

# Transportation: Mobility 2040 Plan

Adopted by the Metropolitan Council in October 2018, the 2040 Transportation Policy Plan (TPP) is the current metropolitan system plan for transportation, and this comprehensive plan conforms to it. The 2040 TPP sets policies for the regional transportation system based on the goals and objectives of Thrive 2040.

## Transportation System Overview

Our Hennepin County Transportation vision is to promote economic vitality and enhance quality of life by developing and operating a safe, environmentally responsible, and multimodal transportation system.

Valued at over \$5.4 billion, our Hennepin County transportation 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 our existing system is well maintained while also improved to provide for the safe and efficient movement of people, goods, and information throughout the county.



## Section 1

# 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 as 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.

# An Integrated Plan

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

It 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.

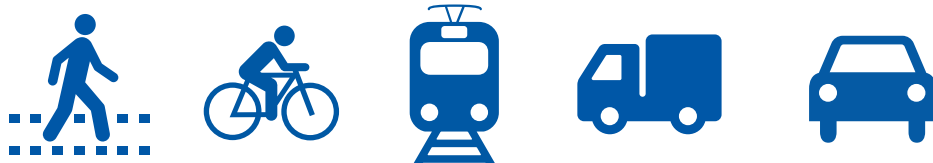
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Mobility 2040 answers the question, "What are we trying to achieve?" It does not answer the question, "How will we do it?" The "how" is addressed in our modal and supporting elements plans and programs.

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## MOBILITY 2040

*Guidance for the county's overall transportation system*



MODAL PLANS Pedestrian • Bike • Transit • Freight • Roads

SYSTEM ELEMENTS Asset Management • ADA Transition Plan • Safety Plan • Advanced Traffic System (ATMS)

# Modal Plans and System Elements

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 on mode.

[Pedestrian Plan](#)

[2040 Bicycle Plan](#)

[Sales and Use Transportation Tax Implementation Plan](#)

[Freight Study](#)

[ADA Transition Plan](#)

[Asset Management](#)

[Complete Streets Policy](#)

[Cost Share Policy](#)

Full documents can be found at [www.hennepin.us/your-government/projects-initiatives/comprehensive-plan](http://www.hennepin.us/your-government/projects-initiatives/comprehensive-plan)

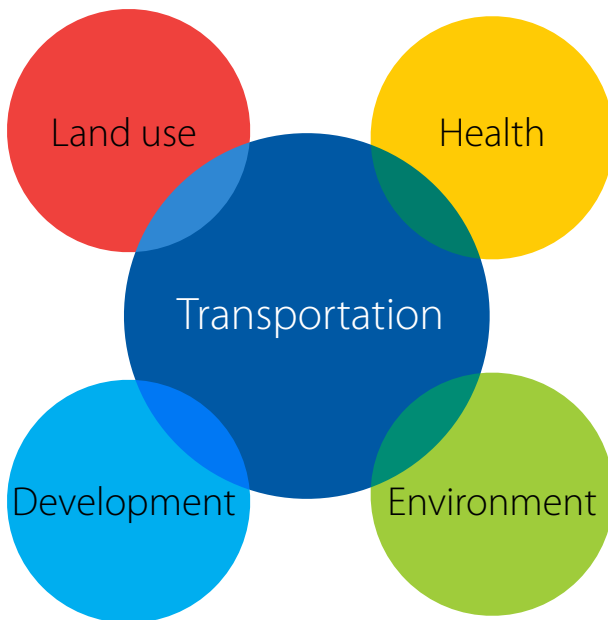


# Beyond Transportation

## 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 maximizes our return on investment and moves 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. 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 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](http://www.hennepin.us/your-government/projects-initiatives/comprehensive-plan)

# Big Transportation Ideas to Explore



# 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.

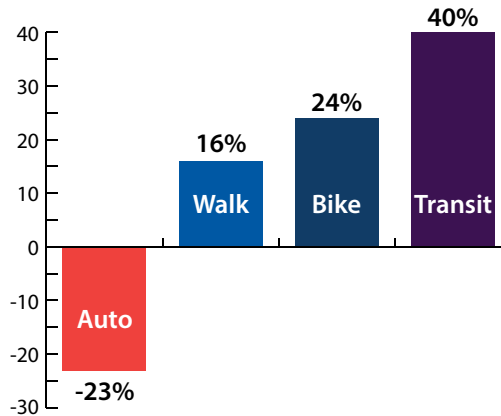


## Changing Transportation Preferences

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.

### Change in millennial travel patterns (2001–2009)



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.

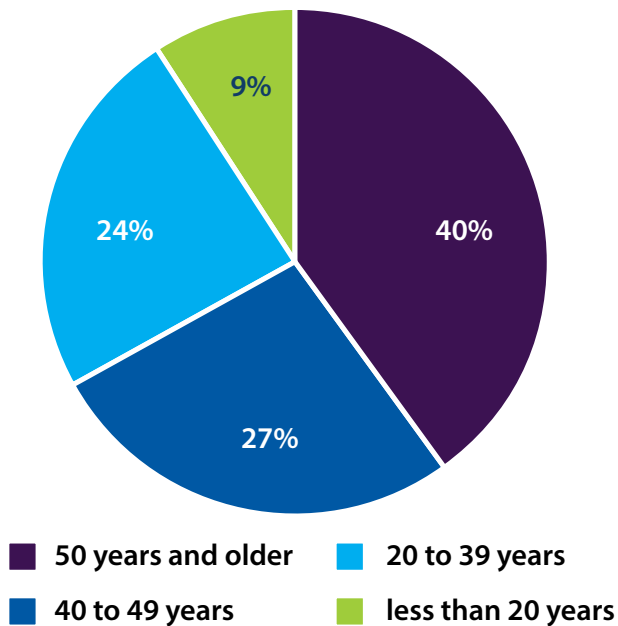
**Challenge:** Accommodating projected growth will place pressure on the county to maintain our existing transportation systems and to provide additional travel choices.

## 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.

### Infrastructure age

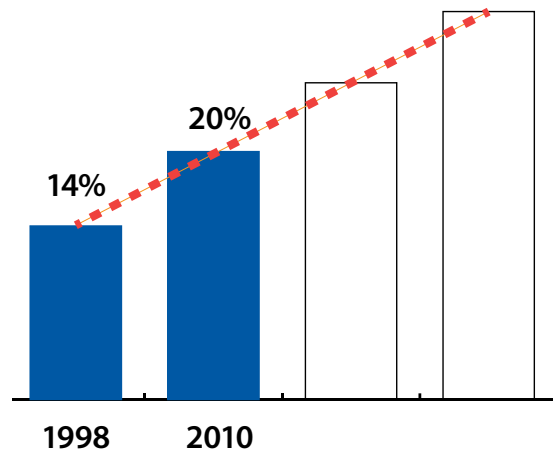


## Increasing Health Concerns

Health is linked to transportation. Investing in bicycle infrastructure, sidewalks, and transit creates opportunities for people to live active lifestyles. Hennepin County through its Active 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.

### Obesity rate



## 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.

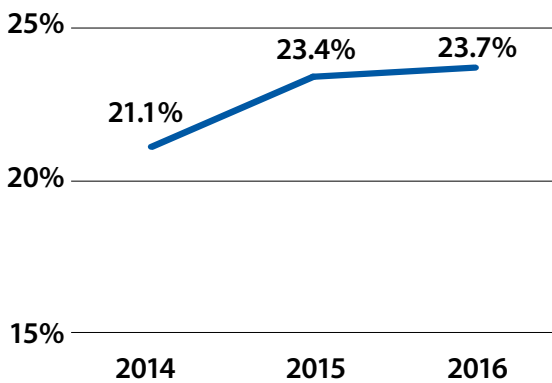
**Challenge:** We will need to explore emerging technologies and employ innovative practices to reduce the impact of the transportation system on the air we breathe, the water we drink, and the natural resources we enjoy.

## 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.

**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.

### Miles of congested roadways — Twin Cities



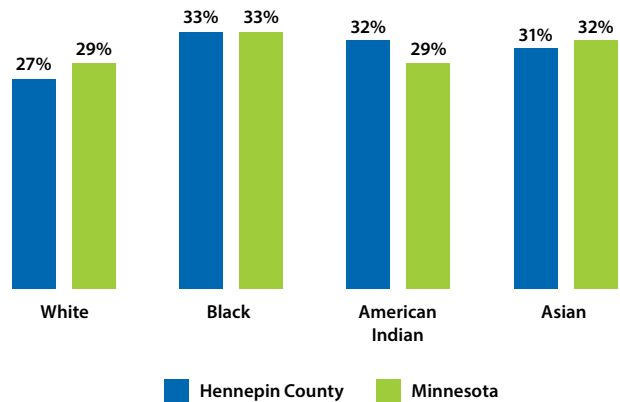
Source: Metropolitan Freeway System Congestion Report

## 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.

### Percentage of commuters who spend more than 30 minutes commuting to work



Source: U.S. Census Bureau, 2006-2010 American Community Survey

## 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 [www.hennepin.us/your-government/projects-initiatives/comprehensive-plan](http://www.hennepin.us/your-government/projects-initiatives/comprehensive-plan) to view the Transportation Trends Report.



## Section 2

# 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

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

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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 our transportation system
- 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

## Supporting plans, programs, projects 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)

## Performance Indicators

Indicator	Definition	Desired Trend	Baseline (2017)	Target (2040)
<b>Preservation</b>				
	Bridge sufficiency rating (less than 50)	↓	5.4%	4%
	Pavement serviceability rating (PSR) (greater than 3.0)	↑	63.2%	67%
	Overlay lane miles (annual)	↓	149	110
<b>Modernization</b>				
	% of signals connected	↑	3%	100%
	Complete streets (projects inclusive of complete streets elements)	→	100%	100%

# 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

## Supporting plans, programs, projects 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

## Performance Indicators

Indicator	Definition	Desired Trend	Baseline (2017)	Target (2040)
<b>Safety</b>				
	Crash rates (per million vehicle miles)	↓	3.35	1.68
<b>Reliability</b>				
	Hours to plow snow — Rural	→	4:19 hours	5 hours
	Hours to plow snow — Urban	→	4:30 hours	5 hours
	Average commute time (minutes)	↓	22.2	Below national average
<b>Congestion</b>				
	Volume to capacity ratio (all roadways)	↓	TBD	v/c < 1
	Intersection (county) level of service (LOS)	↑	TBD	LOS D or better

# 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



## Supporting plans, programs, projects and partnerships

- Americans with Disabilities Act (ADA) Transition Plan
- 2040 Bicycle Transportation Plan
- Pedestrian Plan
- Sales and Use Transportation Tax Implementation Plan
- Transit Oriented Development (TOD) Program
- 2040 Bicycle Transportation Plan
- AHIF, HOME, CBDG
- Hennepin County Consortium Consolidated Plan

## Performance Indicators

Indicator	Definition	Desired Trend	Baseline (2017)	Target (2040)
<b>Affordability</b>				
	Housing + Transportation Cost Index	→	44%	< 45%
<b>Choices</b>				
	Bike to work — percentage	↑	1.8% (2016)	3.4%
	Walk to work — percentage	↑	3.4% (2016)	5%
	Regional transit ridership	↑	27 million	Double
	Mode split (single occupant vehicles downtown Minneapolis)	↓	60%	< 60%
<b>Access</b>				
	Number of households within ½ mile of Blue and Green lines	↑	TBD	TBD



# 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



## Supporting plans, programs, projects and partnerships

Americans with Disabilities Act (ADA) Transition Plan

2040 Bicycle Transportation Plan

Pedestrian Plan

Sales and Use Transportation Tax Implementation Plan

Transit Oriented Development (TOD)

AHIF, HOME, CBDG

Natural Resources Strategic Plan

Complete Streets Policy

Hennepin County Consortium Consolidated Plan

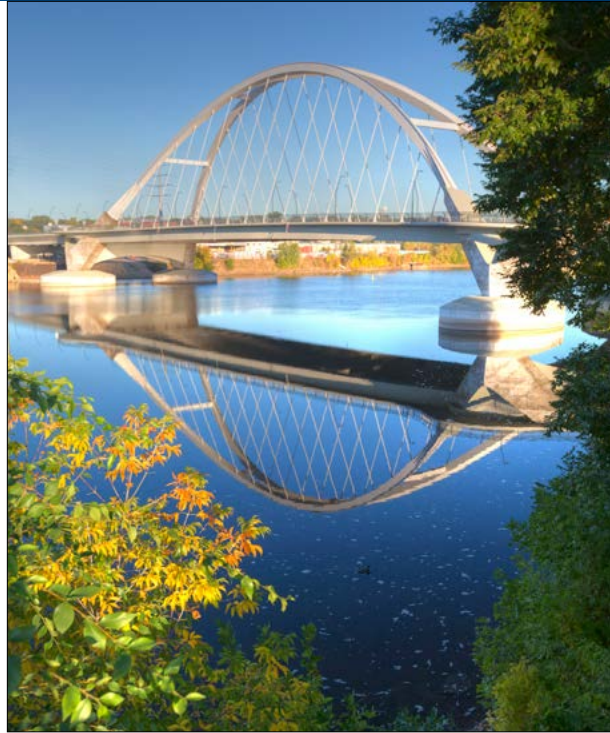
## Performance Indicators

Indicator	Definition	Desired Trend	Baseline (2017)	Target (2040)
<b>Quality of life/livability</b>				
	ADA pedestrian ramps in compliance	↑	53%	100%
<b>Health</b>				
	Number of miles of bicycle facilities built/year	↑	18	20
<b>Competitiveness</b>				
	Number of jobs	↑	920,000 (2020)	1.03 million (2040)

# 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



Supporting plans, programs, projects and partnerships

Natural Resources Strategic Plan

Sustainable Landscape Guidelines

Cool County Initiative

## Performance Indicators

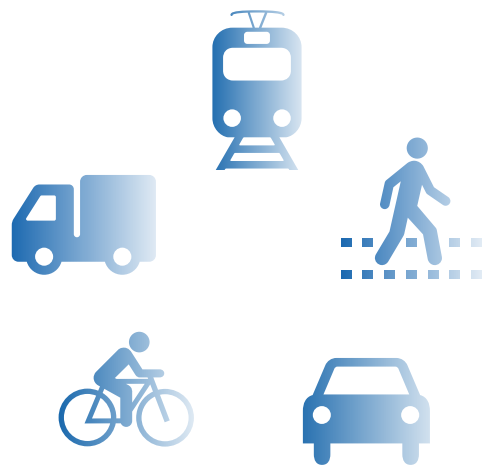
Indicator	Definition	Desired Trend	Baseline (2017)	Target (2040)
<b>Environment</b>				
	Wetland acres preserved/restored	↑	Under development	
	Roadway salt use	↓	Under development	
	Trees planted versus removed	↑	TBD	Planted > Removed
	National Ambient Air Quality Standards (NAAQS)	↑	Attained	Attainment
	Vehicle miles traveled (VMT)	↓	2.14 billion	2.06 billion (year 2000 level)



## Section 3

# 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.

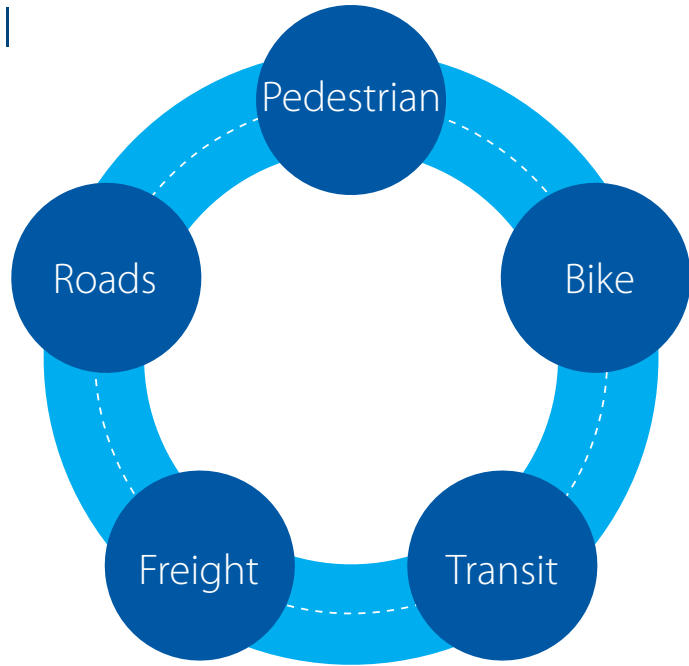


# Integrated and Multimodal

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

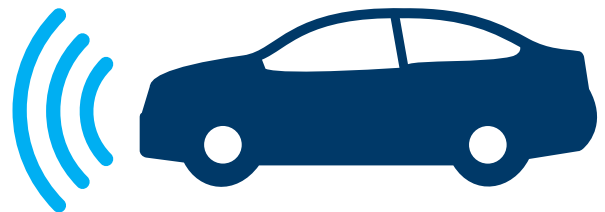
We are committed to using resources wisely to effectively manage and increase the efficient operations of our transportation system.

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 Traffic 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 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.

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://metro council.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.

### Americans 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 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 persons 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.

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.

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.

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

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### 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 Bus Rapid Transit (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 (HCRRRA) in progressing, in partnership, transitways which compose the county's future vision.

To implement light rail transit (LRT) projects, the county and the county's regional railroad authority partner with the Metropolitan Council, the agency responsible for environmental review, engineering, construction, and operations of LRT. Hennepin County acknowledges that when necessary, appropriately designed, engineered and constructed light rail operations, co-located with freight rail within freight rail right-of-way, are safe and appropriate and in the public interest, and that the Southwest LRT project is so designed within a segment of the Wayzata subdivision.

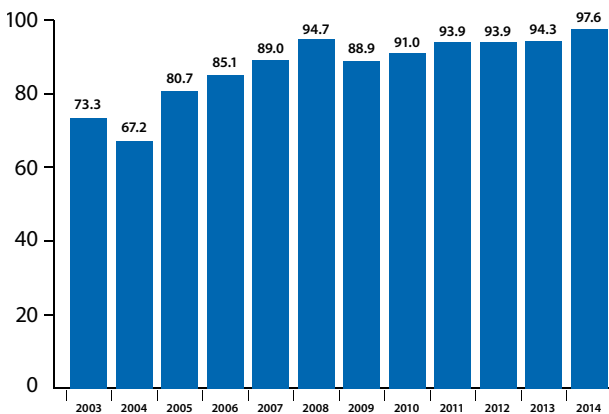
In addition, the county's regional railroad authority was responsible for early preservation of rail rights-of-way for future LRT use. The railroad authority currently owns 55 miles of former railroad corridors for potential future transit use. In the interim, bicycle commuter trails have been constructed 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 [www.hennepin.us/transit](http://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 Trends

Millions of Rides



## 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.

### Transit Market Areas

An important underlying element to the transit investment plan is the definition of Transit Market Areas. Transit Market Areas are defined by the demographic and urban design factors that are associated with successful transit service. There are five Transit Market Areas, as well as some unique market area features. The Transit Market Areas are

generally associated with community designations in Thrive MSP 2040 as follows:

- Transit Market Areas I and II are mostly Urban Center communities where urban form and density are most supportive of transit and have the largest concentrations of transit dependent residents in the region. Transit service in these areas focuses on providing a dense network of local routes with high levels of service to accommodate a wide variety of trip purposes. Market Area II will typically have a similar route structure to Market Area I, but lower levels of service as demand warrants.
- Transit Market Area III is primarily Urban along with portions of the Suburban, Suburban Edge, and Emerging Suburban Edge and is generally characterized by overall lower density and less transit-supportive urban form along with some pockets of denser development. The primary emphasis of transit service in this area is express and commuter service with some suburban local routes providing basic coverage.
- Transit Market Area IV is primarily Suburban Edge and Emerging Suburban Edge along with portions of Suburban, and is generally characterized by consistently low-density development and an urban form that does not support frequent local transit service. Transit service in Market Area IV is primarily peak-period express and commuter service oriented to park-and-ride facilities that can effectively capture the lower density transit demand. Local trips are provided by general public dial-a-ride services.
- Transit Market Area V is generally all forms of Rural and Agricultural but does include the unique freestanding town centers of Stillwater, Waconia, Forest Lake, and Hastings; Market Area V is generally characterized by low-density development or undeveloped land not well suited for regular-route transit service.

The Emerging Market overlays are unique areas of Transit Market Areas II and III where significant pockets of higher density exist but surrounding conditions still limit the success of local transit.

These areas should be a focus for future development that will connect them with areas of higher transit intensity, specifically looking at extension of existing routes or connections.

Freestanding Town Centers are unique areas that grew independently of Minneapolis and Saint Paul and act as suburbs but are still separated from the urban and suburban areas by rural land. These areas typically have small downtowns of their own but also export many workers to other regional centers. Local transit services that connect to the region would not be as effective serving these areas given their location in the region, despite their relatively concentrated nature. However, these areas may still have express service demand and possible demand for small circulator services. The Council and regional transit providers will also coordinate their efforts with MnDOT and transit services that connect beyond the seven-county metropolitan region.

The Transit Market Areas do not address the feasibility of these kinds of services, which are coordinated on a case-by-case basis.

Two additional areas of emphasis in Thrive MSP 2040 are important for consideration in transit service design, the special features of Areas of Concentrated Poverty, Areas of Concentrated Poverty where at least 50% of residents are people of color, and Job Concentrations. Residents of Areas of Concentrated Poverty must overcome a legacy of private disinvestment to access the opportunity of the region. In transit, this often means considering higher levels of service, better amenities, or unique service types focused on providing better access to jobs or education. Job Concentrations have good potential to be served with transit because of their density and level of activity. Many of these concentrations will need to adapt and continue adding density and diversifying land uses to be truly transit-oriented. This will need to be coordinated with continued investments in transit access to these areas, as well as better transit facilities.

## Types of Service

Six types of public transit service currently operate in the Twin Cities area and Hennepin County: 1) Regular-route bus service is provided on a fixed, published schedule along specific routes, with riders getting on and off at designated bus stops. Regular-route service is provided using a variety of bus types that operate local service and express service. Some providers also operate a deviated fixed route, or flex service. 2) Light rail transit (LRT) service is provided by electrically powered trains operating

at high frequencies in primarily an exclusive right-of-way. Light rail uses specially designed transit stations and amenities. 3) Bus rapid transit (BRT) service is provided at high frequencies with unique buses and specially designed facilities and amenities similar to light rail. 4) Commuter rail lines operate on traditional railroad track powered by diesel trains with limited stops. Commuter rail typically serves morning and evening commuters. 5) Dial-a-ride is a shared-ride service that allows customers to schedule pickup times. There are two types of dial-a-ride service in the region: general public dial-a-ride and Metro Mobility service mandated by state and federal law. 6) Public vanpools are made up of five to fifteen people, including a volunteer driver, commuting to and from work destinations throughout the region on a regular basis in a subsidized van. Vanpools typically serve origins and destinations not served by regular-route bus service.

The ADA requires complimentary service for certified riders who want to travel where regular-route transit service is available, but are unable to use the regular-route system due to a disability. The state has established additional service areas beyond that through law. Dial-a-ride service is provided of the general public in areas of Anoka, Carver, Dakota, Hennepin, Ramsey, Scott, and Washington counties where demand cannot be served on regular-route transit.

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

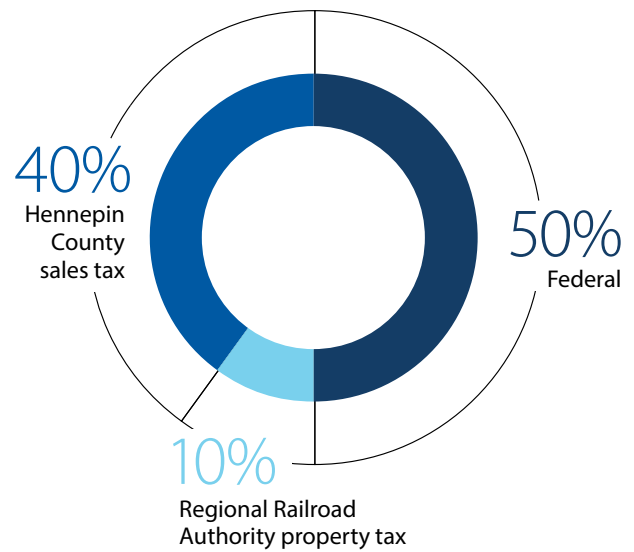
Recently the County's role in financing the development and operation of transit services changed with the disbanding of the Counties Transit Improvement Board (CTIB).

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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.

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## Typical funding of a new line



## 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.

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.



## 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.

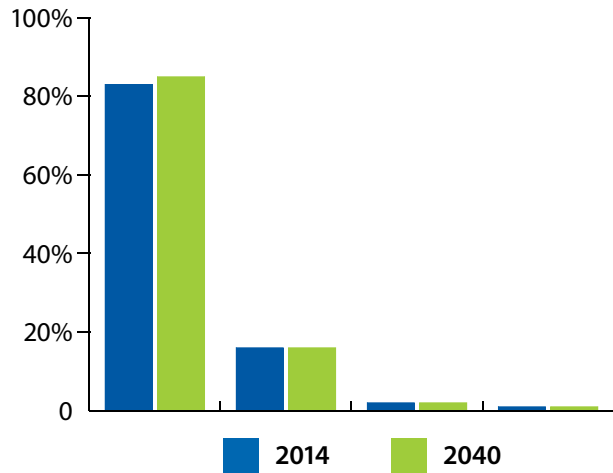
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### Freight-intensive industries account for 33% of Hennepin County jobs in 2014.

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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.

**Freight Tonnage  
Hennepin County 2014 vs. 2040**



Twin Cities, Texas Transportation Institute

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### \$230 million annually in congestion delay costs for trucks

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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.

## 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 federal regulatory framework exempts freight railroads from most state and local regulation of their railroad operations. Freight rail carriers have the ability to operate and grow their networks within their rights-of-way and property rights to meet current and future shipper needs consistent with the federal regulatory framework. County highway and infrastructure projects will continue to take into consideration the impact on such potential safe and lawful future freight expansion.

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 traveling 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 I 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 (HCRRRA)	2	1%

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

## 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.

## 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.

## 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.

## 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 crossings 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.

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86,900 jobs

\$2.5 billion in annual spending by visitors

\$15.9 billion in total economic output annually

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## 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 and identified in 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.



## 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, pipes, 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.

## 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.

## 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.

Figure 4-14 illustrates the county's envisioned future roadway system. The figure 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.

Future travel demand forecasting will be based on adjusted sociodemographic data from adopted comprehensive plans for each of our cities. However, the county includes Fort Snelling and the Minneapolis St. Paul International Airport, an unincorporated area without municipal oversight of land use. The Metropolitan Council recommends that the population, household, and employment forecasts for this area be adjusted, based on an understanding of likely affordable housing development and aviation-related job growth. The county incorporates the Council’s recommended forecast increases and their allocation to Transportation Analysis Zones (TAZs) 1497, 1502, 1519, 1520, 1521, 1522, 1523, 1524, and 1525.

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. Figure 4-14 illustrates projected 2040 traffic volumes and congestion (volume to capacity ratio). These segments will be studied further during corridor or routine traffic studies completed in conjunction with safety or capital improvement projects.

### Anticipated Changes in the Hennepin County Roadway System (Centerline Miles)

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



- 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 an 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.

## 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 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, 2016

## System Safety

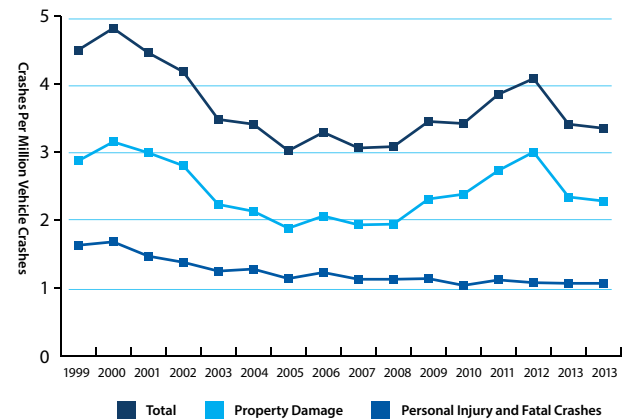
Safety is a primary concern for people when they choose a mode of travel, especially for children

Traveling 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.

## Hennepin County Roadway Crashes



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

## Advanced Traffic Management System (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

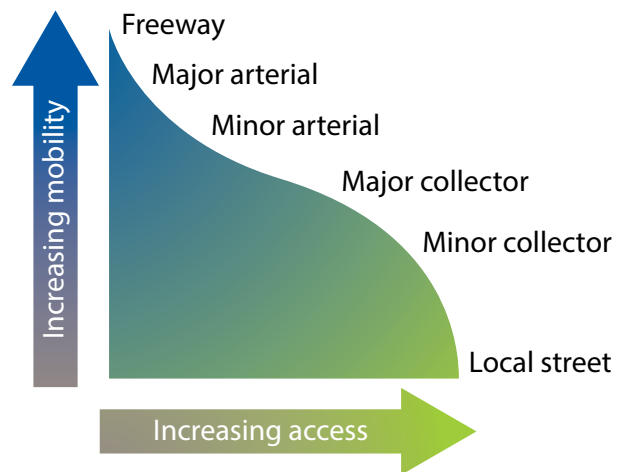
Roadways are placed into classifications based upon the function they serve in the transportation network. The primary purpose of classification is to ensure that each roadway in the network serves its proper function, primarily defined as providing mobility or access or a combination of the two.

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 roadway 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.

### Relationship Between Mobility and Access



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. Figure 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.

Facility type	Functional classification	Projected ADT	Posted speed	Right-of-way width
Two-lane rural	Collector or Minor Arterial	1,500–10,000	45+ mph	100–120 ft
Two-lane suburban	Collector or Minor Arterial	1,500–10,000	35–40 mph	80–100 ft
Three-lane urban (Center 2-way left turn lane)	Collector or Minor Arterial	5,000–16,000	30–35 mph	90–110 ft
Four-lane urban (divided)	Principal or Minor Arterial	8,000–25,000	35–45 mph	110–130 ft

## 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:

## 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.

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

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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](#) and [Move Minneapolis](#). 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).

## 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.

### 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

Include installation of storm water best management practices and increase the use of green infrastructure through tree canopy enhancements and sustainable landscaping on transportation projects. Consider opportunities for natural resource preservation and betterment as part of the planning and implementation of transportation and infrastructure improvement projects to ensure alignment between this plan and the Hennepin County 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.

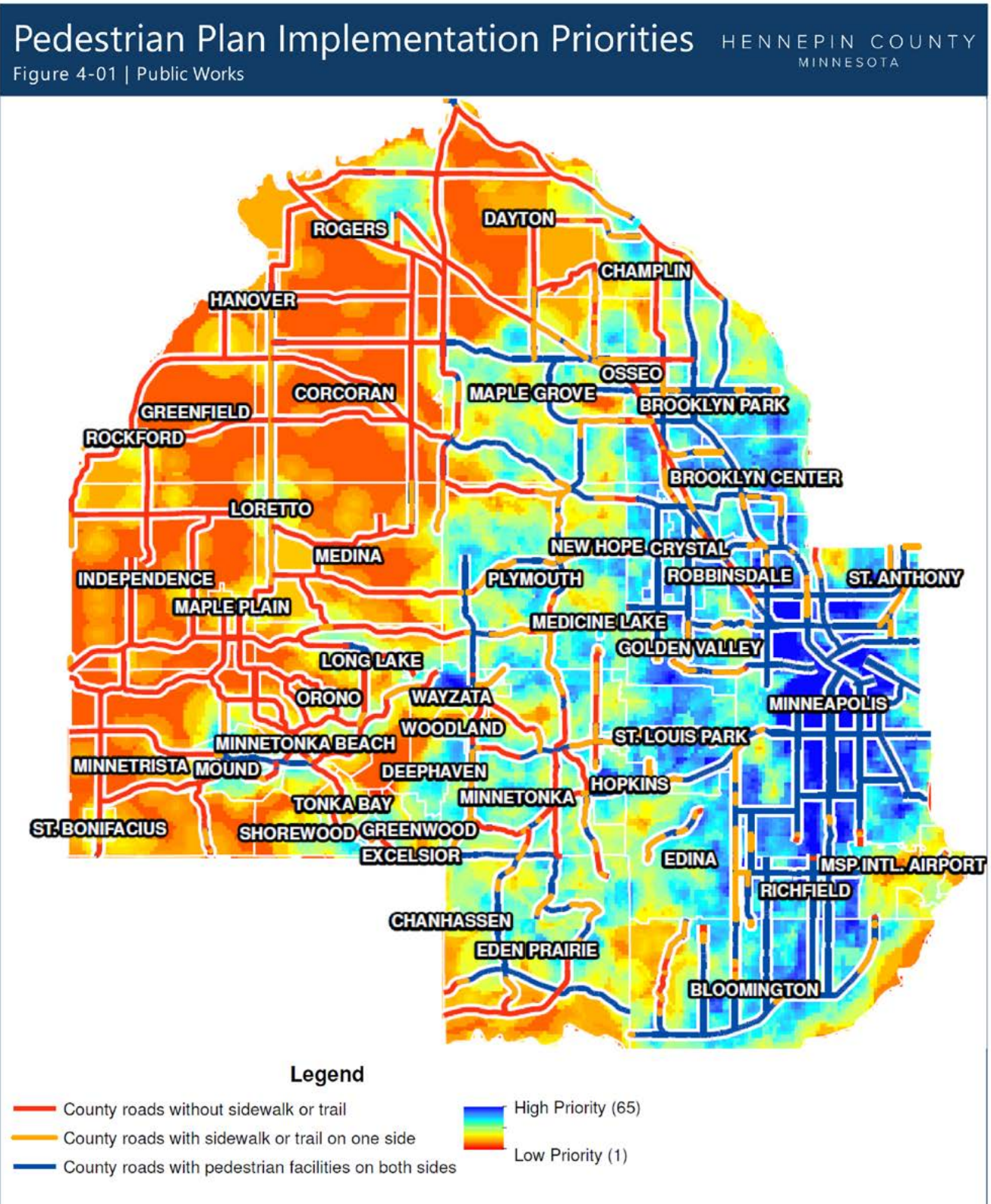
### Plan Update

The supporting modal and system element plans will be evaluated and modified to maintain consistency. An update to this plan will be conducted every five years or in 2023.

### Hennepin-University Partnership (HUP)

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

Figure 4-01



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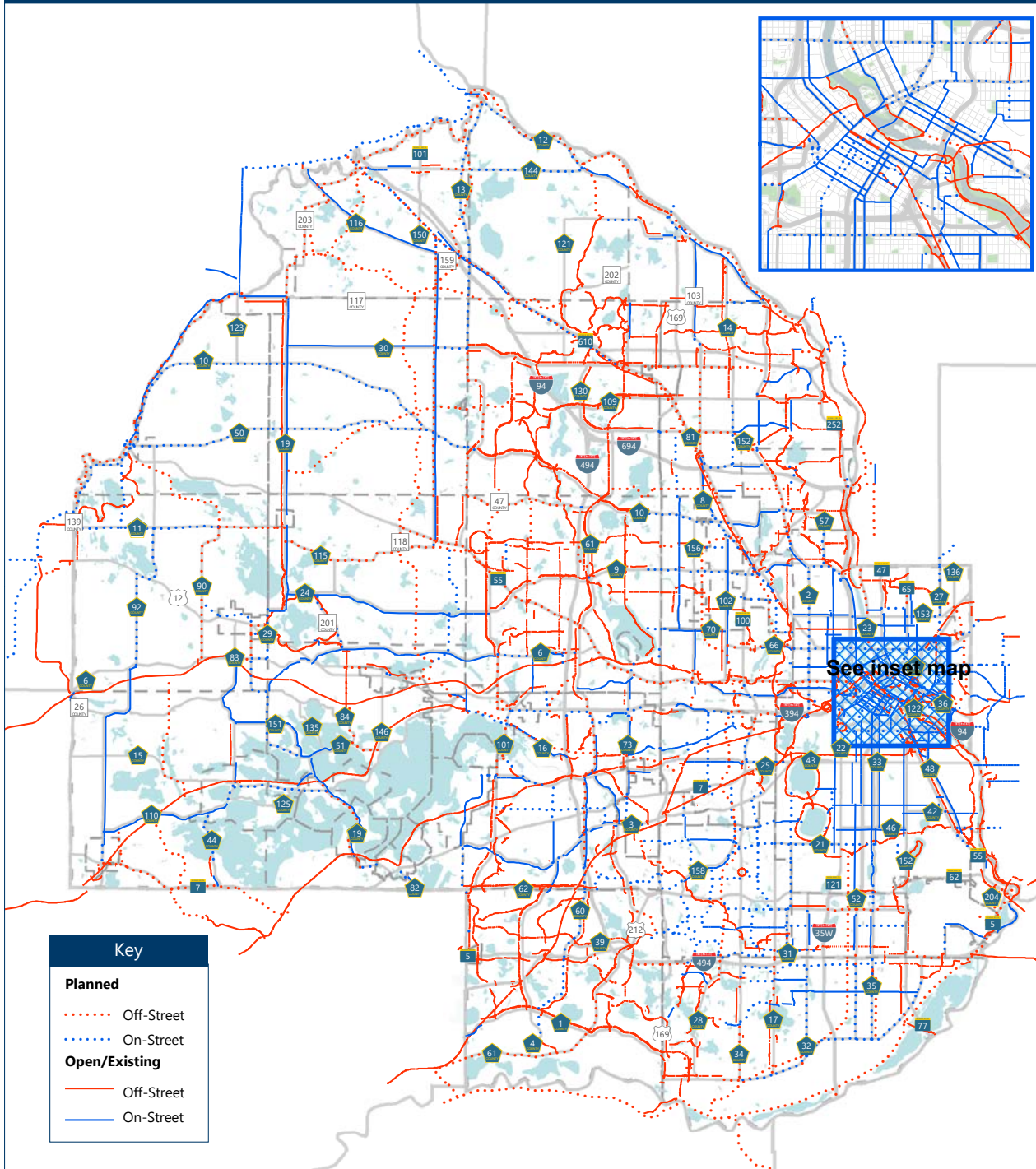
Publication date: 8/5/2013

Figure 4-02

# Existing and Planned Bikeway System

Figure 4-02 | Public Works

HENNEPIN COUNTY  
MINNESOTA

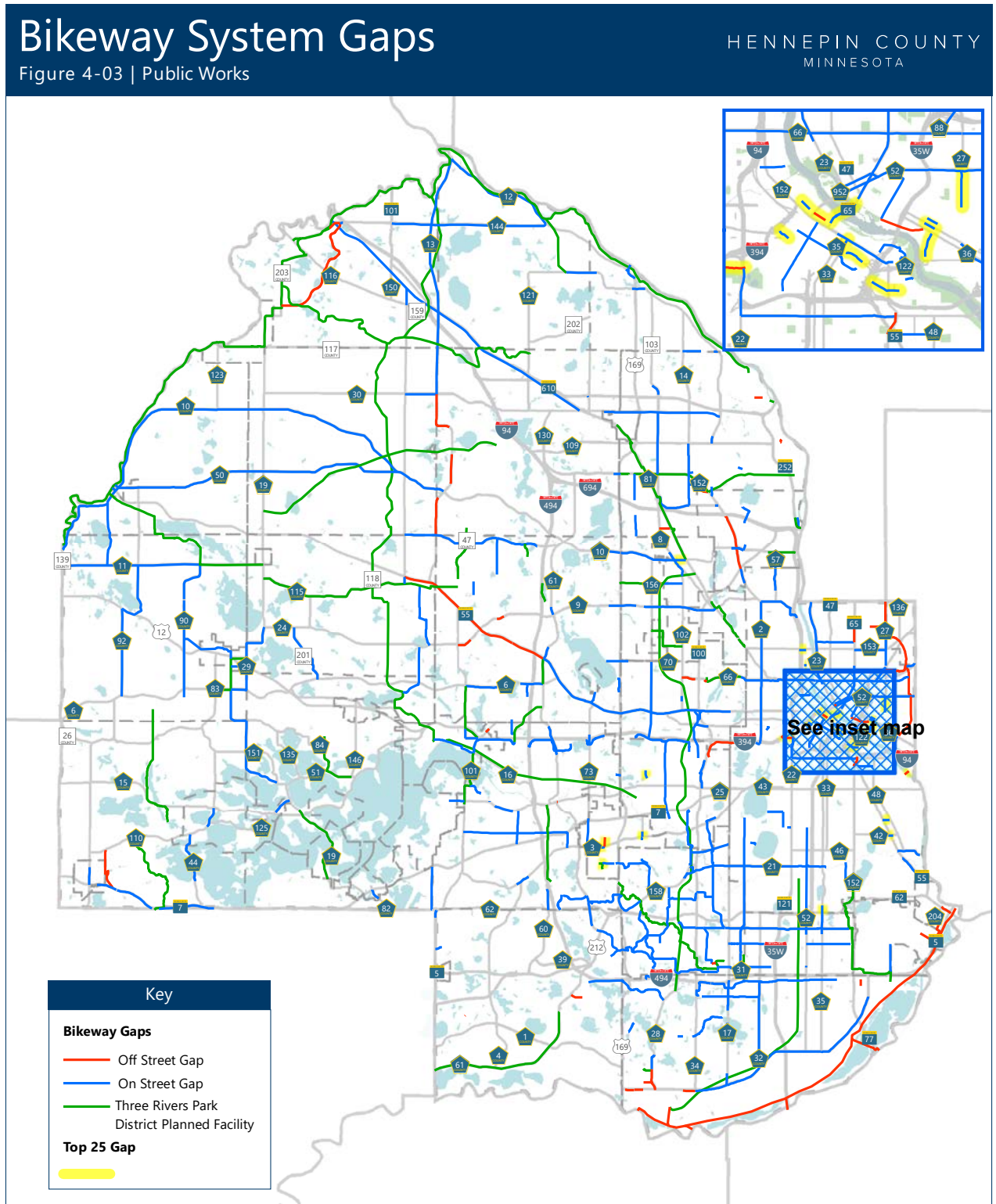


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Figure 4-03



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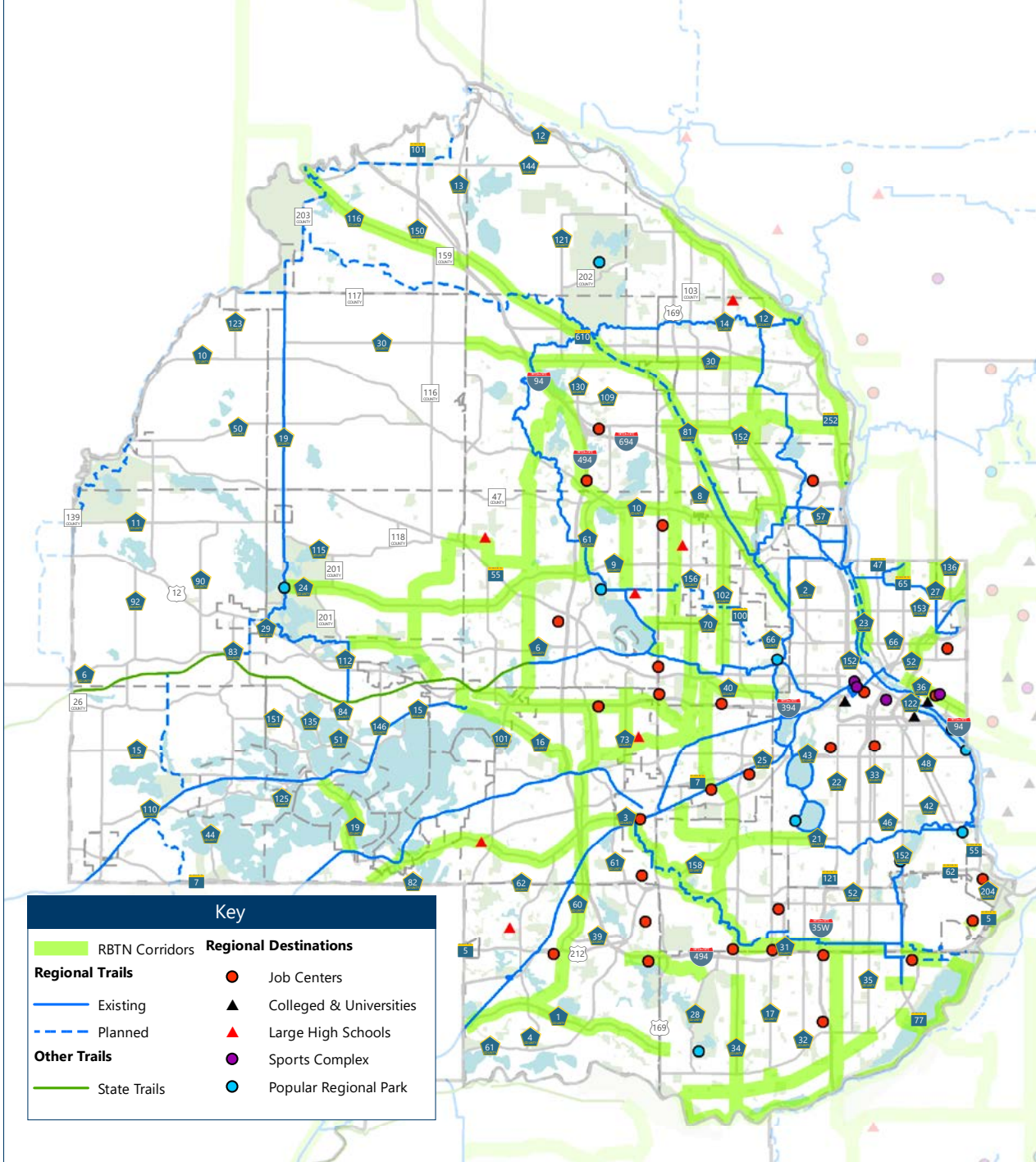
Publication date: 12/14/2018

Figure 4-04

# Regional Bicycle Transportation Network

Figure 4-04 | Public Works

HENNEPIN COUNTY  
MINNESOTA



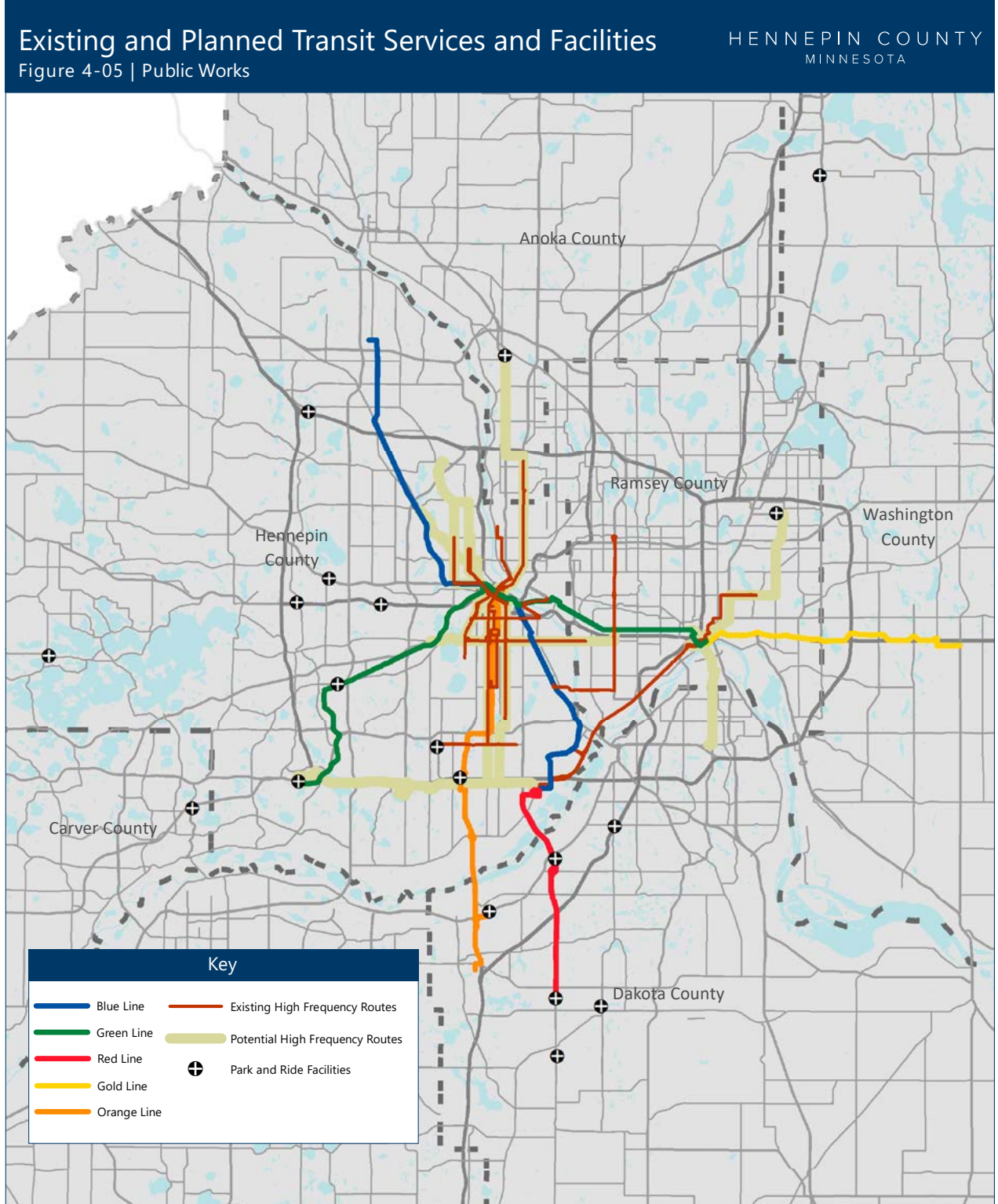
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Publication date: 5/9/2018      Data Source: Metropolitan Council



Figure 4-05



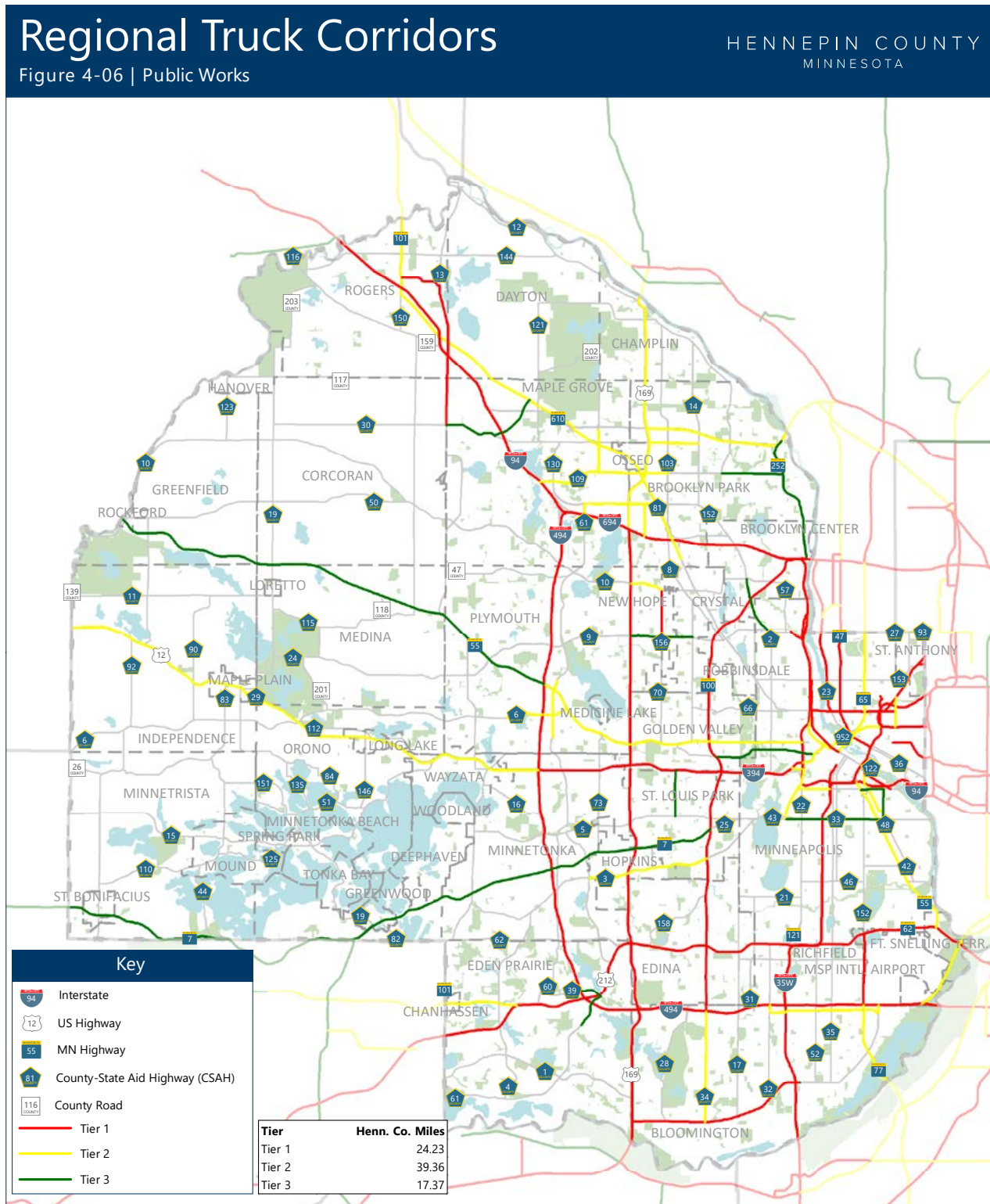
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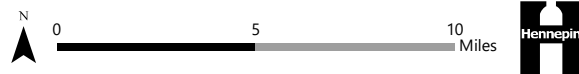
Publication date: 10/11/2018

Data Source: Metropolitan Council

Figure 4-06



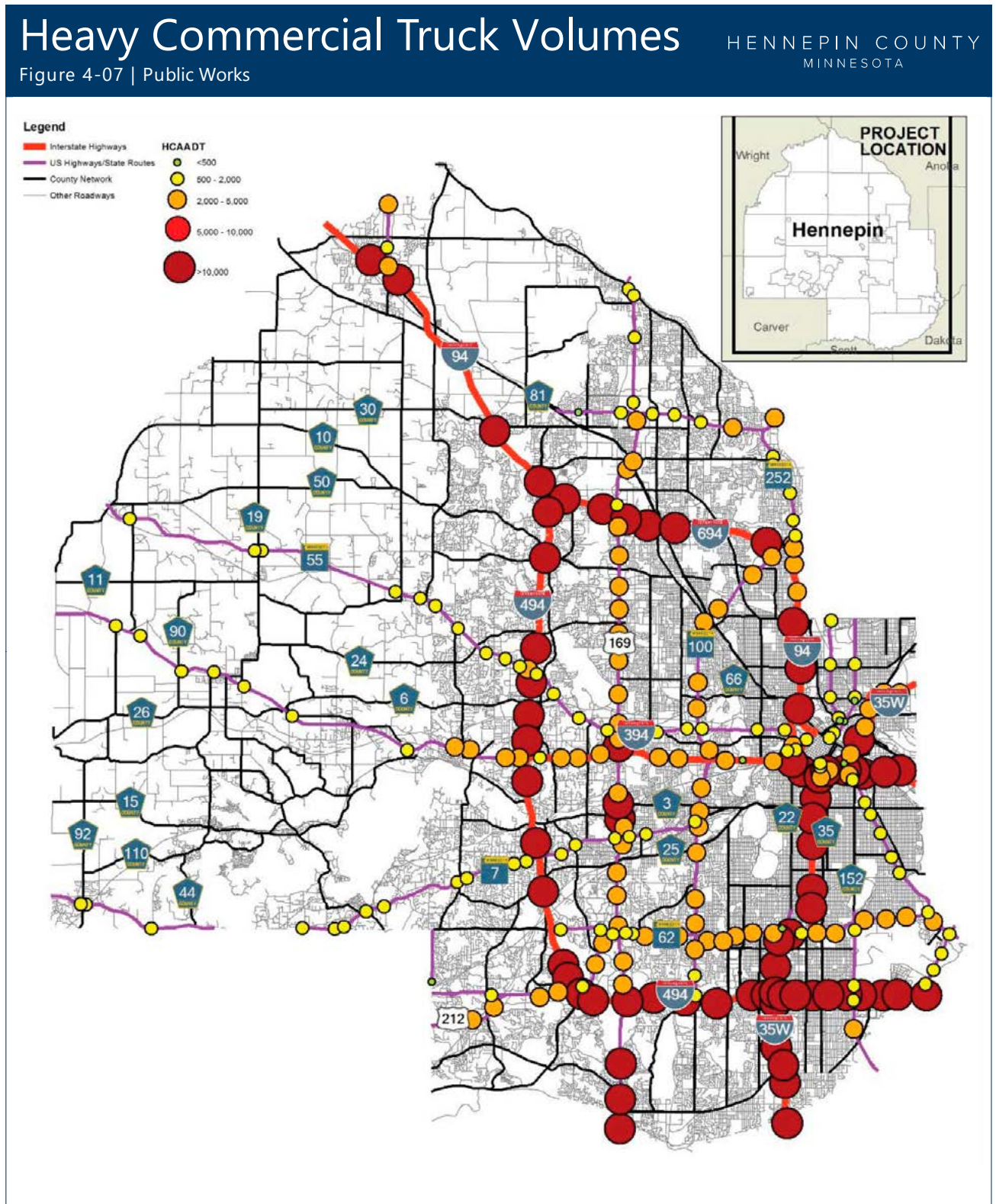
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Publication date: 5/9/2018

Data sources: Metropolitan Council

Figure 4-07

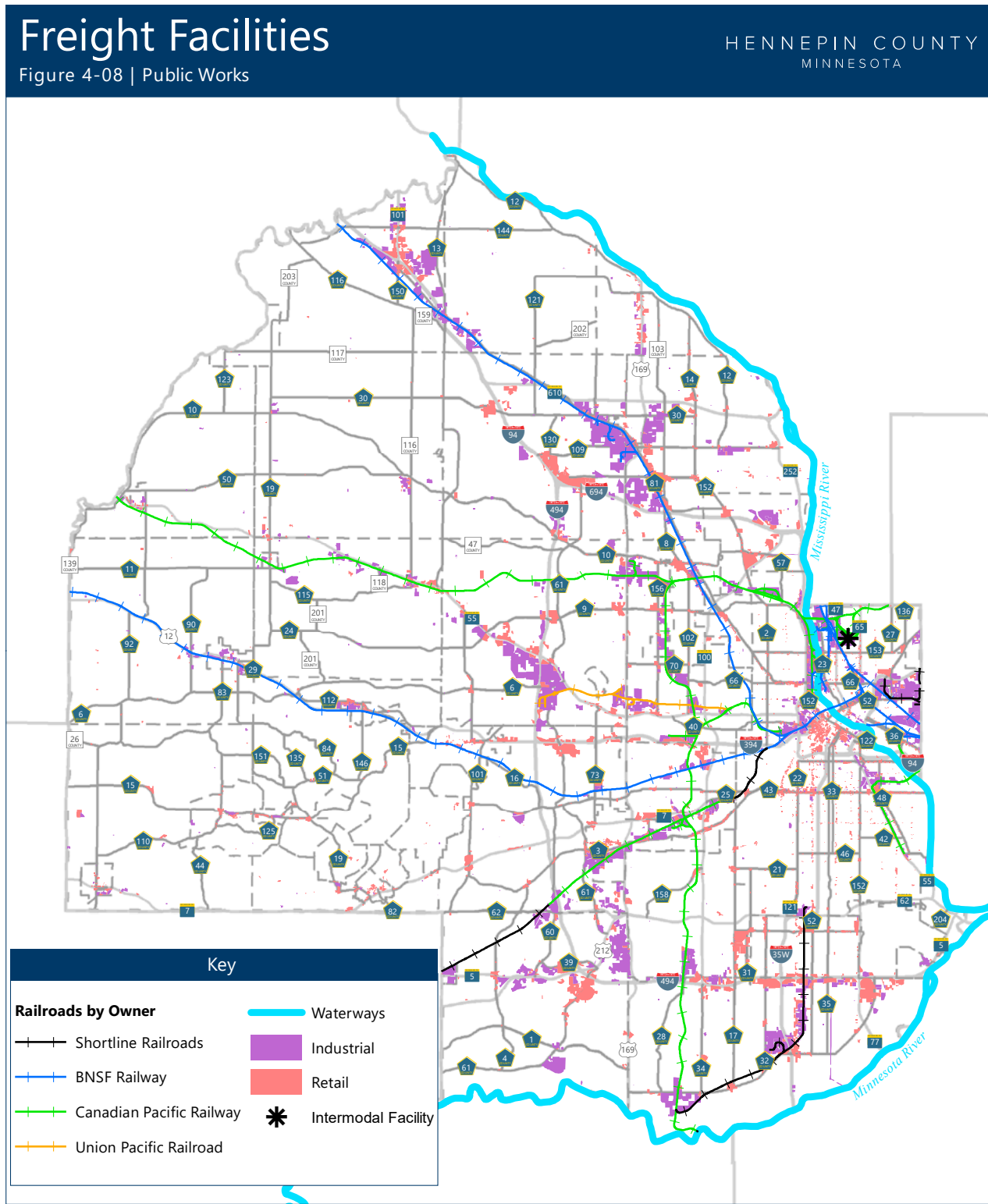


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Publication date: 6/20/2016

Figure 4-08



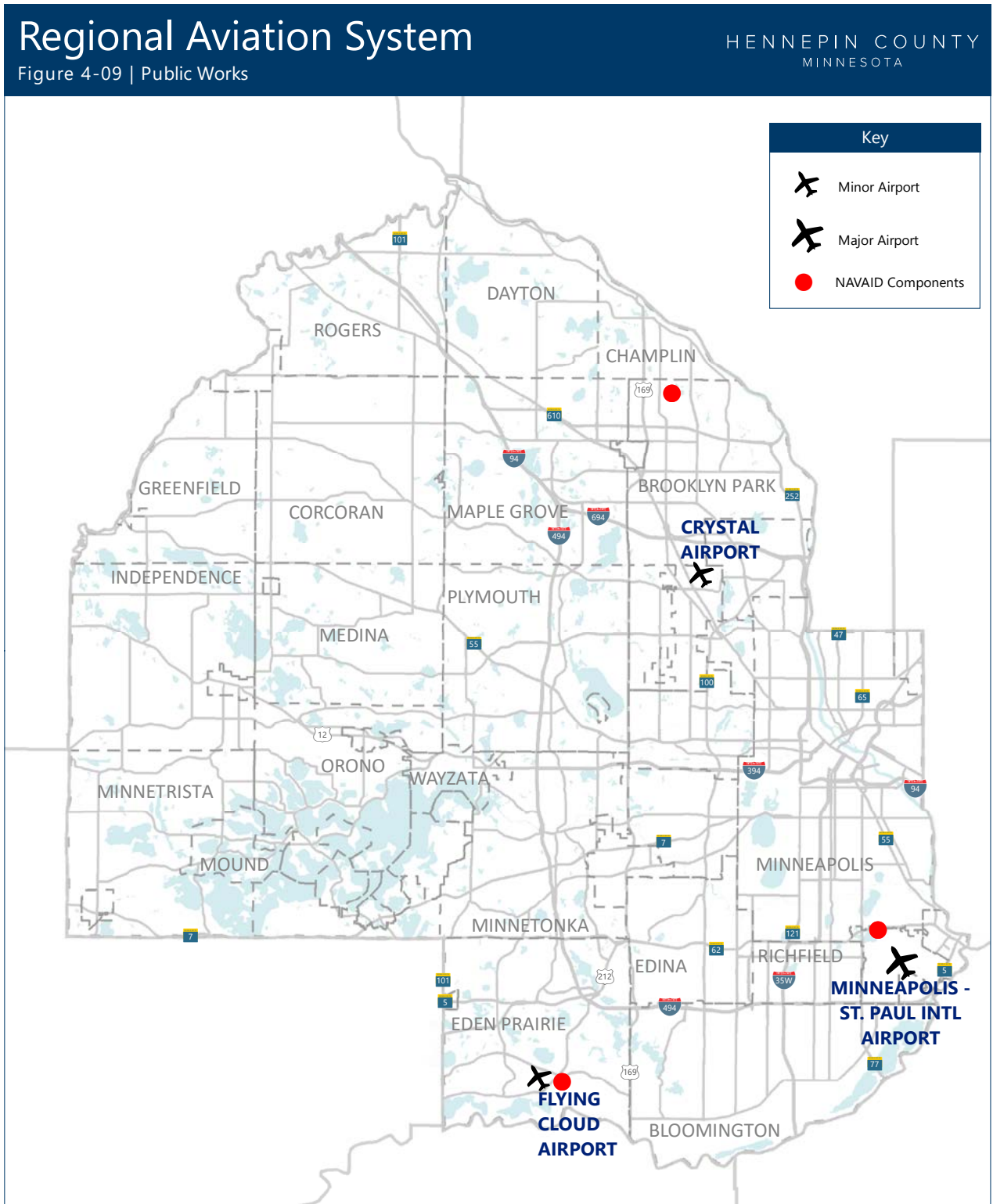
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Publication date: 5/9/2018

Data Source: Hennepin Co Freight Study



Figure 4-09



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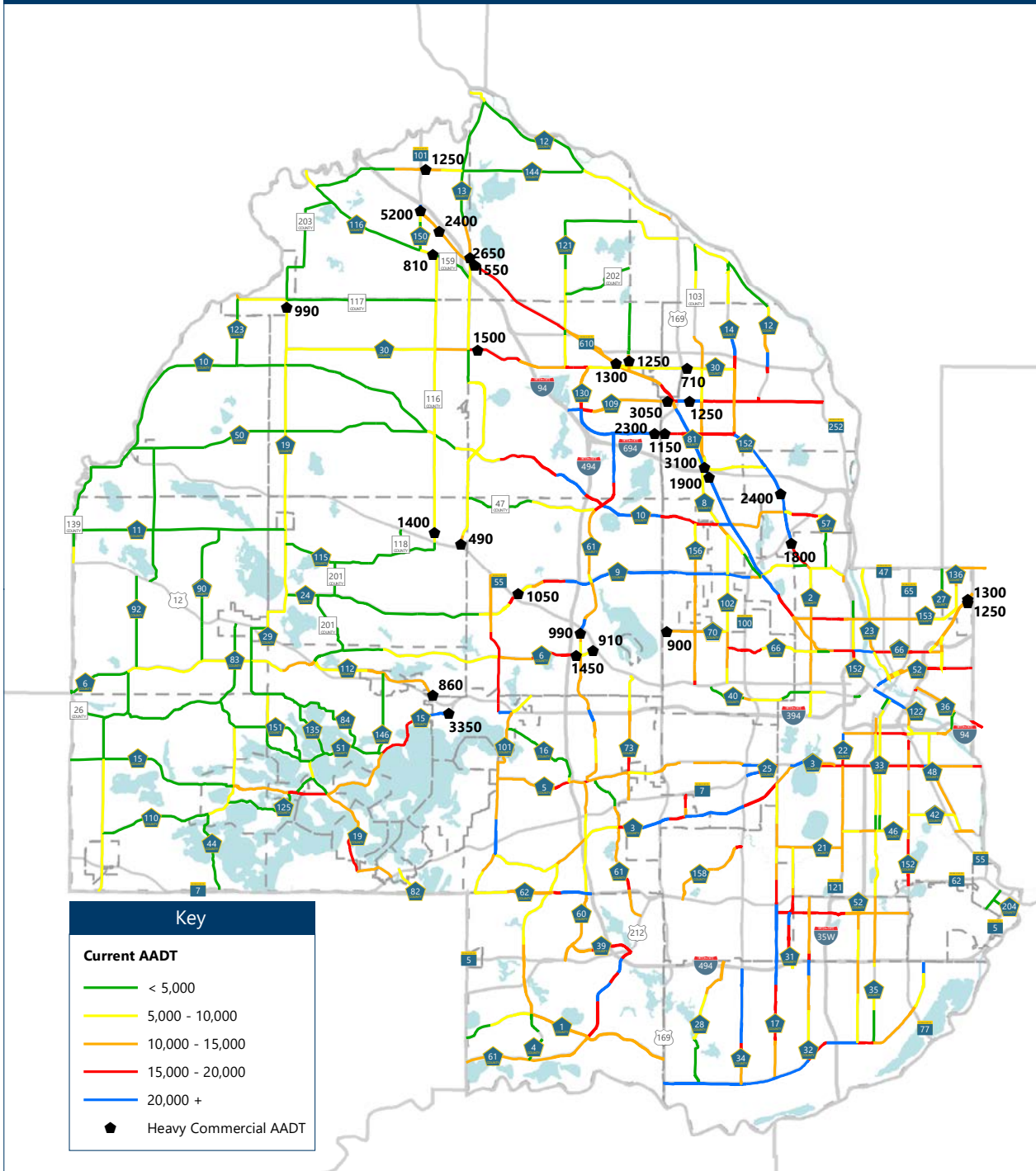


Publication date: 12/6/2018      Data Source: FAA

Figure 4-10

Existing & Heavy Commercial Average Annual Daily Traffic (AADT) HENNEPIN COUNTY MINNESOTA

Figure 4-10 | Public Works



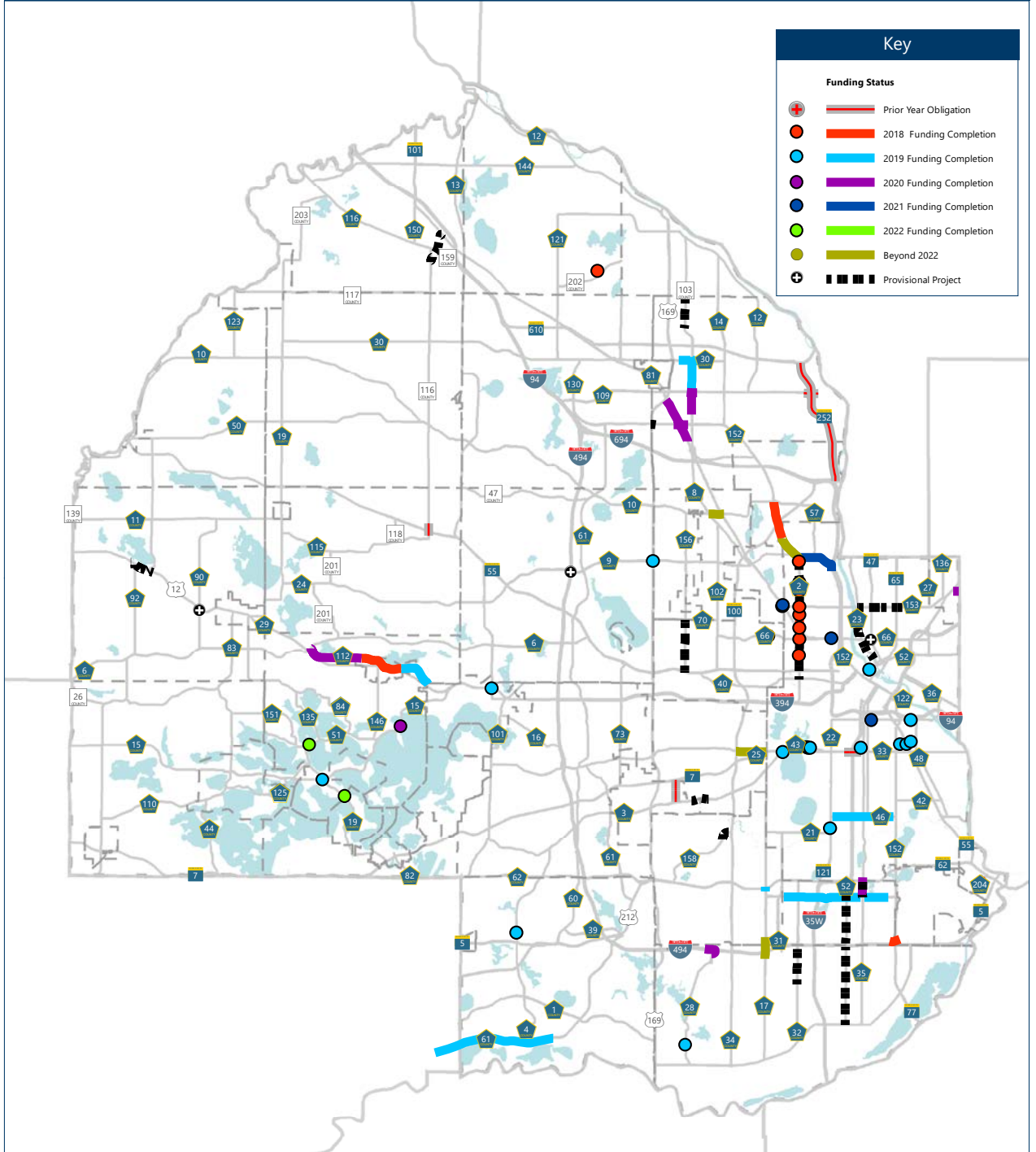
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Publication date: 5/30/2018

Figure 4-11

2018-2022 Transportation Capital Improvement Program HENNEPIN COUNTY MINNESOTA  
 Figure 4-11 | Public Works



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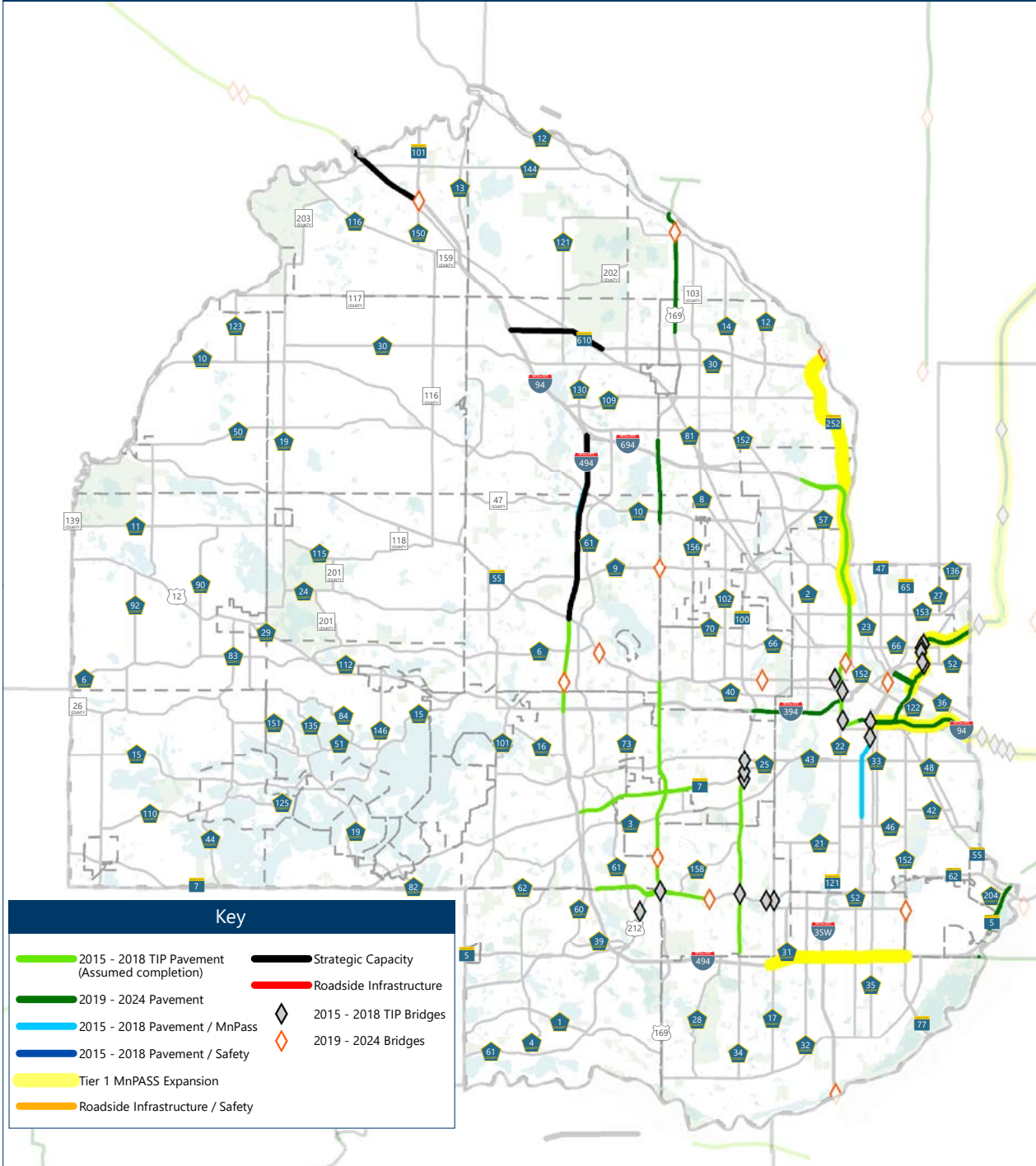
Publication date: 5/30/2018

Figure 4-12

# Highway Current Revenue Scenario

HENNEPIN COUNTY  
MINNESOTA

Figure 4-12 | Public Works



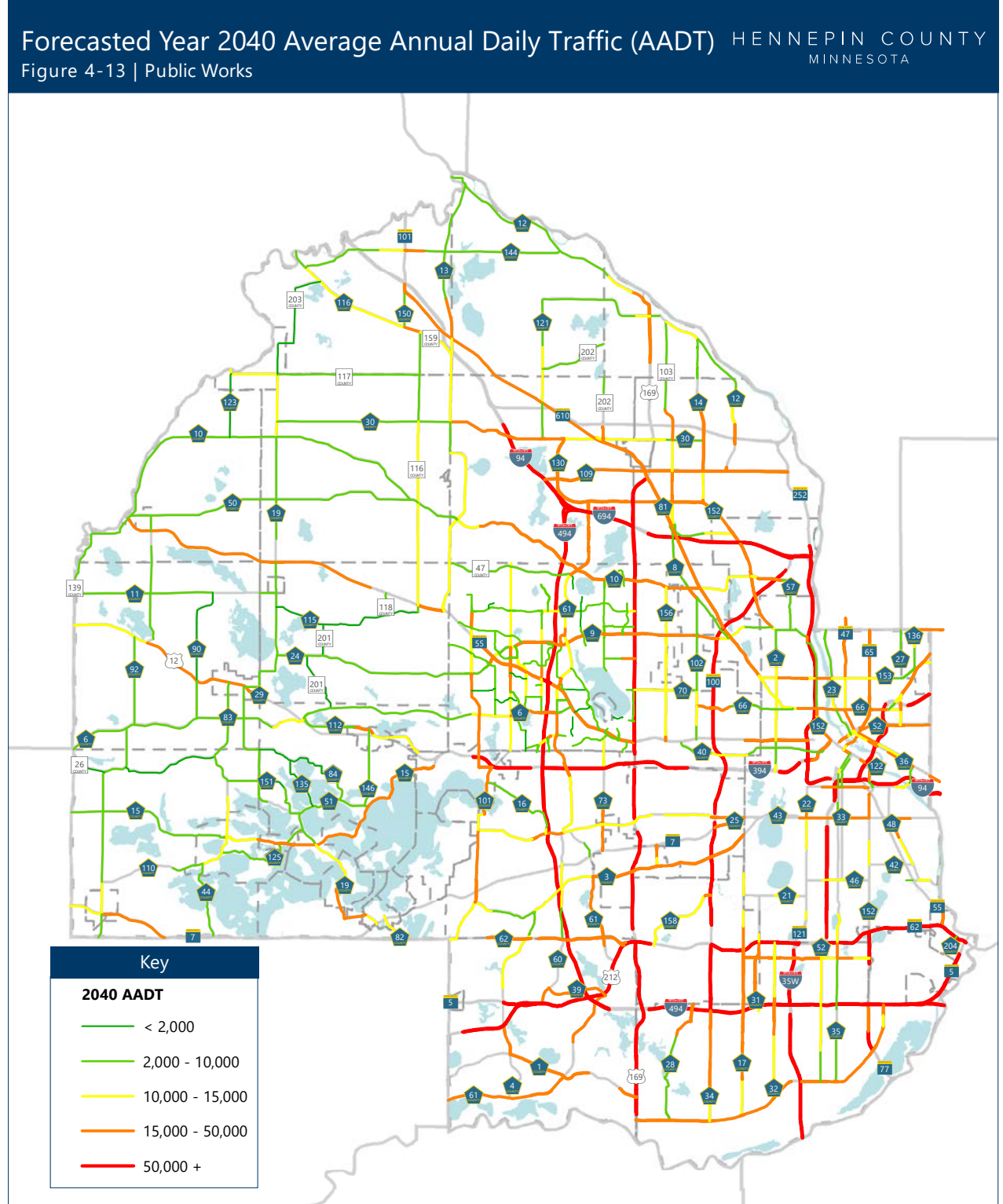
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Publication date: 12/14/2018    Data Source: Metropolitan Council



Figure 4-13



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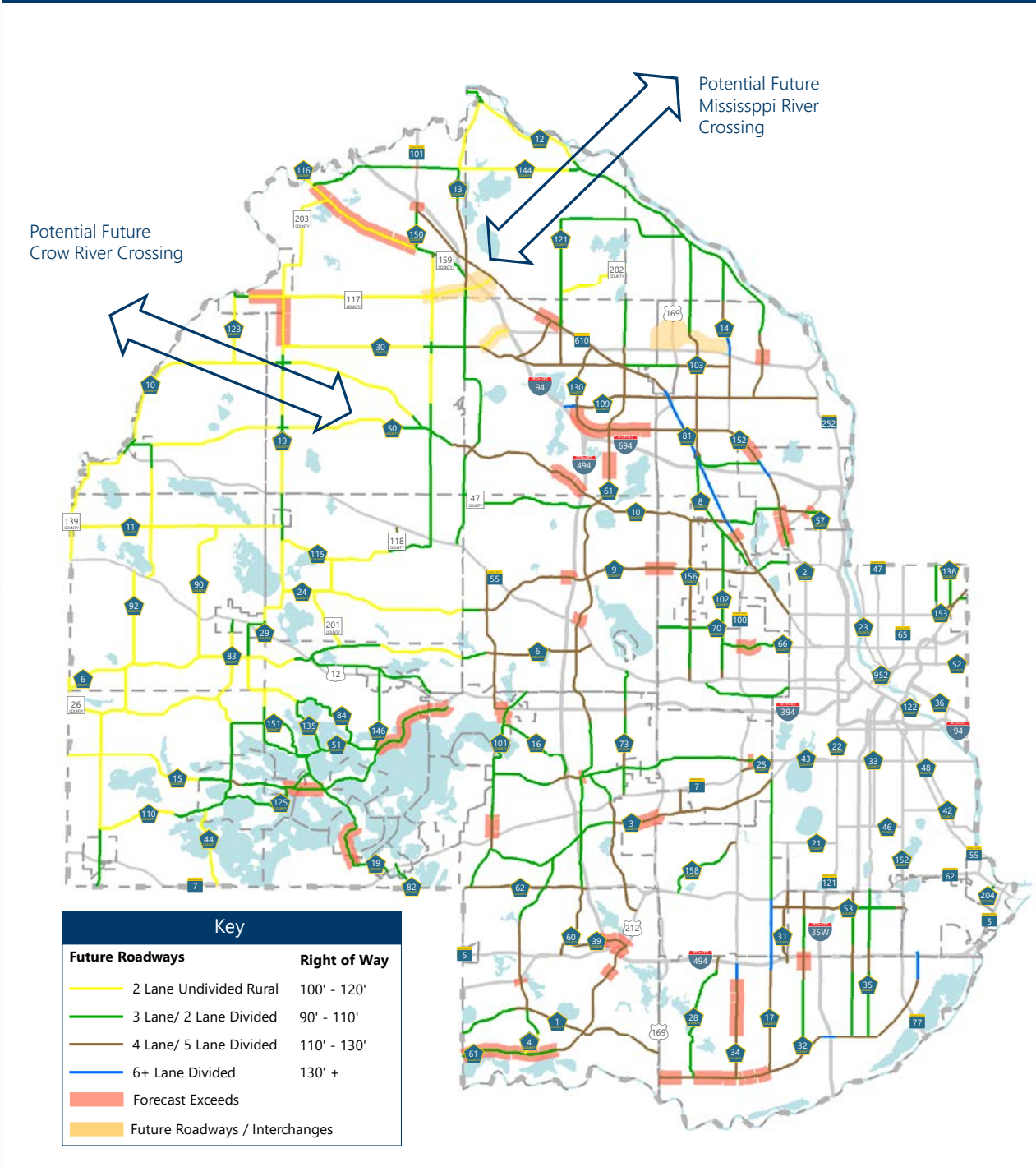
Publication date: 5/30/2018

Data Source: SRF Consulting

Figure 4-14

# Projected 2040 Traffic Volumes and Congestion HENNEPIN COUNTY MINNESOTA

Figure 4-14 | Public Works



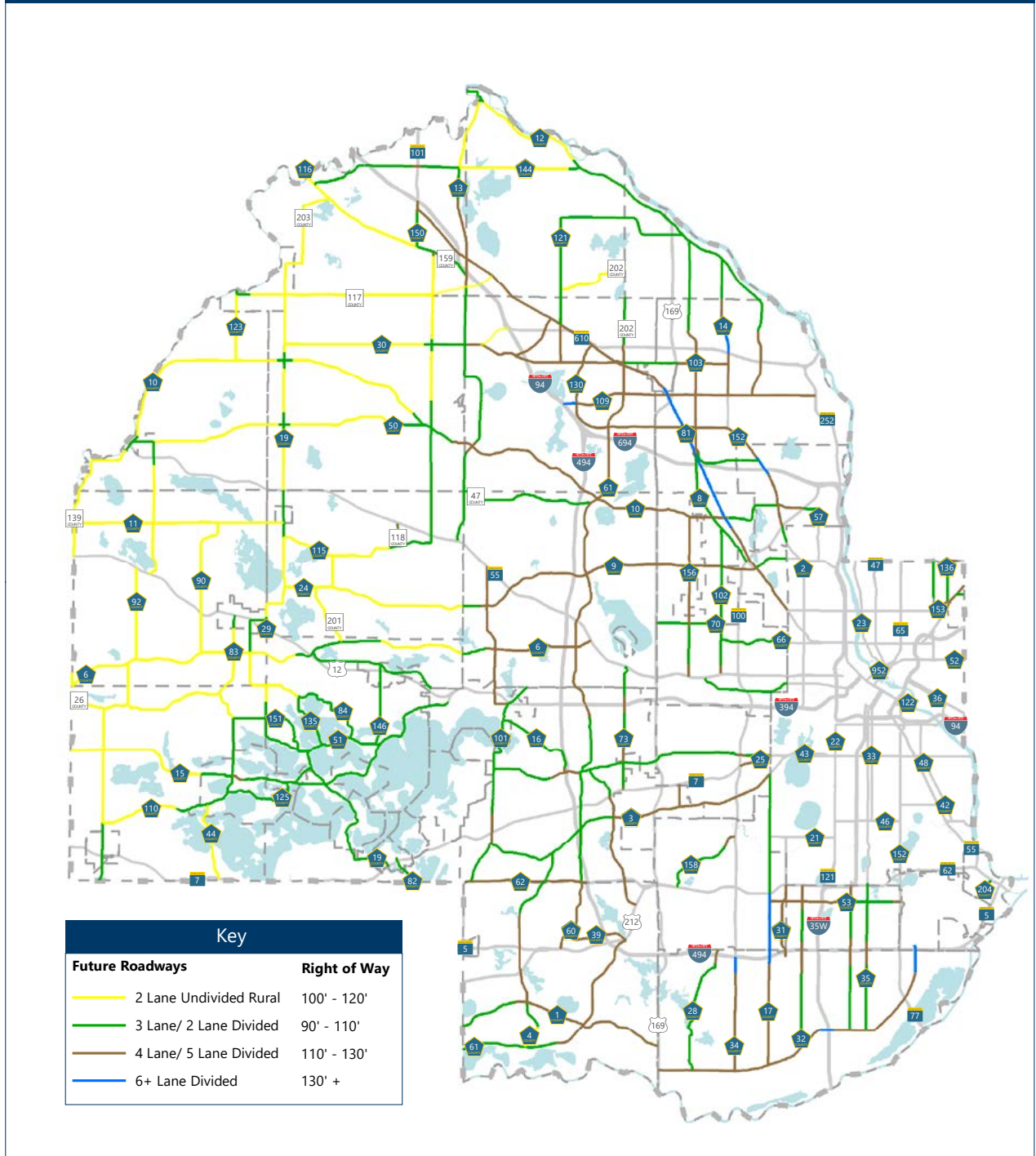
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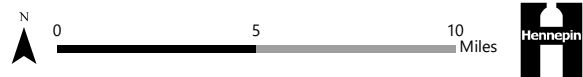
Publication date: 5/30/2018      Data Sources: SRF Consulting

Figure 4-15

Envisioned Roadway System and Right-of-Way Needs HENNEPIN COUNTY MINNESOTA  
 Figure 4-15 | Public Works

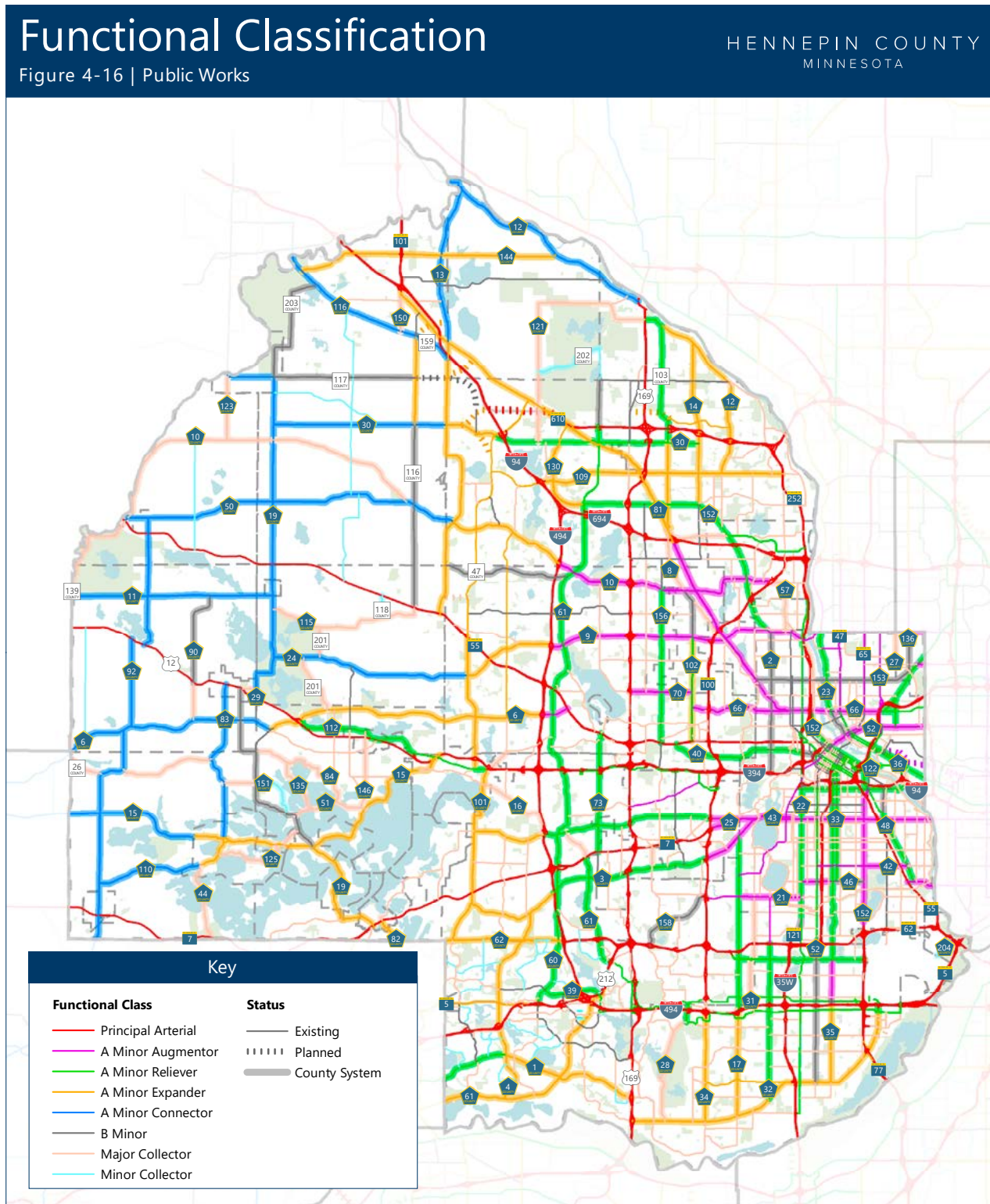


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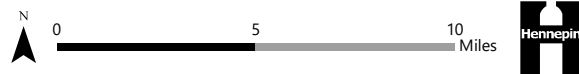


Publication date: 5/30/2018

Figure 4-16

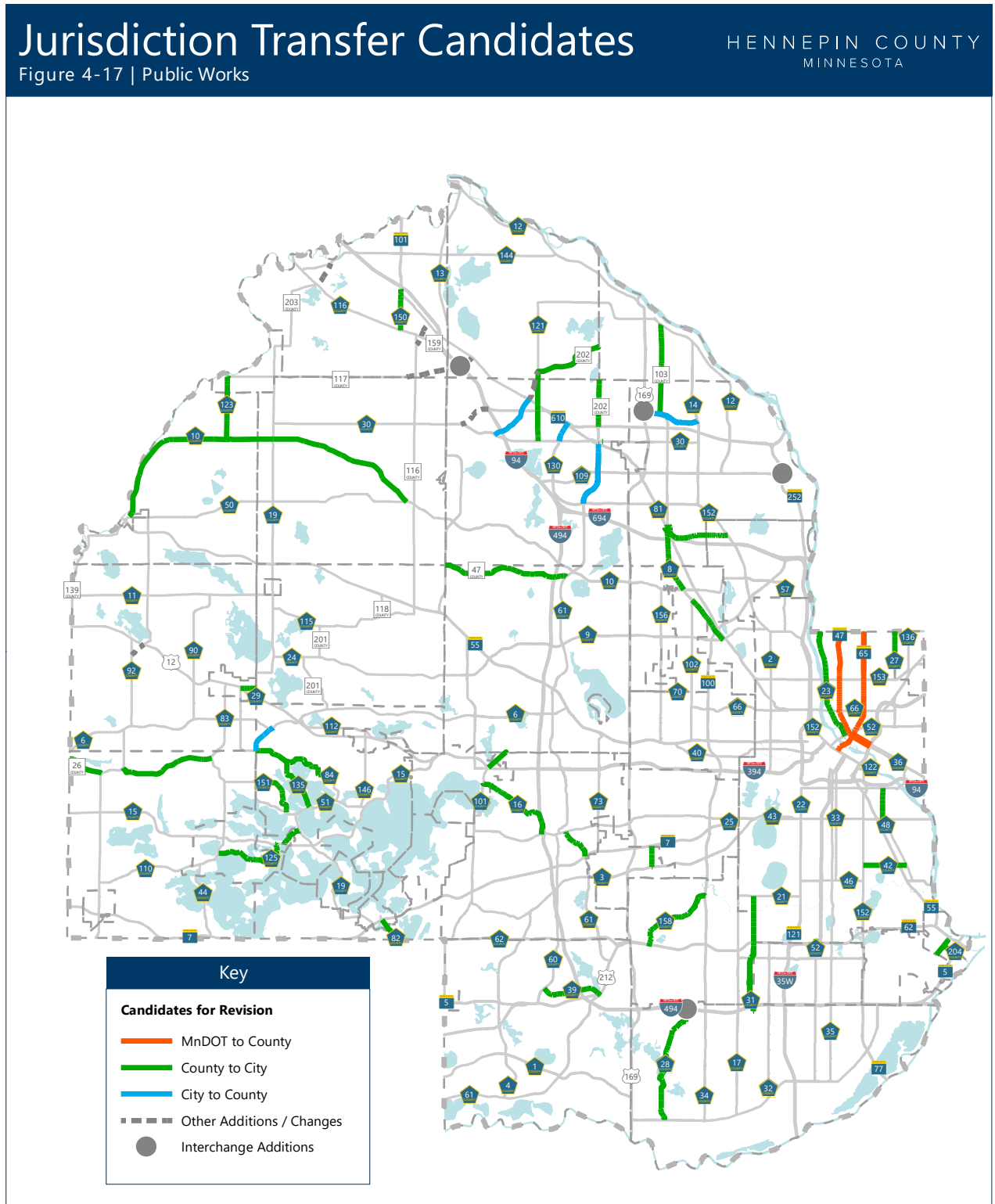


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Publication date: 5/9/2018      Data Sources: Metropolitan Council

Figure 4-17



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Publication date: 5/30/2018

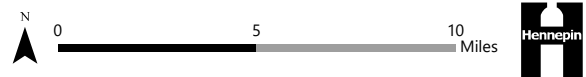
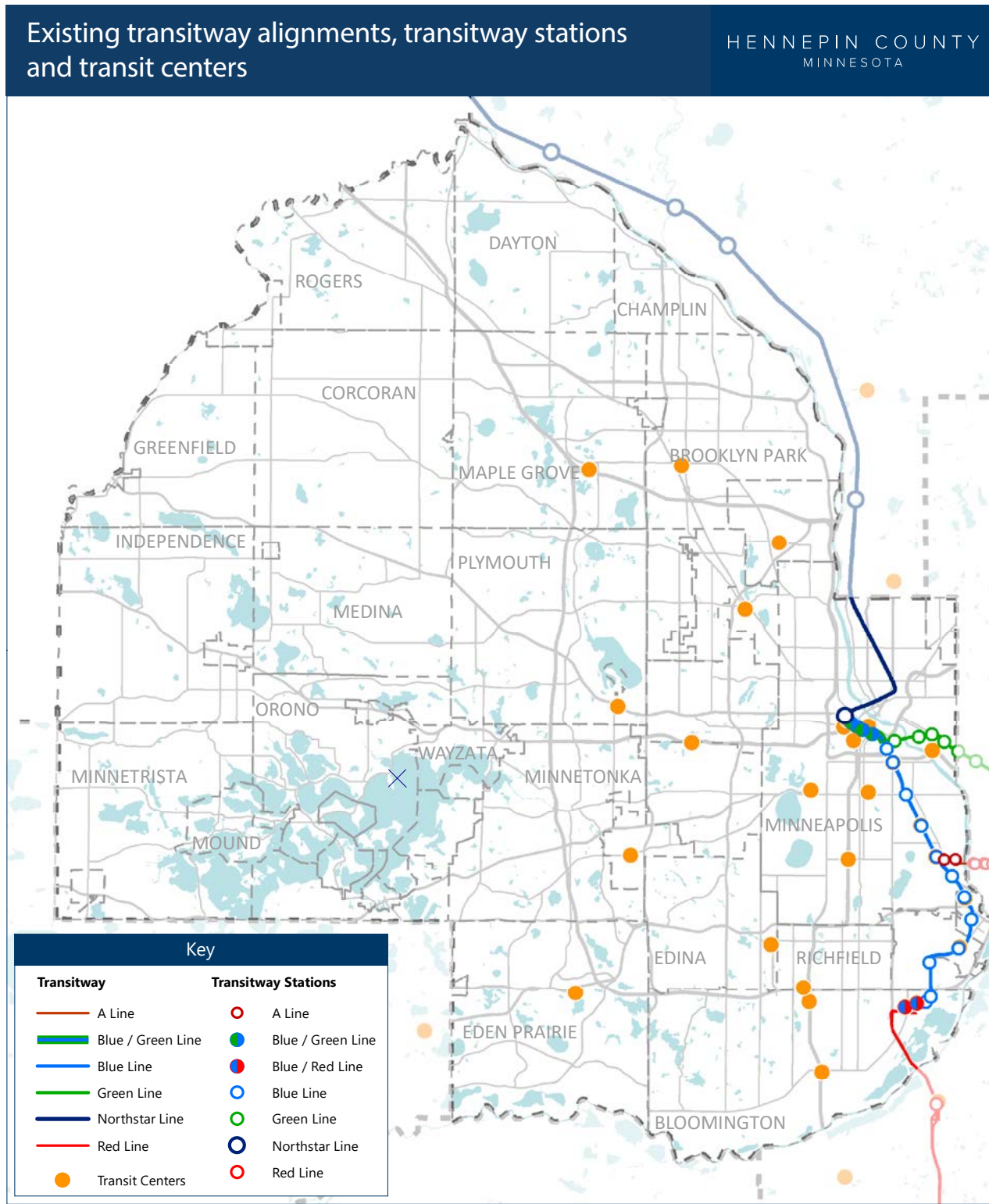


Figure 4-18



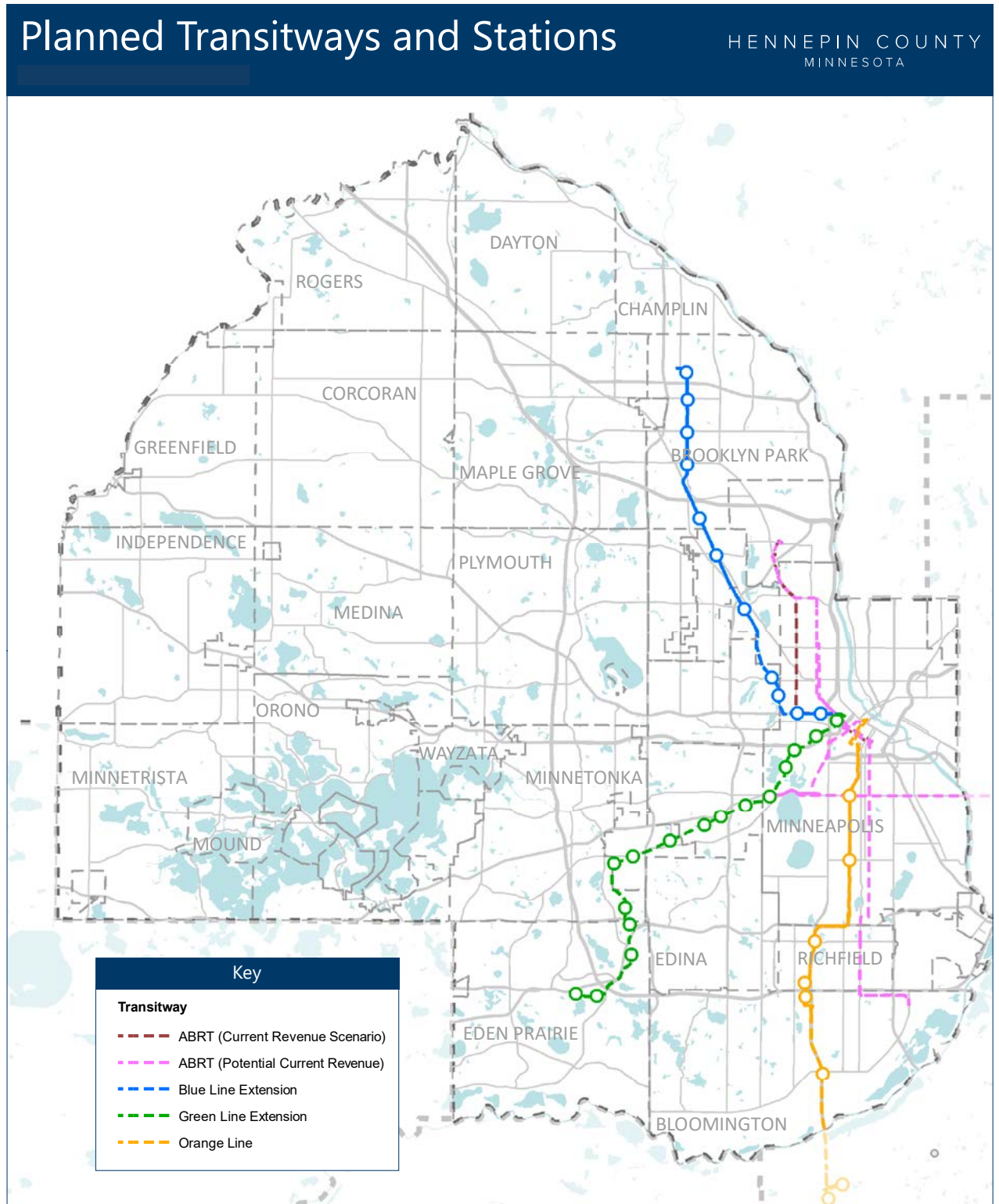
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Publication date: 2/4/2019      Data Source: Metropolitan Council



Figure 4-19



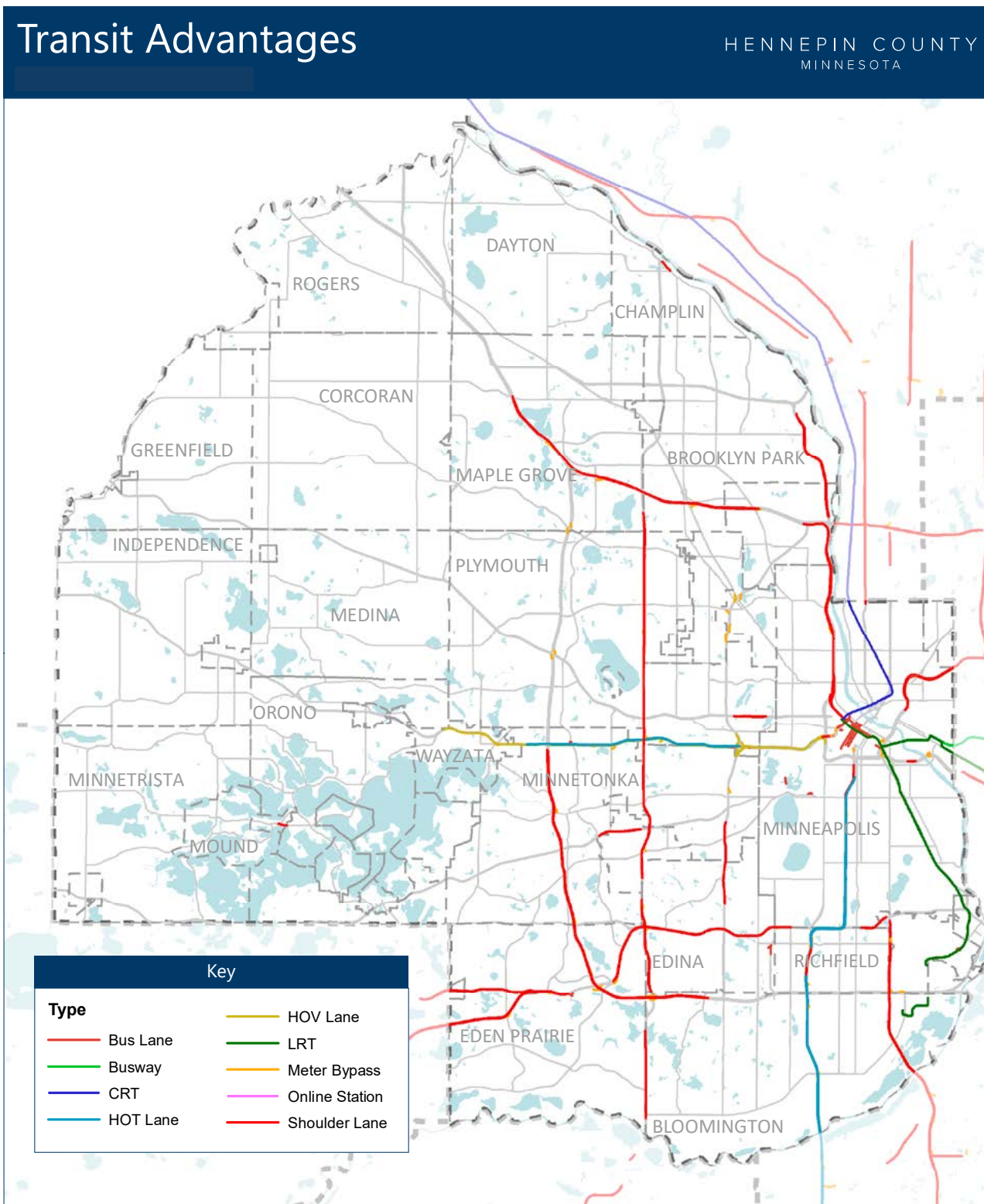
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Publication date: 12/11/2018

Data Source: Metropolitan Council

Figure 4-20



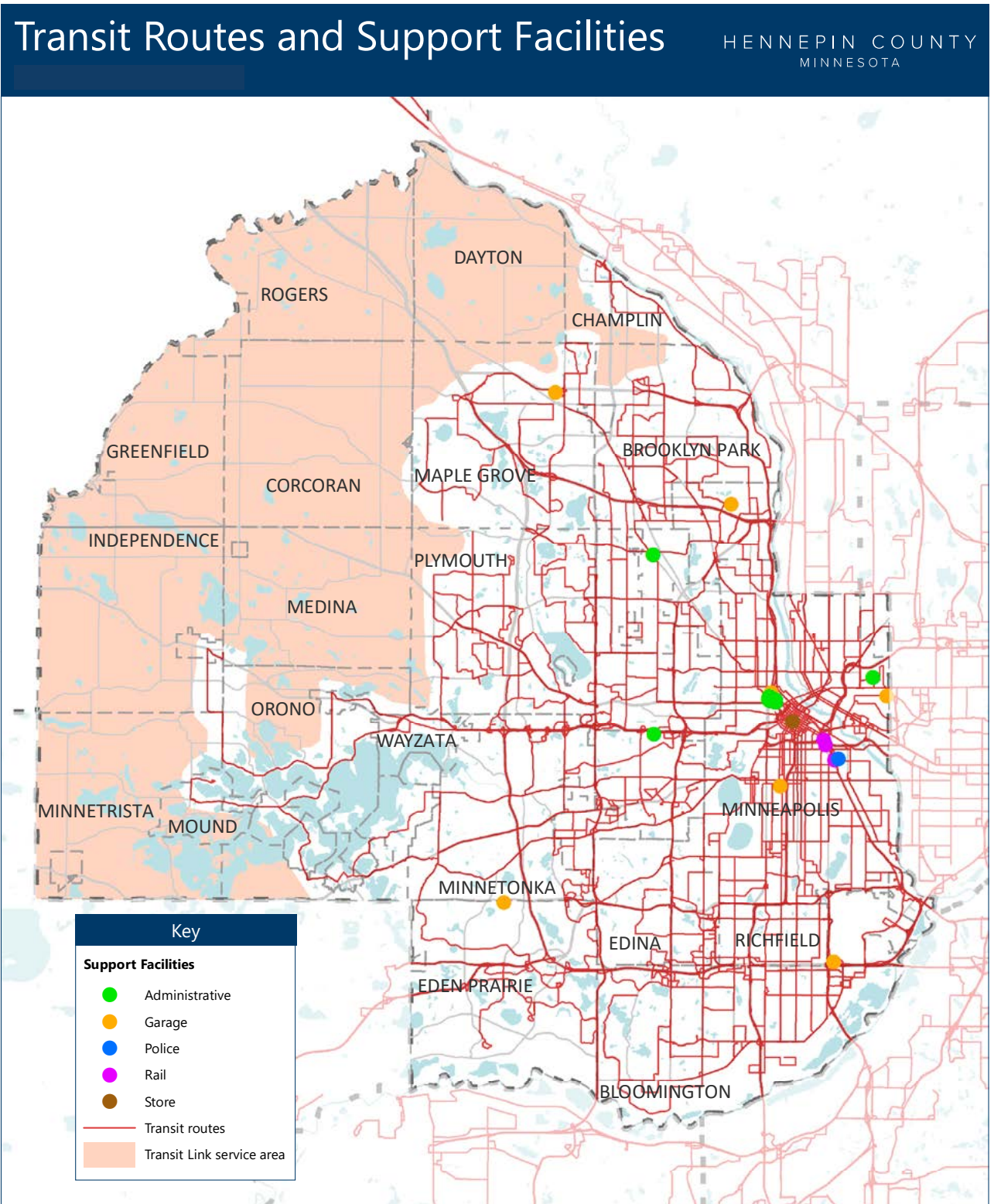
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Publication date: 12/3/2018      Data Source: Metropolitan Council



Figure 4-21



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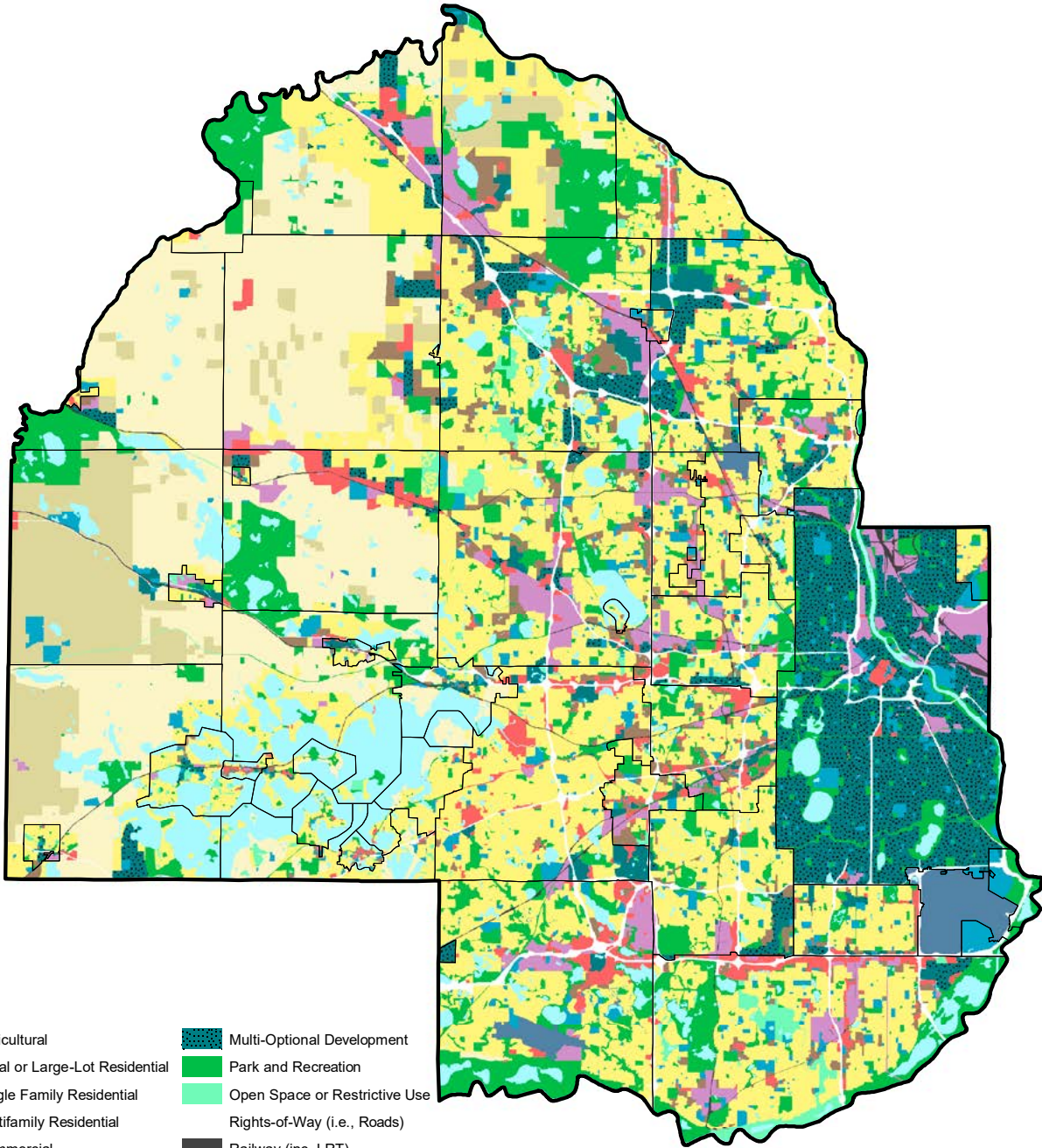
Publication date: 2/5/2019

Data Source: Metropolitan Council

Figure 4-22

# Planned Land Use - 2030

HENNEPIN COUNTY  
MINNESOTA



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

*The 2030 Planned Land Use Map will be updated to reflect 2040 upon completion and adoption of local comprehensive plans.*

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Publication date: 11/20/2017

Data source: Metropolitan Council