System Elements

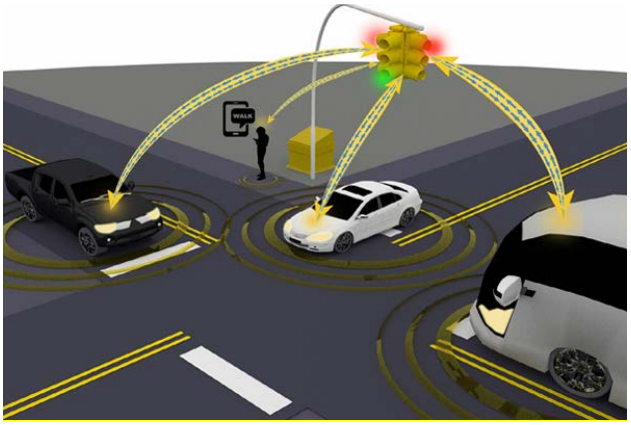
We are committed to using resources wisely to effectively manage and increase the efficient operations of our transportation system.

For an integrated multimodal transportation system to function well, it must be appropriately managed and operated. We do this primarily through focusing on what we call system elements — Asset Management, System Safety, Advanced Transportation Management System (ATMS), Functional and Jurisdictional Classification, Right-of-Way Preservation, Access Management, and Travel Demand Management. These system elements are discussed later in this chapter.

Future Considerations

As we look to the future, we need to consider the impact of rapidly changing technology on the operations and management of our transportation system. Historically, the solution to congestion and capacity issues has been to expand or build new facilities. This is not likely the optimal strategy for the future, as transportation financing becomes more constrained, and as technological infrastructure and "big data" are better at facilitating new approaches to address capacity issues.

Recently, we have seen the evolution of "smart cities," which are connected cities that use technology to enhance the quality and performance of public services, such as energy and transportation, in order to reduce resource consumption and increase responsiveness and overall efficiency of operations.



An example are "smart intersections" that combine advances in technology to increase capacity, improve safety, and reduce fuel consumption and emissions. Strategies can include corridor signal timing coordination, predictive/adaptive arterial signal timing, and multi-modal intelligent traffic signal systems.

In order to continue to increase the carrying capacity of our system, we need to be thinking about how technological infrastructure and "big data" can facilitate new approaches to address capacity issues.

While there is a great deal of uncertainty about how these technology trends will evolve, there is no doubt that they have the potential to provide great benefits for Hennepin County. Proactive planning, policy interventions, and investment decisions can guide the integration of technology and new mobility services toward an equitable and sustainable transportation future.

Future updates of this plan will include an analysis and recommendations for integration of AVs/CVs, Maas, Drones, "big data" and other innovations into our transportation system.

Pedestrians

Everyone is a pedestrian

Hennepin County recognizes that walking and pedestrian infrastructure provide numerous benefits to residents and communities. Walkable communities have a high quality of life, improve personal and environmental health, and promote strong and connected communities and economies.

Every person is a pedestrian at some point in their day, although the role of walking in the daily lives of county residents varies widely. For some residents, their walk is a short stroll from their parking space to their office building. Others walk one mile or more from their home to school or work. Some use a wheelchair to travel from their home to their bus stop. Others walk to exercise, socialize, and experience their neighborhood or park. Despite the diversity of pedestrians and the purpose of their trips, people share a common desire for a safe, comfortable, and convenient pedestrian experience.

406 miles of sidewalk

102 miles of multi-use trail

(along county roads in 2012)

According to the 2010 MSP Region Travel Behavior Inventory pedestrian trips (walking) has increased by sixteen percent as a percentage of all trips in the Twin Cities Metropolitan Area. Hennepin County will continue to be involved with providing pedestrian accommodations through roadway construction projects and coordination with other agencies to assist in spanning major barriers to pedestrian movements.

Role and Partners

Historically, the cities within Hennepin County have been primarily responsible for providing pedestrian facilities. Hennepin County has supported pedestrian movements by incorporating provisions into the design of county roadway facilities.

Often, individual cities within the county and Three Rivers Park District participate in the costs of new sidewalk and trail construction, and once constructed, these jurisdictions assume responsibility for the on-going maintenance and operation of these facilities.

https://metrocouncil.org/Transportation/Planning/Transportation-Behavior-Inventory.aspx

Plans, Programs and Initiatives

Hennepin County Pedestrian Plan, 2016

The Hennepin County Pedestrian Plan, includes strategies that support walking and pedestrian movements through infrastructure, facilities, enforcement, education and evaluation.

Figure 4-01, illustrates the priority locations for future pedestrian infrastructure throughout Hennepin County.

American with Disabilities Act (ADA) Transition Plan, 2015

We seek to make our roadways and pedestrian infrastructure more accessible to individuals with disabilities. In 2015, we developed a county-wide ADA Transition Plan, detailing how we will ensure that all facilities are accessible to all individuals.

ADA Accessible Ramps

Our goal is to provide ADA-accessible pedestrian design features as part of all projects included in the capital improvement program (CIP) making it easier for everyone of all ages and abilities to safely and efficiently use the pedestrian system as a means of transportation

Traffic Signals

County traffic signals are being upgraded with accessible pedestrian signals that audibly and visibly communicate to pedestrians with "WALK" and DON'T WALK" phases. The signal upgrades are scheduled based on priority and available funding in areas where improvements are needed.

Complete Streets Policy

Hennepin County has adopted a Complete Streets policy that complements pedestrian movements and solidifies the County's commitment to develop and maintain a safe, efficient, balanced and environmentally sound county transportation system that supports the County's Active Living initiatives.

Sidewalk Participation Program

The Sidewalk Participation Program was established in 2012 to expand and enhance the network of sidewalk along Hennepin County roads. Since the program began, 23 sidewalk projects at a total cost of $1.1 million have been implemented.

Southwest and Bottineau Community Works

Last mile connections, including sidewalks, were identified for implementation prior to open day of these transitway projects.

Pedestrian Education

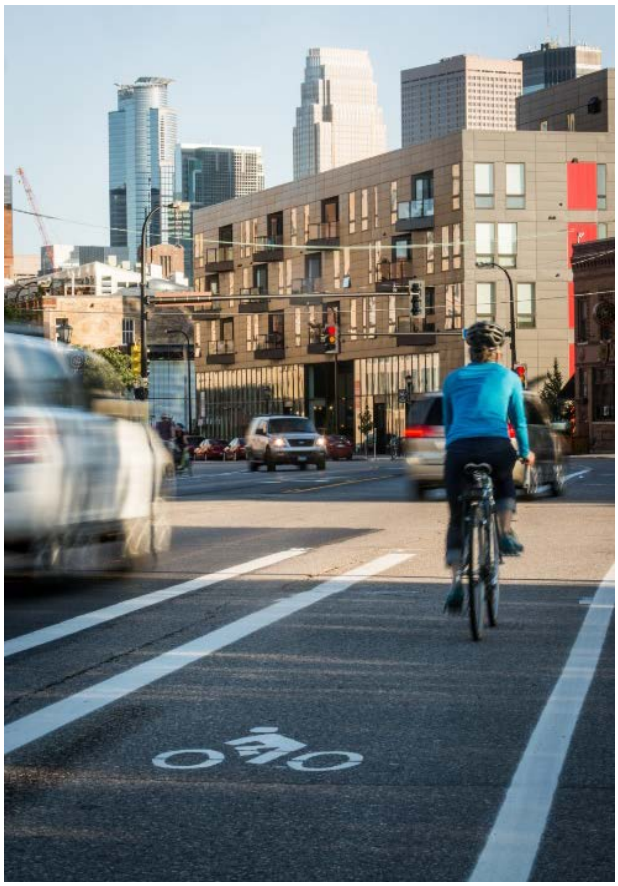
Hennepin County administers Heath@Work, Step To It, Safe Routes to School, and Active Living Hennepin County to support pedestrian activity and educate users of our system.

Bicycling

A vehicle where passengers are also the engines

Bicycling is an integral component of a balanced, sustainable and efficient multi-modal transportation system. Bicycles provide an extremely efficient means of transportation, requiring less right of way space than vehicles. Bicycles also extend the reach of the non-motorized network, maximizing geographic coverage without emitting greenhouse gases.

Bicyclists utilize paved shoulders and designated bike lanes on existing roadways. These non-motorized trips are not only growing in total number as more and more people bike as a mode of transportation, but bicycle trips are becoming more common during all seasons of the year. As a result, there is a growing need to maintain safe bicycling conditions even during snowy winter months.



673 bikeway miles in Hennepin County

Biking accounts for nearly 2% of all trips in Hennepin County

2 x the national average

Currently, there are 775 miles of bikeways on the Hennepin County Bicycle Network, which includes some bikeways not on county roads. Of the 775 miles, 517 miles are off-street facilities and 258 miles are on-street.

Also, within this system, the Three Rivers Park District operates approximately 135 regional trail miles, with 55 of these miles on Hennepin County Regional Railroad Authority right of way. These facilities provide access to regional and local parks and give residents safe and comfortable non-motorized transportation options for work, shopping and other trips by providing safe and comfortable connections to destinations.

Role and Partners

Hennepin County has been an active participant in planning, promoting, designing, and constructing bicycle facilities. The county has continued a collaborative effort with communities and other agencies to develop an interconnected system of bikeways. The Hennepin County roadway network serves many on-street bicycle trips. As a result, the county is responsible for ensuring the safe and comfortable use of these facilities for non-motorized users.

Key partners include the Three Rivers Park District , the Minneapolis Park and Recreation Board, and local communities. The communities located in Hennepin County also have non-motorized (bicycle) facilities that interconnect to and enhance the system of trails throughout the county.

Plans, Programs and Initiatives

2040 Bicycle Transportation Plan, 2015

In 2015, Hennepin County and the Three Rivers Park District collaborated to update the Hennepin County 2040 Bicycle Transportation Plan as well as the park district's regional trail master plans. A primary goal of the Hennepin County bikeway network is to develop an integrated bicycle system that allows users of all ages and varying skills to safely, efficiently and comfortably connect to and between job centers, commercial centers, recreational amenities, schools, transit facilities and other important destinations.

The Plan goals include:

- *Ridership Goal* – promote the bicycle as a mode of transportation that is practical, convenient, and pleasant for commuting, health and exercise, and outdoor recreation.
- *Bikeway System Goal* – Collaboratively build an integrated county bicycle system that allows bicyclists of varying skills to safely, efficiently and comfortably connect to and between all destinations within the county.
- *Safety and Comfort Goal* – Create a safe and comfortable county bikeway system.
- *Sustainability Goal* – Implement bikeways and support facilities as an essential tool in realizing environmental, social and economic sustainability.
- *Maintenance Goal* – Protect the county's and the park district's investments.

By 2040 the Hennepin County bikeway network is planned to include 540 miles of additional bikeways, both on and off-street facilities.

Figure 4-02 depicts the existing and planned bikeway system in Hennepin County.

Hennepin County Bicycle System Gaps

In 2002, Hennepin County completed a bicycle gaps study that identified 110 system gaps and prioritized the top 25 system gaps. To date, about half of the critical gaps have been addressed and more than 60 total gaps have been closed.

Figure 4-03 illustrates the remaining system gaps as of March 2015.

By 2040, the county intends to work with partners to close the remaining gaps in order to realize the County's vision of an interconnected system that eliminates gaps and barriers in order to maximize safety and mobility of the system.

Southwest and Bottineau Community Works

Last mile connections, including bike facilities, were identified for implementation prior to opening day of these transitway projects.

Metropolitan Council's Regional Bicycle Transportation Network (RBTN)

In 2014, the Metropolitan Council completed the Regional Bicycle System Study , which was intended to address how the region's bikeways and trails connect and work together to serve regional bicycle trips. The study developed a vision for the regional bicycle network called the Regional Bicycle Transportation Network (RBTN), illustrated in Figure 4-04.

Transit

Moving people where they want to go

Public transportation is crucial to providing personal mobility and an affordable travel option for residents in Hennepin County. Transit services and facilities provide people with mobility and access to employment, community resources, medical care, education, and recreational opportunities

Public transit systems also help create economically thriving communities and offer location advantages to businesses and individuals choosing to work or live in them.

Transit facilities and services have the potential to guide compact, mixed-use, walkable development patterns that can lower housing and transportation costs

Transit options help reduce congestion on our roadway, reduce travel times, improve air quality, and reduce energy and oil consumption, all of which benefit both riders and non-riders.

Role and Partners

The primary responsibility for construction and operation of transit facilities and services in Hennepin County lies with the Metropolitan Council, Metro Transit and our suburban transit providers - Maple Grove Transit, Plymouth Metrolink, and Southwest Transit.

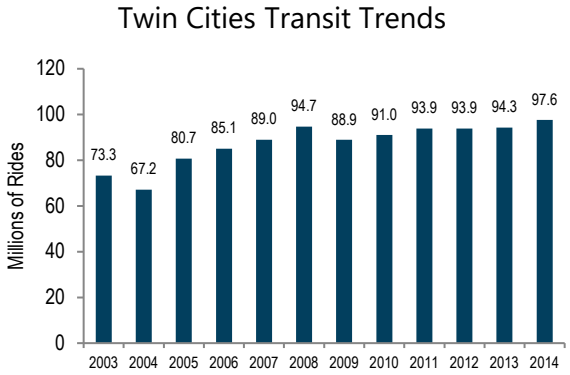
While we do not own, operate, maintain or provide transit services and facilities, Hennepin County plays a critical role in working with partners to build out the regional transit system.

Bus transit lines today and future BRT lines will be located in county roads, which requires close coordination to ensure that our roadways are designed and operated to ensure safe, effective, and accessible transit service.

Hennepin County is also actively engaged through the work of the Hennepin County Regional Railroad Authority (HCRRA) in progressing, in partnership, transitways which compose the county's future vision. In addition, the HCRRA was also responsible for early preservation of rail rights-of-way for future LRT use. The railroad authority currently owns 55 miles of former railroad corridors for potential future transit use. In the interim, bicycle commuter trails have been constructed on all 55 miles – increasing transportation and recreational opportunities for residents. These trails are maintained by the City of Minneapolis or Three Rivers Park District. For more information, visit https://www.hennepin.us/transit

Through Southwest and Bottineau Community Works, Hennepin County works with partners to maximize return on investment from LRT by focusing "beyond the rails" to integrate transit oriented development, jobs, housing, and natural systems. Targeted development along these corridors increases attractiveness for businesses and enhances equity by improving affordable access. Station area planning and infrastructure investment planning are two key activities of these partnerships to connect people to places.

Hennepin County took the lead role in planning and funding Target Field Station, recognizing as far back as 2008 the need for larger facilities at Target Field to accommodate crowds that would use multiple rail transit lines on Minnesota Twins game days. In addition to its role as a transit hub, Target Field Station serves as a public space for everyday use by residents and visitors, and for special events. Working in partnership with Minneapolis Downtown Council and the Minnesota Twins, over 70 events were held in 2016, in addition to events supporting 81 home baseball games and the broadcast of 81 road games on the 29 ft. x 16 ft. video board.



Twin Cities Transit ridership has increased by 24 million rides since 2003.

Plans, Programs and Initiatives

Metropolitan Council's Transportation Policy Plan (TPP)

The 2040 Transportation Policy Plan (TPP) presents the region's policies and plans to maintain and enhance existing transportation facilities, better connect people and communities, and provide more transportation choices that will make the region a better place to live.

The TPP also includes two future scenarios for transit service in the region, the Current Revenue Scenario and the Increased Revenue Scenario. The Current Revenue Scenario, is fiscally constrained to currently projected future revenues. The Increased Revenue Scenario is not fiscally constrained, but includes a reasonable assumption for potential increased future revenues.

Current Revenue (Fiscally Constrained) Scenario

- METRO Green Line (Southwest) Extension
- METRO Blue Line (Bottineau) Extension
- METRO Orange Line (I-35W BRT)
- C Line (Penn BRT)

Increased Revenue Scenario

- I-394/Hwy 55 Highway BRT
- US 169 Highway BRT
- Riverview and Midtown Modern Streetcar
- W. Broadway and Nicollet ABRT or Modern Streetcar
- Chicago Emerson-Fremont, Lake – Marshall, American Boulevard and Central NE ABRT

See Figure 4-05 for the existing and planned transit services and facilities in Hennepin County and the Twin Cities area.

Hennepin County staff participate in technical advisory committees for the projects included in the Metropolitan Council's TPP.

Hennepin County Regional Railroad Authority

Hennepin County Regional Railroad Authority (HCRRA) was established in 1980 to preserve rail corridors and conduct rail transit planning in the county. HCRRA provides funding via a property tax levy for up to 10% of the capital costs for designated light rail transit projects.

Hennepin County

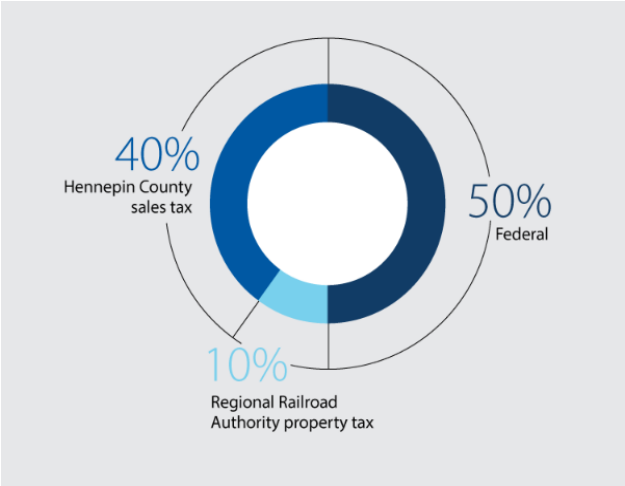
Recently the County's role in financing the development and operation of transit services changed with the disbanding of the Counties Transit Improvement Board (CTIB).

Sales and Use Transportation Tax Implementation Plan

In 2017, the Hennepin County Board adopted the Sales and Use Transportation Tax Implementation Plan and enacted the Sales and Use Transportation Tax to provide a reliable source of locally generated funds to strategically target transitway and other transportation investments.

The estimated annual revenue from the sales and use tax are anticipated to be sufficient to cover the capital and operating costs of the Sales and Use Transportation Tax Implementation Plan projects through 2036.

By 2040, the METRO Green Line (Southwest) extension, the METRO Blue Line (Bottineau) extension are assumed to be operational expanding the LRT system to four lines.

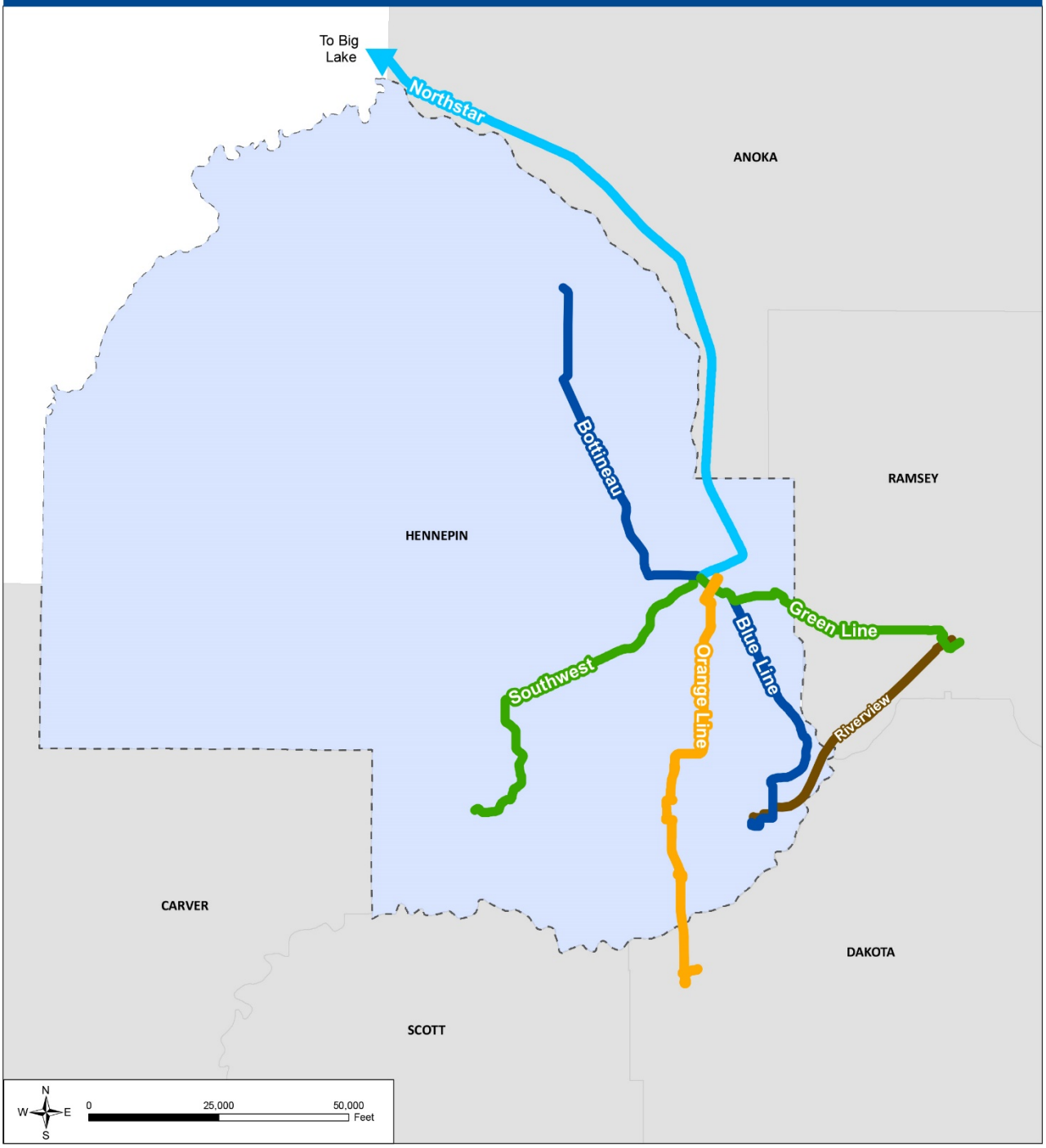


Typical funding of a new line

Projects eligible to be funded include:

- Capital costs of the Green Line Extension (Southwest LRT), Blue Line Extension (Bottineau LRT), Riverview Corridor and Orange Line (bus rapid transit) projects;
- Operating costs of the Green Line (including any extensions), the Blue Line (including any extensions), Riverview Corridor, Orange Line, and Northstar projects;
- Capital costs associated with other transportation or transit projects or improvements, as identified in Hennepin County's Capital Improvement Program (CIP), and operating costs, to the extent designated in the future by the County Board after a public hearing.

Transportation Tax Projects



Map version date:5/19/2017

Data source: Hennepin County, Met Council

This map (i) is furnished "AS IS" with no representation as to completeness or accuracy; (ii) is furnished with no warranty of any kind; and (iii) is not suitable for legal, engineering or surveying purposes. Hennepin County shall not be liable for any damage, injury or loss resulting from this map.

Hennepin County Public Works

Transit Oriented Development (TOD)

Transit Oriented Development supports both redevelopment and new construction that enhances transit usage. Support projects and developments that generally: enhance transit usage, increase density along transit corridors, reinforce both the community and the transit system, exhibit a compact and efficient use of available space, rather than auto-oriented sprawl, contain a diversity and mix of uses with daily conveniences and transit at the center, support pedestrian-friendly physical design that encourages walking, bicycling and access for people with physical disabilities, and are within a comfortable walking distance to transit

Southwest and Bottineau Investment Frameworks

Investment frameworks identifying infrastructure (roads, sidewalks, bicycle facilities, sewer and water) needs by opening day of service were developed for the METRO Green Line (Southwest) extension and the METRO Blue Line (Bottineau) extension. The purpose was to identify infrastructure requirements to aid in transitioning the station areas into transit oriented development (TOD) districts.

Freight

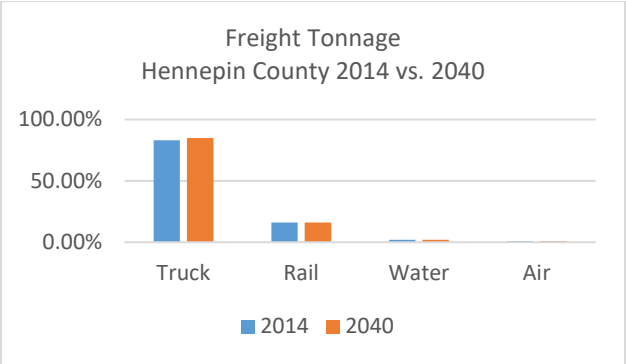
Moving goods efficiently and effectively

The efficient movement of freight by truck, rail, air and water is vital to the economic health of Hennepin County. The Twin Cities region, including Hennepin County, is the primary freight hub for Minnesota and the upper Midwest. Freight-intensive industries for the region include agriculture, mining, construction, wholesale and retail trade, manufacturing, and transportation and warehousing.

Transportation is a critical consideration for many of our businesses. Congestion, lack of good connections from major highways to freight warehouses and distribution centers, and deteriorating roads are all factors that affect commercial transportation costs and the attractiveness of Hennepin County.

Freight-intensive industries account for 33% of Hennepin County jobs in 2014.

In 2014, over 828 million tons of freight traveled within, to, or through Hennepin County via truck, rail, water (Minnesota River), and air. By 2040, total tonnage is expected to increase to over 1.1 billion tons, an increase of 37%. The bulk of that increase will be transported on roadways.



$230 million annually in congestion delay costs for trucks
(Twin Cities, Texas Transportation Institute)

Several industry changes are shaping the future of freight transportation. Technology and innovation are better managing truck fleets, rail operations and other freight logistics. Dispatching and freight routing software are improving fleet utilization and are accelerating the speed at which products move throughout the market (e.g. emergence of same-day-delivery service).

The growth of last-mile delivery and demand for next- and same-day service is pushing freight logistics beyond traditional hub and spoke models to regional options, crowdsourcing, digital, and smart automation. The potential impacts over time for changing consumer preference from brick and mortar retail locations to home delivery may be significant for transportation.

The impact of these trends is still emerging, and future updates of this plan will reflect any changes in our transportation system.

Role and Partners

Keeping the freight transportation system running in good order requires collaboration and coordination among many partners. While the private sector owns and operates most of the freight transportation system, public sector agencies have important roles in planning for the future of the system, setting overall policy direction for transportation, funding projects that benefit goods movement, and owning and maintaining transportation infrastructure.

Hennepin County's primary role in freight transportation is ensuring the county road and bridge networks are maintained in a state of good repair and managed to reduce congestion, which negatively impacts freight delivery. Freight moves along Hennepin County roadways and a portion of freight rail track in Minneapolis owned by the Hennepin County Regional Railroad Authority (HCRRA). Hennepin County incorporates truck freight movement on county roads as part of the planning, design, construction, operations, and maintenance of the roadway system.

Key partners include the private sector, the Minnesota Department of Transportation, and the Metropolitan Council.

Trucking

The primary mode of transportation for freight to, from, within, and through Hennepin County is the roadway system. Trucks move 83 percent of goods in Hennepin County by weight and 65 percent by value (excluding through traffic), and also provide first- and last-mile connections for goods moving in and out of rail and air terminals. The County State Aid Highway System (CSAH) provides through or bypass routes connecting other roadways, and first- and last-mile connections to local customers and businesses.

Figures 4-06 and 4-07 depict regional truck corridor and existing truck volumes on state highways and several county roadways.

Intermodal Facilities

Intermodal terminals provide the opportunity for freight to transfer from trucks to and from rail, barges, pipelines, and airplanes. These terminals relieve the highway system of truck trips by allowing for the movement of freight by other modes for at least a portion of the trip.

The two largest rail yards in Hennepin County are Humboldt and Shoreham, both owned by Canadian Pacific. Humboldt Yard is primarily a switching and transloading yard handling forest products, plastics, and aggregates. Shoreham Yard is one two major intermodal facilities in the Twin Cities region.

In many cases, local roadways provide the "last-mile" connection between intermodal terminals and the metropolitan highway system, which is part of the National Highway System (NHS). The only freight intermodal terminal within Hennepin County currently served by an NHS intermodal connector, CSAH 153/Lowry Ave., is the Shoreham Yard.

Hennepin County supports truck freight movement by developing a system of 10-ton routes and connecting them to major intermodal freight terminals. Roadway design considerations to support freight movement include lane widths, intersection turning radii, intersection control type (stop control, signalization, and roundabouts), bridge sufficiency – clearance height and/or width, and locations with unprotected road crossings of active rail lines.

Freight Rail

Freight traffic is growing nationally and locally in Hennepin County. At the same time that freight traffic is growing, due to rail mergers and abandonments more freight traffic is being concentrated on fewer routes.

The growth in freight traffic is expected to continue due to its ability to offer distinct advantages over other options in terms of fuel efficiency, carbon footprint, and congestion.

The vast majority of goods handled by rail travel through the County without stopping. In 2014, 95 percent (4.3 million units and 122 million tons) of rail freight in the County was through movements. Much of this traffic was comprised of crude oil, ores, and grain travelling from the Upper Midwest and Great Plains to Chicago and Eastern markets. About 6 million tons of rail freight (194 thousand units) originated and/or terminated in Hennepin County facilities, including CP's Humboldt and Shoreham yards.

There are approximately 172 track miles of freight rail infrastructure in Hennepin County.

Railroad	Miles	Percentage
Class 1 (Canadian Pacific, Burlington Northern Santa Fe, & Union Pacific)	155	90%
Class II (Twin Cities & Western Railroad, Minnesota Commercial Railway, & Progressive Rail Inc.)	15	7%
Hennepin County Regional Railroad Authority (HCRRA)	2	1%

Figure 4-08 illustrates freight facilities and rail infrastructure ownership across Hennepin County.

Plans, Programs and Initiatives

Twin Cities Regional Truck Highway Corridor Study

In 2017, the Metropolitan Council conducted the Regional Truck Highway Corridor Study to identify and prioritize regional truck highway corridors. Of the 30 top truck delay hotspots identified, nine are located within Hennepin County.

Table 4-01 lists the nine roadway segments located in Hennepin County and provides the corresponding delay by corridor.

State Rail Grade Crossing Safety Project Report

In 2016, the Minnesota Department of Transportation conducted a 10-year crash analysis (2004 to 2013) for all Minnesota counties and identified Hennepin County as having the highest number of total crashes (55) and the second highest number of fatal plus injury crashes (9) at rail grade crossings.

Currently, there are 272 public at-grade rail crossings for vehicles and pedestrians in Hennepin County and 49 of those are located on the Hennepin County roadway network. Safety at these crossing remain a high priority for Hennepin County and we will continue to pursue high benefit-low cost at-grade rail crossing improvements and expanded educational programs to improve safety.

Hennepin County Freight Study, 2016

In 2016, Hennepin County conducted the Hennepin County Freight Study to understand how the County's transportation networks are being used for the handling of freight.

As a first step to actively collect and monitor freight data, county staff have strategically selected 60 existing Hennepin County traffic count stations to upgrade counter equipment, utilizing advanced technology to better distinguish commercial truck traffic from general automobile traffic. Our enhanced data will help better determine specific needs and priorities along our system.

Cargo Oriented Development

Hennepin County staff participate in a regional task force on 'Cargo Oriented Development' (COD). COD is an initiative by the Center for Neighborhood Technology which among other goals, seeks to match regionally preferred industrial land which has potential for redevelopment with the need to provide for greater worker access to jobs in the region. The COD initiative has recently been awarded a grant through the McKnight Foundation for a two-year study of feasibility in the Twin Cities.

Aviation

Air transportation, both for passengers and cargo, plays a key role in our economic competitiveness by providing access to global markets and enhancing links within and between businesses. In addition, the aviation industry is a major industry in its own right, employing large numbers of highly skilled workers.

The Minneapolis – St. Paul (MSP) Airport Long-Range Plan, forecasts that air cargo operations and tonnage is expected to increase at an average rate of 1.6 percent between 2008 and 2030.

86,900 jobs

$2.5 billion in annual spending by visitors

$15.9 billion in total economic output annually

Role and Partners

Hennepin County's primarily role in aviation is to provide transportation facilities for access to the regional aviation facilities.

Key partners include the Federal Aviation Administration (FAA), the Metropolitan Airports Commission (MAC), the Minnesota Department of Transportation (MnDOT), the Metropolitan Council, and local municipalities.

Three Metropolitan Airports Commission (MAC) facilities, the Minneapolis –St. Paul International (MSP) Airport, the Crystal Airport, and the Flying Cloud Airport are located in Hennepin County (see Figure 4-09).

Minneapolis – St. Paul International (MSP) Airport

The Minneapolis-St. Paul International (MSP) Airport serves as a commercial air service hub and provides Twin Cities passengers with non-stop and direct service to over 100 domestic destinations and over 10 international markets. The MSP Airport is the 17th busiest international airport in the United States.

Crystal Airport

Crystal Airport, located in the cities of Crystal, Brooklyn Center and Brooklyn Park is a general aviation reliever and the closest MAC airport to downtown Minneapolis. Access to Crystal Airport is provided by Hennepin County State Aid Highway (CSAH) 81/Bottineau Boulevard, CSAH 10/Bass Lake Road and CSAH 8 (63rd Avenue North.

Flying Cloud Airport

Flying Cloud Airport is a business jet reliever within the MAC system, and is located approximately 14 miles from downtown Minneapolis in the city of Eden Prairie.

Access to Flying Cloud Airport is provided by Hennepin CSAH 61/Flying Cloud Drive, CSAH 1/Pioneer Trail and CSAH 4/Spring Road.

Water Ports/Barges

There are currently no operating water ports in Hennepin County since commercial navigation along the stretch of the Mississippi River in the City of Minneapolis ceased operation in late 2014.

Roads

Safely and efficiently moving people, goods and information

The Hennepin County roadway system, including bridges, is one of the most important public assets that the County owns and operates. The system includes, but is not limited to, items such as road rights of way, pavements, bridges, drainage features (culvert, ditches, ponds), traffic signal systems, and safety features (e.g., signage, guardrails).

Our roadway system is a multimodal network serving different transportation users including motorists, freight carriers, transit passengers, bicyclists and pedestrians. Roads and bridges connect these users to other transportation systems, such as transit networks, as well as state and city roadways. The efficiency and connectedness of a roadway system also plays a crucial role in economic development and growth and provides many important social benefits.

Figure 4-10 illustrates existing average annual daily traffic (AADT) volumes and heavy commercial truck volumes on the state highway and county highway systems.

Largest county system in the state

2,200 lane miles

1,100 retaining walls

147 bridges800 traffic signals

2,609 culverts

43,450 signs

Role and Partners

Hennepin County is responsible for the planning, design, construction, maintenance and operations of the County State Aid Highway (CSAH) system and County Road system.

Key partners include the Federal Highway Administration (FHWA), the Minnesota Department of Transportation (MnDOT), the Metropolitan Council, other counties, and cities and townships.

Plans, Programs and Initiatives

Metropolitan Council's Transportation Policy Plan (TPP)

The 2040 Transportation Policy Plan (TPP) presents the region's policies and plans to maintain and enhance existing transportation facilities, better connect people and communities, and provide more transportation choices that will make the region a better place to live.

The TPP includes identification of transit projects for implementation by 2040. The planned projects include a number of bus rapid transit (BRT) projects planned to be housed with county roadways, including Penn Avenue, Chicago Emerson-Fremont, W. Broadway Avenue, Nicollet Avenue, and Hennepin Avenue. This will require collaboration with Metro Transit to ensure that our county roadway design and operations can accommodate the proposed BRT projects.

Complete Streets Policy

Hennepin County was the first Minnesota County to adopt a Complete Streets policy. Adopted in 2009, it solidifies the County's commitment to plan, design, and operate roads to enable safe access for all users of all ages and abilities. Complete Streets also support the county's Active Living initiatives.

Hennepin County Capital Improvement Program (CIP)
The Hennepin County Five-Year Capital Improvement Program (CIP) identifies upcoming projects. The types of projects included in the plan are identified below.

- Traffic Management and Spot Improvements – Projects such as signal installation and maintenance, signage, striping and pavement messages, access control and school zone safety driver feedback signs.
- Corridor Reconstruction – Reconstruction projects often involve adding lanes to an existing corridor or adding miles (length) to an existing corridor.
- Right-of-Way Preservation – Involves purchasing land and property rights owned by private interests through direct purchase.
- Planning Studies – Includes corridor studies, traffic analysis studies, environmental studies and long-range system planning studies to better identify future construction projects.

To select projects for inclusion in the Hennepin County CIP, an annual review of transportation project needs is conducted. Project Needs are submitted both internally, and externally by local agencies. The full project needs list is evaluated in the Technical Review (quantitative), analyzing current conditions that looks at infrastructure deficiencies and uses, with supporting data to review the following:

- Safety: review of crash rates along the project corridor in comparison to the county averages
- Roadway usage: vehicle throughput along the project corridor
- Infrastructure age: year of last reconstruction activity completed along the project corridor
- Mobility and mode choice: review of existing bicycle, pedestrian and ADA accommodations

Projects scoring well undergo the Comprehensive Review (qualitative) that looks at the completed project, evaluating the benefits and outcomes based on these six criteria:

- Safety: potential to enhance safety, security, and comfort level of all transportation modes
- Mobility: anticipated impacts to overall level of service for all transportation modes
- Asset condition: expected improvement to address infrastructure deficiencies
- Project readiness and feasibility: assessment of project risk
- Environment: expected impact to the quality of environment
- Community and economic development: influence on local community and businesses

Projects yielding the highest scores and aligning with the county's current priorities will be recommended for funding consideration in the current Capital Improvement Program.

Figure 4-11 illustrates the projects included in the Hennepin County 2018-2022 Capital Improvement Program (CIP).

Twin Cities Transportation Improvement Program (TIP)
The Transportation Improvement Program (TIP) for the Twin Cities Metropolitan Area is the multimodal program of highway, transit, bicycle, and pedestrian projects and programs proposed for federal funding throughout the metropolitan planning area over a four year period. The projects listed in the TIP are consistent with and implement the region's transportation plan and priorities.

Figure 4-12 illustrates the highway projects located in Hennepin County that are included in the current Transportation Improvement Program (TIP).

Future Needs (2023-2040)

To determine future road needs, Hennepin County considers achievement of the adopted transportation goals, conducts travel demand forecasts, and works with our transportation partners.

Transportation Vision and Goals

Hennepin County's transportation network promotes economic vitality and enhances quality of life by developing and operating a safe, environmentally responsible and multimodal transportation network.

- Preserve and modernize our transportation system
- Improve safety, reliability, and comfort for all transportation users
- Provide affordable transportation choices and convenient access to destinations
- Improve our transportation system to enhance our quality of life, health, livability, and competitiveness
- Create a transportation system that protects and enhances the environment

Provisional Projects

Working with our local agency partners to understand highest priority project needs, a prioritization process is held annually to put each project need through a two tiered criteria driven review, scoring each project independently. The results of this process reveal top candidates for programming in the CIP. The remainder of the projects not selected for CIP programming reside on a list of "provisional projects". This list identifies projects for consideration should additional funding become available. These projects reside on the list and are re-evaluated annually along with new projects submitted in the next review cycle. Provisional projects may fall off the list in the next evaluation process based on new project scores. The provisional projects listed provide no guarantee that they will be funded by the county. Table 3-2 lists the current Provisional Projects.

Travel Demand Forecasts

To better understand potential long-term future transportation needs, Hennepin County conducted a process to estimate future, defined as year 2040, travel demands.

Travel demand forecasting is used to estimate the future demand to use a transportation facility based upon future growth projections. The results of the process are used to identify areas that are anticipated to approach or exceed capacity thresholds or potentially create safety issues. Identifying these areas is intended to set the stage for future action (e.g. further monitor situation, conduct detailed study, or design)

Hennepin County conducted a comprehensive travel demand forecasting analysis primarily utilizing the regional activity based model provided by the Metropolitan Council. The Hennepin County forecasts are based on a combination of socio-economic and land use assumptions for future growth. The future transportation network was assumed to include projects identified in the regional Transportation Improvement Program (TIP) and the Hennepin County Capital Improvement Program (CIP).

Figure 4-13 depicts the 2040 forecast traffic volumes and existing average daily traffic volumes.

Exhibit 4-14 illustrates the county's envisioned future roadway system. The exhibit is a comparison utilizing information from current 2040 traffic forecasts, the anticipated future roadway configurations, and right-of-way needs. The envisioned roadway system has been developed over many years based on previous traffic forecasts and roadway related needs. Roadway needs have been evaluated in collaboration with individual cities as part of their property plat and site plan reviews.

Typical roadway sections have been established for various configurations that include trails & sidewalks, utility & sign placements, and urban / rural storm water drainage needs. Examples of common configurations are contained in the support documentation of the 2040 Roadway Plan.

A comparison of the 2040 traffic forecasts to the current envisioned roadway system identified segments that potentially could exceed capacity thresholds. Exhibit 4-15 illustrates the locations of the potentially deficient corridor segments. These segments will be studied further during corridor or routine traffic studies completed in conjunction with safety or capital improvement projects.

For more detail on the travel demand forecasting process, see the Road Plan Support Documents in the appendices.

Table 3-3 Anticipated Changes in the Hennepin County Roadway System (Centerline Miles)

Existing			Next 15 Years		Ultimate Build Out	
	Miles	%	Miles	%	Miles	%
County State Aid (CSAH)	531	93 %	536	93 %	547	94 %
County Road	40	7%	40	7 %	35	6 %
	571		576		582	
2 Lane Rural	247	43 %	175	30 %	107	18 %
2 Lane Urban	92	16 %	105	18 %	120	21 %
3 Lane Urban	26	5 %	105	18 %	175	30 %
4 Lane Rural	1	0 %	3	1 %	5	1 %
4 Lane Urban Undivided	76	13 %	45	8 %	15	3 %
4 Lane Urban Divided	105	18 %	115	20%	125	21 %
5+ Lane Urban	10	2 %	14	2 %	20	3 %
One-way	14	2 %	14	2 %	15	3 %
	571		576		582	

Base existing data is current as of December 2016 – sources: Operations Asset Mgmt and Crash System Databases

CSAH mileage expansion based on 2030 HC-TSP "Map E" anticipated Mn/DOT trunk highway turnbacks (10.3 miles)

University Avenue / TH-47 (4.0 miles)

Central Avenue / TH-65 (3.5 miles)

TH-5 in Eden Prairie (2.8 miles)

County Road mileage assumed to ultimately designate all available mileage in the State Aid mileage bank (currently 5.7 miles) Likely jurisdictional considerations affecting mileages:

Blake Road / CSAH-20 (turnback to Hopkins)

Maple Grove Pkwy / Fernbrook / Elm Creek Blvd (exchanges in Maple Grove)

Fletcher Bypass / Main Street / County Road 159 (exchanges and turnbacks in Rogers)

CSAH-10 and CSAH-50 realignments (Corcoran)

System Elements

Effectively preserve and manage to increase the efficiency and capacity of our transportation system

The following system elements are employed by the county to maintain our system in a state of good repair and to manage our system to improve traffic flow, safety, accessibility, air quality, and the movement of goods, people and information.

- Asset Management
- System Safety
- Advanced Traffic Management System (ATMS)
- Functional Classification
- Jurisdictional Transfers
- Right-of-Way Preservation
- Access Management
- Travel Demand Management (TDM)

Transportation asset management is a process of evaluating, maintaining and improving our transportation assets in a cost-effective manner to maximize their useful life. How we operate our system impacts how frequently as asset needs to be replaced. Asset Management provides a solid foundation from which to monitor the transportation system and optimize the preservation, upgrading and timely replacement of highway assets through cost-effective management, programming and resource allocation decisions

Continuous monitoring of assets enables us to make proactive, data-driven decisions about how to use available resources for maximum benefits to our system.

The health of our county transportation system is currently ranked at fair to good, which means most of our assets are operating as they should, with some maintenance needed to increase their overall service life.

While our current ranking is fair to good, roughly one third of our system is more than 50 years old, requiring an estimated $2 billion to maintain, upgrade or replace.

Asset Management Program

Hennepin County has established an asset management program that is intended to evaluate, maintain, and improve the transportation system in a cost-effective manner throughout the life-cycle of the infrastructure. Transportation assets are divided into five groups used for analyzing, reporting and programming improvements and/or maintenance. The five groups include: 1) roadway pavement; 2) traffic; 3) drainage; 4) roadside; and bridges. Within the groups there are 28 asset categories that have specific attributes used to evaluate the condition and remaining service life of a particular asset. Details of the program are contained in the Asset Management Report, 2017

System Safety

Safety is a primary concern for people when they choose a mode of travel, especially for children

Travelling to school, or seniors who are dependent upon public transportation. Streets that are designed for the safety of multiple users-including pedestrians of all ages, bike riders, people with disabilities, buses, and cars-have been shown to reduce the risk of pedestrian and bike rider injuries.

Every year, the number of users on our roads continues to increase for all modes – walk, bike, transit, freight, and vehicular. Motorists alone travel more than 2.1 billion miles per year on county owned/operated roads.

There are numerous factors that cause crashes on the roadway system, including driver behavior, weather and roadway design.

To improve roadway design, we use data collection and analysis to identify where changes are needed. Examples of improvements made include: changing how road users access the road, moving, modifying, and enhancing crosswalks, extending curbs and medians, using wider and more durable pavement markings, altering turn lanes, adding bicycle and pedestrian facilities, and traffic signal enhancements.

Roadway Safety Plan

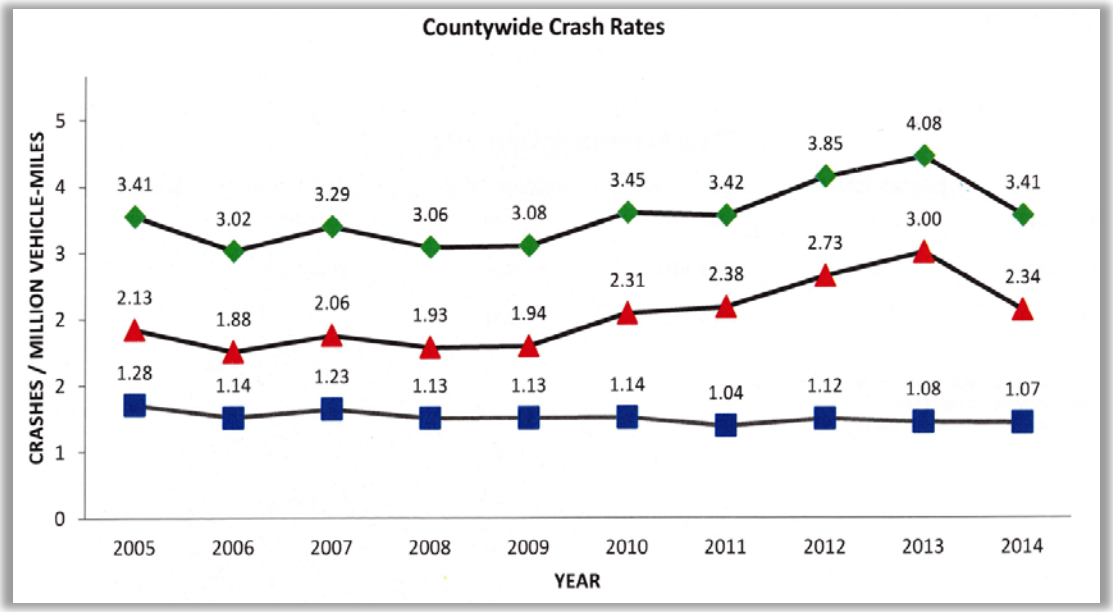
The County Roadway Safety Plan takes a proactive approach, reviewing intersections that show potential for future fatal and serious injury crashes. These intersections have like risk characteristics of other intersections that experience high fatal or serious injury crashes.

The plan identifies locations and costs for safety investments for all travel modes, specifying safety strategies for specific high-risk locations.

Serious injury crashes on Hennepin County roadways have decreased by 45% in the last 10 years. A proactive approach lends to a continued downward trend, with aspiration to positively influence the statewide goal:

Future Challenges

- Safety conflicts between modes
- Impact of technology on improving safety
- Forging partnerships for education and enforcement



ATMS

Advanced Transportation Management System (ATMS) applies modern technology to traffic management throughout our transportation system. It uses transportation management cameras and wireless communications to improve the flow of vehicle traffic and transportation system efficiency.

Transportation Management

- Deployment of real-time / adaptive signal control and network signals
- Dynamic message signage
- Advanced bicycle and pedestrian counting systems
- Bicycle detection at traffic signals

Information Management

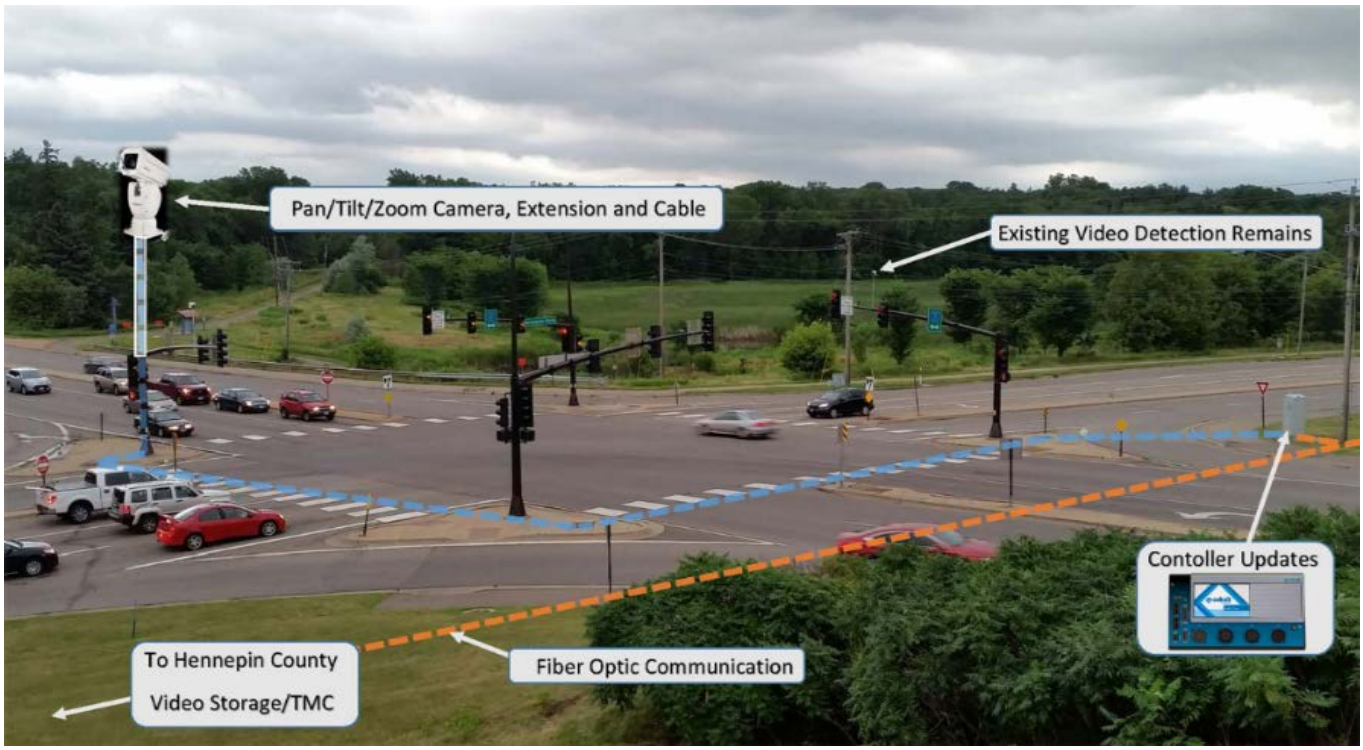
- Expansion of fiber optic networks
- Connecting monitoring and control infrastructure to county network

Emergency Management

- Integrate Dynamic Messaging with the Public Alert Warning System
- Improve Emergency Operations Center access to Dynamic Messaging

The benefits of ATMS include reduced travel times, reduced fuel consumption and emissions, reduced crashes, and improved customer service,

In efforts to provide safe and efficient transportation infrastructure for hundreds of thousands of travelers each day, we will continue to invest in our advanced traffic management system. Future upgrades to the traffic management center (TMC) are anticipated in order to better coordinate county-wide intelligent transportation systems. We will also continue to improve traffic signal synchronization, increase the use and effectiveness of our traffic camera system, and add variable message signs that provide real-time traffic information to motorists and real-time information sharing with other jurisdictions (e.g. MnDOT) through an expanded fiber-optic communication network.



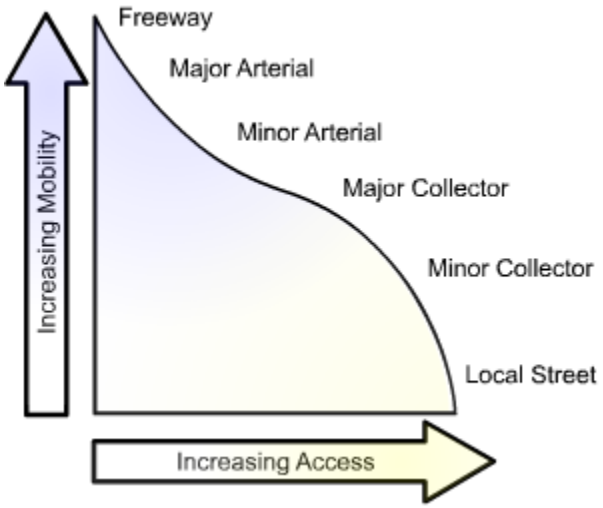
Functional Classification

Roadways are placed into classifications based upon the function they serve in the transportation network. The primary purpose of classification is to ensure that each roadway in the network serves its proper function, primarily defined as providing mobility or access or a combination of the two.

For the purpose of functional classification, mobility is defined as the ability to travel within or along the roadway network, while access is defined as the ability to reach a development or land parcel.

Functional roadways classifications identify what function roadways should perform before determining street widths, speed limits, intersection control or other design features. Functional classification ensures that non-transportation factors, such as land use and development, are considered in planning and design of streets and highways.

The classifications also determine which routes should be part of the metropolitan highway system and which should receive regionally-allocated federal funds.



The functional classification of roadways in the Twin Cities metropolitan area is managed by the Metropolitan Council in cooperation with MnDOT, metro counties and cities. Exhibit 4-16 illustrates the existing and future functional classification system for Hennepin County.

Jurisdictional Transfers

Roadway jurisdiction determines which governmental unit, state, county or city, owns a roadway. Ideally, there is alignment between the functional classification of roadways and the jurisdiction charged with managing its operations. Due to changing circumstances this is not always the case and when this happens, jurisdictions will consider transfers of roadways with the ultimate goal of proper alignment between function and jurisdiction.

The Hennepin County Board has been reviewing a proposed Jurisdictional Transfer Policy that outlines the conditions under which a jurisdictional transfer would be pursued.

- A proposed transfer should be consistent with the proper jurisdictional hierarchy and identified long-range expectations of the County Transportation Plan
- The impact of a proposed transfer should be evaluated with the context of the county's Asset Management Program to ascertain county resources required to maintain the proposed new facility
- Any proposed transaction involving a County State Aid Highway (CSAH) must have the support of MnDOT's State Aid Office for consistency with CSAH and Municipal State Aid (MSA) requirements
- Transfers must include a formal agreement between the county and affected city(ies) and/or state, with mutually agreed terms between the parties
- The County Board of Commissioners must approve all proposed jurisdictional transfers and financial agreements between the county and affected city(ies) and/or state

Figure 4-17 identifies candidate roadways for jurisdictional transfer. The identified roadway segments appear to meet the criteria for transferring, however the map does not constitute implicit support by the affected agencies. Some segments have been under discussion for many years, and others have been added due to recent evaluations or city input. It is anticipated that additional evaluation, and agency discussion/negotiation will be necessary to resolve which transfer candidates will ultimately be recommended to the County Board as part of the implementation of the 2040 Mobility Plan.

Right of Way Preservation

The acquisition and preservation of right-of-way is an important component to the county's long-range transportation planning. As the county grew over time, more width has been necessary to accommodate traffic growth, geometric improvements (turn lanes, medians, shoulders), trails & sidewalks and storm drainage needs.

Property purchases for impending county projects

Right-of-way is purchased following land acquisition procedures once a project is programmed in the county's Capital Improvement Program (CIP) and detailed design plans are developed.

Corridor Studies

We partner with cities and MnDOT to study future needs for longer segments of our roadways. These studies usually result in a concept plan which identifies a recommend design concept and future right-of-way needs. The studies then become reference documents that are used with on-going development reviews and county projects.

Ghost Platting

Ghost platting is a process of considering how the pattern of adjacent properties might develop long-term in order to ensure that adequate local street systems and connections are provided. City and county staffs consider the locations of major county road access points and anticipated right-of-way needs in an informal process to help guide future decisions. This process works well to anticipate issues relating to development coordination and the provisions for exception parcels.

Dedication from Adjacent Developments

As part of the preliminary plat review process, the county has an opportunity to recommend that a city require developers to dedicate additional highway right-of-way and/or easements.

The county's Plat Review Committee typically reviews over 100 plats and site plans each year. In a comparison study done a few years ago, it was found that for the period 1999-2008, almost 42 acres of land had been dedicated through the plat review process for related roadway purposes with a value of almost $11 million dollars.

In some cases, it may not be possible to immediately obtain right-of-way during the platting process. In these situations, county staff often will negotiate the creation of outlot parcels adjacent to the county roadway which limit development and provide for future dedication and / or purchase. County staff also encourages the setback of structures from the right-of-way and supports the placement of open space or parking areas instead.

One of the most important information sources that the Plat Review Committee uses during its reviews is the map of the Envisioned Roadway System (Figure 4.2.4). This map puts together the information from functional classification, access management, future traffic forecasts and combines these elements with a consideration of impending CIP projects, corridor studies, and the results of previous development reviews and discussions.

Today, roadways are planned to provide the following basic right-of-way widths based on the context and function of the roadway:

Facility Type	Functional Classification	Projected ADT	Posted Speed	Right-of-Way Width
Two-Lane Rural Section	Collector or Minor Arterial	1,500 – 10,000	45+ mph	100 ft. to 120 ft.
Two-Lane Suburban	Collector or Minor Arterial	1,500 – 10,000	35 – 40 mph	80 ft. to 100 ft.
Three-Lane Urban (center 2-way left turn lane)	Collector or Minor Arterial	5,000 – 16,000	30 – 35 mph	90 ft. – 110 ft.
Four-Lane Urban (Divided)	Principal or Minor Arterial	8,000 – 25,000	35 – 45 mph	110 ft. to 130 ft.

Access Management

Access Management is the proactive management of access to land parcels adjacent to roadways. Good access management promotes the safe and efficient use of the transportation network. Through our access management program, we strive to achieve an optimal balance between property owner needs for access with operating a safe and efficient transportation system.

Proper access management will minimize or manage the number of potential conflict point along a roadway and result in increased capacity, reduced crashes, and reduced travel times.

10 to 15 percent of all crashes can be attributed to driveway conflicts

Connecting driveways and streets also affect the efficiency and capacity of the county roadway system. Ideally, access to a county roadway should only be via other minor arterial roads or collector streets. Direct driveway access should be oriented to the collector and local street system.

Access Management strategies include:

- Minimizing direct driveway access points to decrease turn movement conflicts
- Spacing street and driveways further from major intersections
- Proper network spacing for intersecting roadways and streets
- Providing optimal signal spacing for coordinated traffic flow
- Ensuring desired entering sight distance guidelines are met
- Use of channelization to preclude selected conflicting turning movements

These methods are implemented by the county through its review and comment authority on preliminary plats and via its access permitting authority. County reviews are coordinated through the Plat Review Committee described in the following section.

The county has developed access management guidelines as a reference document for our partners.

Travel Demand Management (TDM)

Travel demand management (TDM) focuses on understanding how people make their transportation decisions and helping people efficiently use the infrastructure in place for transit, ridesharing, walking, biking and telecommuting. TDM strategies are cost effective in guiding the design of the county's transportation and physical infrastructure so that alternatives to single-occupant driving are naturally encouraged and the county systems are better balanced.

The county actively supports Transportation Management Organizations such as the I-494 Corridor Commission http://www.494corridor.org/494-Corridor-Commission.php and Move Minneapolis http://moveminneapolis.org/. These organizations were established to address increasing traffic congestion by promoting and educating workers, residents and visitors regarding transportation options (transit, carpooling, telecommuting, biking and walking).

move MINNEAPOLIS
TRANSPORTATION MANAGEMENT ORGANIZATION

Transportation Workplan (2019-2023)

Transparent Capital Improvement Program (CIP) Process

Develop a process for capital improvement programming that is clear, transparent, and inclusive of our primary transportation partners.

Long-range Capital Plan

Create a capital plan beyond the five-year capital improvement program to inform project development, project programming, and funding decisions.

Reducing Disparities

Incorporate upcoming work on the intersection of transportation and disparities to incorporate the goal of reducing disparities into our transportation decisions.

Emerging Technologies

Monitor, track and conduct research to better understand the impact of emerging technologies (AVs/CVs., drones, augmented reality). Activities will include an assessment of impact on existing and planned infrastructure, integration with existing modes and systems, and legal and regulatory issues.

Strategic Outreach/Engagement

Engagement strategies to respond to our changing demographics will be explored and piloted to develop a set of best practices.

Performance Indicators Report

Include the Mobility 2040 Performance Indicators in periodic updates to the Hennepin County Board to monitor and track progress towards achieving the adopted transportation goals. Employ a continuous improvement process to evaluate and implement modifications to the performance indicators as necessary.

Environment

Continue to explore opportunities to improve environmental quality through transportation partnerships, including but not limited, to the use of native roadside plantings to provide pollinator habitats, tree plantings to strategically located tree canopies, (add something on wetlands and water) – natural resources strategic plan.

Asset Management

Build off of the current asset management plan to add more categories of infrastructure with the long-term goal of including all Hennepin County assets to account for the full life-cycle cost of our infrastructure.

Risk Assessment

Identifying vulnerabilities before they become emergency situations allows us to adapt and plan for appropriate responses. Conduct vulnerability assessments (landslides, flooding related to climate change), and evaluate strategies to reduce or eliminate vulnerabilities.

Plan Alignment

The supporting modal and system element plans will be evaluated and modified to ensure there is alignment with this plan and between the supporting plans. An update to this plan will be conducted every five years or in 2023.

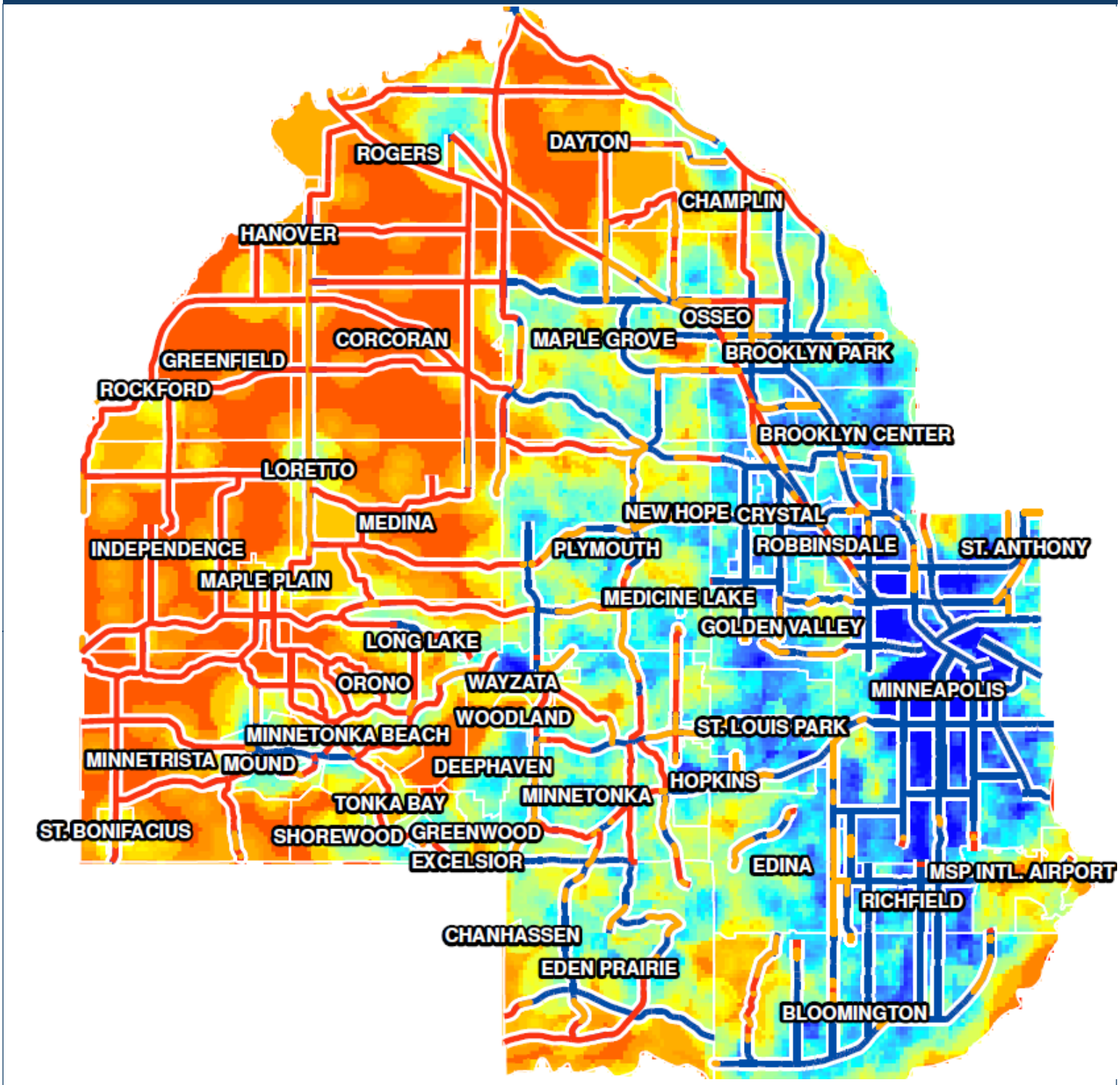
UMN Research Partnership

Continue to partner with University of Minnesota researchers to explore emerging issues, ideas, and technologies affecting transportation.

Pedestrian Plan Implementation Priorities

Figure 4-01 | Public Works

HENNEPIN COUNTY
MINNESOTA



Legend

- County roads without sidewalk or trail
- County roads with sidewalk or trail on one side
- County roads with pedestrian facilities on both sides

High Priority (65)

Low Priority (1)

Disclaimer: This map (i) is furnished "AS IS" with no representation as to completeness or accuracy; (ii) is furnished with no warranty of any kind; and (iii) is not suitable for legal, engineering or surveying purposes. Hennepin County shall not be liable for any damage, injury or loss resulting from this map.

N

0 5 10 Miles

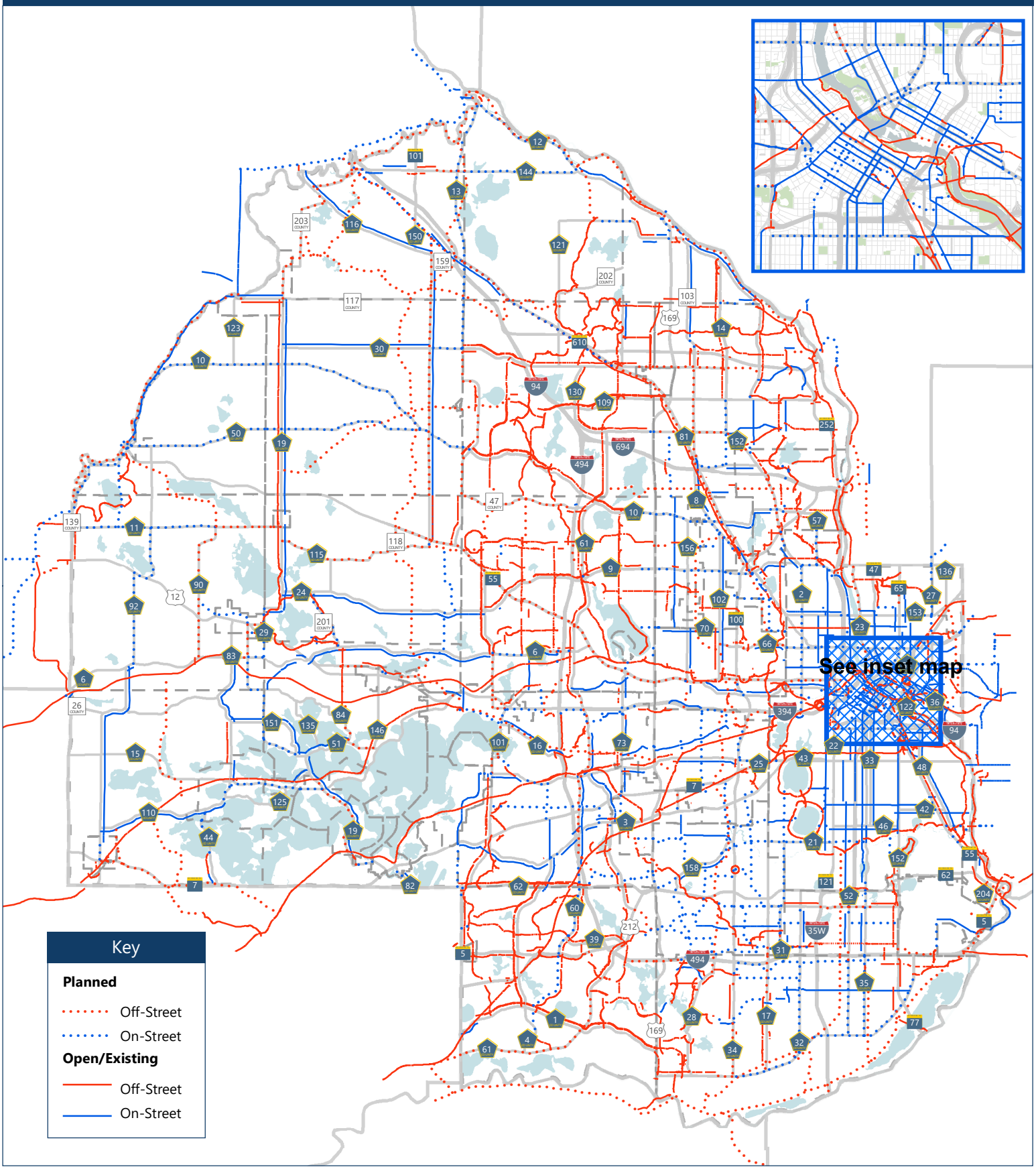
Hennepin

Publication date: 8/5/2013

Existing and Planned Bikeway System

Figure 4-02 | Public Works

HENNEPIN COUNTY
MINNESOTA



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N

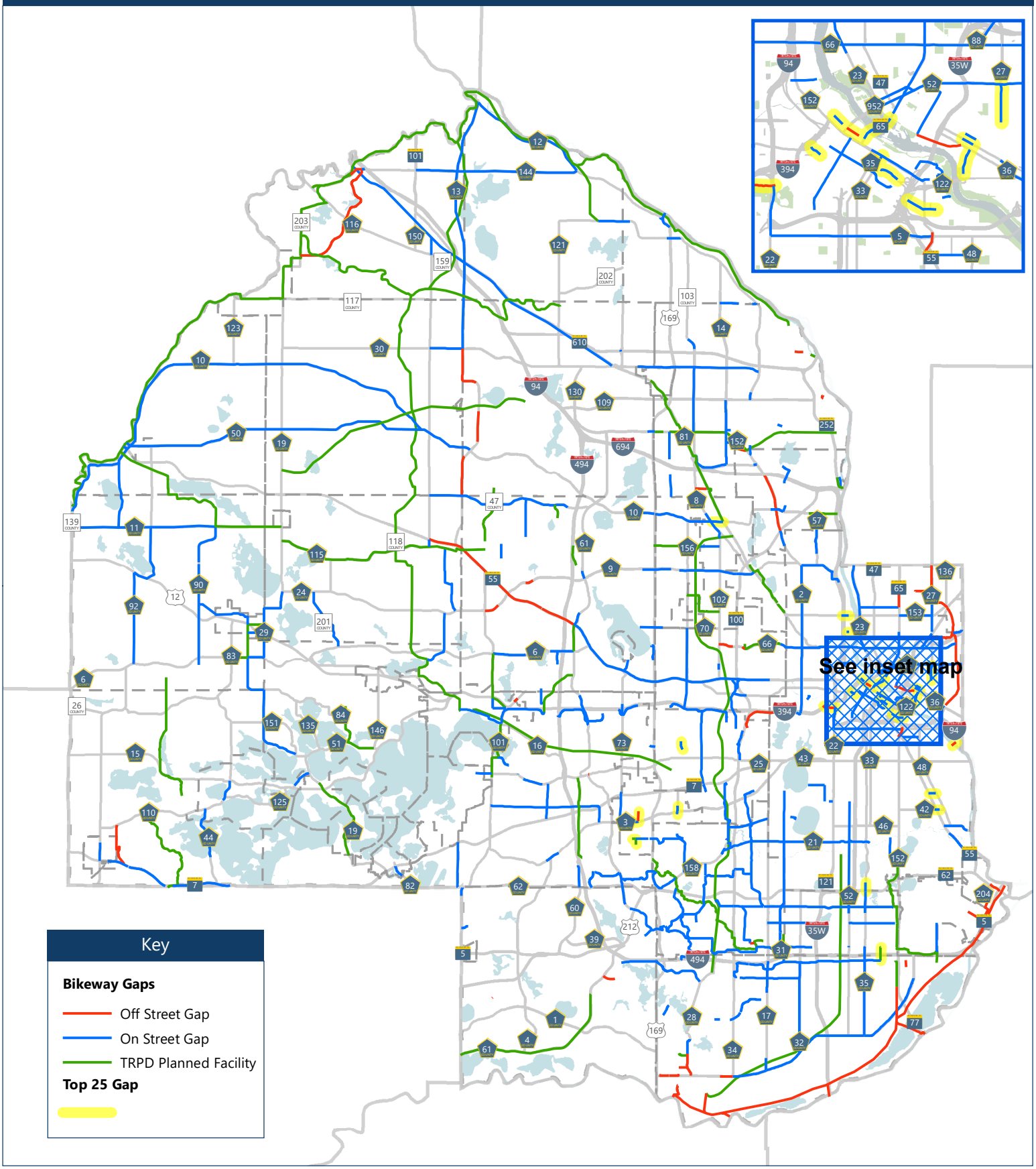
0 5 10 Miles

Publication date: 5/9/2018

Bikeway System Gaps

Figure 4-03 | Public Works

HENNEPIN COUNTY
MINNESOTA



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N

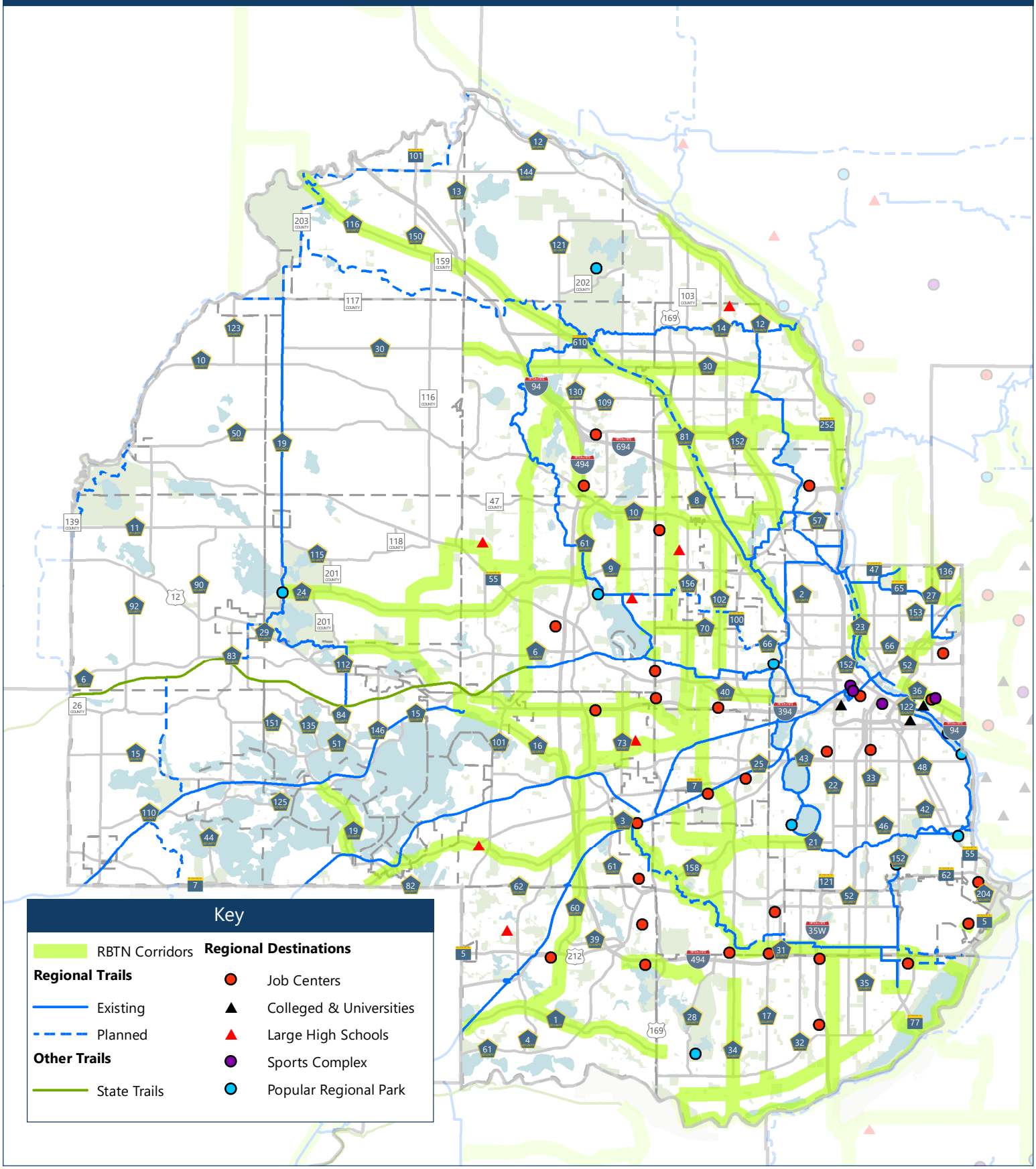
0 5 10 Miles

Publication date: 5/9/2018

Regional Bicycle Transportaion Network

Figure 4-04 | Public Works

HENNEPIN COUNTY
MINNESOTA



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N

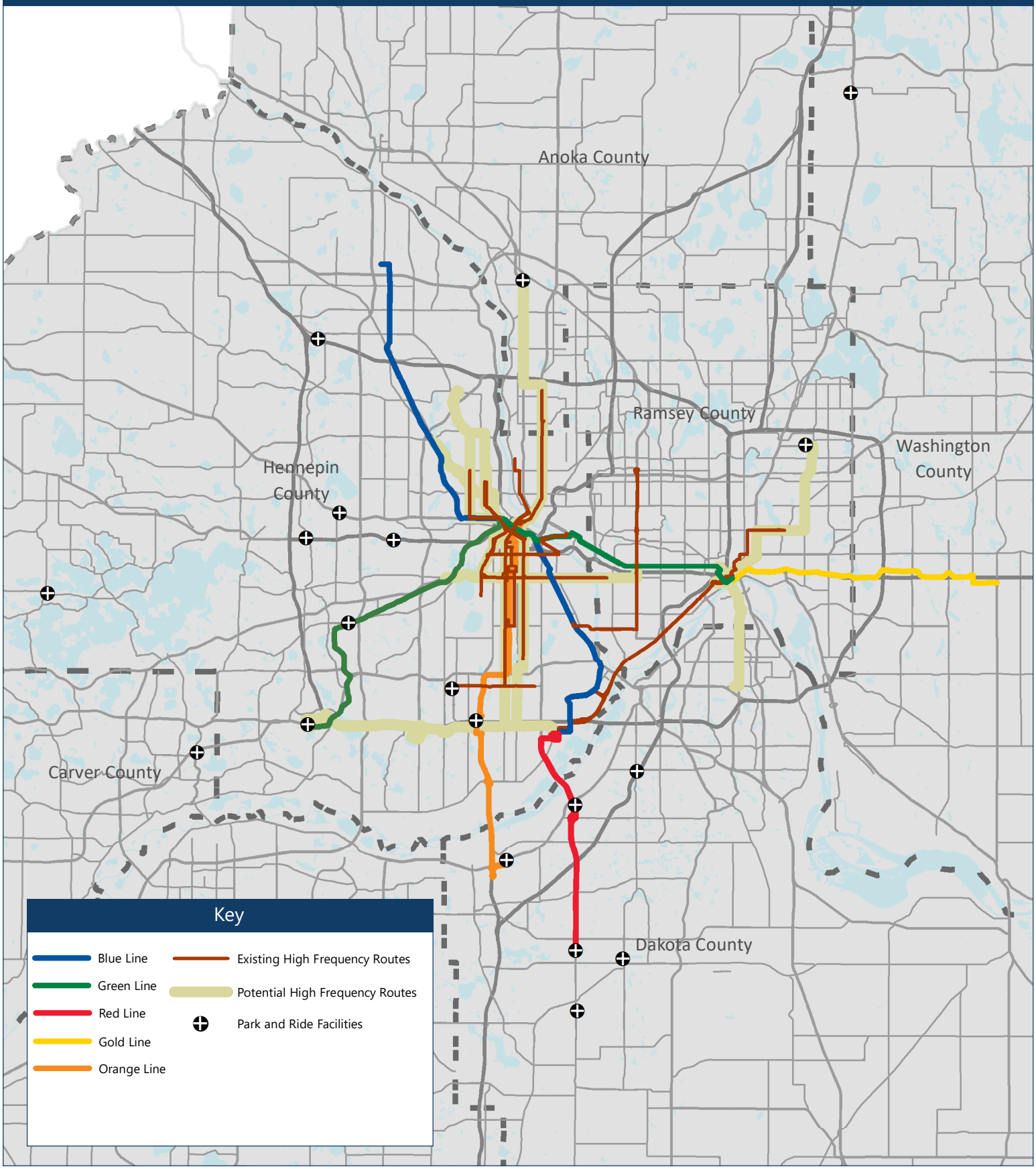
0 5 10 Miles

Publication date: 5/9/2018 Data Source: Metropolitan Council

Existing and Planned Transit Services and Facilities

Figure 4-05 | Public Works

HENNEPIN COUNTY
MINNESOTA



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N

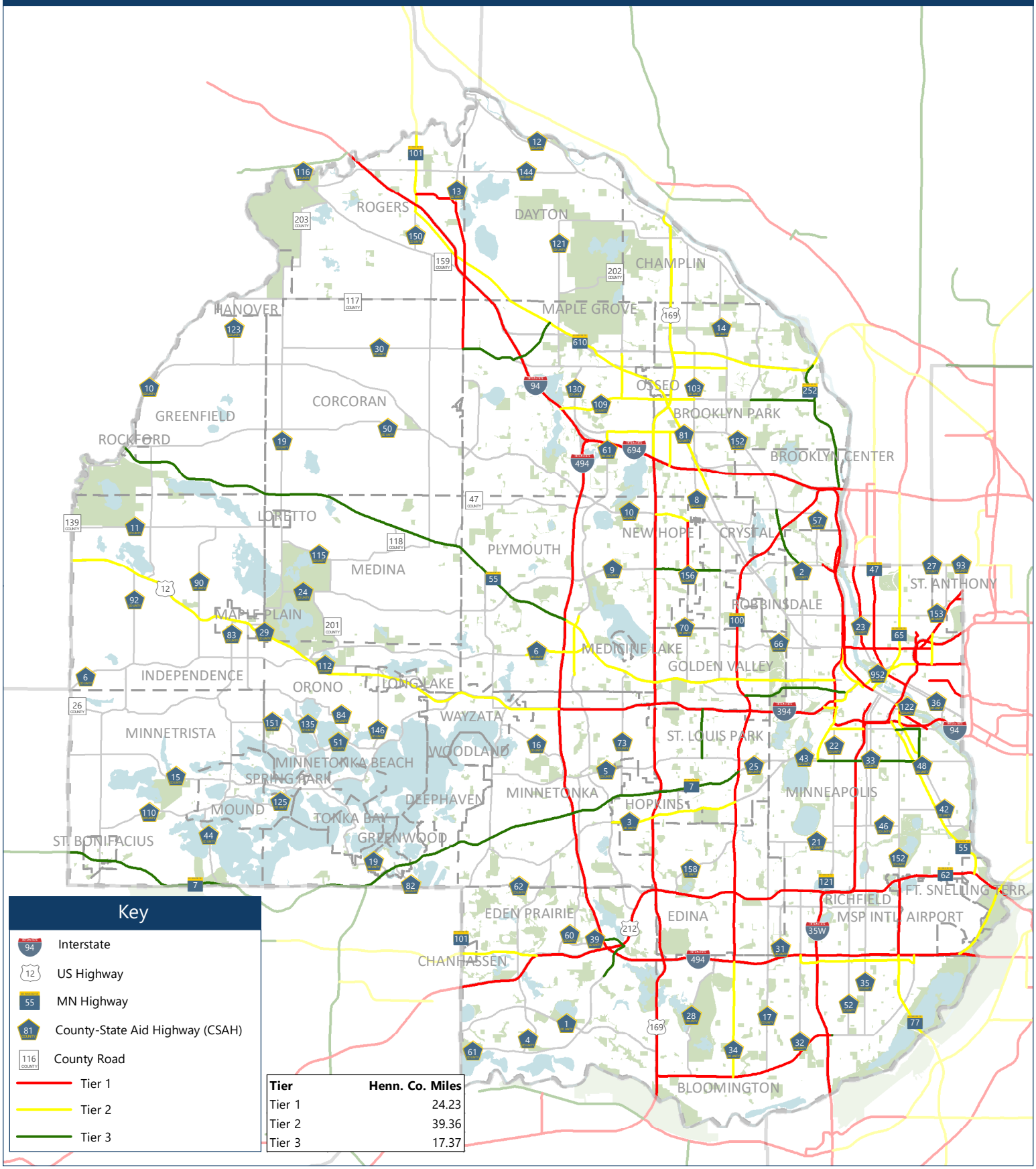
0 5 10 Miles

Publication date: 5/9/2018 Data Source: Metropolitan Council

Regional Truck Corridors

Figure 4-06 | Public Works

HENNEPIN COUNTY
MINNESOTA



Tier	Henn. Co. Miles
Tier 1	24.23
Tier 2	39.36
Tier 3	17.37

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N

0 5 10 Miles

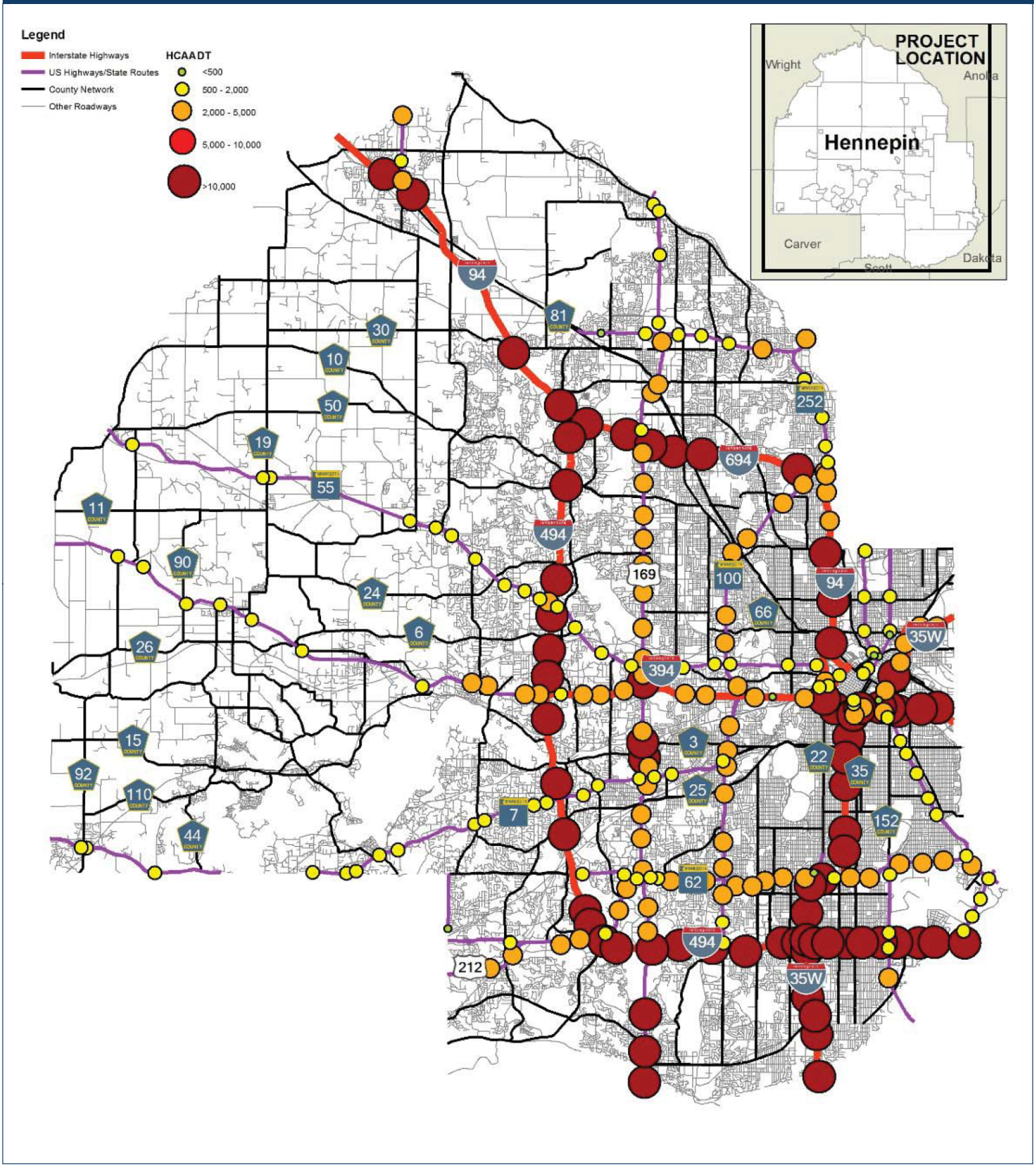
Publication date: 5/9/2018

Data sources: Metropolitan Council

Heavy Commercial Truck Volumes

Figure 4-07 | Public Works

HENNEPIN COUNTY
MINNESOTA



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N

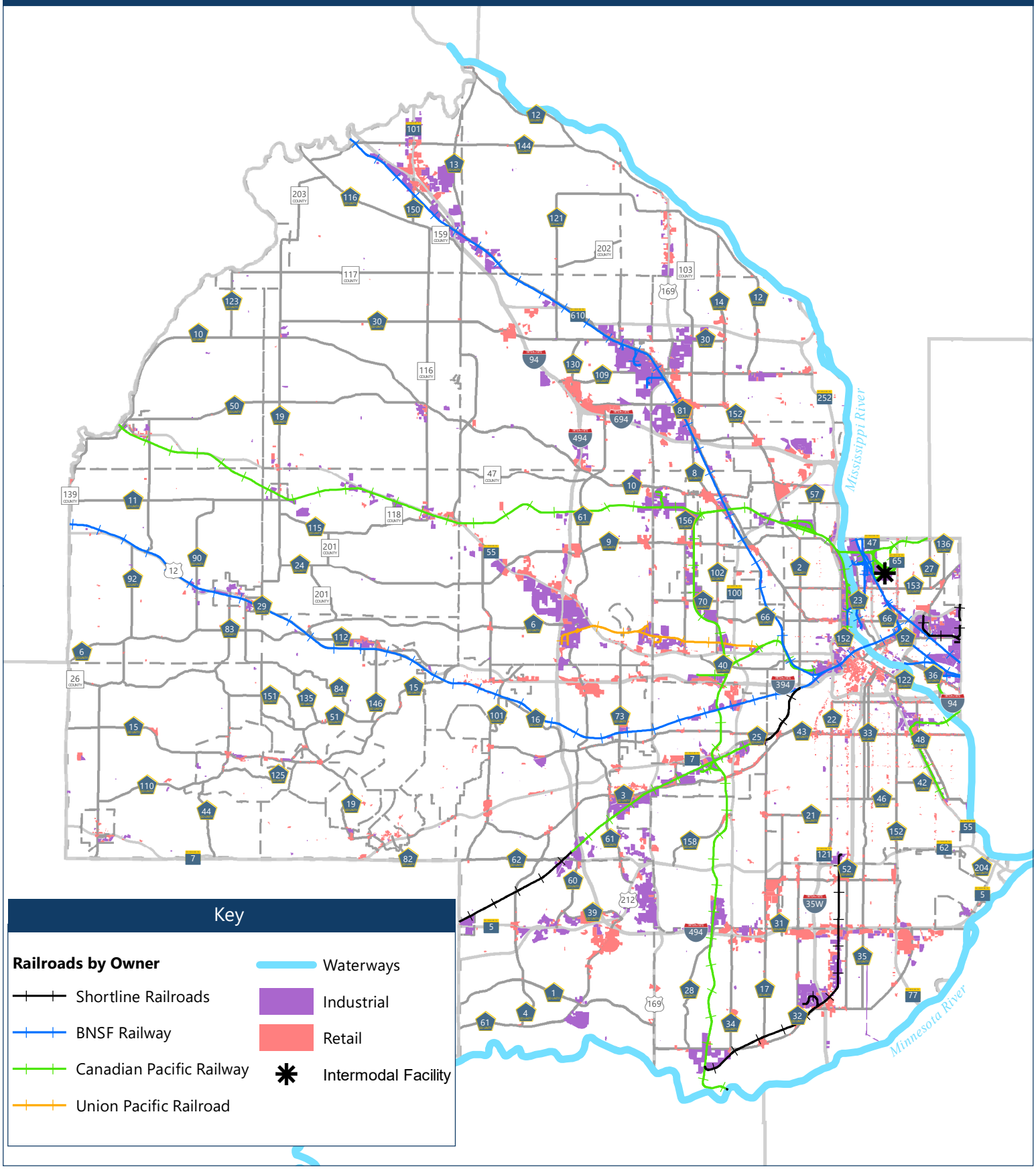
0 5 10 Miles

Publication date: 6/20/2016

Freight Facilities

Figure 4-08 | Public Works

HENNEPIN COUNTY
MINNESOTA



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N

0 5 10 Miles

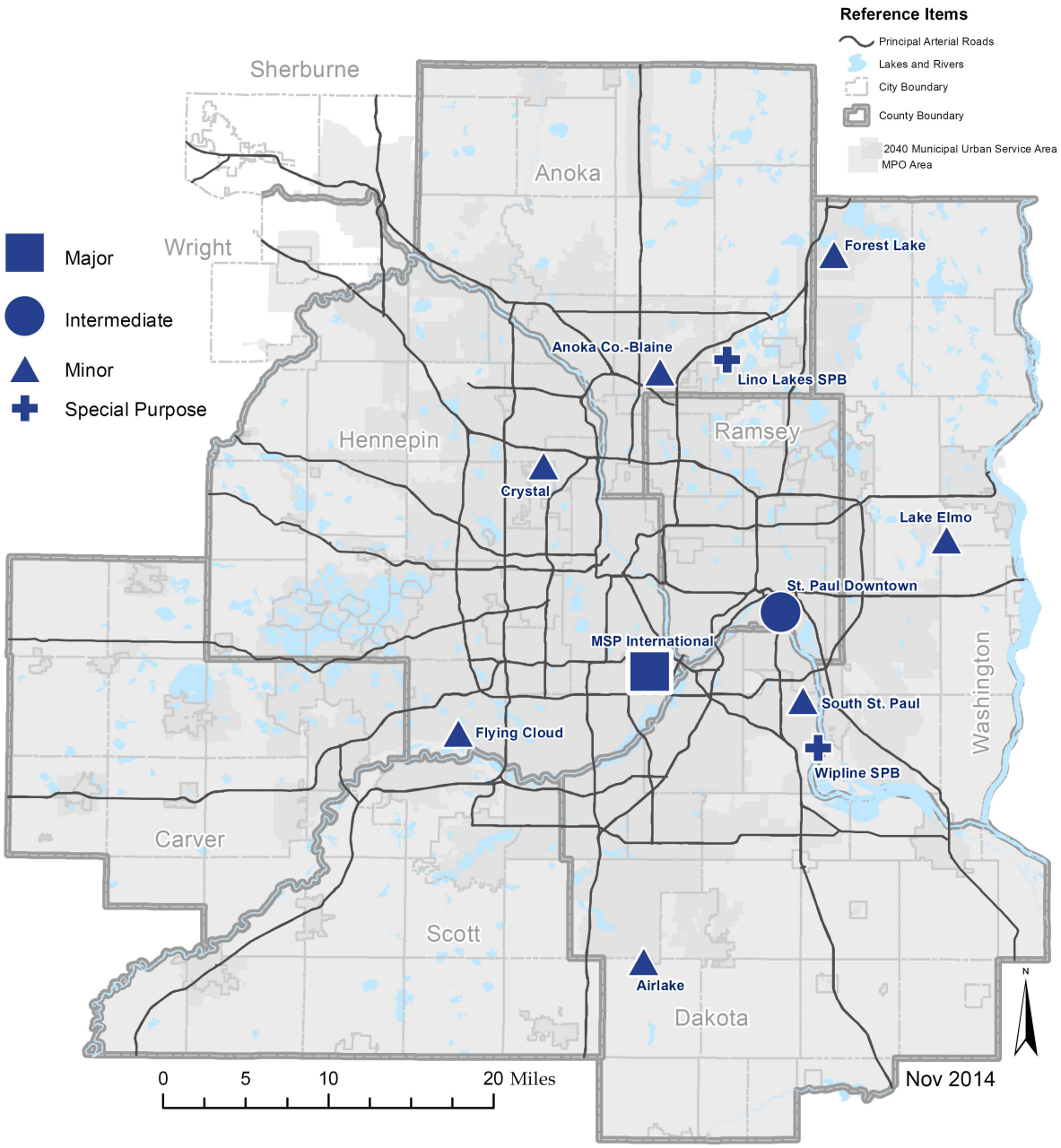
Publication date: 5/9/2018

Data Source: Hennepin Co Freight Study

Regional Aviation System

Figure 4-09 | Public Works

HENNEPIN COUNTY
MINNESOTA



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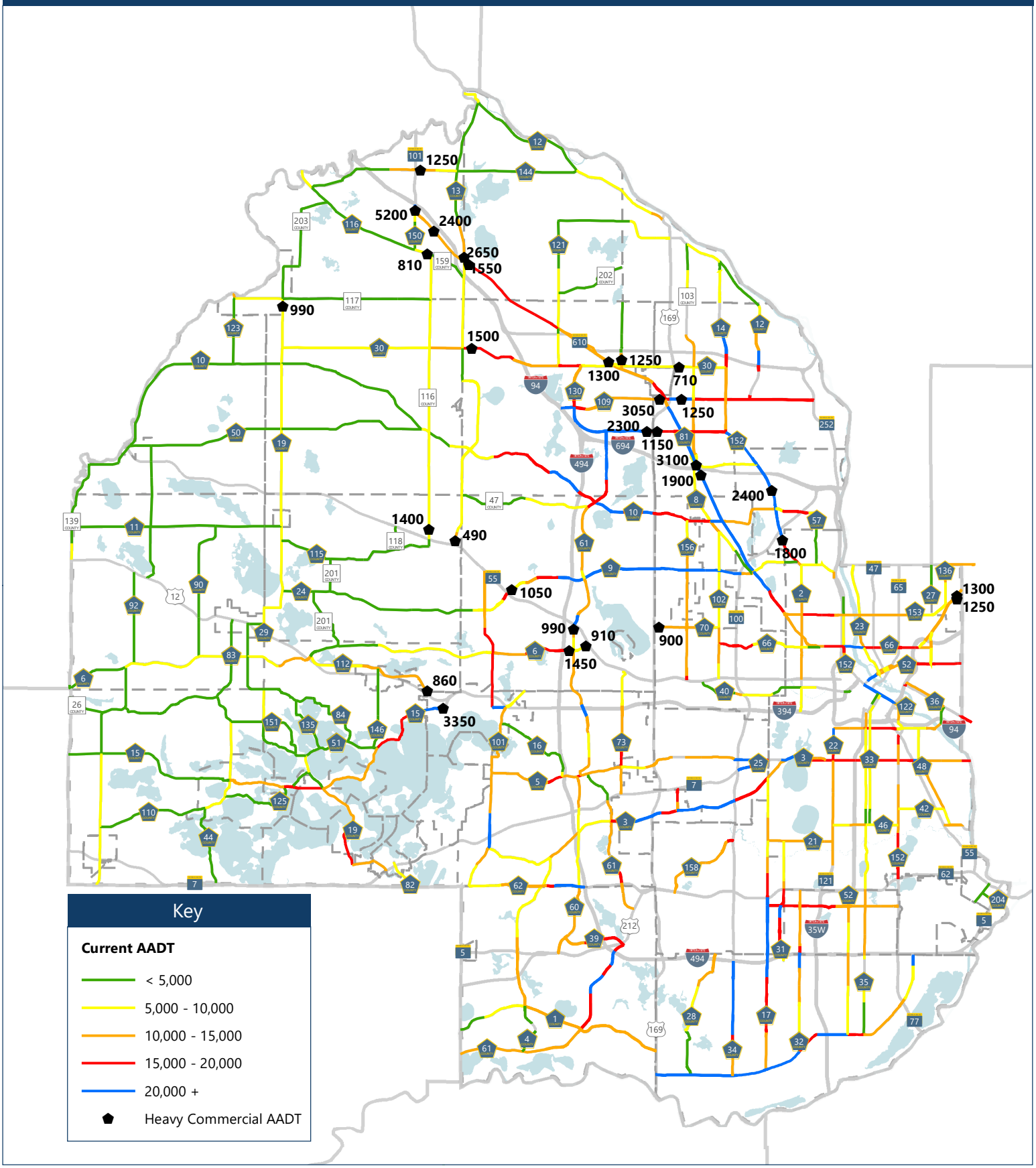
N 0 5 10 Miles

Publication date: 5/9/2018 Data Source: Metropolitan Council

Existing & Heavy Commercial Average Annual Daily Traffic (AADT)

HENNEPIN COUNTY
MINNESOTA

Figure 4-10 | Public Works



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N

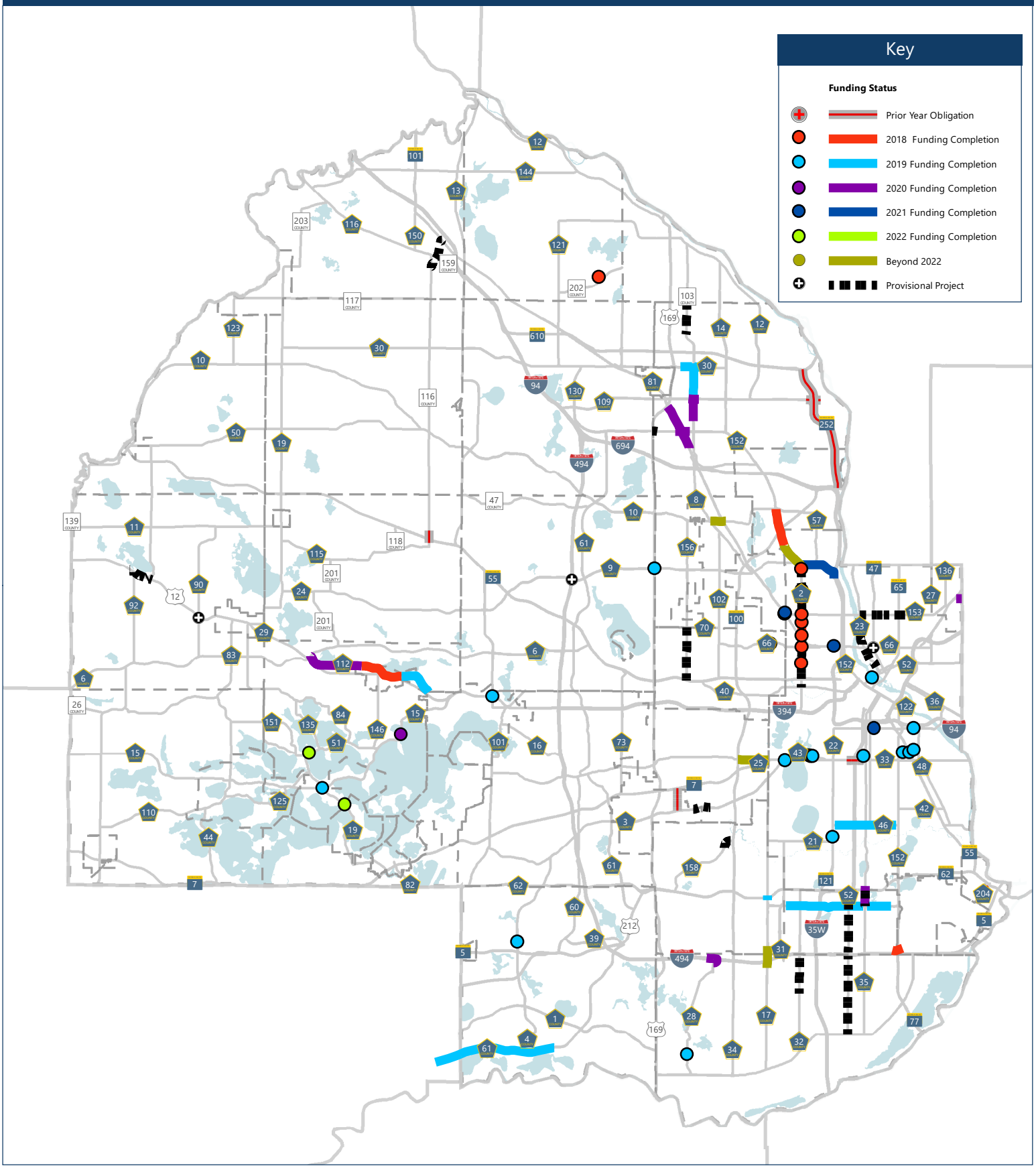
0 5 10 Miles

Publication date: 5/30/2018

2018-2022 Transportation Capital Improvement Program

HENNEPIN COUNTY
MINNESOTA

Figure 4-11 | Public Works



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N

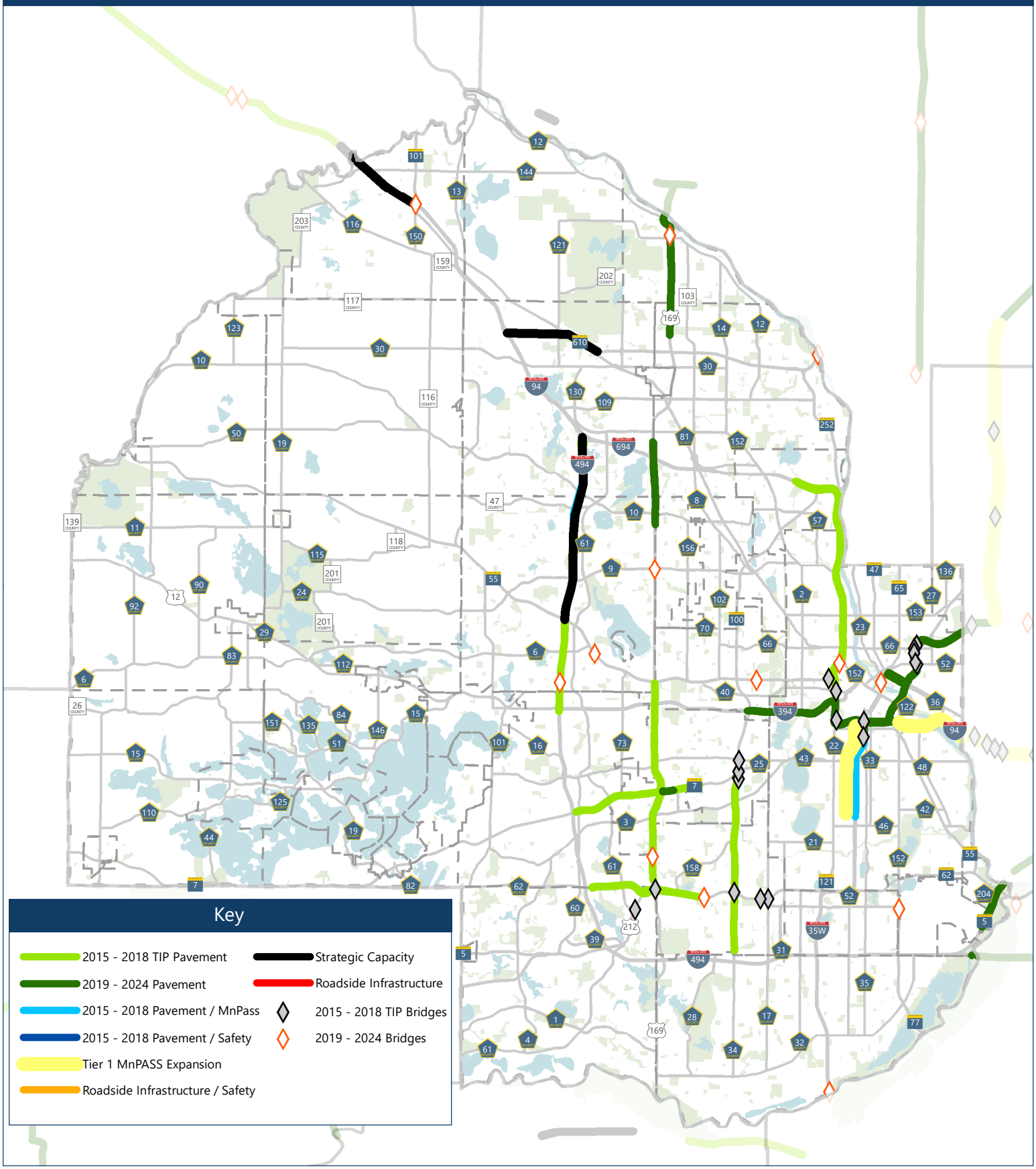
0 5 10 Miles

Publication date: 5/30/2018

Highway Current Revenue Scenario

Figure 4-12 | Public Works

HENNEPIN COUNTY
MINNESOTA



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N

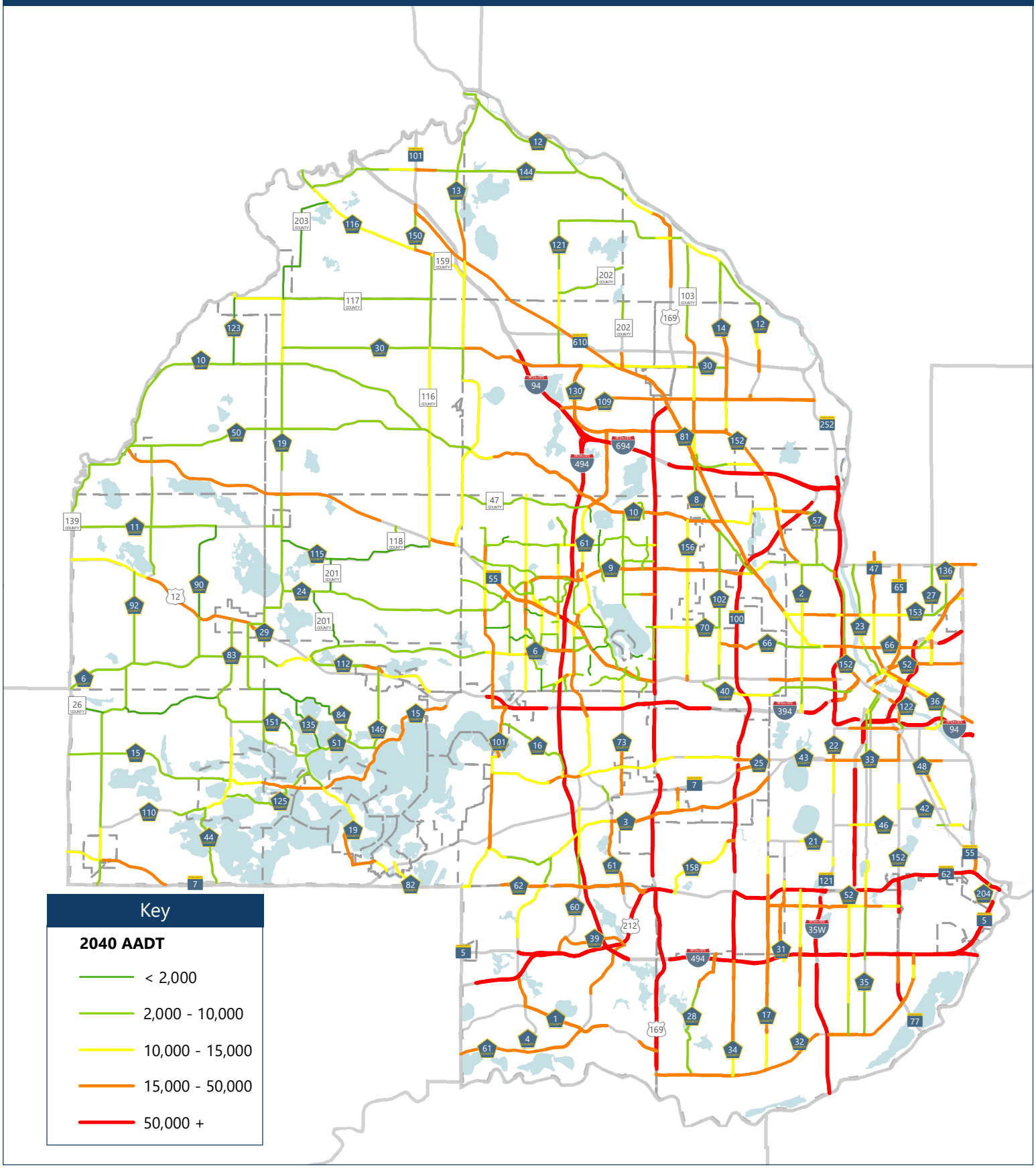
0 5 10 Miles

Publication date: 5/9/2018 Data Source: Metropolitan Council

Forecasted Year 2040 Average Annual Daily Traffic (AADT)

Figure 4-13 | Public Works

HENNEPIN COUNTY
MINNESOTA



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N

0 5 10 Miles

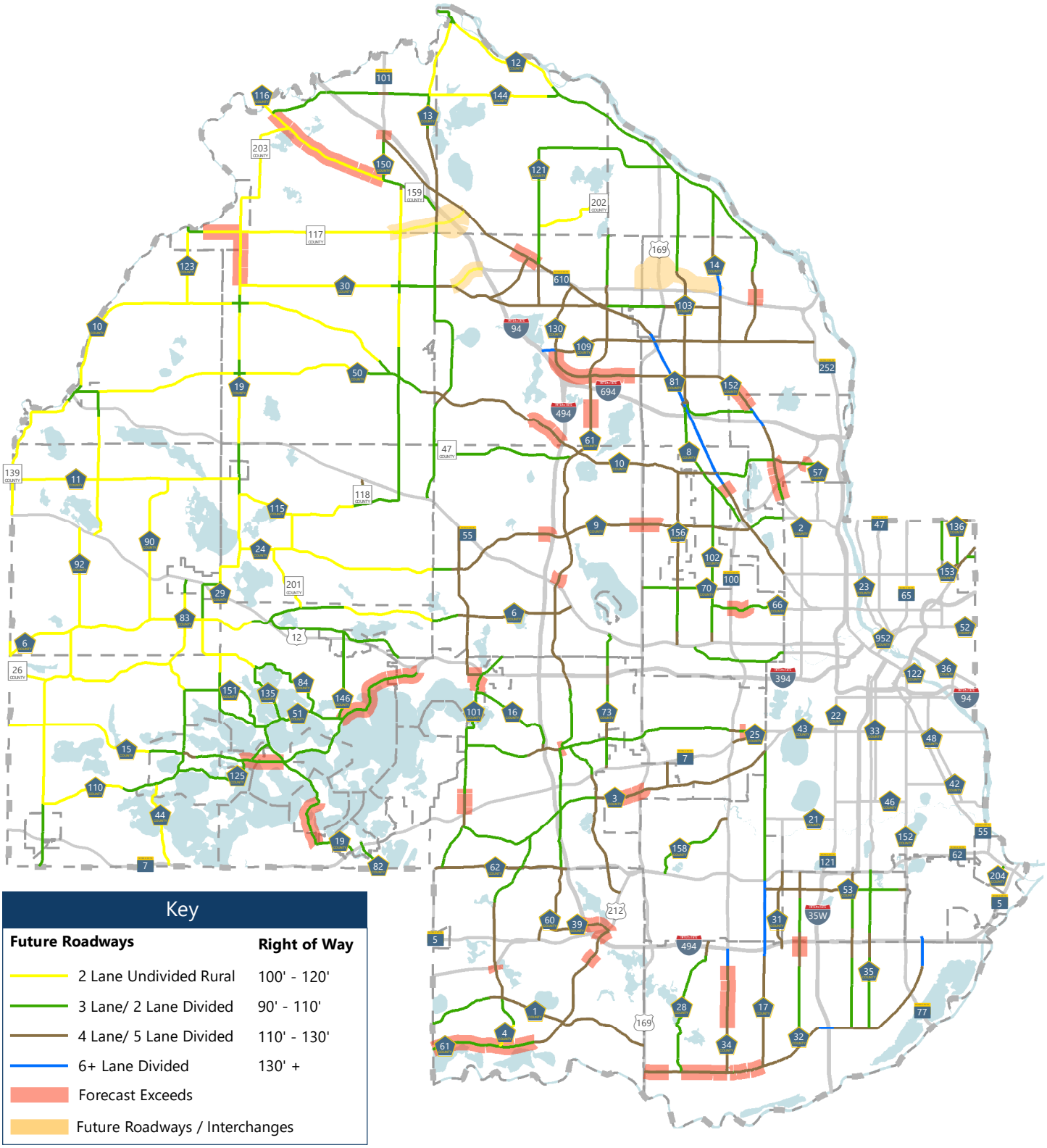
Publication date: 5/30/2018

Data Source: SRF Consulting

2040 Deficient Roadway Segments

Figure 4-14 | Public Works

HENNEPIN COUNTY
MINNESOTA



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N

0 5 10 Miles

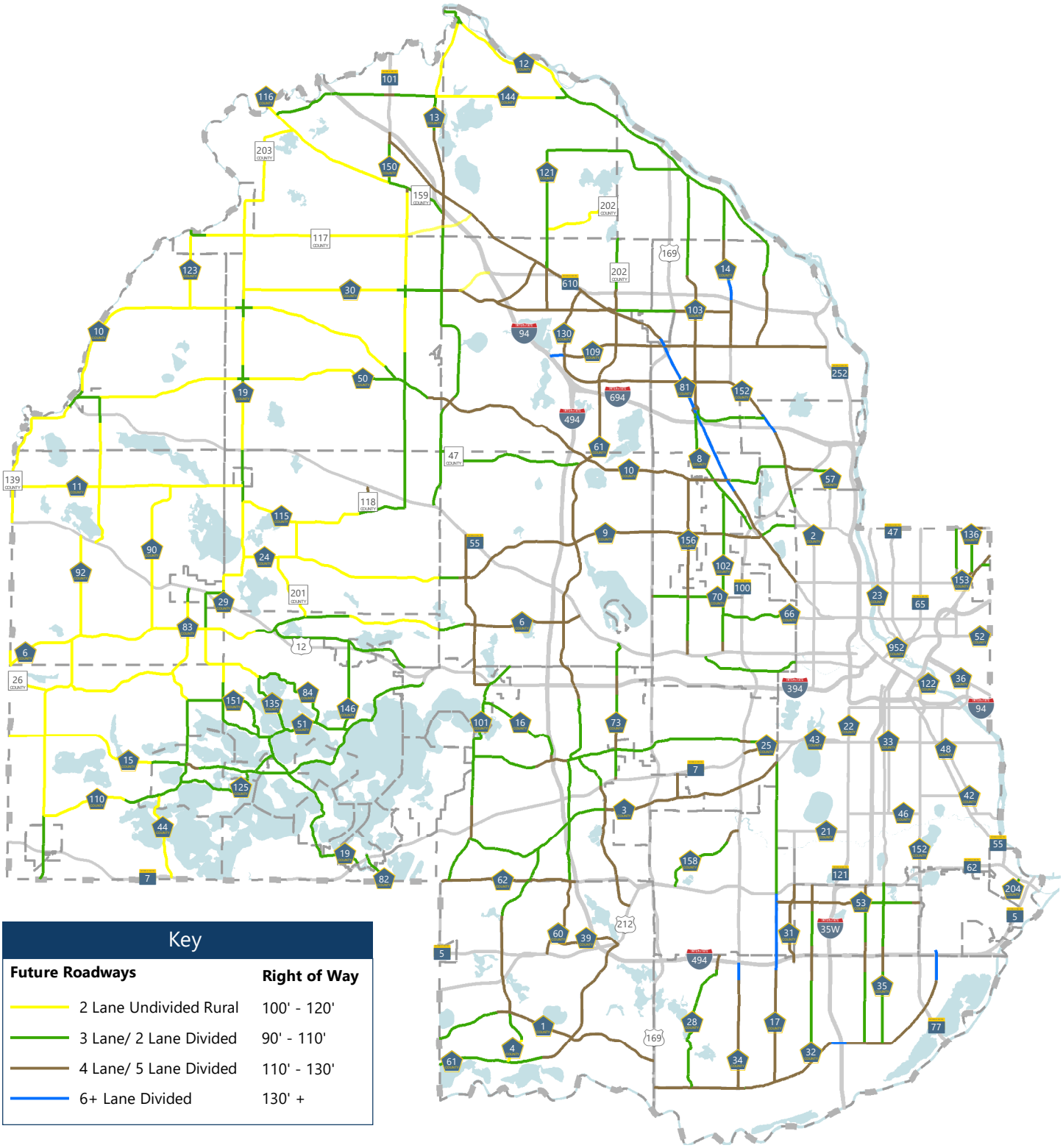
Hennepin

Publication date: 5/30/2018 Data Sources: SRF Consulting

Envisioned Roadway System and Right-of-Way Needs

Figure 4-15 | Public Works

HENNEPIN COUNTY
MINNESOTA



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N

0 5 10 Miles

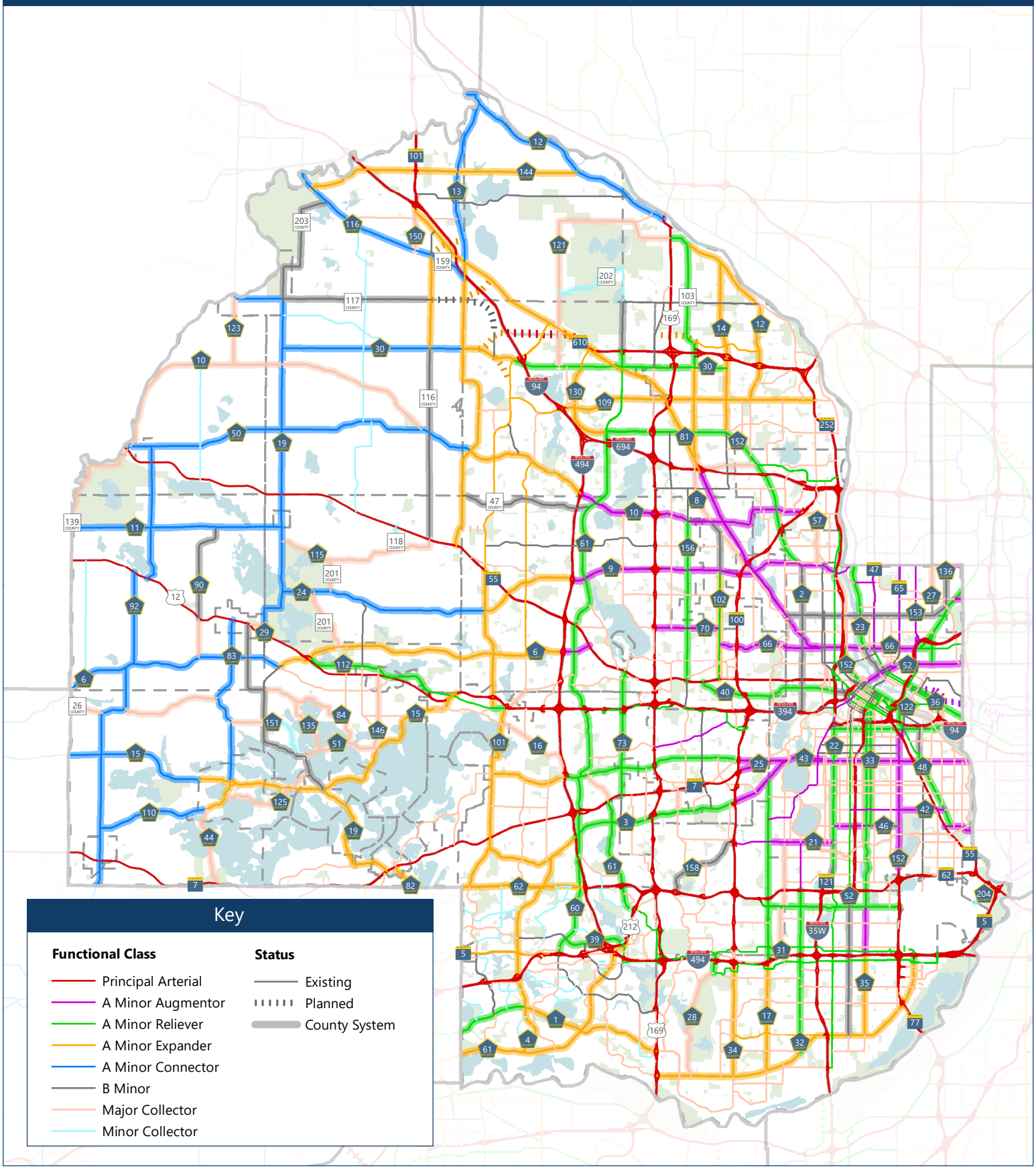
Hennepin

Publication date: 5/30/2018

Functional Classification

Figure 4-16 | Public Works

HENNEPIN COUNTY
MINNESOTA



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N

0 5 10 Miles

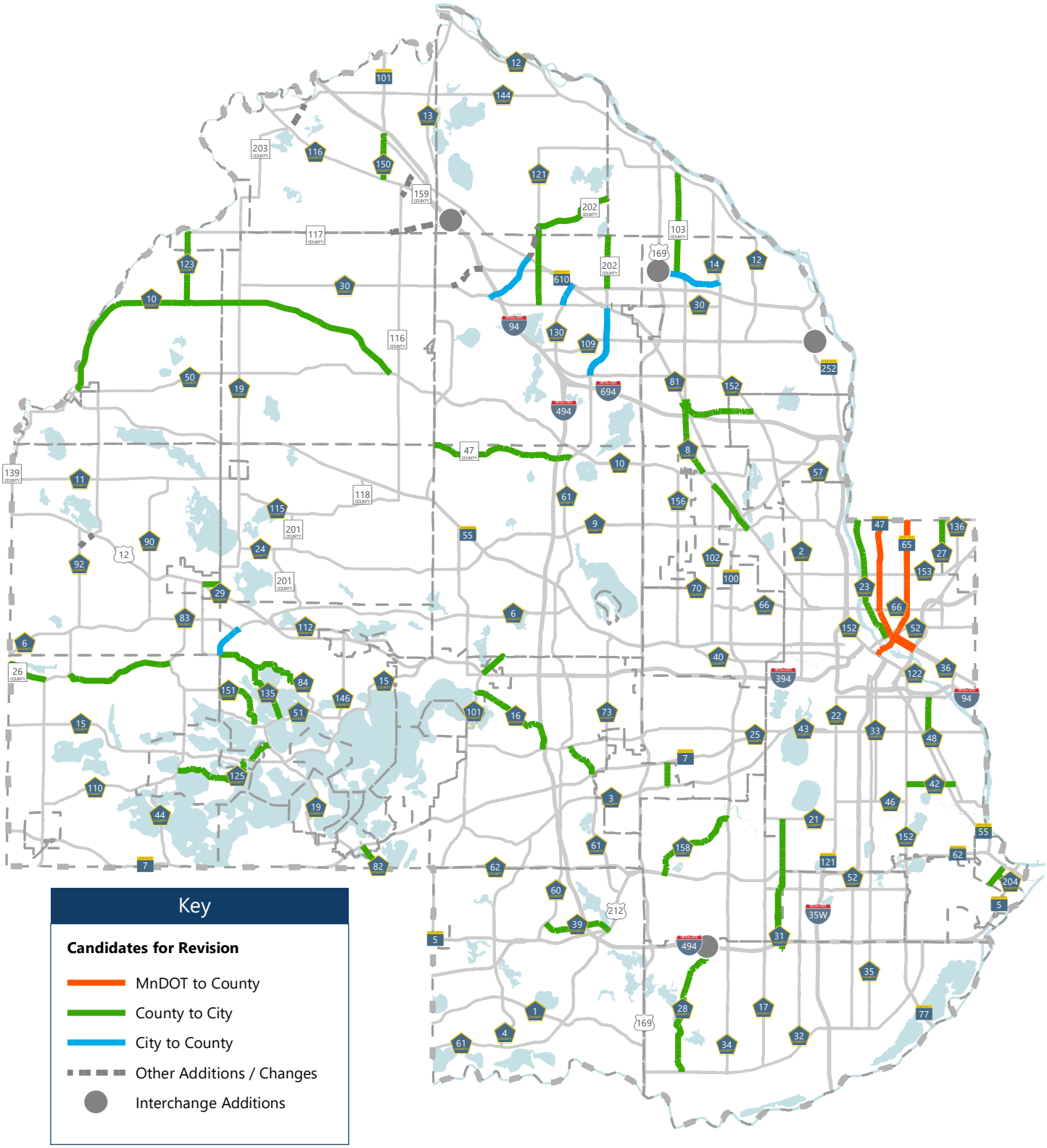
Hennepin

Publication date: 5/9/2018 Data Sources: Metropolitan Council

Jurisdiction Transfer Candidates

Figure 4-17 | Public Works

HENNEPIN COUNTY
MINNESOTA



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N

0 5 10 Miles

Publication date: 5/30/2018

Regional Parks and Trails

*Adopted by the Metropolitan Council in February 2015, the **2040 Parks Policy Plan** is the metropolitan system plan for regional parks with which local comprehensive plans must conform.*

Winter recreation area at Theodore Wirth Regional Park in Minneapolis

Hennepin County is graced with many beautiful parks and trails that showcase the unique landscapes of our area and provide year-round recreational opportunities. Some of the best-known and most-visited include the Minneapolis Chain of Lakes, Elm Creek Park Reserve, and Hyland Lakes Park Reserve.

- Parks and trails used for recreation positively influence our environment, health, and economy.
- Parks preserve our natural landscapes, provide animal and plant habitats, and play a vital role in community storm water infiltration.
- Parks support a healthy community by providing opportunities to connect with nature, which has proven physical and mental health benefits, for example: making it easier to be physically active regularly, reducing risk of preventable chronic disease, and strengthening family relationships and community connections by providing formal and informal gathering places.
- Parks positively influence property values and make areas more attractive for development and redevelopment.

Hennepin County's role

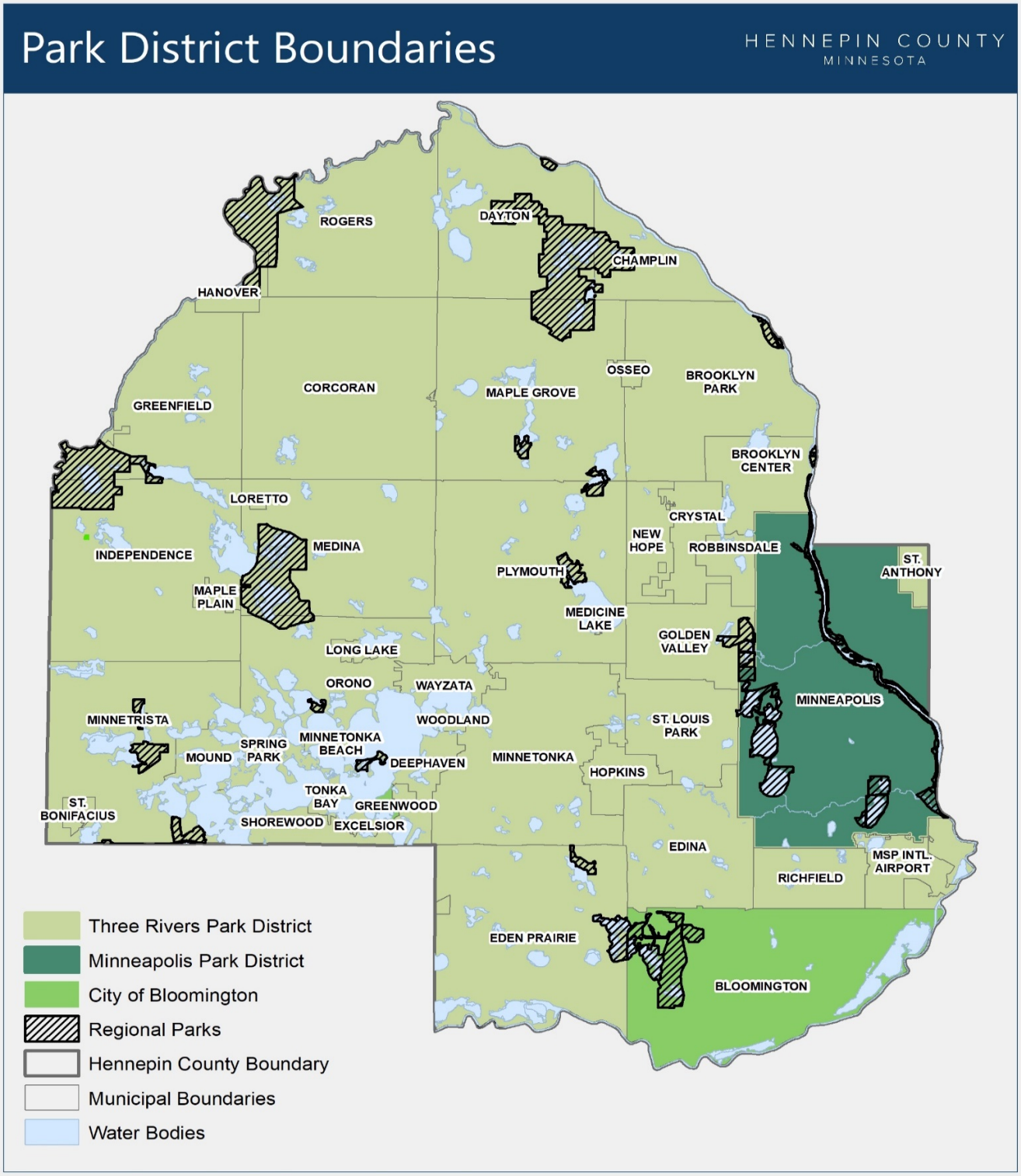
Hennepin County does not plan for, own, or operate the parks and trails within its borders. These are the responsibility of cities and special park districts. Some are part of the regional park system, and regional parks are supported by planning, funding, and marketing from the Metropolitan Council.

The cities or districts that operate regional parks are designated as Regional Parks Implementing Agencies. The Regional Parks Implementing Agencies in Hennepin County are Three Rivers Park District, the Minneapolis Park and Recreation Board, and the City of Bloomington. District boundaries, regional parks and regional trails are depicted on maps P-1, P-2 and P-3.

The county supports parks by making physical connections to parks with roads and trails and by providing, supporting, and funding various environmental, health, social and education programs.

NatureFest, an environmental education field day offered by Hennepin County and Three Rivers Park District

Map P-1



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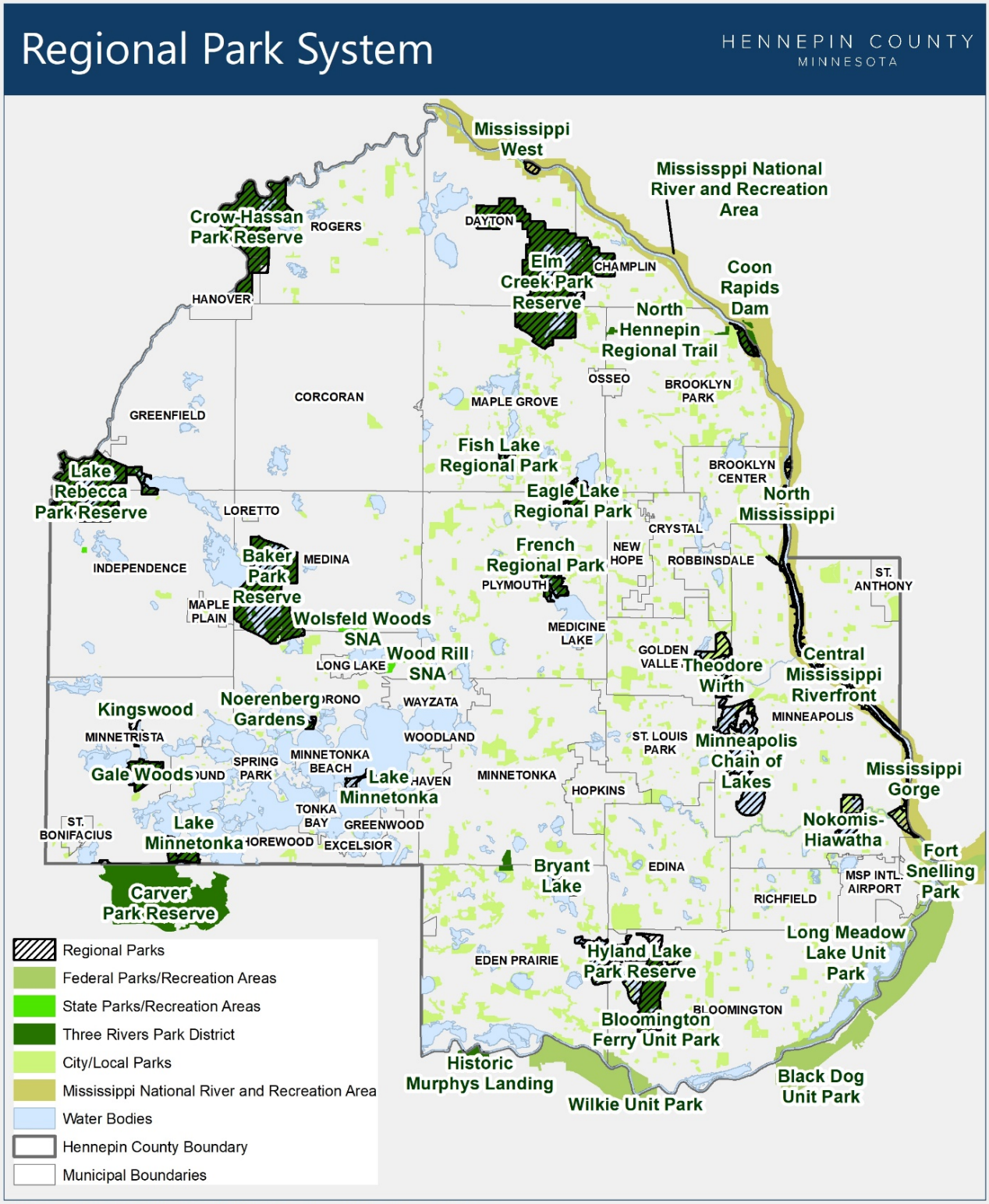
Publication date: 2/14/2018

Data sources: Hennepin County, Metropolitan Council, Minnesota DNR

N 0 5 10 Miles

Map P-2



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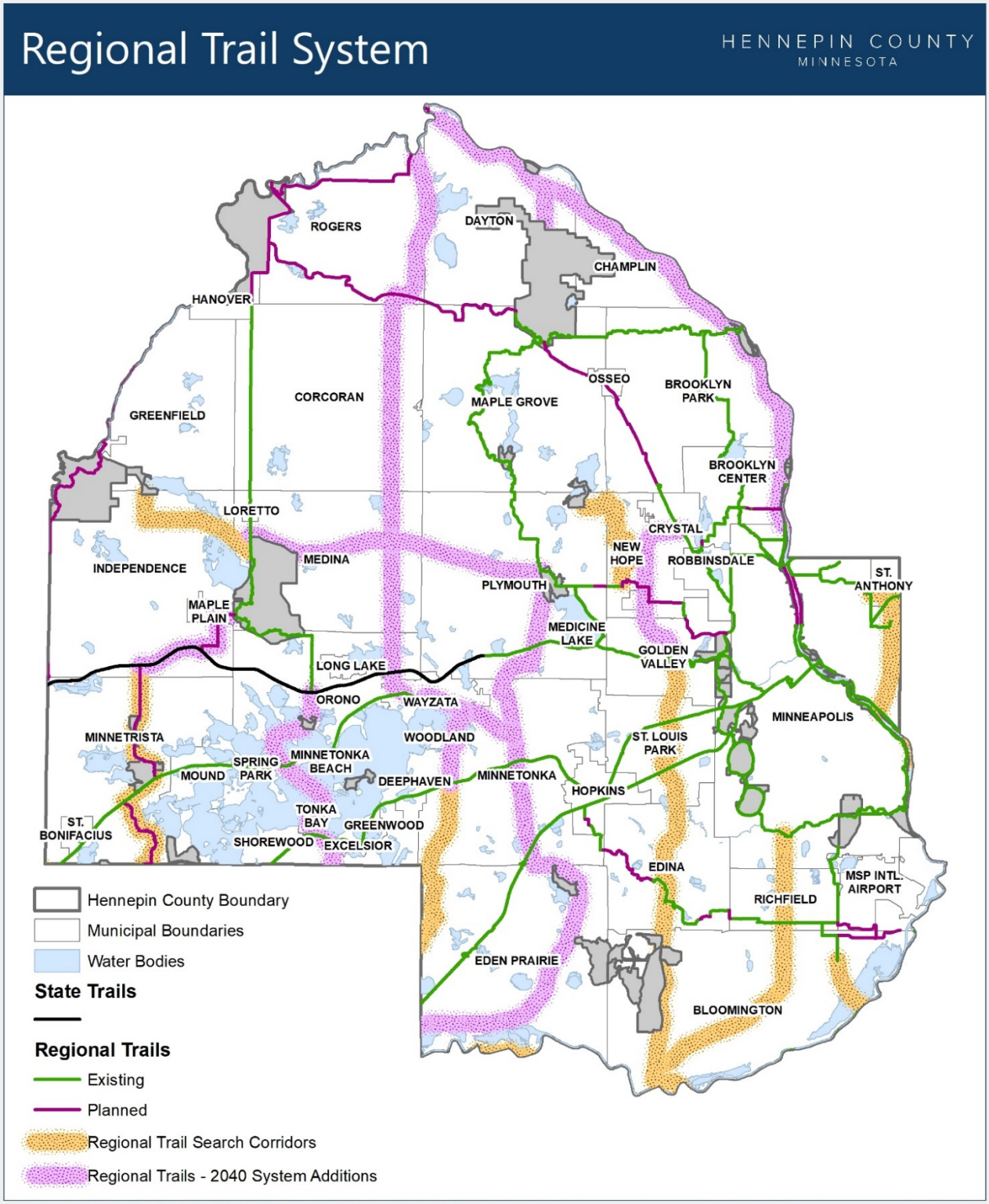
Publication date: 2/6/2018
Data sources: Hennepin County, Metropolitan Council, Minnesota DNR

Map P-3


Regional Trail System
HENNEPIN COUNTY
MINNESOTA
ROGERS
DAYTON
CHAMPLIN
HANOVER
OSSEO
BROOKLYN PARK
CORCORAN
MAPLE GROVE
GREENFIELD
BROOKLYN CENTER
LORETTO
CRYSTAL
NEW HOPE
ROBBINSDALE
MEDINA
INDEPENDENCE
ST. ANTHONY
PLYMOUTH
MAPLE PLAIN
MEDICINE LAKE
GOLDEN VALLEY
LONG LAKE
ORONO
WAYZATA
MINNEAPOLIS
MINNETRISTA
WOODLAND
ST. LOUIS PARK
SPRING PARK
MINNETONKA BEACH
MOUND
DEEPHAVEN
MINNETONKA
HOPKINS
TONKA BAY
GREENWOOD
ST. BONIFACIUS
SHOREWOOD
EXCELSIOR
EDINA
MSP INTL. AIRPORT
RICHFIELD
EDEN PRAIRIE
BLOOMINGTON
Hennepin County Boundary
Municipal Boundaries
Water Bodies
State Trails
Regional Trails
Existing
Planned
Regional Trail Search Corridors
Regional Trails - 2040 System Additions
Disclaimer: This map (i) is furnished "AS IS" with no representation as to completeness or accuracy; (ii) is furnished with no warranty of any kind; and (iii) is not suitable for legal, engineering or surveying purposes. Hennepin County shall not be liable for any damage, injury or loss resulting from this map.
Publication date: 1/3/2018
Data sources: Hennepin County, Metropolitan Council, Minnesota DNR
N
0
5
10
Miles
Hennepin

Three Rivers Park District

Three Rivers is the largest parks agency in the county, with 18,167 acres of parks and 140 miles of trails. Named after the three rivers in Hennepin County — the Mississippi, the Minnesota, and the Crow — Three Rivers Park District owns and manages 21 regional parks within the county.

Goals of Three Rivers Park District:

- Protect the region's water and natural resources
- Inspire people to recreate
- Connect people to nature
- Create vibrant places
- Collaborate across boundaries

Outdoor recreation activities in Three Rivers Park District parks and trails include camping, hiking, cross country and downhill skiing, tubing, bicycling, in-line skating, horseback riding, nature interpretation, golfing, fishing, and swimming. Three Rivers Park District also operates a natural resources management program, which administers the restoration and perpetuation of both native wildlife and plants in order to provide opportunities for a high-quality recreational experience for park visitors.

Regional parks within Three Rivers Park District:

Baker Park Reserve

Bryant Lake Regional Park

Carver Park Reserve

Clifton E. French Regional Park

Coon Rapids Dam Regional Park

Crow Hassan Park Reserve

Eagle Lake Regional Park

Elm Creek Park Reserve

Fish Lake Regional Park

Gale Woods Farm Special Recreation Feature

Hyland-Bush-Anderson Lakes Park Reserve

Kingswood Special Recreation Feature

Lake Minnetonka Islands Regional Park

Lake Minnetonka Regional Park

Lake Rebecca Park Reserve

Lake Sarah Regional Park

Murphy-Hanrehan Park Reserve

Noerenberg Gardens

North Mississippi Regional Park

Three Rivers Parks have seen tremendous growth in use over the past decade, nearly doubling the number of visits between 2006 and 2016.

Regional trails of Three Rivers Park District:

Bassett Creek Regional Trail

Cedar Lake LRT Regional Trail (Hennepin County Regional Railroad Authority corridor)

Cedar Lake Regional Trail (Hennepin County Regional Railroad Authority corridor)

Crystal Lake Regional Trail

CP Rail Extension

Dakota Rail Regional Trail (Hennepin County Regional Railroad Authority corridor)

Dakota Rail Extension

Lake Independence Extension

Lake Sarah Extension

Lake Independence Regional Trail

Lake Minnetonka LRT Regional Trail (Hennepin County Regional Railroad Authority corridor)

Luce Line Regional Trail

Minnetrista Extension

Medicine Lake Regional Trail

Minnesota River Bluffs LRT Regional Trail (Hennepin County Regional Railroad Authority corridor)

Nine Mile Creek Regional Trail

Nokomis-Minnesota River Regional Trail (or Intercity Regional Trail)

North Cedar Lake Regional Trail

Northeast Diagonal Regional Trail (Hennepin County Regional Railroad Authority corridor)

Rush Creek Regional Trail

Shingle Creek Regional Trail

Twin Lakes Regional Trail

West Mississippi River Regional Trail

In addition to the existing and planned trails of the Three Rivers Park District, there are a number of trail corridors, referred to as search corridors, that have not been master planned and/or have not been approved by the Metropolitan Council. These future regional trail

proposals need to be evaluated within the comprehensive, region-wide framework of the Regional Bicycle Transportation Network to ensure that regional facilities are not duplicated.

Because the tentative alignments of these trails have not been approved by the Metropolitan Council as part of a master plan, they are identified on the maps as regional trail search corridors and are not yet eligible for Regional Parks System funding for acquisition and development.

Search corridors identified by the Metropolitan Council within Three Rivers Park District:

- CP Rail Extension Regional Trail Search Corridor
- Crow River Regional Trail Search Corridor
- Dakota Rail Extension Regional Trail Search Corridor
- Eagle Lake – Bassett Creek Regional Trail Search Corridor
- Grand Rounds Missing Link Regional Trail Search Corridor
- Highway 101 Regional Trail Search Corridor
- Intercity Extension Regional Trail Search Corridor
- Lake Independence Extension Regional Trail Search Corridor
- Lake Sarah Extension Regional Trail Search Corridor
- Lake Sarah Regional Trail Search Corridor
- Minnetrista Extension Regional Trail Search Corridor
- Minnetrista Regional Trail Search Corridor
- North – South 1 Regional Trail Search Corridor
- North – South 2 Regional Trail Search Corridor
- South Hennepin East Regional Trail Search Corridor
- South Hennepin West (CP Rail) Regional Trail Search Corridor
- West Mississippi River Regional Trail Search Corridor

To view the Three Rivers Park District Vision Plan, July 2010
https://threerivers-drupal.s3.us-east-2.amazonaws.com/public/pdfs/Mission/Mission-Copy-2010-vision-plan.pdf.

Minneapolis Park System (Minneapolis Park and Recreation Board)

The Minneapolis Park System, governed by the Minneapolis Park and Recreation Board, spans 6,804 acres of parkland and water, and features 179 park properties. The system includes the 55-mile Grand Rounds National Scenic Byway, 102 miles of Grand Rounds biking and walking paths, 22 lakes, 12 formal gardens, seven golf courses and 49 recreation centers. Together these properties annually receive approximately 23 million visits. The 20-Year Neighborhood Park Plan provides funding through 2036 to maintain and revitalize existing parks.

Regional parks within the Minneapolis Park System include:

- Above the Falls Regional Park
- Central Mississippi Riverfront Regional Park
- Kenilworth Regional Trail
- Minneapolis Chain-of-Lakes Regional Park
- Minnehaha Regional Park
- Mississippi Gorge Regional Park
- Nokomis-Hiawatha Regional Park
- North Mississippi Regional Park (with Three Rivers Park District)
- Theodore Wirth Regional Park

Regional trails of the Minneapolis Park System include:

Kenilworth Regional Trail

Grand Rounds National Scenic Byway

- Cedar Lake Regional Trail
- Columbia Parkway Regional Trail
- Dean Parkway
- East River Parkway
- Minnehaha Parkway
- Theodore Wirth Parkway
- Victory Memorial Drive
- West River Parkway
- William Berry Parkway
- Ridgway Parkway Regional Trail
- St. Anthony Parkway

The Metropolitan Council identified the following regional trail search corridors within the Minneapolis Parks and Recreation Board District: Grand Rounds Missing Link Regional Trail Search Corridor

For more, see the Minneapolis Park and Recreation Board Comprehensive Plan, 2007-2020: https://www.minneapolisparks.org/_asset/9h52lq/comprehensive_plan.pdf.

City of Bloomington

The City of Bloomington has one park reserve that is part of the metropolitan regional parks and open space system: Hyland-Bush-Anderson (HBA) Regional Park Reserve. The 2,565 park reserve is jointly managed by the City of Bloomington and Three Rivers Park District.

In 2010, Three Rivers and the City of Bloomington adopted the *Hyland-Bush-Anderson Lakes Regional Park Reserve; Joint Master Plan*. The plan affirms the policy of retaining 80 percent of the upland area for restoration and preservation in a natural state.

To see a copy of the Hyland-Bush-Anderson Lakes Regional Park Reserve; Joint Master Plan, visit https://www.bloomingtonmn.gov/pr/hyland-bush-anderson-lakes-regional-park-reserve-master-plan.

Regional trail search corridors within Bloomington include:

Intercity Extension

South Hennepin East (CP Rail)

South Hennepin West (CP Rail)

State of Minnesota Operated Parklands and Trail

The Minnesota Department of Natural Resources (DNR) manages state parks, lands, and trails in the region, including:

Fort Snelling State Park

Luce Line State Trail

Minnesota Valley State Trail

Robina Lake Wildlife Management Area

Schendel Wildlife Management Area

Wolsfeld Woods Scientific and Natural Area

Wood-Rill Scientific and Natural Area

There are six state water trails and their attendant system of boat and canoe launches that travel through Hennepin County along the Crow, Minnesota, and Mississippi rivers. The DNR and its local unit of government partners actively manage the state water trails for canoeing, kayaking, boating, and camping. Additionally, 72 miles of the Mississippi River and four miles of the Minnesota River have been designated as the Mississippi National River and Recreation Area Water Trail, a national water trail.

National Parks and Federal Lands

Hennepin County is also home to the Minnesota Valley National Wildlife Refuge and the Mississippi National River and Recreation Area (MNRRA). The Minnesota Valley National Wildlife Refuge is a corridor of land and water along the Minnesota River that stretches from Bloomington to Henderson and is managed by the U.S. Fish and Wildlife Service. The refuge was established in 1976 to provide habitat for a large number of migratory waterfowl, fish, and other wildlife species threatened by commercial and industrial development, and to provide environmental education, wildlife recreational opportunities, and interpretive programming for Twin Cities residents.

The 54,000-acre Mississippi National River and Recreation Area was established in 1988 and is a unit of the National Park Service. The National Park Service owns very little land within its borders but partners with local governments, state agencies, and organizations to protect the significant resources along the 72-mile stretch of river running through the region. Several regional parks and trails, which are owned and operated by regional park implementing agencies, are located within the MNRRA corridor. (Source: Metropolitan Council Park Plan).

Water Resources

Adopted by the Metropolitan Council in May 2015, the 2040 Water Resources Policy Plan is the metropolitan system plan for metropolitan wastewater services with which local comprehensive plans must conform.

The 2040 Water Resources Policy Plan includes policies and strategies to achieve the following 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.

Wastewater

Hennepin County's role

Hennepin County provides a septic permitting, inspection, and enforcement program to protect ground and surface waters, provide consistent regulation across city boundaries, and prevent waterborne illness. Hennepin County Ordinance 19 adopts Minnesota Rules Chapter 7080, which governs individual sewage treatment systems (less than 10,000 gallons/day) and describes the authority of the types of septic systems the county regulates. The ordinance was last amended in 2014 to reflect the changes in Minnesota Rules Chapters 7080-7084.

The county's subsurface sewage treatment system (SSTS) program is administered by the Public Health department, Environmental Health division.

Hennepin County has no land use authority and thus partners with cities to incorporate Hennepin County's septic system permitting process into their planning and zoning approval processes. Septic systems regulated by cities and Hennepin County are depicted on map W-1.

The county has the following responsibilities in administering its SSTS program:

- Review all applications for SSTS.
- Issue all required permits.
- Conduct construction inspections and perform all necessary tests to determine conformance with the ordinance.
- Investigate complaints regarding SSTS.
- Perform compliance inspections and issue certificates of compliance or notices of noncompliance where appropriate.
- Issue stop work orders and notices of violation.
- Take complaints to the municipal or county attorney for violations of this ordinance.
- Maintain all records for SSTS.
- Maintain and update data including the location of all known septic system sites in the Hennepin County jurisdiction. All known documentation related to each septic system will be available through the county's natural resources interactive map as attached PDF documents that include designs, inspections, documented issues/problems, etc.
- Submit annual reports to the Minnesota Pollution Control Agency (MPCA) to demonstrate enforcement of the ordinance.

Crystal Lake near Robbinsdale

Ordinance 19

Summary of Ordinance 19 adopting Minnesota Rules, Chapter 7080:

- There is no requirement for inspection of the septic system for property transfer in Hennepin County's ordinance. State law requires that information regarding the septic system must be properly disclosed to the buyer. A well-informed buyer will want a thorough inspection, and many lending agencies require a compliance inspection on the existing system before providing a mortgage.
- Hennepin County inspects new septic systems and repairs existing septic systems that are the subject of a complaint investigation. Hennepin County does not perform compliance inspections for existing septic systems. There are many inspectors licensed by the MPCA. A list of licensed inspectors is available on the MPCA website.
- The following building permits are subject to septic permit approval or compliance inspection: all building permits for new commercial or new residential structures, any permits for bedroom(s) additions, any additions/remodeling of commercial facilities where water usage will be increased, any permits within designated shoreland areas, and any permits within designated wellhead protection areas.
- Existing systems built before January 23, 1996, are considered in compliance if two feet of soil separation is provided and it is not classified as an imminent health threat* (excludes shoreland areas; food, beverage, lodging facilities; wellhead protection areas; and new construction).
- Certificates of compliance for existing systems remain valid for three years unless identified as an imminent health threat.*
- Certificates of compliance for new systems remain valid for five years unless identified as an imminent health threat.*
- Systems receiving a notice of noncompliance, that are not an imminent health threat* have a three-year upgrade requirement.
- There is a general setback of 50 feet to a wetland.
- Warrantied systems (MN Statutes Chapter 115.55) are prohibited.

* Imminent health threat means that sewage is surfacing on the ground, backing up into the home, or discharging to surface or groundwater.

Map W-1: Septc systems regulated by cities and Hennepin County

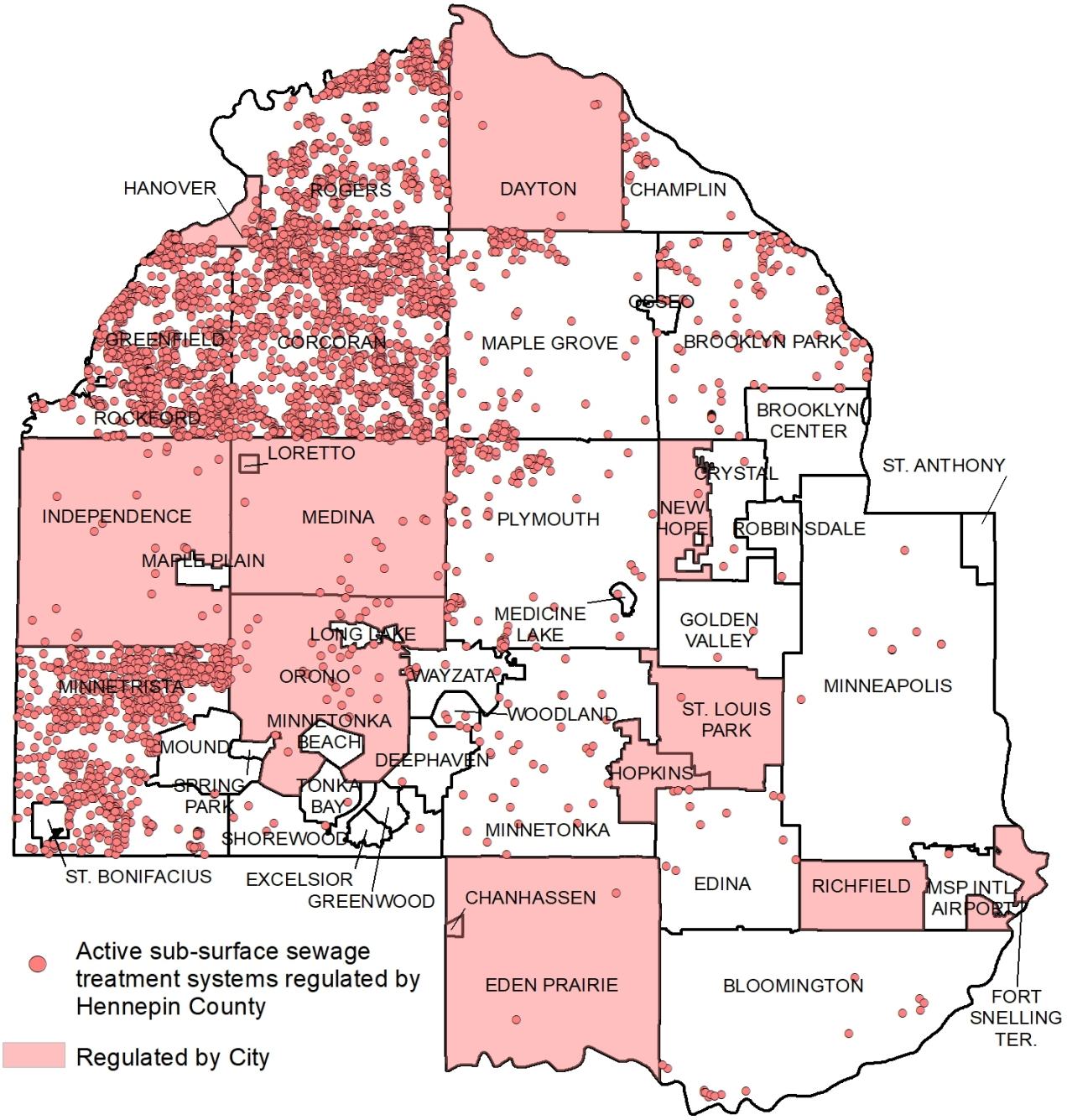


Figure W-1: MPCA Confirmation of Ordinance Amendment Completion Letter

Minnesota Pollution Control Agency

520 Lafayette Road North | St. Paul, Minnesota 55155-4194 | 651-296-6300

800-657-3864 | 651-282-5332 TTY | www.pca.state.mn.us | Equal Opportunity Employer

May 28, 2014

Hennepin County
Human Services/Public Health Dept
Duane Hudson
1011 First Ave So, Ste. 215
Hopkins, MN 55343

RE: Confirmation of Ordinance Amendment Completion

Dear Mr. Hudson:

This letter acknowledges the completion of the Subsurface Sewage Treatment System (SSTS) ordinance amendment requirement by Hennepin County. The Minnesota Pollution Control Agency (MPCA) appreciates the work that Hennepin County put into meeting this requirement, and your county's continued administration of an effective SSTS program. A copy of this signed letter will be loaded into BWSR's eLINK system as a record of this work having been completed.

In the future, MPCA staff will continue be on hand if you have questions or concerns and to provide assistance when needed in administration of your SSTS program. Please do not hesitate to contact any MPCA staff in this regard.

Sincerely,

Gretchen Sabel
SSTS Coordinator
SSTS Section
Municipal Division

GS:wgp

Surface Water

Hennepin County's water resources, which include lakes, streams, groundwater, and wetlands, are an important component to our quality of life and the overall health of our environment. Hennepin County has 200 lakes, 640 miles of streams, and more than 45,000 acres of wetlands.

Protecting our water resources is not only important to human health, it is also vital to preserving wildlife habitat and providing economic and recreational value. Many water pollutants come from human activities on the land. During the last few decades, state and federal regulations have limited point source discharges of waste water and sewage pipes into our waterways. Today the majority of our water pollution comes from nonpoint sources, which includes runoff from yards, roads, farms, and farm tiles.

Prairie near Hennepin County Public Works Facility in Medina

As more county land is developed, there is an increase in impervious surfaces (see map W-2) and a reduction in vegetated surfaces that capture runoff and filter water. When it rains or snows, much of the stormwater that falls on these hard surfaces runs off instead of soaking into the soil. As it travels, stormwater picks up pollutants like sediments, fertilizers, grass clippings, pet droppings, oil, and pesticides and delivers them directly into storm sewers. Eventually, some of this water ends up in lakes, streams, or rivers without filtration or treatment (see map W-3 to visualize water flow throughout Hennepin County).

All water in Hennepin County flows to the Crow River, Mississippi River, or Minnesota River and contributes to the water quantity and quality. By properly managing yards, roads, and farms, all residents play an important role in preventing pollution of water resources.

Emerging issues

Hennepin County's water resources are a critical and valuable asset to all residents. To sustain and improve them for years to come, it is necessary to understand the future issues that may arise and threaten lakes, rivers, wetlands, and underground infrastructure.

The impacts of climate change will put more stress on natural resources. Temperature and moisture patterns will change faster than plant and animal communities can adapt, resulting in changes to ecosystems, habitat loss, and spread of invasive species. Climate change can stress plants and animals, making them more vulnerable to disease and less competitive with invasive species. Additionally, an increased frequency of both flooding and droughts will put additional pressure on our stormwater management infrastructure and groundwater resources.

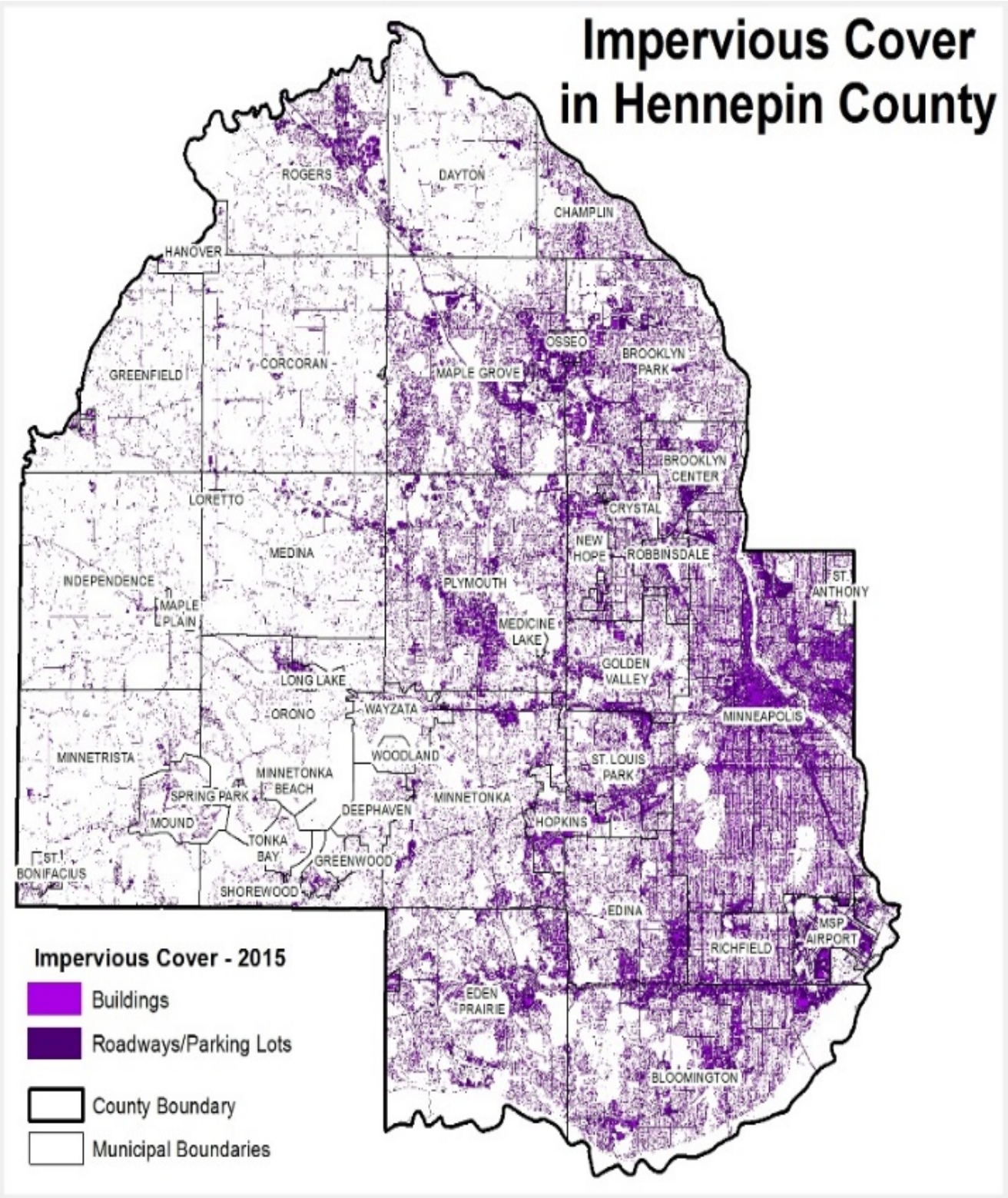
Land use is projected to shift in the county through 2030 with more land being developed and less land being open space or agricultural.

Development is accompanied by additional stormwater infrastructure that often speeds water off the landscape, through systems of pipes, and to nearby water bodies much more quickly than water would move naturally through lakes, rivers, and streams. The increased rate at which water reaches streams and rivers contributes to bank and stream channel erosion, a significant water quality concern for Hennepin County and downstream communities.

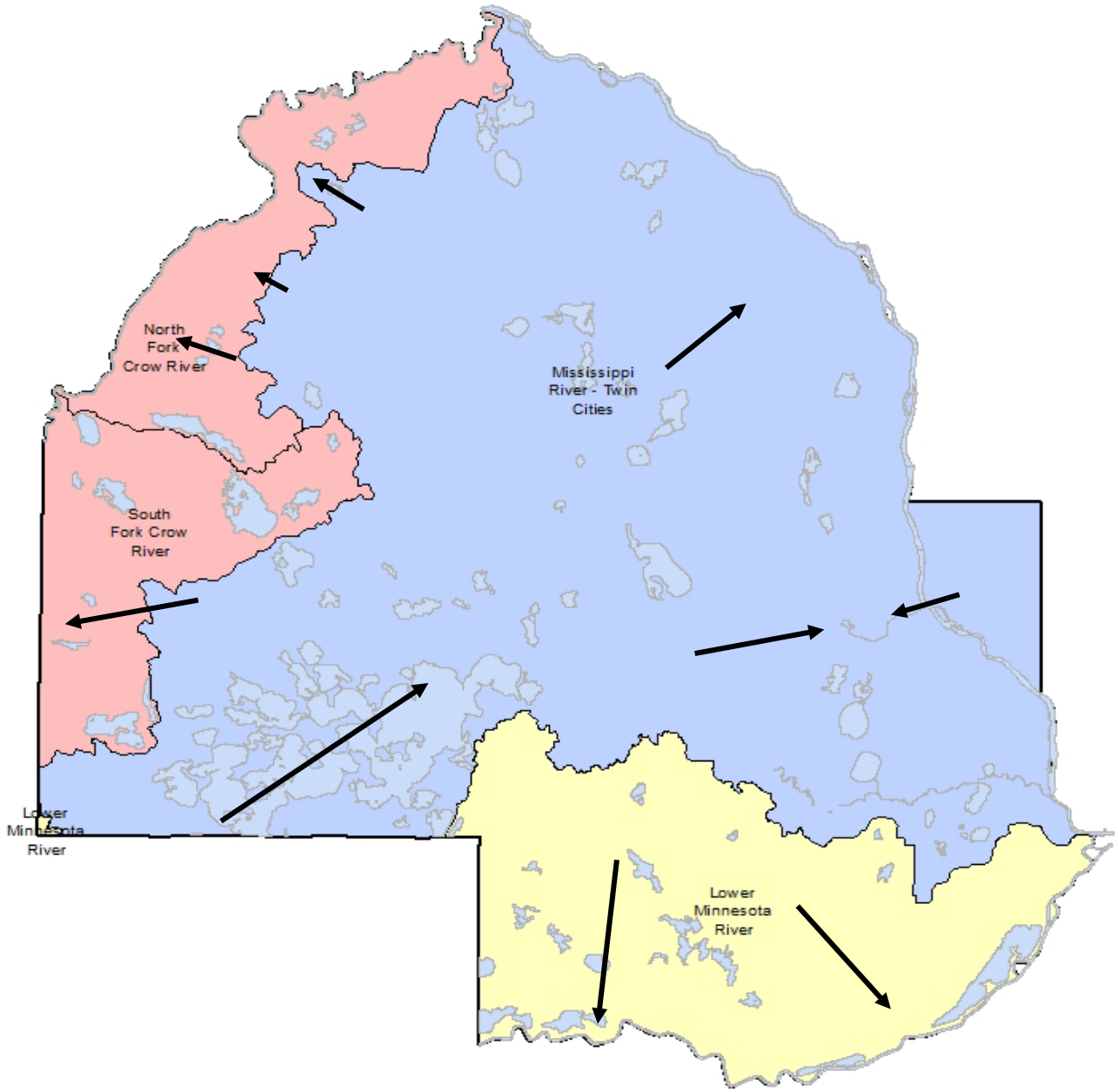
Identifying strategies for both mitigating and communicating about this emerging water quality concern — one that is not a pollutant but a human-made alteration in hydrology — is one of the most challenging issues facing water resource managers today

Map W-2: Impervious surfaces throughout Hennepin County in 2015

(Data used is 1-meter resolution land cover classification provided by the Remote Sensing and Geospatial Analysis Laboratory at the University of Minnesota.)



Map W-3: Watersheds for the Crow, Mississippi, and Minnesota Rivers, and direction of water flow in Hennepin County



Involvement from others

Many entities are involved with water resources, including the county's 45 municipalities, 11 watershed management entities, and two park districts. Additionally, state-level governance regulates water quality throughout Hennepin County. The Minnesota Board of Water and Soil Resources (BWSR) is responsible for working with partners to improve and protect local water quality. The Minnesota Pollution Control Agency (MPCA) helps protect water resources by monitoring water quality, setting standards, and controlling what may go into water.

At the federal level, the Clean Water Act requires each state to adopt water quality standards to protect waters from pollution. Many partners and stakeholders create a complex structure for the management and regulation of water throughout Hennepin County.

Hennepin County's role

In 2016, Hennepin County adopted a Natural Resource Strategic Plan. This plan is intended to guide the county and its partners in responding to natural resource issues and developing internal and external policies, programs, and partnerships that improve, protect, and preserve natural resources.

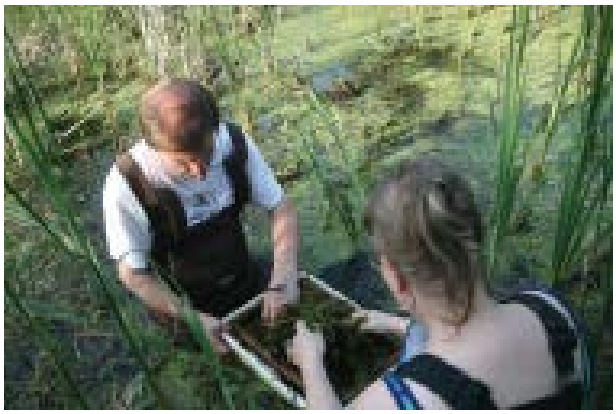
Internally, Hennepin County promotes the implementation of low-impact development and green infrastructure for newly developed and redeveloped properties, agricultural best practices, wetland restorations, and innovative stormwater management practices where applicable. The county will also continue to research and implement state-of-the-art methods of applying chloride to reduce water pollution while maintaining safe roads. These practices will help the county adapt to changing future conditions, reduce impacts from stormwater runoff and work toward the remediation of impaired waters.

Additionally, as the only county in the state with the duties and authorities of a soil and water conservation district, Hennepin County takes the lead in delivering critical assistance in soil and water conservation to land managers. As the conservation district, the county is a member of the Technical Evaluation Panel for administering the Wetland Conservation Act, oversees stewardship of 40 conservation easements, distributes conservation cost-share funds to private landowners, and provides assistance to landowners seeking to comply with the state's buffer law.

Hennepin County and the Minnesota Land Trust established a 44-acre conservation easement at Camp Kingswood in Minnetrista in 2011.

Hennepin County provides technical assistance to watershed organizations and serves on technical advisory committees for the Minnesota Pollution Control Agency's Watershed Restoration and Protection Strategies (WRAPS) and for total maximum daily load (TMDL) studies for impaired waters.

Hennepin County also manages volunteer wetland and stream monitoring programs dedicated to obtaining quality data and promoting wetland and stream stewardship. The county provides financial and technical assistance to landowners and local governments to implement best management practices that preserve and restore critical habitats, reduce erosion, and protect and improve water quality.



Citizen scientist volunteers with the Hennepin County Wetland Health Evaluation Program gather data to assess the health of the county's wetlands.

Perhaps most critically, Hennepin County partners with watershed districts and joint-powers watershed management organizations to add value to their activities by convening groups around issues that span watershed boundaries and to lead by example through careful and considerate stewardship of natural resources in all county activities.

In Hennepin County, watersheds are managed by either a watershed management organization or a watershed district. Both are separate units of government governed by a board of commissioners. Watershed district board members are appointed by the Hennepin County Board, while watershed management organization board members are appointed by city councils.

The watershed management organizations in Hennepin County are:

- Bassett Creek Watershed Management Commission
- Elm Creek Watershed Management Commission
- Lower Minnesota River Watershed District
- Minnehaha Creek Watershed District
- Mississippi Watershed Management Organization
- Nine Mile Creek Watershed District
- Pioneer-Sarah Creek Watershed Management Commission
- Richfield-Bloomington Watershed Management Organization
- Riley Purgatory Bluff Creek Watershed District
- Shingle Creek Watershed Management Commission
- West Mississippi River Watershed Management Commission

Impaired waters

Water quality in lakes is affected by the amount of pollutants entering the lake, lake size, and depth. Similarly, river and stream water quality is affected by the amount of pollutants and the rate and volume of flow through the channel. The amount of pollutants depends on the size of the watershed, the types of land use occurring in the watershed, and annual precipitation. Common pollutants are plant nutrients and fertilizer, which contain phosphorus and nitrogen; sediment; road salt; oil; and heavy metals. Other pollutants of special concern are persistent bioaccumulative toxics (PBTs), which are highly toxic, long-lasting substances that can build up in the food chain to levels that are harmful to humans and wildlife. These toxics are released through the production of energy; motor vehicle use and other air emissions; or when products like electronics, pesticides, and other consumer and industrial products are disposed of improperly.

The primary tool for addressing impaired waters is a pollution reduction plan called a total maximum daily load (TMDL). A TMDL is the maximum amount of a pollutant that a water body can receive without violating water quality standards. The TMDL process identifies all sources of the pollutant and determines how much each source must reduce its contribution in order to meet the quality standard. Using this information, a pollution reduction plan is developed. Once the U.S. Environmental Protection Agency (EPA) approves a completed TMDL plan, the city or watershed management organization implements the plan (see table W-1 for a list of completed TMDL plans in Hennepin County). The MPCA has oversight of this process.

Every two years, the Minnesota Pollution Control Agency creates a list of impaired waters (see map W-4) that do not meet water quality standards. According to the federal Clean Water Act, water quality standards consist of the following categories:

- Beneficial uses: Identify how people, aquatic communities, and wildlife use our waters
- Numeric standards: Amounts of specific pollutants allowed in a body of water while maintaining beneficial uses
- Narrative standards: Statements of unacceptable conditions in and on the water
- Antidegradation protections: Extra protection for high-quality or unique waters and existing uses

In 2018, two lakes in Hennepin County are currently slated to be removed from the Impaired Waters List — Bryant Lake and Mitchell Lake. Both were on the list for nutrient impairments, but restoration activities have improved water quality to the point that they are consistently meeting water quality standards for their size and depth. In addition, Lake Rebecca (listed for nutrient impairments) is also being considered for delisting in 2018, but the data was not compiled in time for the initial review.

Since 2010, nine other lakes and streams have been delisted in Hennepin County, which is an important indicator that conservation work based on TMDLs is having a measurable positive impact on water quality.

TMDLs in Hennepin County

Hennepin County staff serve on technical advisory committees that develop total maximum daily load (TMDL) plans for impaired waters. Currently, there are 21 approved TMDLs in Hennepin County (16 entirely within the county, one statewide, one metrowide, and five in basins that are shared with other counties).

Map W-4: 2018 proposed impaired waters

(Data from Minnesota Pollution Control Agency)

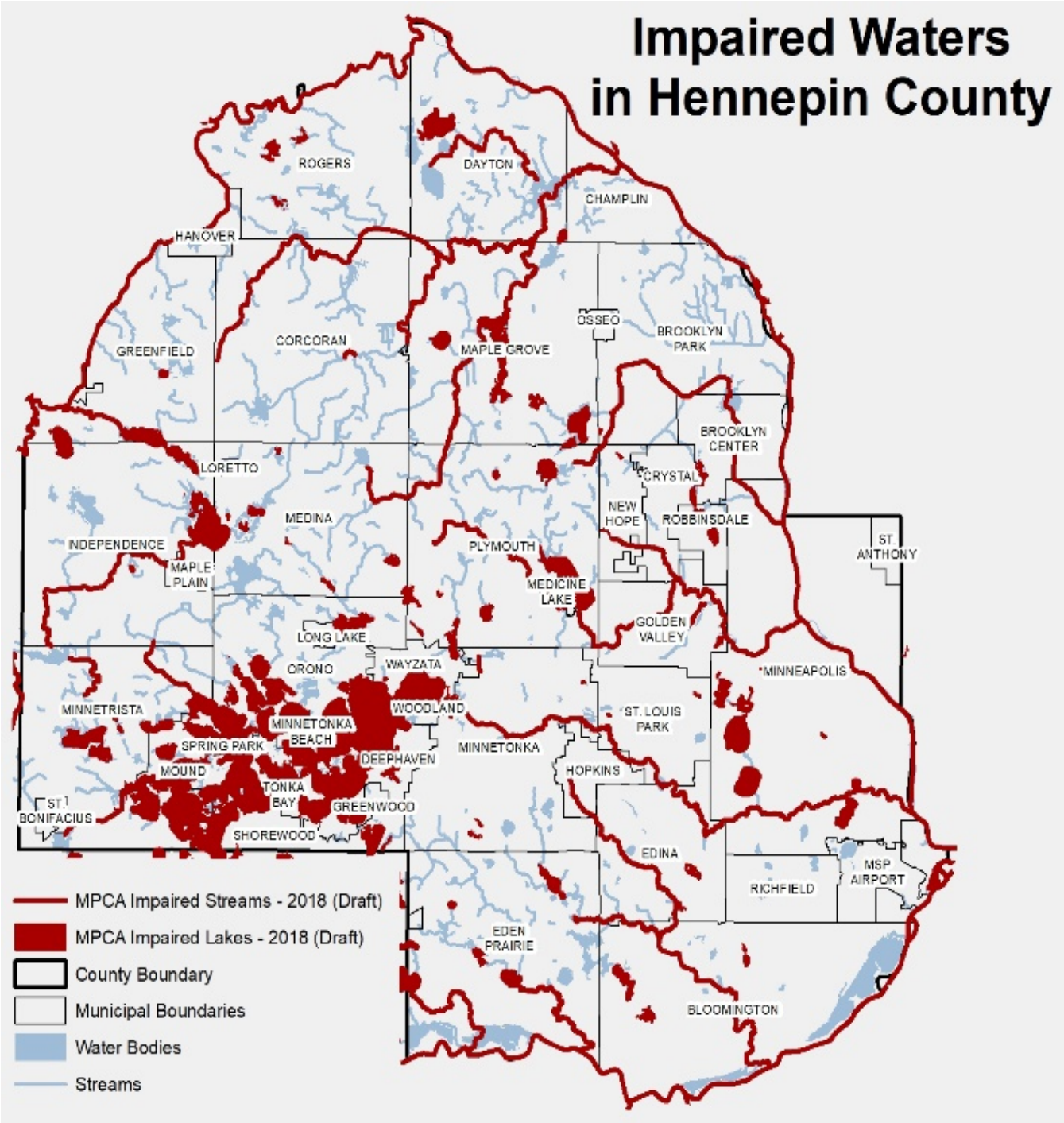


Table W-1: Total Maximum Daily Load (TMDL) plans in Hennepin County

Waterbody/Stream	Reason	Approved	Location in county	Watershed Management Organization
Cedar Island, Pike, and Eagle lakes	Excess Nutrients	2010	Maple Grove, Plymouth	Shingle Creek Watershed Management Commission
Crystal Lake	Excess Nutrients	2009	Robbinsdale, Minneapolis	Shingle Creek Watershed Management Commission
Elm Creek Watershed	DO, Biota, Mercury, Excess Nutrients	2017	Maple Grove, Medina, Rogers, Champlin, Dayton, Corcoran, Greenfield, Plymouth	Elm Creek Watershed Management Commission
Lake Hiawatha	Excess Nutrients, Bacteria	2014	Minneapolis	Minnehaha Creek Watershed District
Lake Independence	Excess Nutrients	2007	Independence, Medina, Loretto	Pioneer-Sarah Creek Watershed Management Commission
Lake Sarah	Excess Nutrients	2011	Independence, Greenfield	Pioneer-Sarah Creek Watershed Management Commission
Lower Crow River	DO, Turbidity, Bacteria	2010	Rogers, Rockford, Greenfield, Carver/Wright Counties	Crow River Organization of Water
Magda Lake	Excess Nutrients	2010	Brooklyn Park	Shingle Creek Watershed Management Commission
Meadow Lake	Excess Nutrients	2010	New Hope	Shingle Creek Watershed Management Commission
Medicine Lake	Excess Nutrients	2011	Plymouth	Bassett Creek Watershed Management Organization
Minnehaha Creek Watershed	Excess Nutrients, Bacteria	2011	Lake Minnetonka Area, Carver County, Minnetonka, Hopkins, St. Louis Park, Minneapolis	Minnehaha Creek Watershed District
Nine Mile Creek	Turbidity, Biota, Chloride	2010	Bloomington	Nine Mile Creek Watershed District
Pioneer-Sarah Creek Watershed	Excess Nutrients, Bacteria, DO	2017	Greenfield, Loretto, Medina, Independence, Maple Plain, Minnetrista	Pioneer-Sarah Creek Watershed Management Commission
Shingle Creek	Chloride	2007	Brooklyn Park, Brooklyn Center, Minneapolis	Shingle Creek Watershed Management Commission
Shingle and Bass Creeks	DO/Biota	2012	Brooklyn Park, Brooklyn Center, Plymouth, Crystal, Robbinsdale, Minneapolis, Maple Grove, Osseo, New Hope	Shingle Creek Watershed Management Commission
Statewide Mercury	Mercury	2009	Entire county	ALL WMOs
Twin Cities Metro	Chloride	2016	Entire county	ALL WMOs
Twin Lakes Chain & Ryan Lake	Excess Nutrients	2007	Brooklyn Center, Crystal, Minneapolis, Robbinsdale	Shingle Creek Watershed Management Commission
Upper Minnehaha Creek and lakes	Excess Nutrients, Bacteria	2014	Lake Minnetonka Area, Part of Carver County	Minnehaha Creek Watershed District
Upper Mississippi River	Bacteria	2014	Entire county	West Mississippi River Watershed Management Commission
Wirth Lake	Excess Nutrients	2010	Minneapolis, Golden Valley	Bassett Creek Water Management Organization

Mississippi River Critical Corridor Area

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 through the seven-county metropolitan area and for 54,000 acres of surrounding land across 30 local jurisdictions. The MRCCA shares a boundary with the Mississippi National River and Recreation Area (MNRRA), a unit of the National Park Service.

Mississippi River from Br. 2441 (Franklin Avenue, CSAH 5) in Minneapolis

The MRCCA was designated a state critical area in 1976 to protect its many unique natural and cultural resources and values. These resources and values are protected through development standards and criteria implemented via local land use plans and zoning ordinances.

The MRCCA is home to a full range of residential neighborhoods and parks as well as river-related commerce, industry, and transportation. Though the river corridor has been extensively developed, many natural areas remain, including bluffs, islands, floodplains, wetlands, riparian zones, and native aquatic and terrestrial flora and fauna.

In January 2017, the State of Minnesota adopted new rules for MRCCA. These rules (see Minnesota Rules, chapter 6106) updated standards for protecting natural, scenic, cultural, recreational, and economic resources within MRCCA and laid out standards for updating local MRCCA plans for complying with these standards.

The new rules were the result of a four-year rulemaking process that focused on developing standards to be implemented through city and township zoning ordinances. However, there are a number of standards that must be implemented by jurisdictions such as counties that own and operate land and facilities within the corridor. Counties are specifically required by the rules (see 6106.0060, subp. 7) to prepare or amend MRCCA plans consistent with the rules.

Hennepin County's role

Hennepin County prepares or amends Mississippi River Critical Corridor Area plans, as required under Minnesota Rules, chapter 6106.0060, subp.7.

MRCCA management

MRCCA is operated through the Minnesota Department of Natural Resources (DNR) and is intended to enhance the management and use of land and water within the corridor. The DNR provides guidelines for how development should be managed in order to protect resources and the scenic qualities of the river corridor.

Corridor districts

Six districts are defined in the MRCCA rules (see Minnesota Statutes, section 116G.15, subdivision 3). The districts are established based on the natural and built character of different areas of the river corridor. All include diverse land uses, including parks and open space and scenic, natural, and historic areas.

Rural and open space district

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

(6106.0050, subp. 53) as key resources and features, including shore impact zones (SIZ), bluff impact zones (BIZ), floodplains, wetlands, gorges, areas of confluence with tributaries, natural drainage routes, unstable soils and bedrock, native plant communities, cultural and historic properties, significant existing vegetative stands, tree canopies

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

River neighborhood district

The river neighborhood district (CA-RN) is characterized by primarily residential neighborhoods that are riparian or readily visible from the river or that abut riparian parkland. The district includes parks and open space, limited commercial development, marinas, and related land uses.

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

River towns and crossings district

The river towns and crossings district (CA-RTC) is characterized by historic downtown areas and limited nodes of intense development at specific river crossings, as well as institutional campuses that predate designation of the Mississippi River Critical Corridor Area and that include taller buildings.

The CA-RTC district must be managed in a manner that allows continued growth and redevelopment in historic downtowns and more intensive redevelopment in limited areas at river crossings to accommodate compact walkable development patterns and connections to the river. Minimizing erosion and the flow of untreated stormwater into the river, providing public access to and public views of the river, and restoring natural vegetation in riparian areas and tree canopy are priorities in this district.

Separated from river district

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

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

Urban mixed district

The urban mixed district (CA-UM) includes large areas of highly urbanized mixed use that are a part of the urban fabric of the river corridor, including institutional, commercial, industrial, and residential areas and parks and open space.

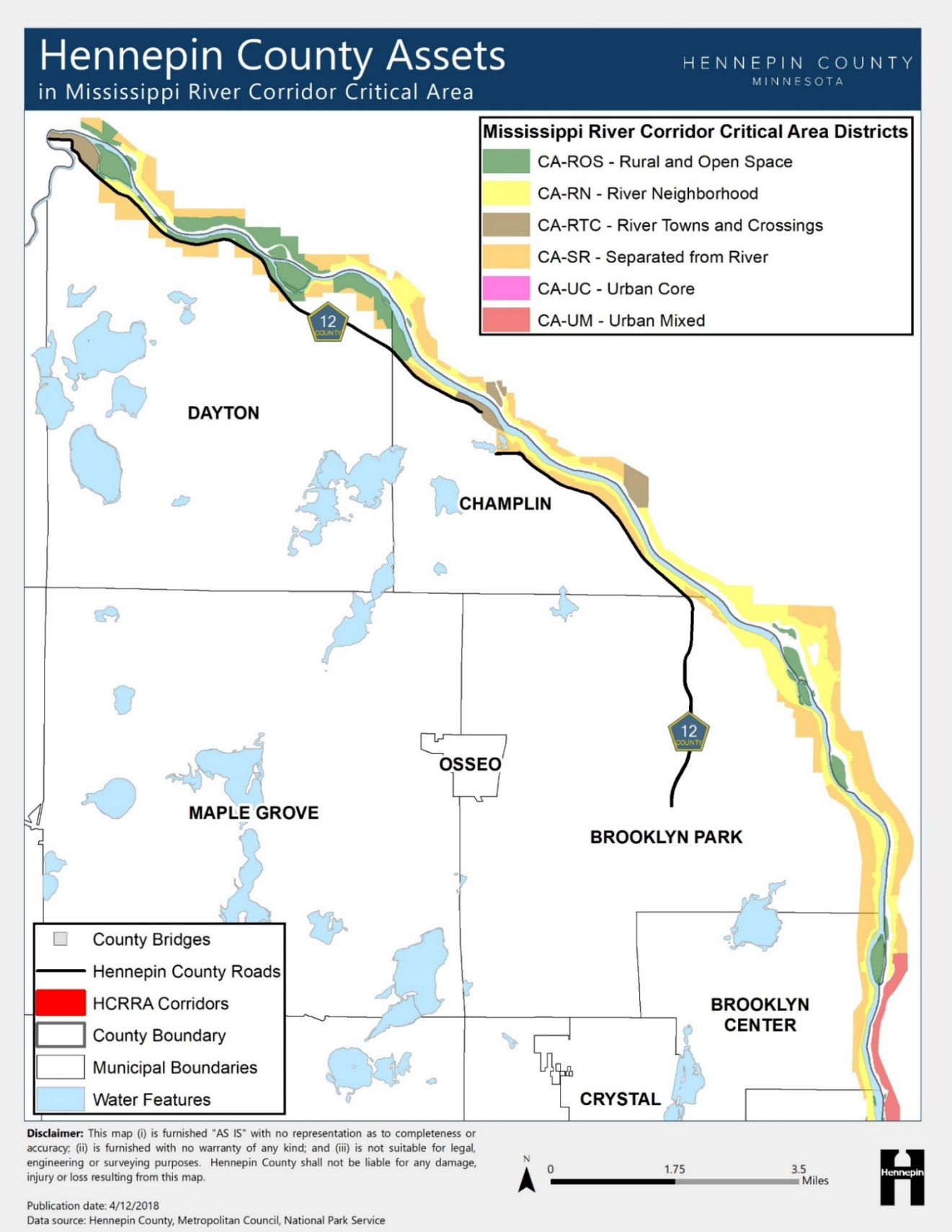
The CA-UM district must be managed in a manner that allows for future growth and potential transition of intensely developed areas that does not negatively affect public river corridor views and that protects bluffs and floodplains. Restoring and enhancing bluff and shoreline habitat, minimizing erosion and flow of untreated stormwater into the river, and providing public access to and public views of the river are priorities in this district.

Urban core district

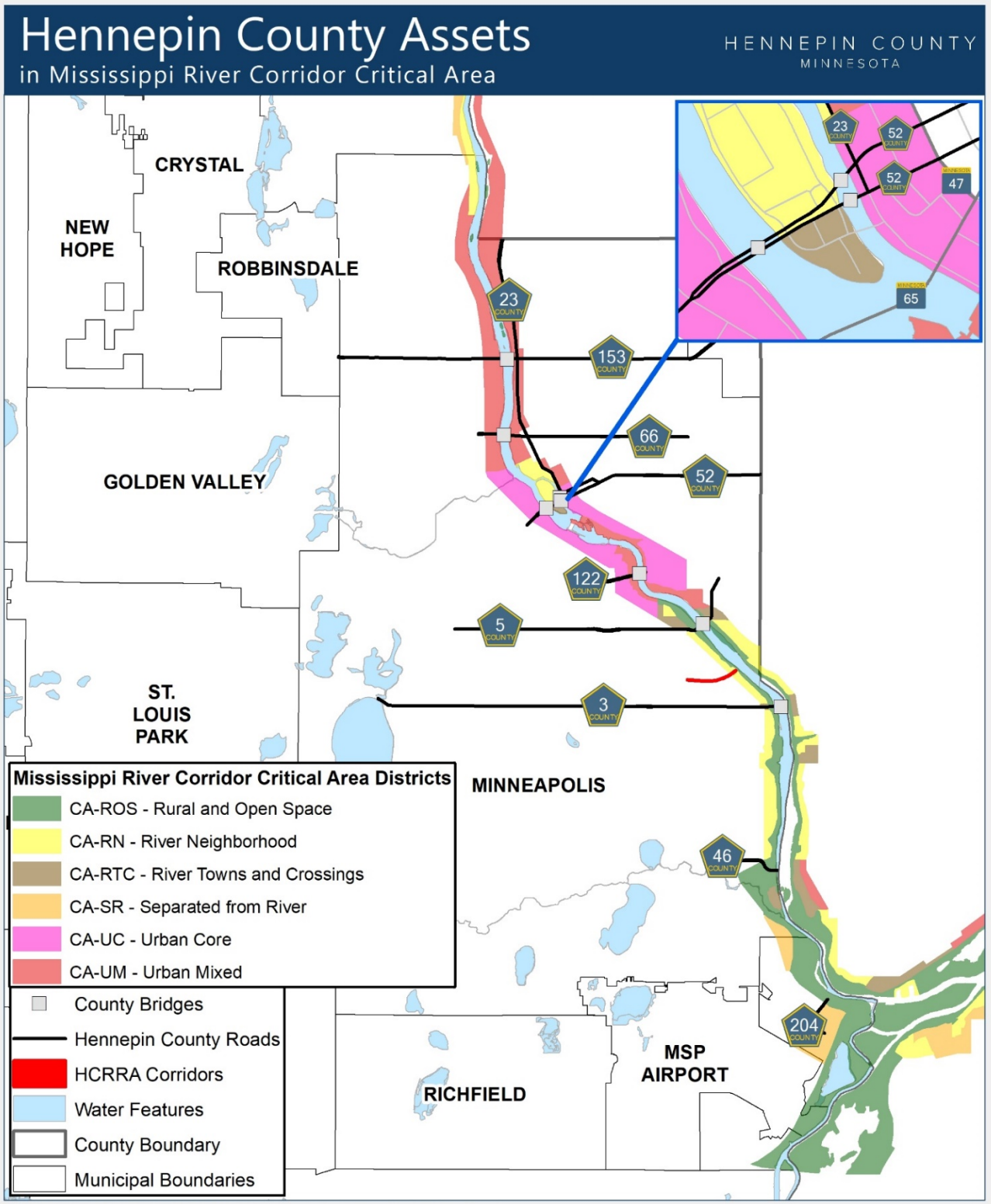
The urban core district (CA-UC) includes the urban cores of Minneapolis and St. Paul

The CA-UC district must be managed with the greatest flexibility to protect commercial, industrial, and other high-intensity urban uses while minimizing negative impacts to primary conservation areas and minimizing erosion and flow of untreated stormwater into the river. Providing public access to and public views of the river are priorities in this district.

Map M-1: Hennepin County Assets in MRCC (North)



Map M-2: Hennepin County Assets in MRCCA (South)



Disclaimer: This map (i) is furnished "AS IS" with no representation as to completeness or accuracy; (ii) is furnished with no warranty of any kind; and (iii) is not suitable for legal, engineering or surveying purposes. Hennepin County shall not be liable for any damage, injury or loss resulting from this map.

Publication date: 4/12/2018
Data source: Hennepin County, Metropolitan Council, National Park Service

Hennepin County MRCCA plan

Hennepin County is required under Minnesota Rules, chapter 6106.0060, subp.7, to prepare a MCRRA plan.

Hennepin County's role in MRCCA stems from ownership and operation of transportation facilities that are located within MRCCA as depicted on map M-1 and M-2, and listed below.

County roads

- CSAH 3 – Lake Street
- CSAH 5 – Franklin Avenue
- CSAH 12 – Dayton River Road, E Hayden Lake Road, West River Road
- CSAH 23 – Marshall Street NE
- CSAH 46 – 46th Street E
- CSAH 52 – Hennepin Avenue, 1st Avenue NE (the old 952)
- CSAH 66 – Broadway Street NE
- CSAH 152 – Washington Avenue
- CSAH 153 – Lowry Avenue
- CSAH 204 – Bloomington Road

County bridges

- Br. 62082 (Lake Street, CSAH 3)
- Br. 2441 (Franklin Avenue, CSAH 5)
- Br. 27636 (Hennepin Avenue, CSAH 52)
- Br. 27537 (Hennepin Avenue, CSAH 52)
- Br. 27538 (Hennepin Avenue, CSAH 52)
- Br. 27608 (Broadway Street, CSAH 66)
- Br. 9360 (Washington Avenue, CSAH 152)
- Br. 27B60 (Lowry Avenue, CSAH 153)

Property

- Hennepin County Regional Railroad Authority – Midtown Greenway

Hennepin County recognizes that transportation facilities can have impacts on scenic views, habitat, and soil erosion and that development of these facilities should be conducted in a manner that minimizes impacts to the MRCCA.

Hennepin County will employ the following procedures consistent with MRCCA guidance:

- Work with the DNR, local municipalities and other relevant entities when planning and implementing programs and projects within the MRCCA to protect and/or minimize impacts to primary conservation areas on facilities owned by the county.
- Coordinate with cities and townships to ensure the county is aware of public river corridor views identified on county owned and operated facilities.
- Consider provision for scenic overlooks, safe pedestrian crossings, and public riverfront access when planning and designing construction and reconstruction of county transportation facilities.
- Where feasible, minimize the impacts to primary conservation areas and public river corridor views from county transportation projects.
- Plan and implement county programs and projects in the MRCCA in a manner consistent with the purposes of the Critical Area Act (see Minnesota Rules, chapter 6106).
- Conduct annual bridge maintenance activities, including bridge flushing maintenance.
- Follow a five-year cycle for bridge surface sealing maintenance where bridge surfaces will be sealed with Methyl Methacrylate (MMA) and protect all bridge deck drains to contain the MMA.
- Contain any bridge maintenance work involving concrete repairs in a preplanned containment system.
- Remove and haul away snow from bridges.
- Sweep county roads twice a year.
- Reduce salt use for snow and ice removal.
- Use a spraying system with biodegradable potassium acetate for deicing on Lowry Bridge.
- Include the identification of projects that lie within the MCRRA in the county's capital improvement program (CIP).

Implementation

The Metropolitan Council requires that comprehensive plans include a description of all public programs, fiscal devices, and other actions that communities will use to implement their plans.

This implementation section is a companion to the other required sections in our Hennepin County comprehensive plan. While each of the other sections describes *what* the county intends to do, the implementation section describes *how* the county will use its official controls, primary county funding sources, and capital improvement program to carry out the work. Implementation includes:

- Official controls: Related ordinances, fiscal devices and other actions the county uses to implement the comprehensive plan.
- Primary county funding sources: Wheelage tax, property tax, and sales and use transportation tax
- Capital Improvement Program (CIP): The county's plan for investments in capital improvement

Official controls

Ordinance 19

Hennepin County Ordinance 19 adopts Minnesota Rules Chapter 7080, which governs individual sewage treatment systems (less than 10,000 gallons/day) and describes the authority of the types of septic systems the county regulates. The ordinance was last amended in 2014 to reflect the changes in Minnesota Rules Chapters 7080-7084.

Ordinance 22

Hennepin County Ordinance 22 was adopted by the Hennepin County Board of Commissioners on November 14, 2000. Hennepin County holds the rights-of-way within its geographical boundaries as an asset in trust for its citizens. Under Minnesota law, the county is to manage the use of the right-of-way and other uses for public purposes, including use by public utilities.

To provide for the health, safety, and well-being of its citizens and to ensure the structural integrity of its roads and the appropriate use of rights-of-way, the county strives to keep its rights-of-way in a state of good repair and free from unnecessary encumbrances.

County funding sources

Wheelage tax

Minnesota statutes (MS 163.051 subd. 1) allow a county to impose a wheelage tax on each motor vehicle housed in its jurisdiction. The statute requires that revenues from the tax be used for road and bridge projects. Hennepin County passed resolution 13-0248R1, which established the Hennepin County wheelage tax with funding to be focused on preservation, efficiency, safety, and modernization.

Hennepin County property tax

Hennepin County uses property tax to fund items that are ineligible for other funding, examples being feasibility studies or burial of power lines.

Regional Railroad Authority property tax

Hennepin County Regional Railroad Authority (HCRRA) was established in 1980 to preserve rail corridors and conduct rail transit planning in the county. HCRRA provides funding via a property tax levy for up to 10% of the capital costs for designated light rail transit projects.

Sales and use transportation tax

In 2017, the Hennepin County Board adopted the sales and use transportation tax implementation plan and enacted the sales and use transportation tax to provide a reliable source of locally generated funds to strategically target transitway and other transportation investments.

Projects eligible to be funded include:

- Capital costs of the Green Line Extension (Southwest LRT), Blue Line Extension (Bottineau LRT), Riverview Corridor, and Orange Line (bus rapid transit) projects;
- Operating costs of the Green Line (including any extensions), Blue Line (including any extensions), Riverview Corridor, Orange Line, and Northstar projects;

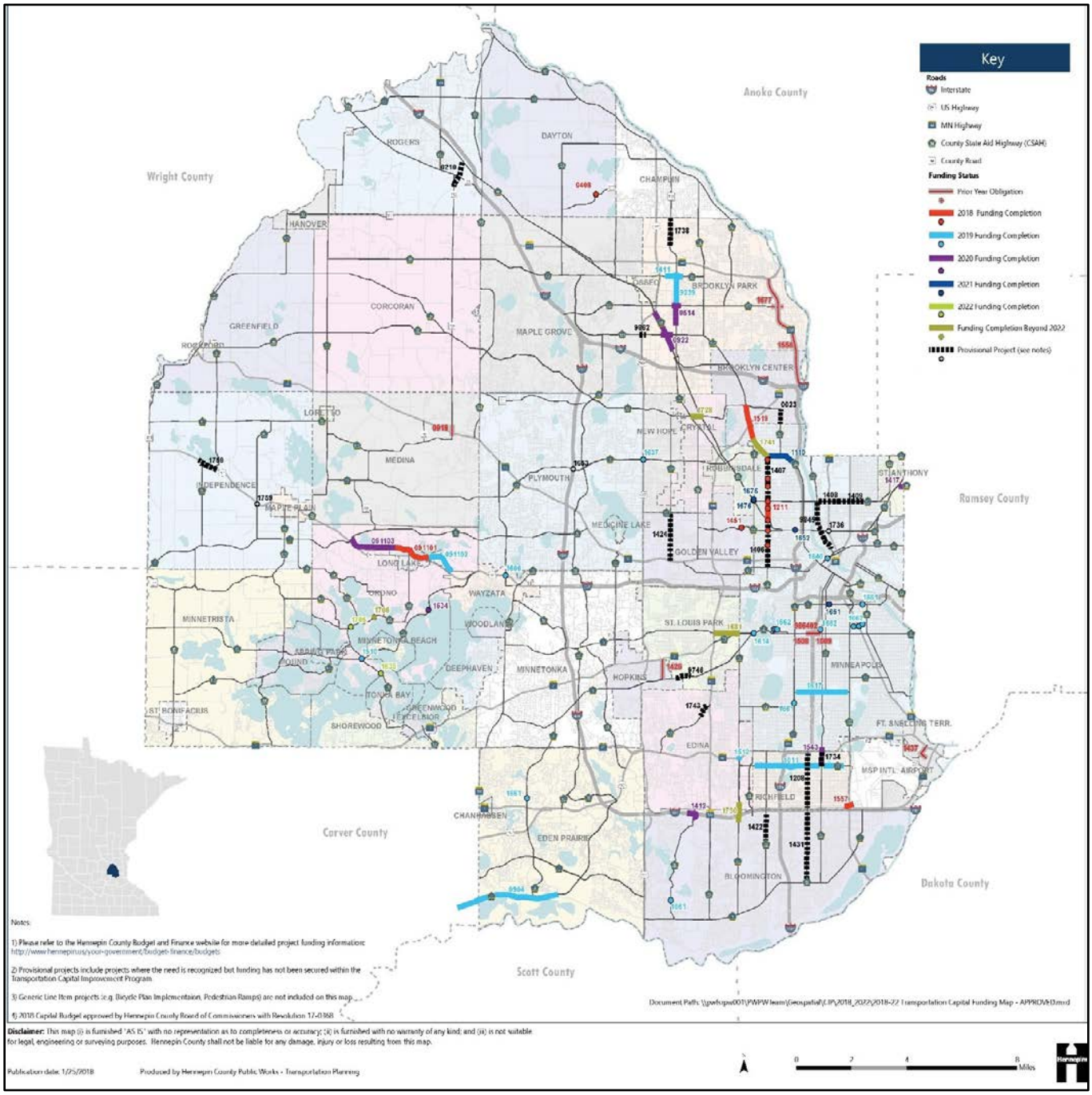
Capital costs associated with other transportation or transit projects or improvements, as identified in Hennepin County's Capital Improvement Program (CIP), and operating costs, to the extent designated in the future by the County Board after a public hearing.

The estimated annual revenue from the sales and use transportation tax is anticipated to be sufficient to cover the capital and operating costs of the sales and use transportation tax implementation plan projects through 2036.

See the sales and use transportation tax implementation plan.

Capital Improvement Program (CIP)

The Hennepin County Capital Improvement Program (CIP) includes a five-year plan for needed transportation improvements. The first year in the CIP is programmed, with approved dollars to spend on projects. A provisional project list is refreshed annually listing high-priority projects that lack funding or need further vision and design work before moving forward.

Map N-1 illustrates projects included in the Hennepin County 2018-2022 Transportation Capital Improvement Program (CIP).

Map N-1: Hennepin County 2018-2022 Transportation Capital Improvement Program