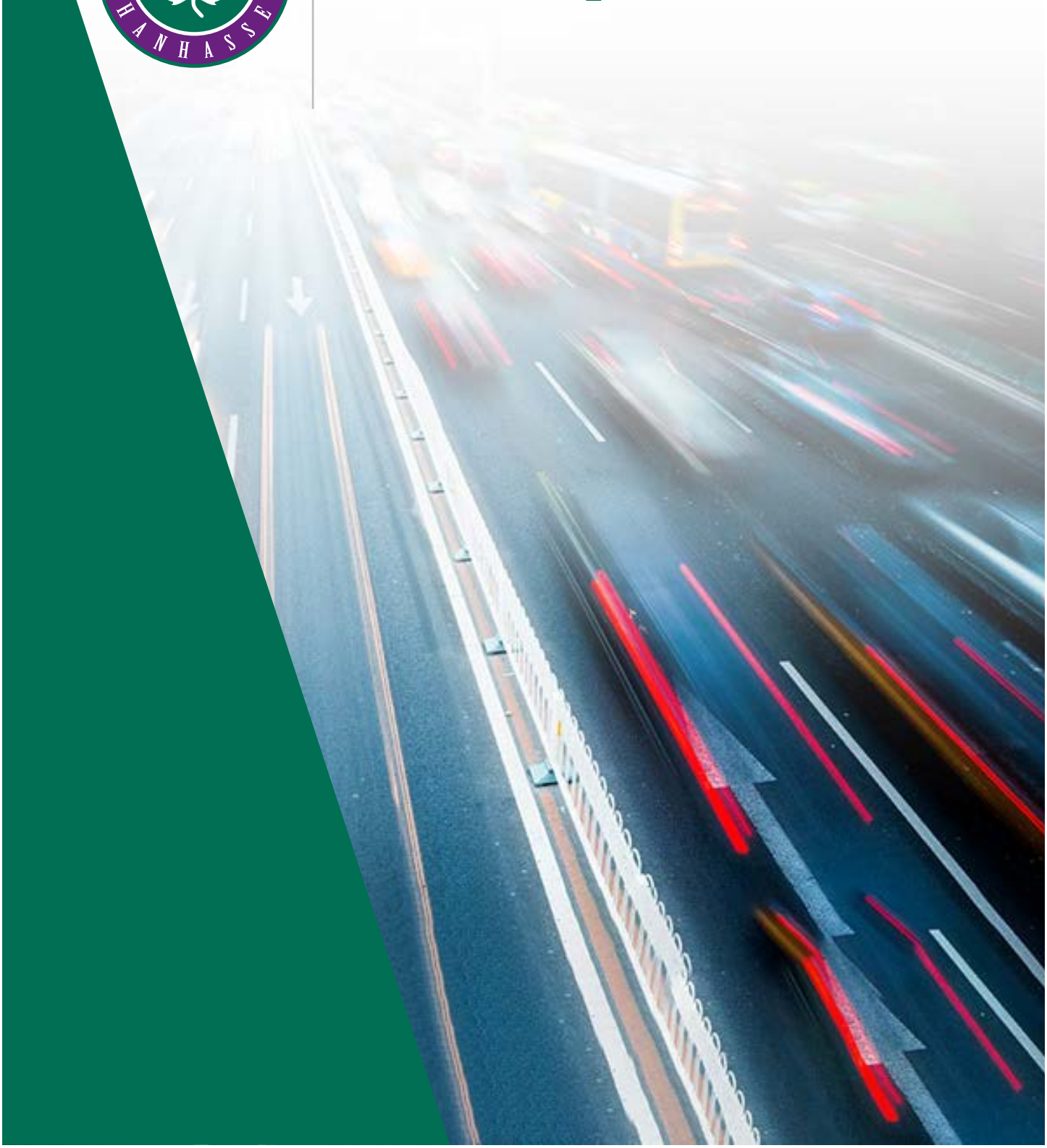
Chapter 6

Transportation

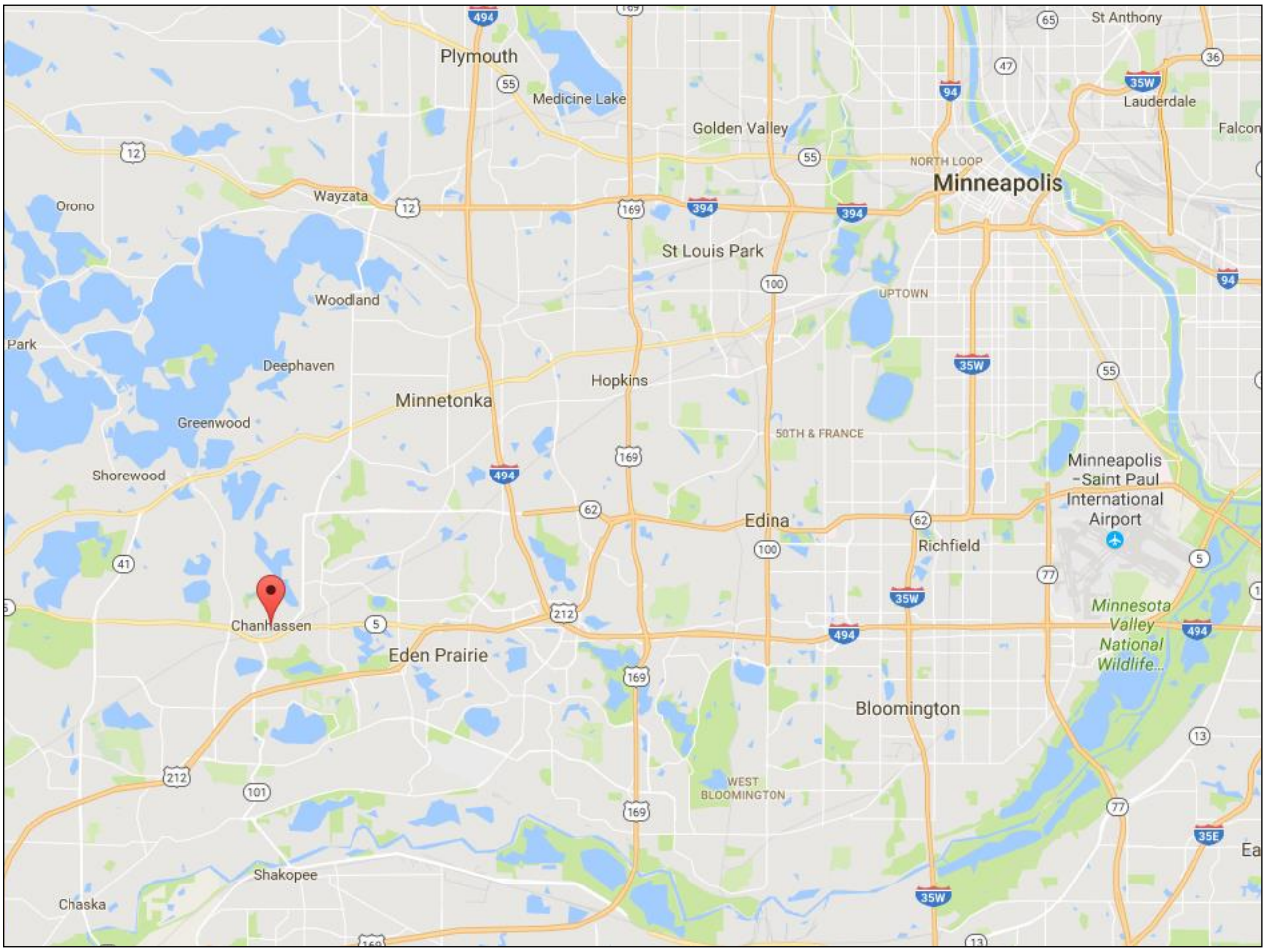


6 | Transportation

6.1 | Introduction

The City of Chanhassen is located in northeastern Carver County approximately 20 miles from downtown Minneapolis. It is classified as an emerging suburban edge of the Twin Cities Metropolitan Region, and is anticipated to be fully developed by the year 2040.

FIGURE 6.1 | Location Map



Several regional highways provide Chanhassen with accessibility to the metropolitan area and to out state Minnesota. These include Minnesota Trunk Highway (TH) 5 which runs east/west and interchanges with I-494 east of Chanhassen in the City of Eden Prairie; TH 7 which runs east-west along the northern border of Chanhassen, TH 41 which runs north-south through the western portion of the city, TH 101 which runs north-south bisecting the southern portion of the city and defining the northeastern border of Chanhassen with Eden Prairie and U.S. Highway 212 which traverses the southern third of the city.

The Chanhassen Transportation Plan is based on the city's 2040 Comprehensive Plan update and incorporates the Land Use Plan to evaluate and direct the local transportation system. Updates to these plans have been undertaken by the city to recognize changes in land use, development patterns and other planning processes including: the Minnesota Department of Transportation's "The 20-Year Minnesota State Highway Investment Plan"

(MnSHIP), which directs capital investment for Minnesota's state highway system. The plan must identify investment priorities given current and expected funding. It is updated every four years, as required by the Minnesota Statute. This MnSHIP update spans the 20-year planning period from 2018 to 2037. The Statewide Multimodal Transportation Plan describes statewide objectives and strategies that help MnDOT and its partners make progress toward the Minnesota GO 50-Year Vision, Carver County's Transportation Plan 2014 update and the Metropolitan Council's 2040 Transportation Policy Plan (TPP) and Thrive 2040 MSP. The TPP was adopted on January 14, 2015 and outlines major transportation investments for the transportation system in the seven county metropolitan area. The TPP identified $84 Billion (2015-2040) in the Current Revenue Scenario for transportation needs in the region. As a result of this funding level, many needs throughout the metropolitan area will go unmet over the next 20 years. The TPP identified current Level of Service (LOS) problems on regional routes such as TH 5, TH 7, TH 41, TH 101 and U.S. Highway 212. Given these limited capacity improvements to regional facilities, operational (congestion), and safety problems on these facilities will continue to increase. Since the regional facilities are anticipated to function poorly, additional traffic is anticipated to divert to the local system.

Carver County is in the process of updating their Comprehensive Plan including the transportation element. System changes and traffic forecasts included in this plan are based on county facilities and forecasts.

Study Goals and Objectives

The Transportation Plan shows how the City of Chanhassen will achieve its goal of creating an integrated, multi-modal transportation system, which permits safe, efficient and effective movement of people and goods while supporting the city's development plans and complementing the metropolitan transportation system that lays within its boundaries. To accomplish this goal, the Transportation Plan:

1. Identifies the density and distribution of future land uses and their relationship to the proposed local transportation system and the anticipated metropolitan transportation system.
2. Develops a functional hierarchy of streets and roads and defines their access to the regional system to ensure that they support the existing and anticipated development of the area; serve both short trips and trips to adjacent communities; and complement and support the metropolitan highway system.
3. Establishes a system improvement and completion program that ensures that higher priority projects are constructed first; maintains a consistent and coherent roadway system during the roadway system development process; and provides for adequate funding for all needed improvements.
4. Identifies what transit services and travel demand management strategies are appropriate for implementation in Chanhassen in order to increase the number and proportion of people who use transit or share rides, and reduce the peak level of demand on the entire transportation system.
5. Identifies the strategies and policies that need to be implemented to properly integrate the trail system (pedestrian, bicycle, etc.) with the proposed roadway system, to ensure the provision of trails in a sequence consistent with the development of the roadway system, and to create a rational network of sidewalks.

Because this analysis deals not only with streets and highways, but also with land use, trails, transit, traffic management and other topics, the results will constitute a Transportation Plan.

6.2 | Land Use

Existing Land Use

Existing development within the city is influenced by several factors including the relative location of the Minneapolis Central Business District, the location of metropolitan highways and the location of several lakes within the city. Residential development, which previously has occurred primarily in the northern portion of the city, with some large lot developments in other areas, has begun to spread out throughout the city. Commercial areas in

Chanhassen have developed along the major highway corridors of TH 5 and TH 41. Additionally, a lifestyle center is under development at the intersection of U.S. Highway 212 and CSAH 17 (Powers Boulevard). The city is also planning for a mixed use development in the CSAH 61 corridor in southern Chanhassen with the extension of urban services. For more information on land use with in the city see the land use section of the comprehensive plan.

Metropolitan Urban Services Area

The Metropolitan Urban Services Area (MUSA) is defined as areas within the city that may be served with centralized infrastructure service and which may therefore develop at urban densities and intensities. The purpose of this boundary is to define the areas within the Twin Cities Metropolitan Area that are eligible for "urban services", specifically sewers, municipal water systems and particular types of transportation systems. This boundary line is defined and maintained by the Metropolitan Council to assist in the orderly development of the metropolitan area.

The city has identified the key infrastructure, lift stations, wells and streets needed to expand into the 2020 MUSA area. It is the city's desire to direct development to those properties that have municipal services. Assuming that current development patterns continue, the majority of the city will be developed by 2040. The pace of expansion of the MUSA will depend on the availability of sufficient developable land to support the required infrastructure.

The location of the MUSA line is, therefore, a valuable guide in determining the priority of roadway improvements. The roadway system within the MUSA area is going to be in demand much sooner than the roadway system outside. This is one of the reasons for having such a boundary. It allows municipalities to focus limited resources on particular parts of their territory. All of Chanhassen is expected to be within the MUSA by the year 2020. However, the actual extension of urban services will be dependent on the orderly construction of key infrastructure.

Land Use Plan

The 2040 Comprehensive Land Use Plan defines areas where the city will encourage specific types of land uses to be developed. The general categories of land uses defined by the city are residential, commercial, mixed use, industrial, office, public and parks. The Land Use Plan is a tool that the city uses to "guide" future development so that it is consistent with current and future land uses in the city. From these land uses, the socioeconomic projections are estimated.

Socioeconomic Characteristics

The analysis and projection of regional traffic conditions is conducted utilizing a technique known as traffic analysis zones. Traffic analysis zones (TAZ) are defined geographical areas within which data such as population, employment and household information is collected. This data is analyzed through computer modeling techniques which results in forecasts of traffic movement between zones. Utilizing this technique, it is possible to project travel and demand such as person trip productions, person trip attractions, intrazonal person trips and motor vehicle data such as average daily trips and peak hour trips. This data is valuable in both local and regional transportation planning.

Table 6.1 shows the past census population, households, and employment as well as 2020 - 2040 forecasts for the City of Chanhassen. From 2010 to 2040, the population and the number of households in Chanhassen are projected to increase 62 and 68 percent respectively. By 2040, Chanhassen's employment is projected to grow 69 percent more than the 2010 figure. City forecasts are based on the location of existing development and an understanding of the kind of development that occurs as well as the rate at which development is occurring both within Chanhassen and throughout the region.

TABLE 6.1 | Population, Households, and Employment Past Census Totals and 2020, 2030, and 2040 Forecasts

	1970	1980	1990	2000	2010	2020	2030	2040
Population	4,879	6,359	11,732	20,231	22,942	26,700	31,700	37,100
Households	1,349	2,075	4,016	6,914	8,352	10,000	11,900	14,000
Employment	900	2,102	6,105	9,350	10,905	15,600	17,000	18,400

Forecast figures from Metropolitan Council

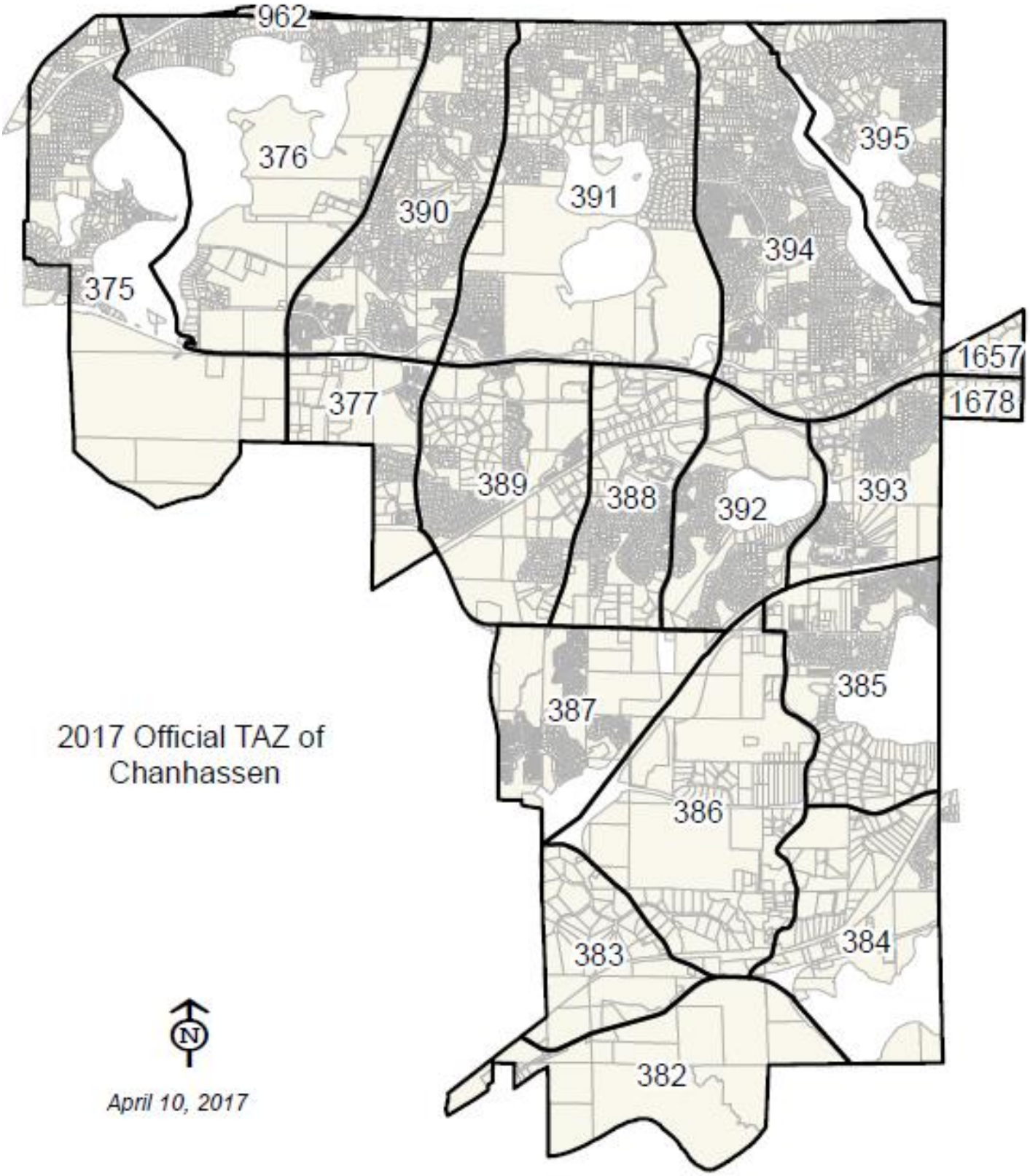
TABLE 6.2 | City of Chanhassen 2040 Population, Households, and Employment by TAZ

TAZ	2020			2030			2040		
	House	Pop	Employ	House	Pop	Employ	House	Pop	Employ
375	540	1,539	270	555	1,543	297	573	1,593	327
376	423	1,176	332	470	1,283	350	493	1,331	370
377	192	518	1,170	218	512	1,287	398	931	1,416
382	13	34	485	13	34	598	13	34	951
383	35	90	0	218	569	0	398	1,043	0
384	145	416	26	300	918	51	721	1,702	70
385	513	1,347	8	801	1,972	54	891	2,155	54
386	155	426	69	540	1,385	251	695	1,799	384
387	753	1,987	167	1,046	2,697	1,972	1,100	2,707	2,575
388	652	1,569	3,300	688	2,143	2,550	906	2,087	2,490
389	392	1,074	1,758	392	1,047	2,277	392	1,019	2,600
390	1,080	3,863	352	1,100	3,871	218	1,377	4,071	398
391	1,118	3,102	124	1,456	3,872	134	1,948	6,474	172
392	634	1,399	1,644	663	1,476	1,680	600	1,488	1,554
393	823	1,786	564	830	1,895	572	830	1,895	577
394	1,893	4,521	2,650	1,960	4,604	2,342	2,000	4,856	2,360
395	639	1,853	0	650	1,879	0	665	1,915	0
962	0	0	0	0	0	0	0	0	0
1657	0	0	1,489	0	0	1,294	0	0	1,054
1678	0	0	1,192	0	0	1,073	0	0	1,048
TOTALS	**10,000**	**26,700**	**15,600**	**11,900**	**31,700**	**17,000**	**14,000**	**37,100**	**18,400**

Projections and allocations were made by City of Chanhassen Planning Department, April 2018.

Table 6.2 shows the City of Chanhassen's forecast for population, households, and employment by TAZ for 2020, 2030 and 2040. This table distributes growth across the city during the planning period.

FIGURE 6.2 | TAZ Map



6.3 | Analysis of Existing and Future Roadway Needs

Determining future roadway needs is based on both an analysis of the existing roadway network needs and an understanding of how traffic demand will grow in the future. A good indicator of existing need is traffic congestion. However, maintaining system continuity as new land develops is also important. Identifying future need requires an understanding of how the city is expected to grow. The preceding section outlined the expected distribution of housing, population and employment. Traffic forecasts were made for the existing roadway system including improvements that are already programmed. This traffic analysis allows the detection of problems that would develop if no further system improvements were made.

Existing Roadway System

As with all municipalities, jurisdiction over the roadway system is shared among three levels of government: the state, the county and the city. The Minnesota Department of Transportation (MnDOT) maintains the interstate and trunk highway system on behalf of the state. Carver County maintains the County State Aid Highway (CSAH) and County Road systems. The remaining streets and roadways are the responsibility of the city.

The existing street network includes approximately 153 miles of road. This represents double the road system of 75 miles in 1990.

Road Type	Length in Miles
Trunk Highway	21.59
Trunk Highway turn-back	0
County State Aid	19.2
Municipal State Aid	22.14
County	2.04
Local	88.24
TOTAL	153.21

TABLE 6.3 | City of Chanhassen Important Transportation Facilities

HIGHWAY/STREET	FROM	TO
Audubon Road	TH 5	Lyman Boulevard
Audubon Road (CSAH 15)	Lyman Boulevard	South Limit
Bluff Creek Boulevard	Audubon Road (CSAH 15)	Powers Boulevard (CSAH 17)
Bluff Creek Drive	Bluff Creek Boulevard	Flying Cloud Drive (CSAH 61)
Coulter Boulevard	Century Boulevard	Audubon Road
Dell Road	TH 5	South Limit
Flying Cloud Drive (CSAH 61)	West Limit	East Limit
Galpin Boulevard (CR 117 & 15)	North Limit	Lyman Boulevard (CSAH 18)
Kerber Boulevard	CSAH 17	W. 78th Street
Lake Drive East	Powers Boulevard (CSAH 17)	Dell Road
Lake Lucy Road	TH 41	Powers Boulevard (CSAH 17)
Longacres Drive	TH 41	Galpin Boulevard CR117
Lyman Boulevard (CSAH 18)	West Limit	CSAH 101
Market Boulevard	W. 78th Street	Lake Drive East
Minnewashta Parkway	TH 7	TH 5
Park Road	Audubon Road	Powers Boulevard (CSAH 17)
Pioneer Trail (CSAH 14)	West limit	East Limit
Pleasant View Road	Powers Boulevard (CSAH 17)	TH 101
Powers Boulevard (CSAH 17)	North Limit	Pioneer Trail (CSAH 14)
TH 5	West Limit	East Limit
TH 7	West Limit	East Limit
TH 41 (Hazeltine Boulevard)	South Limit	North Limit
TH 101 and CR 101	South Limit	North Limit
U.S. Highway 212	West Limit	East Limit
West 78th Street	TH 41	TH 101

Table 6.3 shows the major components of the existing street system in the City of Chanhassen along with each facility's termini.

Existing Traffic Volumes

Traffic volumes for the different highway segments within Chanhassen were collected from MnDOT traffic maps, Carver County Transportation Plan and City of Chanhassen traffic counts in the summer of 2017. These volumes represent average daily traffic volumes and are shown on the Traffic Volumes Map.

There are no intermodal freight terminals within the city. There are two areas of office-industrial development. The eastern development in Hennepin County are on either side of Highway 5 from Dell Road west to approximately Highway 101. The other office industrial area is south of Highway 5 from Market Boulevard (CR 101) to Audubon Road and as far south as the TC&W Railroad.

FIGURE 6.3 | Existing Freight Physical Conditions and Traffic Counts

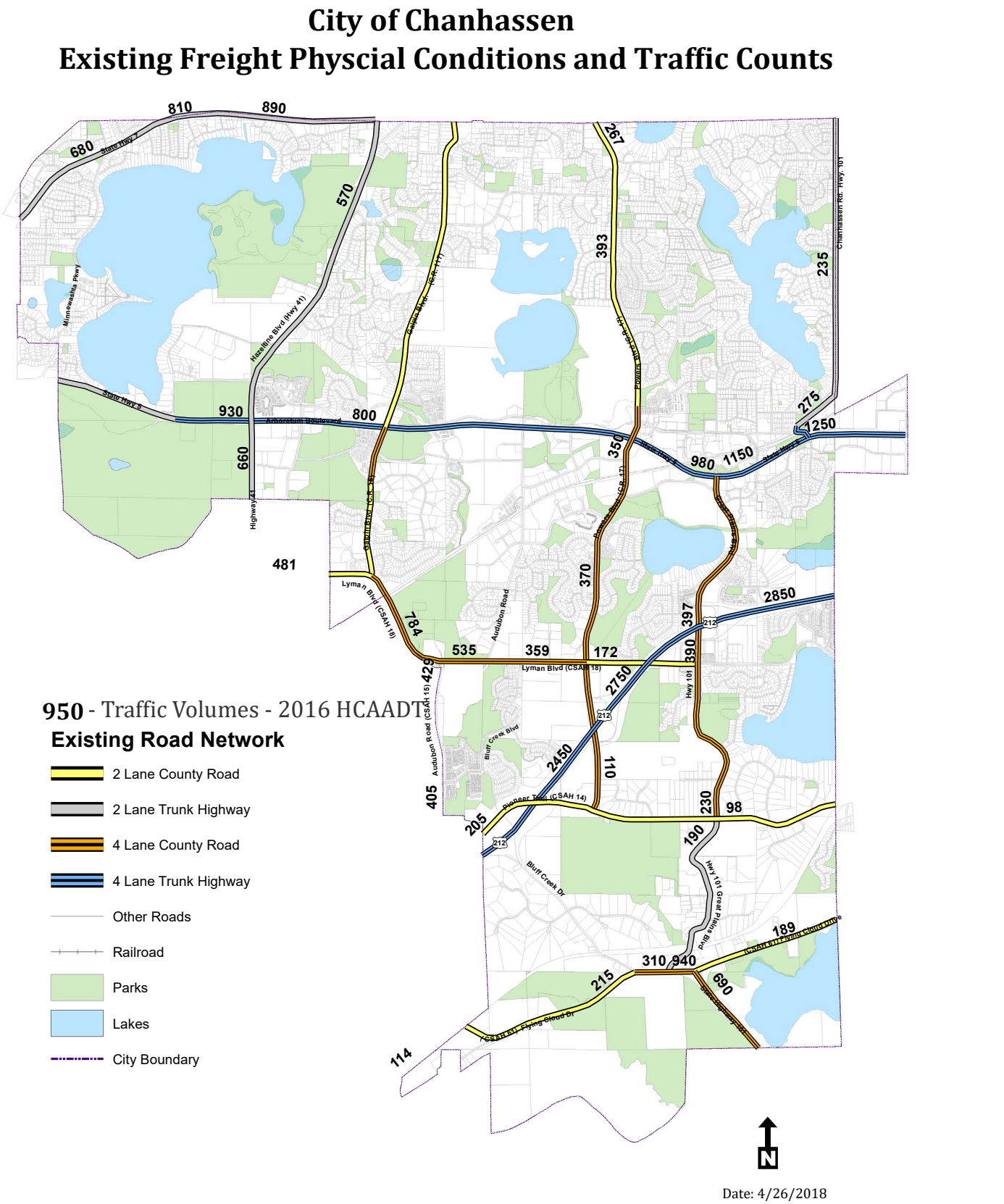
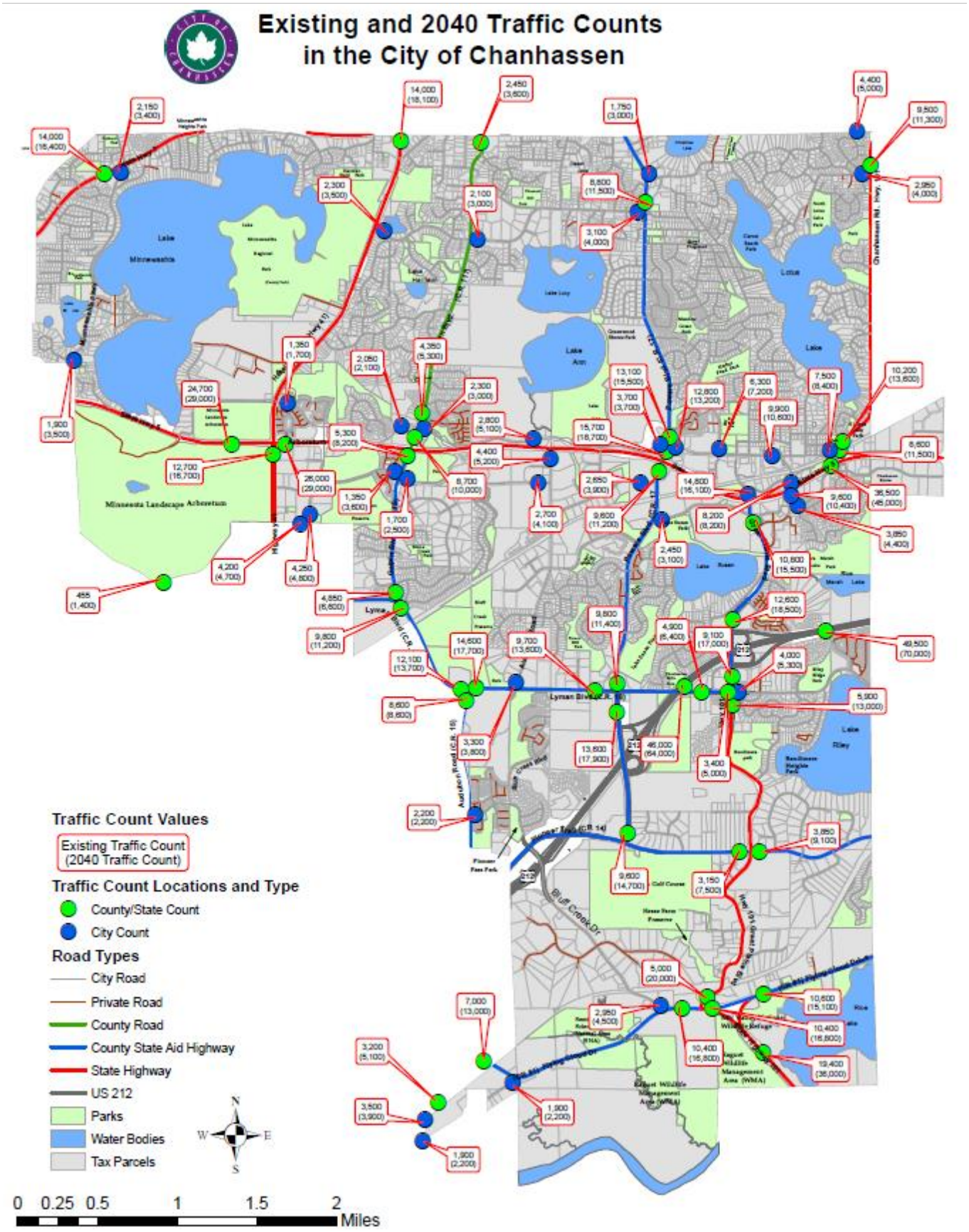


FIGURE 6.4 | Traffic Volumes Map

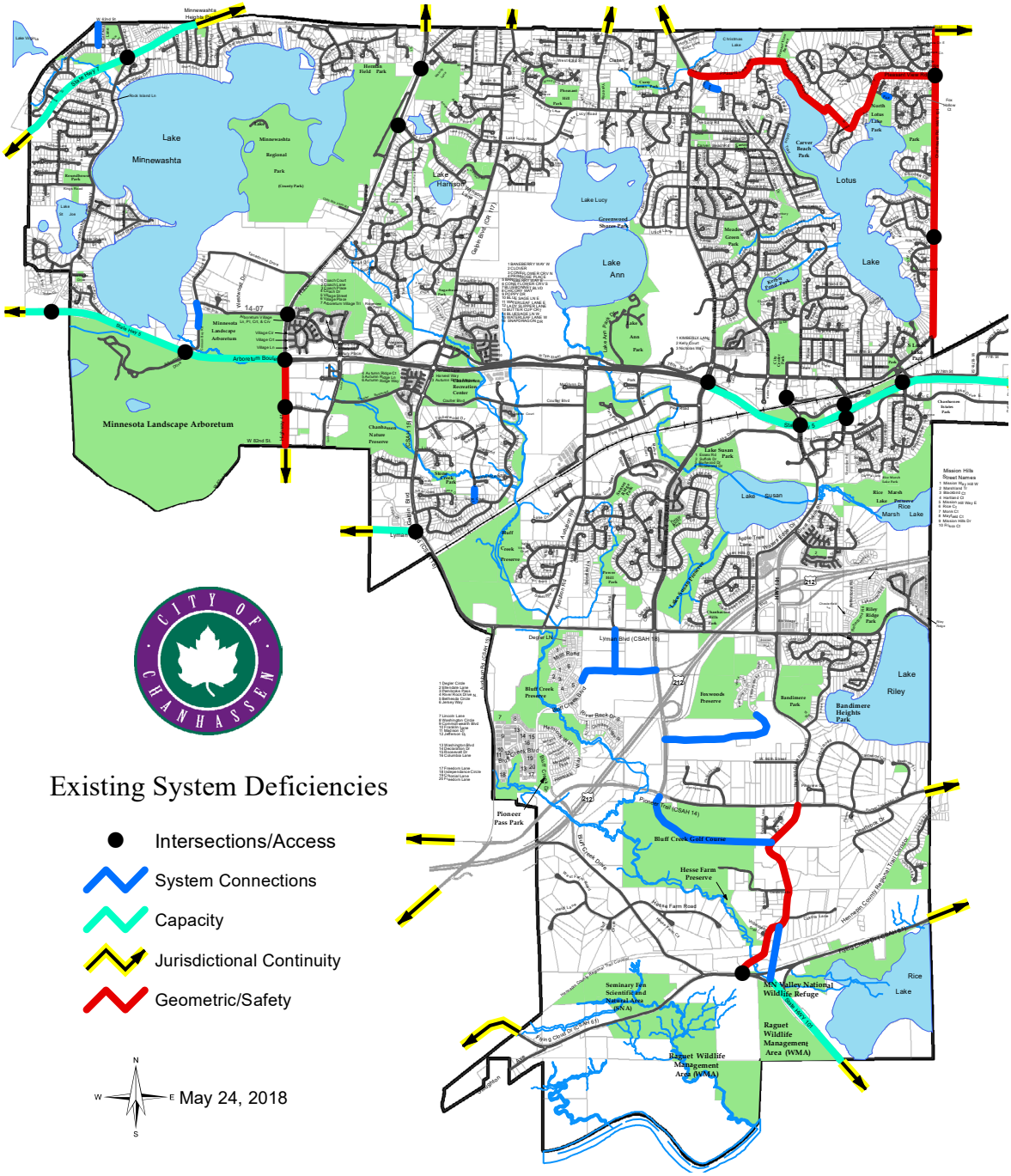


Existing Transportation Issues/Deficiencies

The function of a transportation plan is to not only accommodate future needs but also to analyze existing problems and pose appropriate solutions. Frequently, existing problems are closely related to future needs. As a result, a specific action in a given area can remedy existing deficiencies while providing for future needs.

Issues and system deficiencies were categorized into three areas: 1) intersections, 2) roadway capacity/alignment/connection and 3) jurisdictional continuity. The major issues are shown on the system deficiency map and discussed in more detail as follows:

FIGURE 6.5 | System Deficiencies



Intersections/Access

Chanhassen contains a number of intersections that currently are experiencing problems or are anticipated to experience problems in the future. A summary of the intersections that experience the most problems are as follows:

1. TH 7/Minnewashta Parkway

The major problem with this intersection is the angle with which northbound Minnewashta Parkway joins TH 7. As a result, it is difficult to see eastbound traffic on TH 7. Also, turning movements from eastbound TH 7 to southbound Minnewashta Parkway are cumbersome. Due to heavy traffic volumes, particularly during peak hours, turning movements in this area are difficult. Installation of a traffic signal or other intersection improvement, e.g. round-about, at this location may be warranted in the future.

2. TH 5/Minnewashta Parkway

The City of Chanhassen completed improvements to Minnewashta Parkway in 1993. A pedestrian underpass was constructed to the Minnesota Landscape Arboretum in 2012. Due to heavy traffic volumes, particularly during peak hours, turning movements in this area are difficult. Installation of a traffic signal and turn lanes at this location are anticipated in the future.

3. TH 5/Crimson Bay Road/Minnesota Landscape Arboretum entrance

Due to heavy traffic volumes, particularly during peak hours, left turning movements in this area are difficult. Elimination of left turns may improve this intersection.

4. TH 41/Lake Lucy Road

Due to heavy traffic volumes, particularly during peak hours on TH 41, turning movements in this area are difficult. Installation of a traffic signal at this location may be warranted in the future.

5. TH 41 and Minnetonka Middle School

Beehive Homes of Excelsior entrances. Due to heavy traffic volumes, particularly during school pick-up and drop-off hours, turning movements in this area are difficult. Installation of a traffic signal or a round-about at this location may be warranted in the future.

6. TH 41/W. 78th Street

Due to heavy traffic volumes, particularly during peak hours, turning movements in this area are difficult. Installation of a traffic signal at this location may be warranted in the future.

7. TH 5/TH41

Intersection geometrics were evaluated. Additional turn lanes and through lanes are necessary on TH 41. The south approach to the intersection contains a significant slope that must be lowered.

8. TH 41/Water Tower Place

A future right-in/right-out has been planned for this intersection. Installation of this intersection is not possible until the roadway geometrics are improved south of TH 5. Improvements to TH 41 are not in the 20 year MnDOT improvement plan.

9. Galpin Boulevard/Lyman Boulevard

With the development of the property south of Lyman, a fourth traffic leg will be added to the intersection.

10. TH 5/Powers Boulevard (CSAH 17)

Traffic congestion occurs at this intersection during peak hours. Additional turn lane improvements are required on westbound left turn movements. This intersection experiences an extraordinary number of traffic accidents.

11. TH 5/Market Boulevard

Traffic congestion occurs at this intersection during peak hours. Traffic backs up through the intersection of W. 78th St. There are a significant number of crashes at this intersection.

12. Market Boulevard/Market Street

Due to heavy traffic volumes, particularly during peak hours, turning movements in this area are difficult. This intersection will need to be monitored to determine if improvements are warranted.

13. TH 5/ Great Plains Boulevard

Traffic congestion occurs at this intersection during peak hours. Traffic backs up through the intersection of W. 78th St. Due to heavy traffic volumes, particularly during peak hours, turning movements in this area are difficult.

14. Great Plains Boulevard/W. 79th Street

This intersection includes failing level of service levels for left turning movements. This intersection will need to be monitored to determine if improvements are warranted.

15. TH 101/Pleasant View Road

Due to heavy traffic volumes, particularly during peak hours, turning movements in this area are difficult. Installation of a traffic signal at this location may be warranted in the future. Turn lanes were added to this intersection and a pedestrian warning light (rectangular rapid flashing beacons) was installed in 2015.

16. TH 101/Kurvers Point Road/Valley View Road

Due to heavy traffic volumes, particularly during peak hours, turning movements in this area are difficult. A southbound by-pass/left turn lane is provided at this intersection. This intersection will need to be monitored to determine if improvements are warranted. Pedestrian and bike crossing at this intersection are challenging and should be evaluated as part of any improvements.

17. TH 5/TH 101/Dakota Ave.

Due to heavy traffic volumes, this intersection experiences an extraordinary number of traffic accidents.

18. TH 101/Flying Cloud Drive

The city, in conjunction with Carver County and MnDOT, will undertake a study to determine the appropriate access controls necessary to serve the properties and maintain the capacity of Flying Cloud Drive. In 2016, a roundabout was constructed at the intersection of Flying Cloud Drive and the CSAH 101 river crossing. It the future, the north leg of the intersection realigning TH 101 will connect to the roundabout.

Road Capacity/Alignment/Connections

Deficiencies in this category are mainly caused due to capacity problems created by increased traffic volumes, alignment or geometric deficiencies or poor regional or local connections. Examples of such circumstances include the following:

TH 5

Users of TH 5 are aware that excessive congestion on this route occurs at various times of the day with concentrations during peak hours. Portions of TH 5 are overloaded for up to 8 hours per day. In 2015, TH 5 carried 39,000 vehicles per day at Chanhassen's eastern border, down from the 55,000 vehicle trips per day in 2005. Relief from the congestion of TH 5 was due to the construction of U.S. Highway 212 through Chanhassen.

TH 5 east of Powers Boulevard and west of TH 41 continues to be a traffic-congestion problem and with continued growth in western Carver County, congestion along this corridor is expected to increase. With U.S. Highway 212 opening in 2009, some of this congestion has decreased with 26,000 vehicle trips per day in 2015. The City of Chanhassen should continue to partner with Carver County, the City of Eden Prairie, the City of Victoria, MNDOT and other communities along the corridor to plan for future improvements and identify funding.

TH 7

TH 7 experiences congestion during peak hours of traffic. Daily traffic volumes exceed the design capacity for a two-lane highway.

TH 41

Existing sight distances at various areas along the corridor are potentially inadequate. Additionally with 14,600 vehicle trips per day north of TH 5 and 13,200 vehicle trips per day south of TH 5 in 2015, the capacity of this roadway is being stressed.

TH 101 North of TH 5

This corridor should be widened and turn lanes installed at intersections to improve function. Also, geometric improvements should be made. Since a substantial portion of TH 101 is in Carver County, Chanhassen, Eden Prairie and Hennepin County, jurisdictional and functional continuity are significant concerns that could have major consequences for the city.

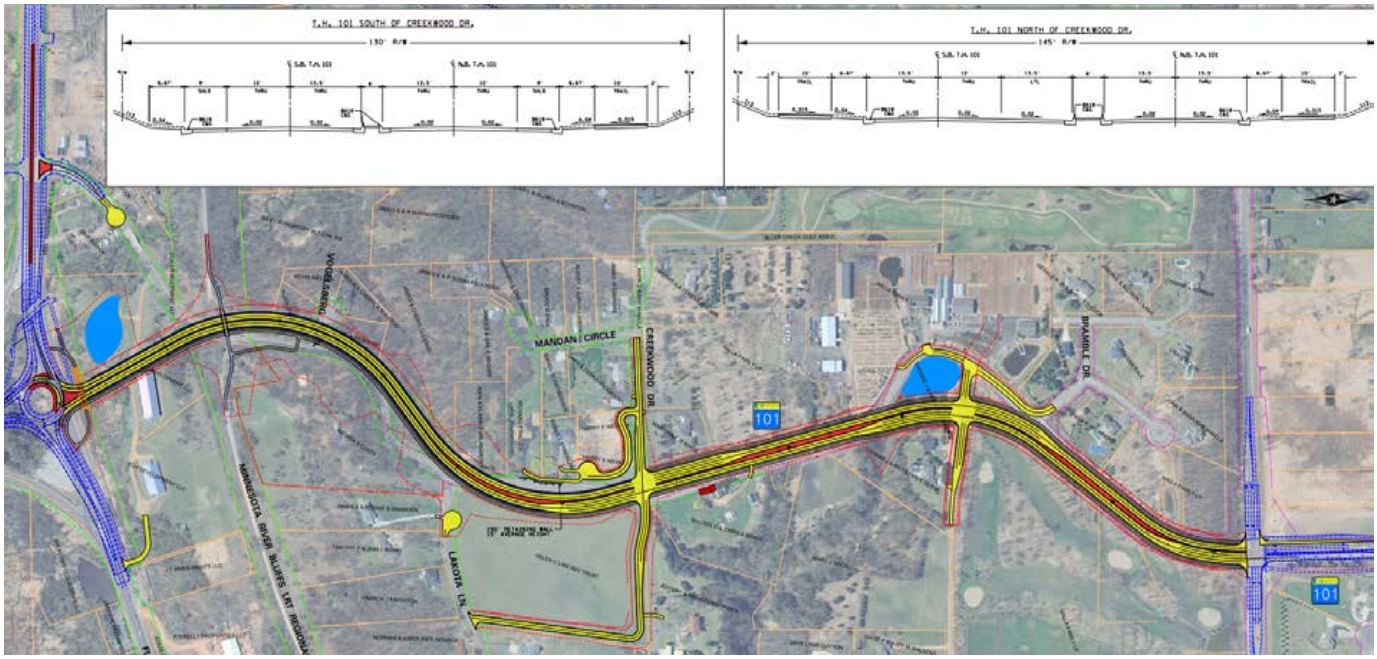
TH 101 South of Pioneer Trail to CSAH 61

The highway has significant alignment and geometric problems. TH 101 from TH 5 to Pioneer Trail was improved by MnDOT, Carver County and Chanhassen and will jurisdictionally be transferred to Carver County for future maintenance. The intersection of TH 101 and Pioneer Trail (CSAH 14) has been widened and signalized (2005). The purpose of the project is to improve traffic safety, capacity and connectivity issues on TH 101 between Pioneer Trail and Flying Cloud Drive, which involves realigning and reconstructing 1.2 miles of TH 101 from a two-lane undivided roadway to a four-lane divided roadway with turn lanes at key intersections. A paved multi-use trail is proposed along both sides of TH 101 from Pioneer Trail to Creekwood Drive and along the east side only from Creekwood Drive to Flying Cloud Drive. Carver County currently performs maintenance on this segment of roadway.

The City of Chanhassen, in cooperation with MnDOT and Carver County, completed the preliminary design and environmental review (Environmental Assessment Worksheet) for Highway 101 from Pioneer Trail (CSAH 14) to Flying Cloud Drive (CSAH 61). On November 23, 2015, the City of Chanhassen officially mapped the preferred alignment.

Preliminary Design: http://www.ci.chanhassen.mn.us/DocumentCenter/View/2730
Official Map: http://www.ci.chanhassen.mn.us/DocumentCenter/View/2729

FIGURE 6.6 | 101 Realignment Map



Minimal funding has been provided by the State of Minnesota for this improvement. Additional funding will need to be secured for the future improvements to the corridor. It is expected that state and local funds will be needed to help finance the improvements.

Pleasant View Road

The existing roadway alignment is inadequate in several areas. Sharp curves, private building structures located at the right of way line, hidden driveways and frequent vistas of Lotus Lake, which serve as a distraction, all combine to create a poor functioning corridor. Due to the need for more right-of-way, previous efforts to improve Pleasant View Road have been unsuccessful. As a result, the inadequacies of this route will continue to intensify in the future as traffic volumes increase.

Bluff Creek Boulevard

The city constructed a portion of Bluff Creek Boulevard east from Audubon Road (CSAH 15) as part of the 2005 MUSA project. However, the final segment, approximately half a mile, of the roadway to Powers Boulevard was not included in the project. This roadway must be constructed with the development of the properties west of Powers Boulevard.

Galpin Boulevard (CSAH 117)

This roadway provides a connection through Chanhassen to the City of Shorewood and Hennepin County ending at TH 7. In Chanhassen, the roadway is a rural design standard and should be upgraded to an urban design with safety and geometric improvements. In Shorewood, the roadway narrows to a rural section road.

Sunset Trail, North Collector Street Connection

Local collector roadways were identified in the 2005 MUSA project to properly provide service for the development of this area and connect to the County roadway system. This collector road will connect to Lyman Boulevard (CSAH 18). The connection will be constructed with the development of the properties in the area.

Eagle Ridge Road, East/West Connection

A connection from TH 101 with a touch down in the vicinity of Bandimere Park to Powers Boulevard (CSAH 17) with a touch down between Highway 212 and Homestead Lane. These connections will be constructed with the development of the properties in the area. Additionally, this road will make connections with West 96th Street as well as Homestead Lane and/or Flintlock Trail.

Lyman Boulevard (CSAH 18)

Chanhassen, Chaska and Carver County are currently working on planning for the future improvements to Lyman Boulevard from Galpin Boulevard to the west.

Bluff Creek Golf Course

A connection from Pioneer Trail and Powers Boulevard to TH 101 will be required as part of any redevelopment of the golf course. The existing Creekwood Drive is not designed or constructed to accommodate redevelopment traffic. These connections will be constructed with the development of the properties in the area.

Flying Cloud Boulevard (CSAH 61)

A continuation of the improvement to CSAH 61 west of Bluff Creek Drive to Engler Boulevard is being reviewed by Carver County, Chanhassen and Chaska. These improvements are intended to improve traffic capacity. This project is part of the highway turn-back roadway projects.

Other Local Street Improvements:

Dogwood Road/Crimson Bay Road

At the present time, Crimson Bay Road does not connect to Dogwood Road. Correspondingly, the Crimson Bay neighborhood has only one means of egress/ingress. A future street connection in this area is needed to alleviate existing access problems. Additionally, it is anticipated that once this connection is made, access to TH 5 shall be made into a right-in/right-out only.

Fox Hollow Drive

The right-of-way is dedicated for the roadway connection. However, the public street does not connect to the two ends of the road. Currently, through traffic must go through a driveway on the North Lotus Lake Park property to continue on Fox Hollow Drive. A public street should be constructed within the right-of-way to complete this roadway as part of any street maintenance or reconstruction project.

Nez Perce/Pleasant View Road Connection

During review of the Vineland Forest plat, it was evident that a connection between Nez Perce/Lake Lucy Road and Pleasant View Road was warranted since there was no north-south connection between Powers Boulevard (CSAH 17) and Lotus Lake. Improved access is needed for local trips and to ensure the adequate provision of emergency services. At the same time, there were concerns voiced regarding the introduction of additional trips onto Pleasant View Road since the street already suffers from capacity and design constraints. Therefore, it was determined that the Pleasant View Road intersection should be located as far west as possible at the Peaceful Lane intersection.

Pipewood Lane and W. 62nd Street

A secondary access to this area was discussed as part of the plat for Hidden Creek Meadows. Cathcart Lane is a substandard gravel roadway that provides emergency access to the area. With the future development of the farmstead, a public street will connect these roadways.

Timberwood Drive/Stone Creek Court

The neighborhoods of Timberwood Estates and Stone Creek are separated by approximately 30 feet of unfinished road. This connection would permit the residents of Timberwood Estates to access the Bluff Creek trail system. In addition, this connection could provide a secondary access to Timberwood Estates for residents and emergency vehicles.

6.4 | Future Traffic Forecasts

The city has relied on the 2040 baseline traffic forecasts incorporated within the Carver County Transportation Plan to determine the adequacy and appropriateness of the street and highway system to accommodate the development that is expected to be in place by the year 2040. The forecasts were prepared based upon projected population, households and employment data developed by the City of Chanhassen and Carver County in conjunction with the Metropolitan Council. 2040 Baseline – Development assumptions are consistent with the Metropolitan Council's Thrive MSP 2040. The population, household, and employment information was distributed throughout the city to a refined network of Traffic Assignment Zones (TAZ). The analysis assumed improvements to regional facilities only if they were programmed. Other local improvements were assumed if they have been included in previous transportation plans and were part of the arterial system. These system improvements are listed as follows:

- **TH 41**: Four lanes from Highway 5 to the south Carver County boundary.
- **TH 101:** Four lanes from Pioneer Trail (CSAH 14) to Flying Cloud Drive (CSAH 61)
- **Lyman Blvd:** Four lanes from Galpin Boulevard (CSAH 15) to TH 41.

The resulting traffic projections are shown in the 2040 Average Daily Traffic (ADT) map. The forecasts are based on a capacity restrained network.

The level of congestion of the future highway system depends in large measure on both the capacity improvements undertaken and the availability of a local arterial system to complement and relieve the regional system. The 2040 forecasts suggest the following:

Regional Facilities (TH 7, TH 5, TH 41 and U.S. Highway 212) currently are congested. With little or no capacity improvements to these facilities, congestion will increase on these facilities. In addition, more trips will divert to local routes such as CSAH 14 (Pioneer Trail), CSAH 18 (Lyman Boulevard), County Road 117 (Galpin), CSAH 17 (Powers Boulevard) and to other collector routes within the city.

Regional River Crossing Bridges (TH 41 and TH 101) are congested currently and will become more congested as the region expands. The development of U.S. Highway 212 is anticipated to attract more trips from Scott County and U.S. Highway 169. A connection from Highways 212 to 169 will provide relief to this congestion. Agencies should continue to investigate and preserve this corridor or identify how existing corridors could be expanded to address river crossing needs. While CSAH 101 was raised above the flood elevation and widened to four lanes in 2016, additional cross river traffic is anticipated.

Improvements proposed for municipal roadways are under direct control of the city and will receive highest priority in the city's Transportation Improvement Program. For roadways on the county system, the city will cooperate with Carver County and encourage the improvement of county roads in accordance with this plan.

6.5 | System Plan

The proposed roadway system should be consistent with the anticipated density and distribution of land uses in the city in the year 2040. The purpose of this section is to review the existing functional classification system and identify potential functional classification and other system changes that should be made to accommodate the anticipated growth.

Guiding Planning Principles

The City of Chanhassen Transportation Plan has been developed using the following guidelines and planning principles:

1. The functional classification of the roadway system in Chanhassen should conform to the following criteria and characteristics:

    - The trip length characteristics of the route as indicated by length of route, type and size of traffic generators served, and route continuity.
    - The ability of the route to serve regional population centers, regional activity centers and major traffic generators.
    - The spacing of the route to serve different functions (need to provide access and mobility functions for entire area).
    - The ability of the route to provide continuity through individual travelsheds and between travelsheds.
    - The role of the route in providing mobility or land access (number of accesses, access spacing, speed, parking and traffic control).
    - The relationship of the route to adjacent land uses (location of growth areas, industrial areas and neighborhoods).
    - The spacing guidelines for the specific road classification.

The functional classification system is broken down into four categories – principal arterials, minor arterials ('A' and 'B'), collectors (major and minor) and local roadways.

2. The plan should reflect vehicular travel demand at full development.

3. The full development level, as defined by the proposed Land Use Guide Plan, should incorporate the limiting effects that the identified physical constraints have on the attainment of the anticipated level of development.

4. Compatibility and connectivity should be maintained between the roadway system in Chanhassen and county and regional roadway systems.

5. In developing the plan, roadway segments and intersections that cannot accommodate the anticipated vehicular travel demand should be identified.

Functional Classification System

The functional classification criteria were closely followed during the preparation of this plan. The intent of a functional classification system is the creation of a hierarchy of roads that collects and distributes traffic from neighborhoods to the metropolitan highway system in the most efficient manner possible given the topography and other physical constraints of the area. Places of high demand, employment or commercial centers, should be served by roadways higher in the hierarchy such as arterial roads. Neighborhoods and places of low demand should have roadways of lower classification such as collectors and local streets. It is in this way that the land use plan is integrated into the transportation plan.

An important consideration in developing a functional classification system is adherence to the spacing criteria established by the Metropolitan Council (Table 6.4). The City of Chanhassen is currently considered part of the emerging suburban edge area. As a result, the city has a mixture of urban, suburban, and rural areas. It is anticipated, however, that the city will be fully developed by 2040. The ultimate roadway system assumes full development, but the current distinction between developing and rural is important in the establishment of implementation priorities.

TABLE 6.4 | Summary of Spacing Criteria

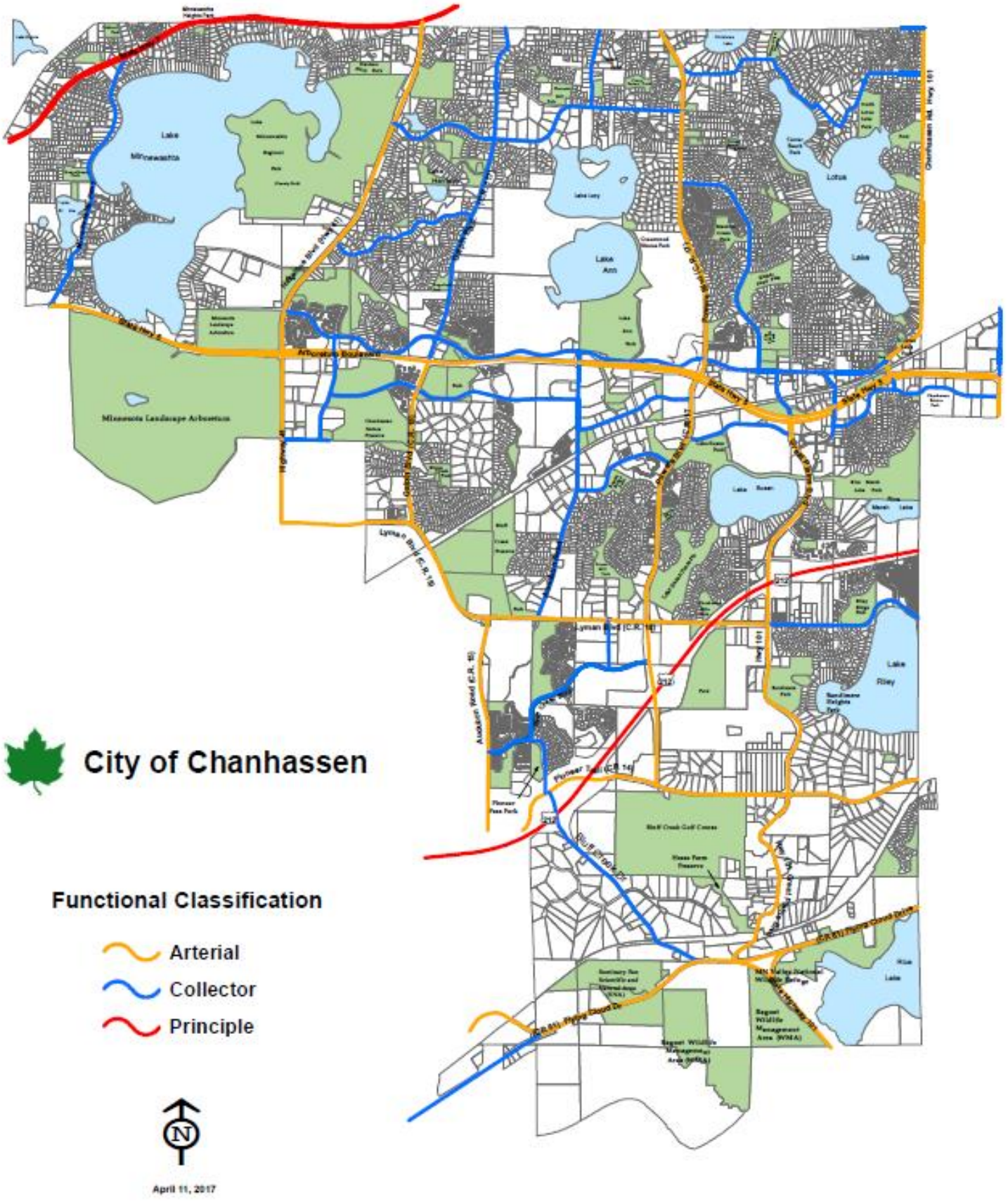
Functional Classification	Spacing (Miles)			
	Metro Centers/ Regional Business Concentrations	Fully Developed Areas	Developing Areas	Rural Areas
Principal Arterial	--	2-3	3 - 6	6-12
Minor Arterial	1/4 - ¾	1/2 - 1	1 - 2	As needed
Collector	1/8 - ½	1/4 - 3/4	1/2 - 1	As needed

Source: Metropolitan Council.

The City of Chanhassen functional classification system is shown in below. The classification system is consistent with the preliminary changes that are being proposed by Carver County in the update of their transportation plan. Since the plan is still under development, there may be some further modification of the functional classification system. The functional classification plan includes the following categories:

1. Principal Arterials
2. Minor Arterials
   - "A" Minor Arterials
   - "B" Minor Arterials
3. Major Collector Streets
4. Minor Collector Streets
5. Local Streets

FIGURE 6.7 | Functional Classification Map



Principal arterials are the highest roadway classification and are considered part of the metropolitan highway system. These roads are intended to connect the central business districts of the two central cities with each other and with other regional business concentrations in the metropolitan area. These roads also connect the Twin Cities with important locations outside the metropolitan area.

Principal arterials are generally constructed as limited access freeways in the developed area, but may also be constructed as multiple lane divided highways. The following facilities are designated as principal arterials within the City of Chanhassen:

Trunk Highway 7

TH 7 serves as a key east-west route through the south central portion of Minnesota. It connects the Twin Cities Metropolitan Area with cities such as Hutchinson, and Montivideo to the west. It is located in the northern portion of Chanhassen and provides regional access and mobility to primarily residential areas. In Chanhassen, vehicle movements are generally uninhibited by signals or major street intersections. To the east, however, Highway 7 passes through Minnetonka and northern Hopkins where there are more frequent signalized intersections and commercial development. The roadway carries substantial vehicular traffic and is considered congested (LOS F) during peak travel periods. East of TH 41, TH 7 is a four lane divided highway. West of TH 41, it is a two lane highway. Eventually, TH 7 should be upgraded to four lanes.

U.S. Highway 212

The U.S. Highway 212 is a principal arterial and connects small rural communities to the Twin Cities Metropolitan area. In Chanhassen, U.S. Highway 212 travels diagonally across the southern third of the city. This facility was planned for many years and became operational in 2007. The route is a four lane divided facility with controlled access at two interchanges in Chanhassen, one at CR 101 and the other at CSAH 17.

New Principal Arterial River Crossing

Currently there is a lack of a principal north-south arterial route in the region. This is due to physical constraints such as Lake Minnetonka and Minnesota River bluff area as well as past travel patterns favoring east-west travel. However, as the urban area continues to grow, north-south travel demand is anticipated to increase. The spacing from the Bloomington Ferry Bridge (U.S. Highway 169) to CR 101 is approximately 7 miles. This is inconsistent with the functional classification guidelines. A north-south regional river crossing has been shown previously on the Metropolitan Council's functional classification system. This route is intended to accommodate regional trips between new Highways 212 and 169.

This route was designated a principal arterial route in lieu of designating the current alignment of TH 41 a principal arterial route. This was primarily done because TH 41 goes through downtown Chaska and has numerous access points and limited ability for capacity improvements. The existing river crossings on TH 41, CR 101 and U.S. Highway 169 are shown to be at capacity based on traffic forecasting work done for the Carver County Transportation Plan. Therefore, expansion of existing river crossings or an additional regional river crossing appears to be needed to address regional growth.

As part of the review process for the river crossing, MnDOT had prepared a Tier I Environmental Impact Statement (DEIS), TH 41 Minnesota River Crossing. The study process began in 2002. The scoping decisions for the environmental reviews were made in February 2005 and revised in February 2006. The DEIS review and comment period ended on August 10, 2007. The end result of the DEIS was to identify a preferred alignment for the new river crossing. The preferred alignment should be both a cost effective solution and minimize social, economic and environmental impacts. Once the preferred alignment is chosen, local governments will need to officially map the alignment in order to preserve it for the river crossing. The preferred alignment begins near the boundary of Carver

and Chaska, goes south of the Chaska Athletic Fields and then parallels TH 41 across the Minnesota River to U.S. Highway 169.

A Tier I Environmental Impact Statement review was completed for the river crossing in 2015. This study was done so that a corridor could be selected for preservation for the future Minnesota River Crossing. The crossing will connect Highways 169 and 212, near Highway 41. MnDOT worked with the Federal Highway Administration (FHWA), local governmental units, the Metropolitan Council, state and federal resource agencies and other interested parties to study the need for and potential impacts of this project. A Record of Decision was signed by the FHWA on March 16, 2015.

Design details will be studied during a Tier II Environmental Impact Statement process that will occur closer to construction, which is not anticipated for several years. It is anticipated that this route will be a four lane divided highway with interchange access only.

Minor Arterials

Minor arterials are designed to emphasize mobility over land access, serving to connect cities with adjacent communities and the metropolitan highway system. Major business concentrations and other important traffic generators are often located on minor arterials. In the metropolitan area, minor arterials are divided into two classes "A" Minor Arterials and "B" Minor Arterials. The number of lanes on arterial routes should be based on the projected volumes. Routes are likely to be constructed either as four-lane undivided roads or as three-lane roadways where there is insufficient right-of-way when the system is complete.

- Relievers – Minor arterials that provide direct relief for metropolitan highway traffic.
- Expanders – Routes that provide a way to make connections between developing areas outside the I-494, I-694 interstate ring.
- Connectors – Roads that would provide good, safe connections to and among town centers in the transitional and rural areas in the area.
- Augmenters – Roadways that augment principal arterials within the interstate ring or beltway.

To the extent possible, "A" minor arterials are the most continuous and form a grid network over the entire city; however, topographic constraints and the location of existing highways and existing land uses can result in deviations from the spacing guidelines. Nevertheless, continuity and connectivity among the "A" minor arterials and the principal arterials allows the arterial network to provide important mobility functions throughout the city.

In Chanhassen, the current spacing of "A" Minor arterials is approximately every one mile (spacing between TH 101, CSAH 17 and TH 41). The desirable spacing for "A" minor arterials is considered to be one half to 1 mile for fully developed areas. Because Chanhassen is anticipated to be fully developed by the year 2040, additional "A" minor arterials should be designated to maintain mobility throughout the city. The Minor Arterials that are recommended in Chanhassen include the following:

1. "A" Minor Arterials

Trunk Highway 5 is important roadway in Chanhassen functioning as the city's transportation backbone. In the early 1970's, TH 5 was considered a principal arterial route. This designation has changed over time because of the close proximity of TH 7 and lack of continuity west of Carver County. Currently, TH 5 serves as the major link for Chanhassen to the metropolitan area. In addition, TH 5 provides regional access to a large number of businesses and industrial properties in the area. The concentration of these large employers results in some "reverse commuting" patterns as well as destinations for many trips coming in to Chanhassen from the west. Even though this route is designated as a minor arterial, it provides many functions similar to TH 7 and U.S. Highway 212 which are principal arterial routes. As a result, it is recommended that the city continue to support improvement and access management strategies that would maintain the mobility of this route.

Within Chanhassen, the flow of traffic along Highway 5 is interrupted by traffic signals at TH 41, Century Boulevard, CSAH 19 (Galpin Boulevard), Audubon Road, CSAH 17 (Powers Boulevard), CR 101 (Market Boulevard), Great Plains Boulevard, Dakota Avenue, and Dell Road. There are no significant commercial or residential uses accessing directly onto Highway 5.

Eastbound traffic on TH 5 typically connects with either I-494, U.S. Highway 169 and TH 62. From the Chanhassen border to I-494, TH 5 contains signalized intersections at Eden Prairie Road and Fuller Street. These signalized intersections combined with higher traffic volumes in Eden Prairie contribute to significant traffic delays during peak hours. TH5 is a four lane highway east of TH 41 and two lane west of TH 41. Eventually, TH 5 should be a four lane facility.

Trunk Highway 41 – Hazeltine Boulevard

Another "A" minor arterial that has many principal arterial characteristics is TH 41. This route is located in western Chanhassen and is a major north-south river crossing west of the Bloomington Ferry Bridge (nine miles to the east) that connects U.S. Highway 169, U.S. Highway 212, TH 5 and TH 7. As a result, this route will continue to be an important link serving Carver County and the City of Chanhassen. Chanhassen and Chaska have done a good job in protecting the mobility of this corridor by providing limited access and proper development setbacks. With other north-south corridors being limited, the volumes on this corridor are anticipated to increase as additional development occurs. Currently, TH 41 is a two lane highway through Chanhassen. Eventually, it should be a four lane facility.

TH 101/CR 101

This designation is consistent with the Metropolitan Council's Functional Classification Plan and Hennepin County's designation. This designation is consistent with the spacing guidelines for developing areas. The projected year 2040 daily volumes are at the upper limit or exceed the recommended guidelines for volumes. The roadway connects principal and other minor arterial routes thereby providing an important mobility function for the region. The city has historically limited direct access to Highway 101 and will continue to do so. North of TH 5, TH 101 is a two lane facility. South of TH 5 to CSAH 14 (Pioneer Trail), CR 101 is a four lane facility.

CSAH 61 – Flying Cloud Drive

After the construction of new U.S. Highway 212, old TH 212 (CSAH 61) was downgraded from a principal arterial route to an "A" minor arterial. Flying Cloud Drive is a two lane undivided highway with limited access control on the segment within Chanhassen; however, the river bluff substantially restricts the ability to access this route. The route continues to link Chaska and CR 101 river crossing with Twin Cities Metropolitan Area. The route fits the spacing guidelines for "A" minor arterial routes and provides east-west traffic flow below the bluff.

In conjunction with the construction of the CR 101 river crossing, Carver County reconstructed CSAH 61 from Highway 101 to Bluff Creek Drive. A continuation of the improvements to CSAH 61 west of Bluff Creek Drive to Engler Boulevard is being reviewed by Carver County, Chanhassen and Chaska. However, this project is part of the county's unfunded high priority roadway projects.

Reconstruction of Flying Cloud Drive (CSAH 61) from Highway 101 in Chanhassen to Charlson Road in Eden Prairie (3.7 Miles) is programmed to begin in 2018. Hennepin County is leading this reconstruction project.

The reconstruction includes:

- Two-lane roadway with shoulders
- Continuous Shared Center left-turn lane
- Right-turn lanes at key intersections
- Multi-use trail on north side of roadway
- Raise road out of 100 year flood plain
- Retaining Walls
- Bridges
- Intersection Improvements

CSAH 14 – Pioneer Trail

County State Aid Highway 14 is currently classified as an "A" minor arterial based on the spacing with other similar east west routes and the connections that it provides to other arterial facilities: TH 41, CSAH 15, CSAH 17, and CR/TH 101.

CSAH 15 – Audubon Road (Lyman Boulevard to south boundary) and Galpin Boulevard (TH 5 to Lyman Boulevard)

Together these routes form a north-south connection between CSAH 61 and TH 5. This route meets the spacing with other similar north-south routes and the connections that it provides to other arterial facilities. It connects facilities such as CSAH 61, CSAH 14 (Pioneer Trail), CSAH 18 (Lyman Boulevard) and TH 5. North of CSAH 18 (Lyman Boulevard) the spacing of this roadway with CSAH 17 to the east is approximately one mile and the spacing of this route with TH 41 to the west is approximately one mile. However, there are physical barriers (Bluff Creek) that limit the connections between these routes. North of CSAH 18 (Lyman Boulevard) the spacing of this route with TH 41 to the west is approximately two miles and the spacing of this roadway with Powers Boulevard to the east is approximately one and one-half miles. As the City of Chanhassen develops, this facility will provide mobility for north-south traffic flow to important destinations within the city as well as the regional transportation system

CSAH 17 – Powers Boulevard

County State Aid Highway 17 is classified as an "A" minor arterial based on the spacing with other similar north-south routes and the connections that it provides to other arterial facilities. It connects facilities such as CSAH 14 (Pioneer Trail), U.S. Highway 212 (interchange), CSAH 18 (Lyman Boulevard), TH 5, and TH 7. The spacing of this roadway with TH 101 to the east is approximately one mile; however, there are physical barriers (lakes and wetlands) that limit the connections between these routes. The spacing of this route with TH 41 to the west is approximately two miles. As the City of Chanhassen develops, this facility will provide mobility for north-south traffic flow to important destinations within the city as well as the regional transportation system. It is recognized that the character of CSAH 17 does change as it extends north into Hennepin County (CR 82). The roadway becomes narrower and setbacks are limited.

2. "B" Minor Arterials

The Metropolitan Council defines all minor arterials other than "A" minor arterials as "B" minor arterials. These roadways also serve a citywide function. Medium to long distance trips use the "B" minor arterial system. When combined with the "A" minor arterial system, most places in the city are within a mile of such a roadway. There is one route in the City of Chanhassen that is proposed as "B" minor arterial. This route is described as follows:

CSAH 18 – Lyman Boulevard

Lyman Boulevard is designated as a "B" minor arterial. It is an east-west route that parallels TH 5 one to one and one-half miles to the south. It currently connects TH 41, CSAH 15, CSAH 17 and CR101; however an extension is planned to the west of TH 41. The spacing guidelines are consistent with designation of an "A" minor arterial for this route. However, we have chosen to leave the designation of Lyman Boulevard as a "B" minor arterial because it lacks of continuity east of TH 101. It is in close proximity to the arboretum and there are limited setbacks in the City of Victoria.

Major Collectors

Major collectors are designed to serve shorter trips that occur entirely within the city and to provide access from neighborhoods to the arterial system. These roads supplement the arterial system in the sense that they emphasize mobility over land access, but they are expected, because of their locations, to carry less traffic than arterial roads.

The following roadways are recommended as Major Collectors in Chanhassen.

Minnewashta Parkway – This street serves as the only north/south route between TH 5 and TH 7 west of Lake Minnewashta. It is also located such that it likely serves some through trips from outside the city along TH 5, traveling to the north to TH 7, as well as locally generated traffic along its route.

Galpin Boulevard (CR 117) north of TH 5 – This route connects TH 5 to Shorewood and Highway 7 and is approximately midway between TH 41 and CSAH 17.

Lake Drive – Lake Drive serves two functions: local access south of TH 5 and a parallel collector to TH 5. This route is capable of carrying off loaded local trips of short to medium length. The city undertook a joint project with MnDOT and the City of Eden Prairie to extend Lake Drive East to the city line where it merges with the signalized intersection at TH 5 and Dell Road.

Pleasant View Road – Pleasant View Road serves as the only east-west connection between CSAH 17 and TH 101 in northern Chanhassen.

Lake Lucy Road – Lake Lucy Road serves as the only east-west connection between TH 41 and CSAH 17 in northern Chanhassen.

Coulter Boulevard – Coulter Boulevard serves two functions. These include local access south of TH 5 and a parallel collector to TH 5 capable of carrying off loaded local trips of short to medium length.

West 78th Street – This east-west route connects TH 41 to TH 101. It parallels TH 5 and provides local access to the properties adjacent to TH 5.

Minor Collectors

Great Plains Boulevard – This route connects West 78th Street to Lake Drive East.

Kerber Boulevard – This route connects West 78th Street in downtown Chanhassen to Powers Boulevard and is parallel to Powers Boulevard.

Market Boulevard – This route provides a link between TH 5 and downtown Chanhassen.

Century Boulevard – This route provides a north south link between West 78th Street, TH 5 and 82nd Street West.

Bluff Creek Drive – This route provides a north-south connection from Bluff Creek Boulevard and Pioneer Trail (CSAH 14) to Flying Cloud Drive.

Bluff Creek Boulevard – This route provides an east-west connection from CSAH 15 to CSAH 17 and U. S. Highway 212 interchange. The eastern portion of this roadway will be constructed with the development of the adjacent property.

Dakota Avenue (TH 5 to Lake Drive East) – This route completes the connection of TH 101.

Yosemite – Lake Lucy Road to city boundary provides a valuable link between Chanhassen and Excelsior. (This route has been added to the collector system since the 2030 Comprehensive Plan.)

The ultimate roadway system is based upon the functional classification presented above. It reflects full development of the city according to the land use plan and socioeconomic forecasts presented earlier. The roadway cross-section identified for each classification would be expected to be in place at the time full development is achieved.

6.6 | Planned and Programmed Improvements

Roadway Plan

Traffic on Chanhassen's roadway system will continue to increase due to new commercial, residential and industrial development and changes in socio-economic conditions. The impact of added traffic will be more evident on the arterial and collector routes. However, failure to address capacity issues on major routes will result in more traffic diverting to local streets. This can result in safety, speed and other undesirable impacts to collector routes.

In order to ensure that traffic concerns are addressed thoroughly and comprehensively, the transportation chapter of the Chanhassen Comprehensive Plan contains a planned and recommended roadway system for the year 2040. This system is the result of both current and past planning efforts.

The following major improvements are components of the recommended and planned transportation system:

TH 5 – The city will continue to work to get TH 5 improved west of TH 41. The current Carver County Transportation Plan indicates a need for a four-lane TH 5 west toward Waconia to accommodate traffic flows.

TH 101 – Planning efforts since 1980 have consistently identified the need for improvements to TH 101. Planned improvements north of TH 5 consist primarily of reconstruction and realignment of the route north of the intersection of TH101 and West 78th Street to effectuate better traffic flow. Based on traffic projections, a four-lane roadway may be required.

CR 101 has been widened to 4-lanes and the alignment improved from TH 5 to Pioneer Trail (CSAH 14)

On January 9, 2006, the city approved a Joint Powers Agreement with Carver County and the Minnesota department of Transportation to fund the corridor study from Lyman Boulevard (CSAH 18) to Scott County. The purpose of this study was to identify deficiencies and improvements necessary for a two-lane, 3.3 mile segment of TH 101 Corridor in Chanhassen between Lyman Boulevard (CSAH 18) on the north and the Scott County Line on the south. The city proposed that construction of this project be split in to at least two phases. Phase I would be from Lyman Boulevard (CSAH 18) to Pioneer Trail (CSAH 14), which has been completed. Improvements south of Pioneer Trail (CSAH 14) depend on MnDOT turn-back program funding or other funding sources. The road includes a four-lane design.

The CR 101 river crossing completed in 2016 expanded the bridge to four-lanes to accommodate traffic with a pedestrian trail on one side. In addition, the bridge was raised above the 100 year flood elevation.

TH 41 – TH 41 needs to be upgraded to a four-lane cross section from TH 7 south to the County line. In addition, the vertical alignment of the south approach to TH 5 must be reduced to improve the safety of this heavily used intersection.

New Regional River Crossing – U.S. Highway 212 to U. S. Highway 169 – Currently, TH 41 and CR 101 bridges serve the river crossing needs for the region. TH 41 is significantly over capacity. The expansion of CR 101 river crossing has improved traffic crossing the river. The city will work with adjacent communities, Mn/DOT, and the Metropolitan Council to determine potential alternatives to address capacity needs in the region. The regional river crossing will be a four-lane facility with limited interchange access. It is not currently in any funding plan.

CSAH 18 (Lyman Boulevard) – Chanhassen, Chaska, and Carver County are currently working for the future improvement to Lyman Boulevard west of Galpin Boulevard. This roadway will require a four-lane design.

CSAH 14 (Pioneer Trail) – This roadway provides a vital transportation connection from Hennepin County to western Carver County. Based on projected traffic volumes, a four-lane roadway design is required.

Recommended Local Street Improvements

As Chanhassen continues to develop, transportation conflicts and inconsistencies will become evident. These situations, unlike planning for major routes, are not predictable since they result from the merging of existing and new land use patterns. The Comprehensive Plan can be a useful tool in assisting the city in resolving these local access situations. It is the city's policy to require interconnections between neighborhoods to foster a sense of community, to improve safety and to provide convenient access for residents.

Often during the subdivision review process, the need for future extension of local streets becomes apparent. As a result, access concepts are developed to assist in creating an acceptable configuration for the plat and as a guide for the future development of adjoining parcels. It is the city's intent that the Comprehensive Plan serve as an implementation tool by providing a means by which to record these access plans, legitimizing them by the nature of the fact that they are approved by the City Council prior to recording. It also will provide a useful means of providing information to residents and developers seeking information of future development potential. These concept plans are illustrated below. Additional concept plans will be added to this document over time as they are developed.

These concept plans are illustrated below. Additional concept plans will be added to this document over time as they are developed.

Bluff Creek Boulevard – The final connection from Powers Boulevard to the westerly terminus of the roadway will be constructed with the development of the underlying properties.

North and South 2005 MUSA Collectors – The connection from Bluff Creek Boulevard to Lyman Boulevard will be constructed in conjunction with the development of the underlying properties. The south connection was constructed in conjunction with the Pioneer Pass development (Bluff Creek Drive).

Eagle Ridge Drive east-west connection – This roadway will connect CSAH 17 to CR 101. The first section of this roadway was installed in the Foxwood development. The remainder of the connections will be constructed with the development of the properties in the area. It should be noted that this connection will likely provide additional connections to West 96th Street and Homestead Lane.

Dogwood Road/Crimson Bay Road – Crimson Bay Road does not connect to Dogwood Road. Correspondingly, the Crimson Bay neighborhood has only one means of egress/ingress. A future street connection in this area is needed to alleviate existing access problems.

Carver Beach Road Conditions – Chanhassen's Carver Beach neighborhood was one of the first residential developments on Lotus Lake. This area consists of smaller lots and narrow rights of way. Drainage problems occur due to topography and a lack of storm sewer facilities in some portions of the area. Improvement of existing conditions can only occur in a comprehensive manner involving the reconstruction of both streets and utility systems. Because of development constraints, typical street standards will not be applicable in this area.

Nez Perce/Pleasant View Road Connection – During review of the Vineland Forest plat, it was evident that a connection between Nez Perce/Lake Lucy Road and Pleasant View Road was warranted since there was no north/south connection between County Road 17 and Lotus Lake. Improved access is needed for local trips and to ensure the adequate provision of emergency services. At the same time, there were concerns voiced regarding the introduction of additional trips onto Pleasant View Road since the street already suffers from capacity and design constraints. Therefore, it was determined that the Pleasant View Road intersection should be located as far west as possible at the Peaceful Lane intersection.

Timberwood Drive/Stone Creek Court – The neighborhoods of Timberwood Estates and Stone Creek are separated by approximately 30 feet of unfinished roads. This connection would permit the residents of Timberwood Estates to access the Bluff Creek trail system. In addition, this connection could provide a secondary access for Timberwood Estates for residents and emergency vehicles. It would also facilitate improved school bus access to the neighborhood.

Pipewood Lane and West 62nd Street – A secondary access to this area was discussed as part of the plat for Hidden Creek Meadows. Cathcart Lane is a substandard gravel roadway that provides emergency access to the area. With the future development of the farmstead, a public street will connect these roadways.

6.7 | Alternative Modes

Transit

Although private cars are the most commonly used mode of transportation for Chanhassen residents, mass transit serves as an important alternative to automobile uses and serves as one leg of a multi-modal transportation strategy for the community. The City of Chanhassen lies within the Metropolitan Council's Transit Market Area III, which represents areas with generally lower concentrations of activity, housing and jobs, with intermittent pockets of moderate concentrations. Metropolitan Council service options for this area include peak-only express, small vehicle dial-a-ride, mid-day circulators, special needs para-transit (ADA, seniors) and ride-sharing services which are, generally, tied to park-and-ride lots and hubs. Two forms of mass transit, buses and light rail/commuter rail, are specific components of this plan. Plans for these services are outlined as follows:

Buses

In late 1986, Chanhassen joined the cities of Eden Prairie and Chaska in the creation of the Southwest Metro Transit Commission, operated under a joint powers agreement between the communities, to provide transit service known as the Southwest Transit (SWT). SWT is governed by a seven-person Commission. Each of the three cities has an appointed member as well as an elected official. The seventh member is a representative of the riding public. The city will continue to monitor the effectiveness of the Southwest Transit program in providing cost effective transit service to the City of Chanhassen. Public transit service is provided for Chaska, Chanhassen and Eden Prairie, as well as Carver and Victoria. SWT currently offers service to and from Downtown Minneapolis, the University of Minnesota, Normandale Community College, Best Buy Headquarters and Southdale Transit Center.

Park and Ride

SWT has two park and ride parking ramps within Chanhassen. These ramps are located in the downtown area off Great Plains Boulevard and Market Street (Chanhassen Transit Station) and at U.S. Highway 212 and CR 101 (Southwest Village). In addition, SWT has parking facilities in Eden Prairie at U.S. Highway 212 and Prairie Center Drive (Southwest Station) in Chaska at U.S. Highway 212 and TH 41(East Creek Station) and in Carver at Jonathan Carver Parkway and Ironwood Drive (Carver Station).

There are several services provided by Southwest Transit:

Express Service – This service provides express service for passengers working in downtown Minneapolis. Riders are picked up at any of the park and ride lots servicing Chanhassen and driven to downtown Minneapolis and the University of Minnesota without stopping. At the end of the workday, the service is reversed taking passengers back to Chanhassen.

Southwest Flex Commute – These routes start in Minneapolis and bring passengers to job sites in Chanhassen, Chaska and Eden Prairie. The city's rapid growth as an employment concentration warrants service to facilitate work trips. SW Flex services provided over 65,000 trips in 2017.

Regional Routes – SWT has 80 buses and offers service to Downtown Minneapolis, the University of Minnesota, Southdale Shopping Mall and regional employment centers. Special seasonal routes are also provided to the Minnesota State Fair, US Bank Stadium and Target Field. Bus shoulder use is permitted on Highways 5 and 212.

SW Prime – An on demand ride service to help transit users bridge the gap between transit stations and final destinations. This service typically has between 350 and 400 daily users. SW Prime is a transit service for Eden Prairie, Chaska, Chanhassen, Carver, and Victorian. To transfer between zones, riders are dropped off and picked up at SW Chanhassen Village station on Hwy. 212 and Hwy. 101. As a modern local service, riders may request a ride through smartphone app, website or phone, indicate the location from which they want to be picked up and where they want to go. SWT vehicles are ADA compliant.

Other Services – Because the agency's mission is to meet the transit needs of the community, Southwest Transit provides a variety of other transit opportunities. For example, group rides are available for a variety of businesses, schools, organizations and others. Whenever possible, Southwest Transit provides buses for little or no charge for community purposes in Chanhassen and other service communities.

SWT has also begun (2014) a seasonal and daily bike rental opportunity (SW Rides) from several of its transit stations. This program is run from April through October.

SWT offers travel training services to seniors and other community organizations to promote existing services and help people understand who to use the transit services provided by SWT. SWT provides business out-reach service to Chanhassen businesses in order to help tailor transit services that will meet the transportation needs of local businesses.

Non-SWT Services

Metro Mobility

Is a shared public transportation service for certified riders, who are unable to use regular fixed-route buses due to a disability or health condition. Rides are provided for any purpose.

SmartLink Transit

(Formerly known as Carver County Transit), provides services to transit dependent residents of Carver and Scott counties. It includes Dial-A-Ride, Medical Assistance and Volunteer Drivers for both Scott and Carver counties. Priority will be given to elderly, disabled, and economically disadvantaged residents. Transitlink is a small bus, curb to curb, reservation only, regional dial-a-ride. Smartlink averages over 400 passenger trips per day in Carver and Scott Counties utilizing 23 buses.

WeCAB (Community Area Busing)

Provides safe, affordable and flexible supplemental transportation to those who are unable to drive to medical appointments, grocery store or food shelf, church, volunteering or social events.

Rail Service

Twin Cities and Western Railroad (TC&W) runs through the city entering just north of Highway 5 at Dell Road and cuts diagonally to Lyman Boulevard at Galpin Boulevard. TC&W is a regional railroad operating over 229 miles of track serving some of the most productive agricultural counties in Minnesota and South Dakota. Interchanging with all the Class 1 railroads in the Twin Cities, TC&W provides a connection for the surrounding areas. Operating as far east as St. Paul, Minnesota and as far west as Milbank, South Dakota, the TC&W is the largest shortline in Minnesota. Depending on freight requirements, there are between 1 and 10 daily trains through the community.

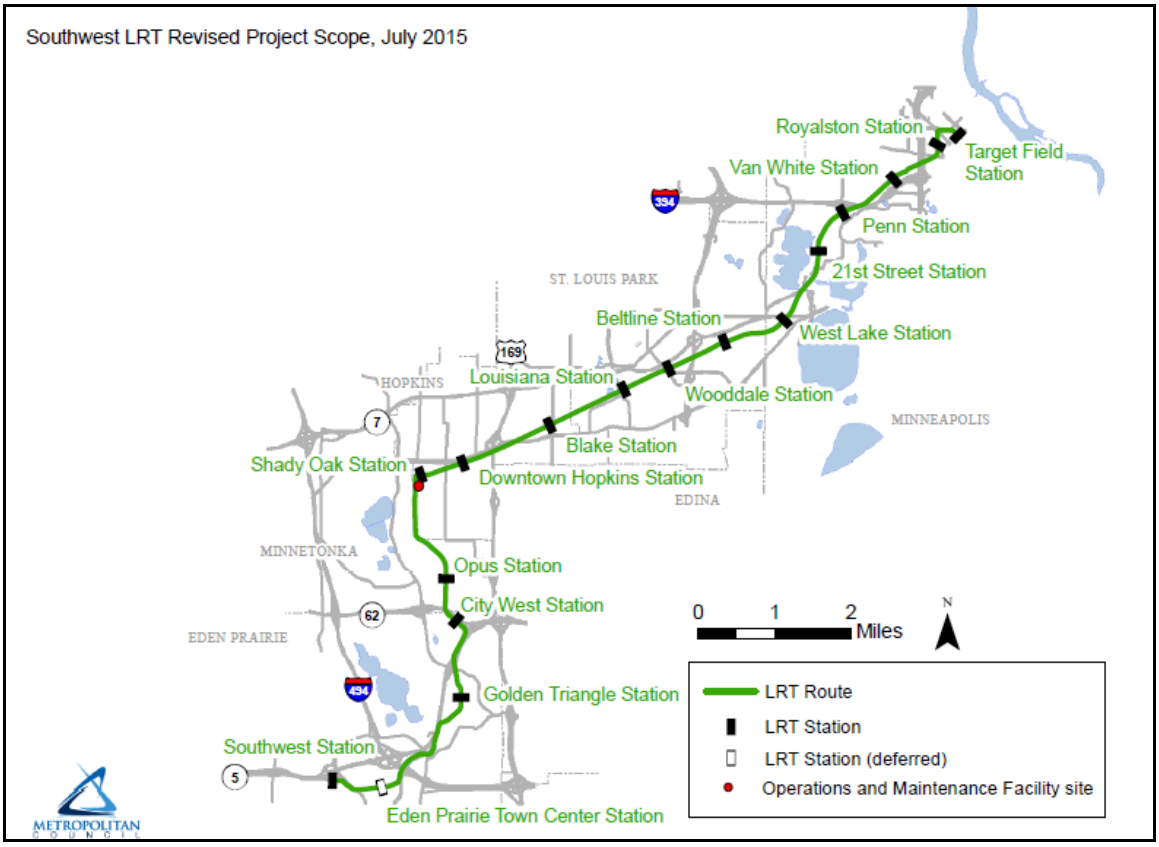
Light Rail Transit

Light rail transit is a mode of transportation that is being constructed in the Twin Cities Metropolitan Area. In 1987, Hennepin County received authorization from the State Legislature to prepare a Comprehensive LRT System Plan for Hennepin County. Toward that end, the county established the Hennepin County Regional Railroad Authority to administer the system. Hennepin County owns railroad right of way from downtown Minneapolis to Victoria and Chaska. Other counties in the metropolitan area have followed Hennepin County's lead and have also established railroad authorities.

FIGURE 6.8 | Blue Line LRT Map

FIGURE 6.9 | Green Line LRT Map

FIGURE 6.10 | Green Line Extension



There are multiple agencies involved in planning and implementing transitways in the Twin Cities region. Local governments, particularly counties and regional railroad authorities, play a lead role in the planning of transitway corridors and recommending locally preferred alternatives. The Minnesota Department of Transportation (MnDOT), Metropolitan Council and Metro Transit, Counties Transit Improvement Boar (CTIB), counties and cities are involved in the funding, design, and construction of transitway facilities and services.

Currently, the Blue Line connecting downtown Minneapolis to Bloomington and the Mall of America and the Green Line Connecting the downtowns of Minneapolis and St. Paul are in operation.

Southwest Light Rail Transit (Green Line Extension)

The Southwest Light Rail Transit (LRT) project (METRO Green Line Extension) will operate on a route from downtown Minneapolis through the communities of St. Louis Park, Hopkins, Minnetonka, and Eden Prairie, passing in close proximity to Edina. The 14.5 mile line will include 15 new stations and will be part of an integrated system of transitways, including connections to the METRO Blue Line, the Northstar Commuter Rail line, many bus routes, and proposed future transitways. The total estimated project cost of $1.858 billion will be funded by the Metropolitan Council and project partners through a mix of federal, state, and local sources, with federal funds making up approximately half the total. At Target Field Station in Minneapolis, Green Line Extension trains will continue along the METRO Green Line, providing on-seat rides to the University of Minnesota, State Capitol area, and downtown St. Paul. The Southwest LRT line is anticipated to begin construction in 2019.

FIGURE 6.11 | Blue Line Extension

Bottineau LRT Line (Blue Line Extension)

An approximately 13-mile route will serve downtown Minneapolis, north Minneapolis, Golden Valley, Robbinsdale, Crystal and Brooklyn Park. Eleven new stations will be built, in addition to Target Field Station. The total project cost is estimated at $1.536 billion, funded by a combination of federal, state and local sources. Construction is anticipated to begin in 2020.

Commuter Rail

Commuter rail is a passenger train service that connects an urban region over moderate distances; which typically operates on existing freight tracks; and whose primary clientele travels between home and work. These trip-to-work services usually offer concentrated frequencies primarily during rush hour with suburban station spacing typically every five miles. Commuter rail typically serves longer trips than most light and heavy rail transit lines. Commuter rail trains are normally made up of a locomotive and several passenger coaches. Commuter rail vehicles have an on-board operator, who adjusts vehicle speed in response to traffic conditions and railway signaling requirements.

The Northstar rail line from Big Lake to Minneapolis with stops in Elk River, Ramsey, Anoka, Coon Rapids, and Fridley is the first example of commuter rail in Minnesota. The Northstar Commuter Rail line opened in 2009. The Northstar Expansion proposes to extend service to St. Cloud.

Regular weekday service is designed for commuters and is available during the morning and afternoon peak-travel periods. The morning commute period features five inbound trains and one outbound train; the late-afternoon and early-evening commute features five outbound trains and one inbound train. There are three roundtrips each weekend day with special event service available throughout the year. Metro Transit schedules additional trips to provide Northstar service to all Minnesota Twins and Minnesota Vikings games and other large downtown events.

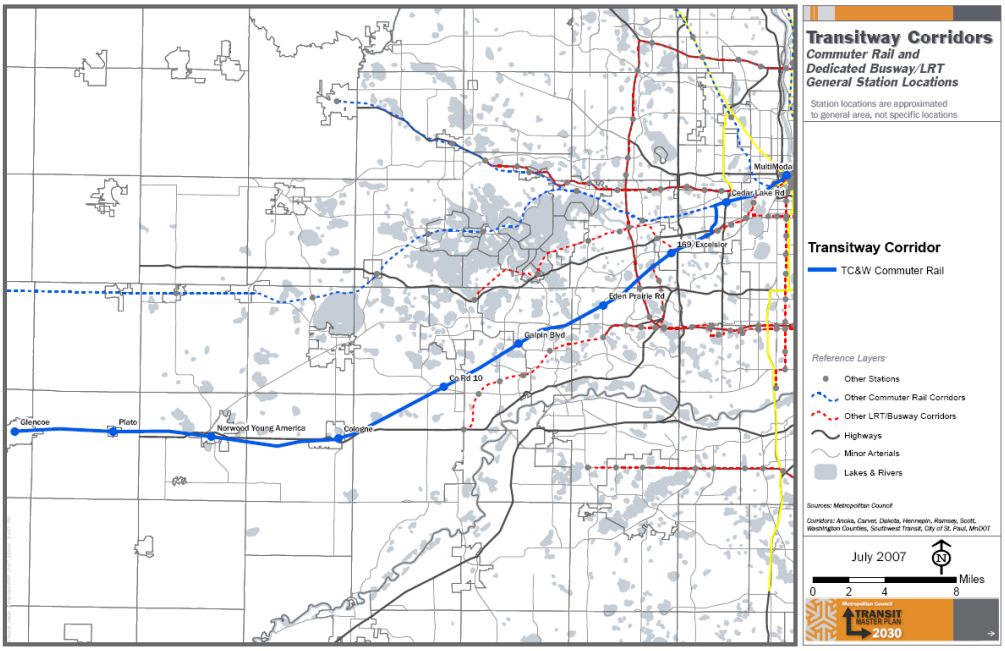
The city supports the continuing investigation of commuter rail as a transportation alternative for the community, the region, and the state. The Twin Cities & Western Line, which runs through the heart of Chanhassen, is a possible route. The city has advised the Metropolitan Council that any commuter rail station located within Chanhassen would need to be located between Market Boulevard and Great Plains Boulevard in downtown Chanhassen. The downtown location meets the standards of the transit-oriented development (TOD).

The core area of the TOD is a relatively dense mixed-use development and constitutes from one-tenth to one-half the total TOD area. The main characteristics include:

- Residential (20 to 30 percent of the TOD area),
- Employment uses (20 to 30 percent of the TOD area), and
- Civic uses (about 10 percent of the TOD area).

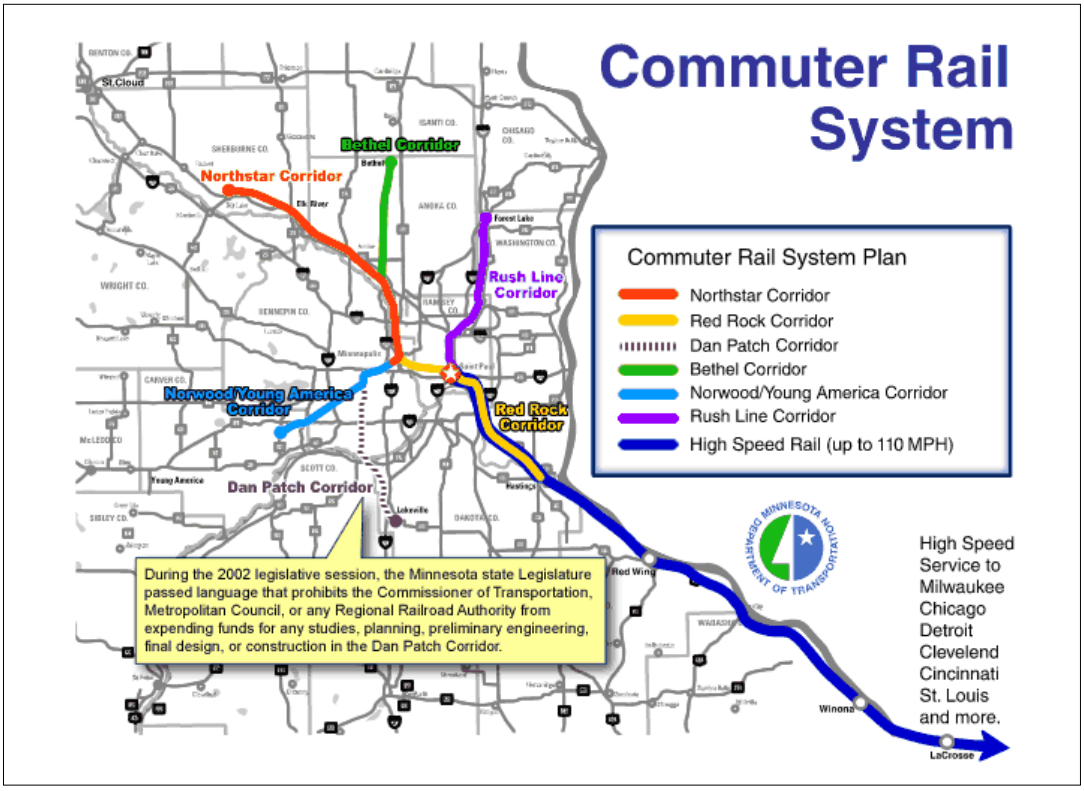
In 1997, the Minnesota Legislature instructed the Minnesota Department of Transportation (MnDOT) to conduct a feasibility study to determine if the Twin Cities Metropolitan Area could support commuter rail service. Out of 19 rail corridors studied, six proved to be feasible of supporting commuter rail. Those six lines were divided into two tiers. Tier I included the Northstar Corridor between Minneapolis and St. Cloud, the Red Rock Corridor between Minneapolis and Hastings and the Dan Patch Corridor between Minneapolis and Lakeville. Tier II included the Bethel Corridor, the Rush Line Corridor and the Norwood-Young America Corridor. The city supports the classification of the Norwood-Young America Corridor as a Tier I commuter rail corridor.

FIGURE 6.12 | Transitway Corridors



In January 1999, MnDOT presented the results of the Twin Cities Metropolitan Commuter Rail Feasibility Study to the Minnesota Legislature. After hearing those results the legislature passed M.S. 174.80 to 174.90 which gave the Commissioner of MnDOT the authority to plan, design, construct, and operate commuter rail in the State of Minnesota. Further, the Commissioner was charged with the responsibility of developing a commuter rail system plan that would ensure that, if built, commuter rail would be part of an integrated transportation system that would interface with all other forms of transportation including LRT, buses, park and ride, bicycles, and pedestrians. In developing the Commuter Rail System Plan, MnDOT has built on the results from the Twin Cities Metropolitan Commuter Rail Feasibility Study and in particular the implementation strategy presented in the final report.

FIGURE 6.13 | Commuter Rail System



Travel Demand Management

Travel Demand Management (TDM) programs will also provide an opportunity to reduce travel demand on the regional highway system. The employment concentrations anticipated for the area, particularly in the office complexes, provide the city with a tremendous opportunity to implement TDM programs. As part of its standard approval process, the city will work with new employers locating in the study area to ensure that employers will:

- promote carpooling by providing information on carpooling and vanpooling to employees on a regular basis, providing preferential parking and guaranteed-ride home;
- encourage employees to participate in Minnesota Rideshare's ride-matching program;
- Rail Corridors offer employees flexible work hours and set a goal to reduce peak hour trips by 10 percent; and
- participate in a Travel Demand Management Organization specifically set up for major employers. This group will consider TDM mea sures that require cooperation among several employers such as, but not limited to:
  - staggered start times
  - van-pools
  - trip reduction goals
  - transit subsidies

In addition, every employer, regardless of size, will be required to provide a convenient carpool/vanpool drop-off site that does not interfere with other traffic. This drop-off site will be consistent with applicable Americans with Disability Act requirements. The city may allow a group of employers to provide a shared drop-off site as long as the site is accessible to all participating employers.

It will be the goal of the city to reduce peak hour trip generation to and from the study area by 10 percent through the use of a combination of transit service and TDM programs. The city supports investigation of TDM strategies to reduce trip levels on area roads. The city will be advocating the development of a multi-community, multi-county partnership with the business community to promote these strategies.

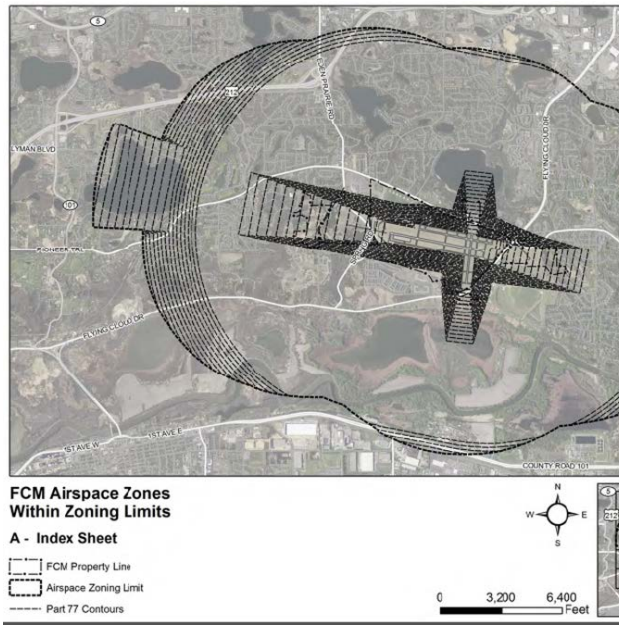
Airports

There are no existing or planned airports within the City of Chanhassen. Commercial air service is available at Twin Cities International Airport and general aviation is available at Flying Cloud Airport in Eden Prairie. Flying Cloud Airport is approximately 4 miles east of the City of Chanhassen.

A small portion of the City, located in the southeast portion of the city, is within the Flying Cloud Airport (FMC) Air Space Zone height limits. The FMC Airspace zoning limits are located around Lake Riley and are not within a land use limitation district but is restricted by height. This area is guided low, medium density and is mostly developed, except for the area of the old mining site along County Road 61. The mining site is guided for high density. Municipal services are not available is this area, but it is anticipated that they will be when TH 101 is reconstructed.

Despite the lack of airports in Chanhassen, the city has two primary aviation concerns: first - physical obstructions are controlled, and second - seaplane operations. At the present, the tallest manmade structures within Chanhassen are the city's water towers, which average 135 feet. Structures under 200 feet are not considered obstructions under state rules. Radio towers are the only potential structures that may exceed the 200 foot threshold. If proposals for towers occur, the city will require that they comply with all State, Federal and local requirements.

The highest structures permitted in the city are cell towers. They limited in height to 200 feet in the city code. The Code further states: The applicant is responsible for receiving approvals from the Federal Aviation Administration, Federal Communications Commission, and any appropriate state review authority, stating that the proposed tower complies with regulations administered by that agency or that the tower is exempt from those regulations."



Lakes Minnewashta and Riley are used by seaplanes. To date, there have been few conflicts between boat traffic and seaplane usage. Continued usage in these areas is not viewed as a major issue due to the small number of aircraft and off peak hour operation by their owners. If in the future the numbers of aircraft increases or the potential for serious usage conflicts occurs, the city may work with the State and regional authorities to limit or ban seaplane usage. Pursuant to Minnesota Administrative Rules 8800.2800, planes may land on any lake that is frozen.

Autonomous Vehicles

An autonomous car (also known as a driverless car, auto, self-driving car, robotic car) and Unmanned Ground Vehicle is a vehicle that is capable of sensing its environment and navigating without human input. Many such systems are evolving, but as of 2017 no cars permitted on public roads were fully autonomous. They all require a human at the wheel who must be ready to take control at any time.

Autonomous cars use a variety of techniques to detect their surroundings, such as radar, laser light, GPS, odometry, and computer vision. Advanced control systems interpret sensory information to identify appropriate navigation paths, as well as obstacles and relevant signage. Autonomous cars must have control systems that are capable of analyzing sensory data to distinguish between different cars on the road.

The potential benefits of autonomous cars include reduced mobility and infrastructure costs, increased safety, increased mobility, increased customer satisfaction and reduced crime. Specifically, it could lead to a significant reduction in traffic collisions; the resulting injuries; and related costs, including less need for insurance. Autonomous cars are predicted to increase traffic flow; provided enhanced mobility for children, the elderly, disabled and the poor; relieve travelers from driving and navigation chores; lower fuel consumption; significantly reduce needs for parking space; reduce crime; and facilitate business models for mobility as a service, especially via the sharing economy.

Among the main obstacles to widespread adoption are technological challenges, disputes concerning liability; the time period needed to replace the existing stock of vehicles; resistance by individuals to forfeiting control; consumer safety concerns; implementation of a workable legal framework and establishment of government regulations; risk of loss of privacy and security concerns, such as hackers or terrorism; concerns about the resulting loss of driving-related jobs in the road transport industry; and risk of increased suburbanization as travel becomes less costly and time-consuming. Many of these issues are due to the fact that autonomous objects, for the first time, allow computers to roam freely, with many related safety and security concerns.
(Wikipedia September 19, 2017)

As autonomous vehicle technology continues to evolve and gain acceptance and use, the city will follow and evaluate the potential of such vehicles and its implications to city regulations and design requirements.

Trails and Sidewalks

The sidewalk and trail system is discussed and mapped primarily as part of the recreation and trail chapter in the Comprehensive Plan. The city desires to be pedestrian friendly. To accomplish this, the city must assure that city improvements and private developments provide pedestrian and bicycle linkages. An integral component of the transportation system is the pedestrian and bicycle sidewalks and trails. Trails also provide a health benefit to residents and visitors to the city. The city continues to plan for an extensive trail system throughout the community. These trails will provide linkages between individual neighborhoods as well as connecting these neighborhoods to the rest of the community. As new development is proposed and reviewed, the city will continue to require that these pedestrian linkages be included as part of the project.

» Total Number of Trails: 95.3 miles

» Total Number of Sidewalks: 32.1 miles

6.8 | Relationship of the Transportation Plan to the Metropolitan System

In 2015, the Metropolitan Council issued a Systems Information Statement to the City of Chanhassen. The city was encouraged to address issues identified in the Statement and to ensure that planning in Chanhassen was consistent with the Metropolitan Council's newly revised Transportation Policy Plan. This section is intended to identify how the revisions to the city's Transportation Plan support the Metropolitan Council's Plan.

As the region continues to grow, utilization of the metropolitan highway system is expected to increase. In some cases, these facilities will become congested. Due to the regional function that these facilities perform, many of the factors affecting segments that are in the City of Chanhassen are beyond the city's control. Nevertheless, the city supports the desire to resolve transportation issues by coordinating its own efforts with those of adjacent communities, Carver County, MnDOT and the Metropolitan Council.

To this effect, the city has undertaken a comprehensive approach for dealing with these transportation issues. This approach considers the following methods for dealing with current and future problems: (1) an updated roadway plan, (2) support of regional programs and activities; and (3) initiation of a TDM program. The city's approach to each of these is described below:

1. The city has adopted a Transportation Plan that recognizes the need to support the metropolitan highway system. The major elements of the new plan are:
   - An arterial and collector system spaced in accordance with Metropolitan Council guidelines contained in the Transportation Policy Plan.
   - An arterial system that provides both east-west and north-south continuity between the City of Chanhassen and adjacent communities, thus providing alternatives to the metropolitan system for medium- and long-distance inter-community trips.
   - Arterial and collector roadways that are parallel to the metropolitan system, thus providing alternate routes for short and medium length trips and eliminate them from the metropolitan system.
2. The City of Chanhassen supports Metropolitan Council and MnDOT plans to improve the metropolitan transportation system in the following areas:
   - The city will coordinate site-specific installations with MnDOT in order to develop geometric designs at access streets that will accommodate the resulting queues and reduce the traffic impacts on the local street system.
   - The city supports the efforts of MnDOT to construct a new Minnesota River Crossing.

6.9 | Plan Implementation

Previous sections have examined future travel demand, have suggested guidelines for developing a Transportation Plan, and have recommended a Plan that is responsive to these considerations. This section concentrates on examining the steps necessary to implement the Transportation Plan. It discusses a general strategy for moving from 2007 to the future in accomplishing the plan.

Transportation Plan Adoption

By adopting the Transportation Plan, the City Council will establish the guidelines by which decisions regarding transportation facilities will be made in Chanhassen. It should be revised as necessary to respond to changing conditions and needs. The city should periodically review the assumptions under which the plan was developed, including estimates of future development, population trends, changing financial resources, energy considerations, and citizen and governmental input, and update the plan accordingly.

The plan should be circulated widely so that residents and the business community are aware of the opportunities and limitations that the plan provides, thus enabling all interested parties to plan with full knowledge.

Jurisdictional Realignment Process

In general, it is good policy that Carver County and the State (MnDOT) assume responsibility for the arterial system, and that the city assume responsibility for the collector and local street systems. This is, to a large extent, the situation in Chanhassen. Currently, Carver County has not accepted the turnback of TH 101 south of CSAH 18. Other roadways that are under consideration for jurisdiction change include:

- County Road 117 (Galpin Boulevard) from TH 5 to the north city limit (turnback from county to city). This roadway is designated as a local collector street and does not function to serve regional or inter-county type traffic. However, this roadway meets a rural design standard and should be upgraded to an urban design with capacity improvements prior to the city accepting jurisdiction.
- TH 5 and TH 41 – The TSP developed by MnDOT indicated that all non-principal arterial routes in the metropolitan area should be con sidered for turnback. This included both TH 5 and TH 41. These routes currently play a critical role in the region. A jurisdictional change should not be considered unless a new river crossing is made linking U.S. Highway 212 and U.S. Highway 169.

Access Management

The City of Chanhassen, through its ordinances, has authority to approve developments contiguous to city streets. As part of this process, the city will work with MnDOT and Carver County on managing access to all arterial and important collector routes within the city. Access management will help maintain mobility and provide increased safety for route users. Access guidelines will be developed as part of the Carver County Transportation Plan. The city will assist in this process by carefully considering any parcel splits along arterial corridors, promoting frontage roadways to serve developments rather than direct access. In addition, the city will make available any access guide-lines to developers so that they are aware of limitations prior to beginning preliminary platting of property.

Establish Improvement Programs

An overall strategy of improvement, tempered by fiscal constraints, begins with an analysis of key intersection capacity improvement projects, safety improvements and the protection of access by establishing strict standards and by designating necessary right-of-way. Identifying future needs for facility rights-of-way followed by timely "set-aside" programs will, in the long run, save the community much in the way of financial resources. Roadway improvements should also be geared toward providing for transit needs, particularly in the area of meeting turning radii, traffic signals and adequate roadway structure. It should be pointed out that non-motorized travel needs must also be carefully considered. Chanhassen will continue its policy of designating sufficient right-of-way to provide for sidewalk and bikeway needs.

6.10 | Sources of Funding

Roadways under city jurisdiction are maintained, preserved, constructed and re-constructed by the city's Department of Public Works. Rehabilitation and reconstruction pojects are typically performed by a contractor under supervision of the city's Engineering Department. Funding for these activities, including the administrative costs of operating the department, are obtained from a variety of sources including ad valorem taxes, special assessments, development fees, Municipal State Aid, state and federal project funding and tax increment financing. A major concern of the city is the availability of sufficient funds for maintenance and construction activities. If funds are unavailable, needed projects may be delayed or terminated and maintenance of existing facilities may fall short of acceptable standards. The following discussion explains the existing sources of funding and potential new sources of revenue.

State Aid

An extremely important source of revenue to the city is state-aid. A network of city streets called Municipal State-Aid Streets is eligible for funding assistance with revenue from the Highway User Tax Distribution Fund. This fund acts as a distribution or tax clearance fund, and tax income received into the fund is transferred to various transportation related funds for expenditure. The fund receives revenue from two principal sources: 1) gasoline taxes, and 2) vehicle registration taxes. These two sources are permanently dedicated to this fund. Ninety-five percent of the net proceeds of the Highway User Tax Distribution Fund are distributed annually according to a constitutionally mandated formula: 62 percent to the Trunk Highway Fund, 29 percent to the County State-Aid Highway Fund, and 9 percent to the Municipal State-Aid Street Fund.

Assessments

Property that benefits from a roadway scheduled for improvement may be assessed for a portion of the cost of construction. In order to assess a property owner, it must be demonstrated that the property will benefit from the improvement. For this reason, it is a limited source of revenue. It is also limited by the almost certain requirement that the property must have access to the roadway.

Since 1989, the city has generally been following the following assessment practices. This assessment practice is intended to provide direction to city staff in preparation of assessment rolls to ensure fair and consistent treatment of all properties within the City of Chanhassen.

Maintenance (Pothole filling, patching, crack sealing seal coat.)

Maintenance costs are not assessed to abutting property owners. Maintenance is financed through the city's Annual Budget process.

Rehabilitation (Repair of problem areas to full depth, milling of edge or full width of existing pavement, repair to existing catch basins and/or curb and gutter, pavement overlay.)

Total Project Cost =	60% paid by city (city share may be MSA, General TIF, Federal or State grants, etc.)	+	40% assessed to abutting property owners

Residential properties abutting collector or commercial streets shall be assessed using the same formula; however, the assessments shall be reduced to be equivalent to a typical 31-foot residential street section.

Reconstruction

Removal of existing street and construction of new street. May include sanitary sewer or water main and stormwater improvements. May recycle the existing asphalt as gravel base.

Reconstruction cost are assessed using the same formula as Rehabilitation.

New Construction

Construction of new streets or utilities or a significant upgrade from the previous facilities, e.g., a 4-lane street replaces and existing 2-lane.

New construction will be assessed 100% to the benefiting properties.

Note: If a feature (sanitary sewer, water curb and gutter, etc.) that did not previously exist is added during a rehabilitation or reconstruction project, that cost of that item is treated as new construction with the remaining project costs being treated as rehabilitation or reconstruction.

Work done by city crews may be maintenance, rehabilitation or new construction. This work is not typicall assessed. Exceptions would include work associated with an assessment agreement signed by the property owner and approved by City Council and work specifically authorized by the City Council to be done by city crews and assessed to the abutting properties.

Ad Valorem Taxes

If 20 percent of the cost of a city project can be assessed to the adjacent property owners, the remaining cost of the project can be added to the ad valorem or property taxes of the remaining property owners in the city. Ad valorem taxes for street improvements are excluded from the state mandated levy limits.

Property Tax Funding

The seven metropolitan counties – through their regional railroad authorities – are authorized by State Statute to impose levies on real estate of up to a maximum of 0.04835% of market valuation to pay for capital and/or operating costs of passenger rail service.

Tax Increment Financing

Establishing a tax increment financing (TIF) district is a method of funding infrastructure improvements that are needed immediately using the additional tax revenue to be generated in future years by a specific development. Municipal bonds are issued against this future revenue which is dedicated for a period of years to the repayment of the bonds or to other improvements within the TIF project area. When used appropriately, a TIF can accelerate economic development in an area by insuring that the needed infrastructure is in place without requiring support from the usual funding. This method of financing has already been used successfully in the City of Chanhassen and is expected to be used again in selected areas in the future.

Potential Source of Revenue

Revenues available from current sources of funding are not always sufficient to meet highway maintenance and construction needs. In order to reduce the potential shortfall of revenue, other sources of funding need to be considered.

Franchise Fee – Every City has a franchise agreement with each utility company (gas, electric, etc.) for their use/rent of city owned right-of-way for their business purposes.

- Right-of-way is City property devoted for roadway purposes but is also used for utilities, trails and sidewalks, and snow storage.
- By law, Cities may charge utilities a fee for use of city right-of-way. Utility providers will likely pass this fee onto their customers.

The franchise fees could be set aside in a dedicated fund to be used solely for expenditures related to pavement management program projects such as street overlays and reconstruction, and trail improvement projects.

Impact Fees – Impact fees are assessed to individual developers as property is improved. An attempt is made to determine what impact the additional traffic will have on roadways both near the development and away from it. The cost associated with improving the roadway system sufficiently to handle the additional traffic is assessed to the developer.

Road Access Charge – Impact fees are assessed after an attempt is made to determine the specific impacts of a specific development. A road access charge would be assessed all new development based on the trip generation rate of the new development but without documenting specific impacts. Revenues from this funding source would be used to construct or improve arterial and collector streets in the jurisdiction collecting the tax. New legislation would be required for this type of funding mechanism to be implemented. Cities are in a position to assess these fees because of their zoning and development authority.

Transportation Utility Billing – Under the concept of a municipal transportation utility, all properties would be subject to a periodic fee (i.e., monthly, quarterly), based upon the number of vehicle-trips generated by the type of property. This revenue would then be used for transportation improvements that produce community-wide benefits including the reconstruction of existing roads and preventive maintenance to reduce deterioration. Such a fund would be especially useful for the maintenance of collector streets which are under the city's jurisdiction, particularly when it is difficult to show enough direct benefit to adjacent property owners to be able to charge an assessment. The periodic nature of the utility billing would also provide a stable source of income to support a regular maintenance program for the entire street system. Such a utility would be administered by individual cities, with each city deciding on their own fee structure. At the present time, this sort of revenue source is not permitted by the state, but efforts are underway to persuade the State Legislature to pass legislation allowing the cities to obtain revenue in this way.

Wheelage Tax – Any city (Minnesota Statutes Section 426.05) or metropolitan county board of commissioners (Minnesota Statutes Section 163.051) may impose an annual wheelage tax upon motor vehicles using the public streets or highways. Carver County currently imposes a wheelage tax for roadway improvements in the County.

Local Planning Policies

Chanhassen has different policies pertaining to construction standards for urban versus rural local streets. Urban roadways are required to dedicate 60 feet of right of way for local streets and 31-foot wide pavement width. Rural roadways are also required to have a bituminous surfacing 24 feet wide contained within a 60 foot right of way. Right-of-way widths may be reduced to 50 feet if there is extenuating environmental or physical constraints on a property.

Current city policy also allows the construction of private streets. Up to four single-family residences may be served via a private street if it is demonstrated to be unfeasible or unnecessary to construct a public street. In such cases, 30 feet of easement is required with the roadway consisting of a 20-foot wide paved surface. Multi-family private streets require 24 feet of paved surface in a 40-foot easement. Commercial, industrial, and office development may be served by 26-foot wide paved private streets within a 40-foot wide access easement.

6.11 | Pavement Management

Historically, the emphasis for growing communities has been building roads and implementing preventive maintenance due to the relatively new network system. But as street networks age, the new focus is on maintaining and preserving existing pavement surfaces. A pavement management program is a systematic approach to using a series of pavement treatment options over time. One treatment at the right time will improve the quality of the pavement surface and extend the pavement life, but the true benefits of the pavement management program are realized when there is a consistent schedule.

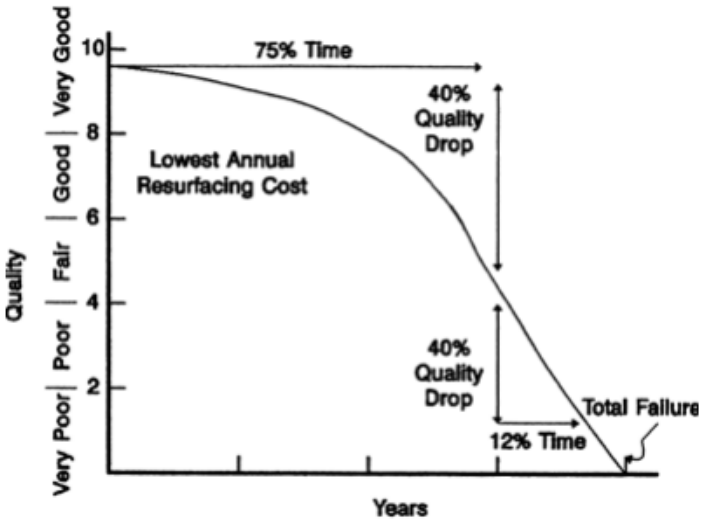
An effective pavement management program integrates many preventive maintenance strategies, rehabilitation and reconstruction treatments. The goal of such a program is to extend pavement life and enhance system-wide performance in a cost-effective and efficient way. Studies show that preventative maintenance is six to ten times more cost effective than a minimal maintenance program with only some rehabilitation and reconstruction maintenance strategies used.

The City of Chanhassen recognizes that the street infrastructure is an asset to the community that needs to be maintained. In 2004, the city began a pavement management program to identify long-term needs of the city street network. The objective of the program is to have a long-term pavement management plan that can realistically be funded and does not have significant peaks and valleys in the annual budgets. Also, the program will help identify projects long term that will give residents some idea when their street will be proposed for improvements. The program is structured to propose projects when projects are warranted and to have a consistent methodology for proposing street improvement projects. Over the past years, staff has used this information to ascertain which streets require improvements and what type of improvement is required.

There are three main types of pavement treatment options:

1. ***Preventive Maintenance:*** This item includes filling potholes, patching, crack sealing and seal coating.
2. ***Rehabilitation:*** Performed to correct deficiencies that occur in pavements such as extensive cracking and potholing. This type of maintenance includes mill and overlays.
3. ***Reconstruction:*** This item is performed when corrective maintenance is no longer appropriate.

FIGURE 6.14 | Pavement Degradation Curve



Studies conducted by a number of agencies indicate that as pavement conditions decrease, the cost for the appropriate improvements significantly increases. A typical graph of a pavement degradation curve taken from the American Public Works Association is shown above. This graph shows that it is more cost effective to have pavement repaired with preventative maintenance than it is to wait until the pavement needs reconstruction.

Bridges

Bridges meeting the State of Minnesota definition are inspected according to the National Bridge Inspection Standard and are typically inspected every one to two years depending on their condition.

Capital Improvements

Capital improvements will be included in the implementation chapter.