



## MEMORANDUM

**Date:** June 18, 2019

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**Subject:** Revised Existing and No-Build Conditions  
Arboretum Area Transportation Plan  
Carver County  
Project No.: T44.117142

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### Introduction

Carver County, in collaboration with the Minnesota Department of Transportation (MnDOT) and the cities of Victoria, Chaska, and Chanhassen, is working to identify transportation improvements on major corridors in the vicinity of the University of Minnesota Landscape Arboretum. This includes evaluating issues and providing recommendations for improvements to MN Trunk Highway (TH) 5 (Arboretum Boulevard), County State Aid Highway (CSAH) 13 (Rolling Acres Road/Bavaria Road), 82<sup>nd</sup> Street West/Lyman Boulevard, and TH 41 (Chestnut Street/Hazeltine Boulevard).

The project was divided into subareas to manage varying contexts and better organize the process. Project subareas are as follows:

- Highway 5 West Subarea – One quarter of a mile west of CSAH 11 (Victoria Drive) to CSAH 13 (Rolling Acres Road/Bavaria Road)
- Highway 5 East Subarea – CSAH 13 (Rolling Acres Road)/CSAH 13 (Bavaria Road) to TH 41 (Chestnut Street)
- Rolling Acres Road Subarea – CSAH 13 (Rolling Acres Road) from TH 5 (Arboretum Boulevard) to TH 7
- Bavaria Road Subarea – CSAH 13 (Bavaria Road) from TH 5 (Arboretum Boulevard) to 82<sup>nd</sup> Street West
- 82<sup>nd</sup> Street West Subarea – Bavaria Road to TH 41 (Chestnut Street)

- Highway 41 Subarea – Lyman Boulevard to just north of West 78<sup>th</sup> St

The corridors function as a system. This means one corridor’s functionality has an effect on the others. Carver County desires to guide future improvements on these corridors and establish improvement recommendations that will ensure safe and efficient operations. The study will:

- Define issues and potential opportunities both today and into the future
- Develop and evaluate potential infrastructure improvement alternatives to address existing and projected issues and to guide future growth and development
- Establish improvement recommendations
- Develop an implementation plan that can be phased in over time

The purpose of this memorandum is to document existing and no-build conditions and to identify and confirm issues along and near the corridors. This memo is organized by the following sections:

- Previous studies overview
- Demographics and trends
- Transportation system characteristics
- Study area characteristics
  - land use and major traffic generators
  - existing and no-build traffic conditions
  - crash history
  - access
  - pedestrian/bicycle
- Social, environmental, and economic (SEE) resources
- Summary of issues

This information will guide the development of plan goals and objectives and ultimately the identification of improvement alternatives for each of the project corridors.

**Appendix A** of this memo contains figures of each of the study area characteristics listed above and SEE resources.

### **Previous Studies Overview**

Several short- and long-range studies have been completed which provide direction for future transportation system needs within and around the University of Minnesota Arboretum Area. The key points in each study relevant to the Arboretum area are summarized below by plan title.

#### *TH 5 Study (2008)*

*The Trunk Highway (TH) 5 Corridor Study* was completed by Carver County and the Cities of Victoria and Waconia, in collaboration with MnDOT and the other communities in the project corridor. The project corridor extended from TH 41 to TH 212, a distance of

approximately 20 miles. The study was conducted in expectation of continued rapid population growth and associated travel demand in the project corridor. The segment of TH 5 (Arboretum Boulevard) considered in the Arboretum Area Transportation Plan was included in the TH 5 Study. The following provides a summary of findings from this study.

- The primary issues of concern for the TH 5 Study were mobility and safety. Projected 2030 traffic volumes exceeded the planning level capacity of the existing 2-lane undivided design. In addition, existing crash rates exceeded statewide averages.

The favored alternative for the Chanhassen and Victoria Subareas included four-lane expansion of the existing alignment on the southern side of the roadway. This alternative had fewer local impacts than expansion to the north and met mobility and safety needs on the corridor.

- Conceptual design for the four-lane expansion included:
  - *East of CSAH 13 (Rolling Hills Road/Bavaria Road) through Downtown Victoria* -150' ROW corridor with space for a double turn-lane median, boulevards, and non-motorized accommodations.
  - *TH 41 (Hazeltine Boulevard) to east of CSAH 13 (Rolling Hills Road/Bavaria Road)* - 135' right-of-way (ROW) corridor with space for a single turn-lane median, boulevards, and non-motorized accommodations.

The conceptual design identified in the TH 5 Study was approved by the Chanhassen and Victoria city councils (and other city councils for other portions of the study corridor), as being locally supported.

- Planning-level cost estimates were provided in the study.
- No fatal flaws or major/unique impacts were identified during a screening of SEE resources.

#### Carver County Draft 2040 Comprehensive Plan (2018)

- Carver County anticipates continued rapid population growth into the future, and its policy is to direct this growth to identified growth areas of cities. To meet the demands of growth, the transportation network is evaluated based on safety, existing and forecasted volumes, and access management.
- While not in the current draft plan, safety information was compiled in support of the comprehensive plan. Safety analysis identifies the following high crash locations (crash index<sup>1</sup> greater than 1.0) in the study area based on 2011-2015 data (Note: Safety data from 2013 to 2017 is being evaluated as part of this planning process.

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<sup>1</sup> Crash index includes calculations to determine if the given crash rate (crashes per million vehicles entering the intersection) can be determined to be statistically higher than the statewide average with a high level of confidence; crash index greater than 1.0 suggests an underlying safety problem inherent to the location and not just chance occurrences.

Updated data for each project subarea is discussed in the Study Area Characteristics section of this document):

- TH 5 (Arboretum Boulevard)/CSAH 13 (Rolling Acres Road/Bavaria Road) (1.21 crash index)
- CSAH 13 (Bavaria Road)/CSAH 18/82<sup>nd</sup> Street West (1.6 crash index)
- TH 41(Hazeltine Boulevard) /TH 5 (Arboretum Boulevard) (1.3 crash index)
- In the 2040 traffic forecasting, the base roadway scenario (fiscally constrained, programmed improvements only) includes:
  - Extension of Stieger Lake Lane to CSAH 11 (west) north of TH 5 (Arboretum Boulevard)
  - Reconstruction of CSAH 13 (Rolling Acres Road) between TH 7 and TH 5 (Arboretum Boulevard) as 2-lane arterial with shared center turn lane
- Beyond these programmed improvements, the plan includes projects and prioritization identified in the Carver County 20-year Transportation Tax Implementation Plan (2018 – 2037). The investment and improvement locations identified within the study area, along with prioritization A – D, are listed below and are subject to change.
  - TH 5 (Arboretum Boulevard)/CSAH 13 (Rolling Acres Road/Bavaria Road) intersection (Priority A)
  - TH 41(Hazeltine Boulevard/Chestnut Street)/CSAH 18 (Lyman Boulevard) intersection (Priority A – roundabout to be constructed 2019)
  - TH 7/CSAH 13 (Rolling Acres Road) intersection (Priority B)
  - 82<sup>nd</sup> Street West from CSAH 13 (Bavaria Road) to TH 41 (Hazeltine Boulevard/Chestnut Street) (Priority B)
  - TH 5 (Arboretum Boulevard) from TH 41 (Hazeltine Boulevard) to CSAH 13 (Rolling Acres Road/Bavaria Road) (Priority B)
  - TH 5 (Arboretum Boulevard) from CSAH 13 (Rolling Acres Road/Bavaria Road) to CSAH 11 (Victoria Road) (west) (Priority D)
- County 2040 traffic forecasts are lower than 2030 forecasts. State 2040 forecasts on TH 5 (Arboretum Boulevard) are comparable to the 2030 forecasts, but the 2040 volumes on parallel routes are substantially lower.
- The following roadway congestion levels were forecasted based on the Scenario 2 analysis, a roadway network scenario that includes just existing and programmed improvements:
  - Over Capacity: TH 41 (Hazeltine Boulevard) north of TH 5, and TH 5 (Arboretum Boulevard) throughout the study area
  - Approaching Capacity: CSAH 13 (Rolling Acres Road) between TH 7 and TH 5 (Arboretum Boulevard)

- The County also forecasted roadway congestion through Scenario 3, which also included county sales tax funded roadway improvements in addition to those in Scenario 2. The County is using this as their fiscally constrained scenario. By comparison, this shows:
  - Over Capacity: TH 41 (Hazeltine Boulevard) north of TH 5
  - Approaching Capacity: TH 5 (Arboretum Boulevard) east of CSAH 13 (Rolling Acres Road/Bavaria Road) and CSAH 13 (Bavaria Road) south of TH 5
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- 82<sup>nd</sup> Street West between CSAH 13 (Bavaria Road) and a new connection to TH 41 (Hazeltine Boulevard/Chestnut Street) at Lyman Boulevard is identified as a potential future transfer from the City of Chaska to Carver County. This roadway is shown as transitioning from an other arterial to an A minor arterial. This is the only jurisdictional transfer and functional classification change in the study area.
- The County uses MnDOT guidelines for roadway access management. These are long-term goals subject to existing conditions and local design considerations. The plan includes access spacing guidance for the county roadways in the study area, including:
  - Rural, exurban, and bypass arterial (1/2 mile full intersection spacing, 1/4 mile secondary intersection spacing) – TH 41 south of TH 5 (Arboretum Boulevard) and the entire length of TH 5 in the study area
  - Urban/urbanizing arterial (1/4 mile full intersection spacing, 1/8 mile secondary intersection spacing) – CSAH 13 (Rolling Acres Road/Bavaria Road), 82<sup>nd</sup> Street West, TH 41 north of TH 5.
- The study area is in Metropolitan Council Transit Market Area IV or V, indicating relatively limited potential demand for scheduled transit service. Any such service would generally be peak hour, commuter service to job centers such as downtown Minneapolis. Southwest Transit currently does not have scheduled service in the project area. Excessive congestion along TH 5 (Arboretum Boulevard) could drive the need and justification for a park and ride station near TH 5 (Arboretum Boulevard) and CSAH 13 (Rolling Acres Road/Bavaria Road).
- A future linking trail along TH 5 (Arboretum Boulevard) west of CSAH 13 (Rolling Acres Road/Bavaria Road) to the western study area limit (existing trail in downtown Victoria area) is identified. A future local trail is shown along 82<sup>nd</sup> Street West, east of CSAH 13 (Bavaria Road).

City of Victoria Draft 2040 Comprehensive Plan (2018)

- Victoria's population increased approximately 25 percent between 2010 and 2017 (7,400 to 9,300), and the Metropolitan Council projects a further growth of approximately 65 percent to 15,400 by 2040. The City has a High Growth scenario

which goes to 17,400 by 2040. There is much potential for growth within the Orderly Annexation area in adjacent Laketown Township.

- 2040 traffic forecasting assumes a reconfiguration of CSAH 13 (Rolling Acres Road) to a 3-lane design north of TH 5 (Arboretum Boulevard) by that time.
- 2040 traffic projections show TH 5 (Arboretum Boulevard) (without improvements) as being over capacity. CSAH 13 (Rolling Acres Road) between TH 7 and 78<sup>th</sup> Street is shown as being a mix of approaching capacity and over-capacity in 2040.
- The City recognizes capacity improvements will be required on the TH 5 (Arboretum Boulevard) corridor and will work with MnDOT and Carver County to plan for and advance these improvements. The City's participation in the previous TH 5 Study is noted. Capacity improvements on regional highways should include proper aesthetic treatments and non-motorized accommodations. The City will work with Carver County as it implements improvements associated with its Transportation Tax Implementation Plan.
- There currently is no scheduled transit service in Victoria. While the City feels that such service would reduce congestion along TH 5 (Arboretum Boulevard), it acknowledges that it would be dependent on funding availability. The City anticipates that any future scheduled transit service would be extended along TH 5 (Arboretum Boulevard).
- A future City trail is identified along TH 5 (Arboretum Boulevard) west of the Lake Minnetonka Light Rail Transit (LRT) trail. It also shows a future city trail along Kochia Lane which would connect with the existing trail along Park Drive to the north, thus creating a new trail crossing of TH 5 (Arboretum Boulevard) east of the downtown area. Additionally, the plan shows a new trail connection along CSAH 13 (Bavaria Road) from TH 5 (Arboretum Boulevard) to the southern city limits, providing another north-south connection.

*Victoria Downtown Development Planning: A Vision & Guide for the Future (2016)*

- Identifies the West Side Development Area Concept as a mixed-use center with commercial, office, and residential uses between Victoria Drive and Lake Minnetonka LRT Regional Trail.
- As part of the West Side Development Area, Stieger Lake Lane would be realigned from its current intersection with TH 5 (Arboretum Boulevard) to terminate at CSAH 11 (Victoria Drive). A new secondary roadway will extend from near the existing (skewed) access to Stieger Lake Lane from TH 5 (Arboretum Boulevard) and will intersect the realigned Stieger Lake Lane via roundabout and will continue to the northeast. On-street parking is planned throughout the new development.

- The plan illustrates aligning Commercial Avenue and 80th Street to full-access at TH 5 (Arboretum Boulevard) and connecting TH 5 (Arboretum Boulevard) to Quamoclit Street.
- The plan provides guiding principles that identify the need to enhance gateways into downtown, improve bike/pedestrian connections to regional resources, add more residential land use, and use open space, parks and lakefront to bolster a sense of place and downtown business activity.

#### Downtown Victoria Traffic Study (2017)

- Study completed in 2017 to assess impacts associated with development opportunities near downtown Victoria. This study references and uses imagery from the Victoria Downtown Development Plan throughout the analysis.
- Generally, data from 2013 to 2015 shows intersections operated at Level of Service (LOS) C or better. Certain intersections exhibited poor LOS at some approaches during certain peak times.
- Short- (2021) and long- (2031) term forecasts were developed for downtown redevelopment and future roadway connections
  - Access to the new connection from realigned Stieger Lake Lane from Highway 5 will be right-in only.
  - A new connection via Commercial Avenue between Highway 5 and Quamoclit Street has also been identified; assumed for post 2031 construction.
  - Issues are expected at the following intersections in No-Build Scenario:
    - TH 5 (Arboretum Boulevard) and CSAH 11 (Victoria Drive) (west)
    - TH 5 (Arboretum Boulevard) and Rose Street
    - TH 5 (Arboretum Boulevard) and Quamoclit Street
    - TH 5 (Arboretum Boulevard) and Stieger Lake Lane
- Development is anticipated to increase vehicle trips along TH 5 (Arboretum Boulevard) from an existing 10,053 vehicles per day to 19,275 by 2031 (long-term). 10% of new traffic is anticipated to come from CSAH 11 in the north; 25% is anticipated on TH 5 (Arboretum Boulevard) from west; 30% is anticipated on CSAH 11 from south; and 35% is anticipated from TH 5 (Arboretum Boulevard) from east.
- The following improvements are recommended:
  - TH 5 (Arboretum Boulevard) and CSAH 11 (Victoria Drive) (West) – construct a single lane roundabout or install a traffic signal.
  - TH 5 (Arboretum Boulevard) and Stieger Lake Lane – construct a westbound right-turn lane.
  - TH 5 (Arboretum Boulevard) and Rose Street – modify to three-quarter access.
  - TH 5 (Arboretum Boulevard) and CSAH 11 (Victoria Drive) (East) – restripe the northbound/southbound approaches for exclusive left-turn lane and a shared

- thru/right-turn lane. Add protected/permissive left-turn phasing to the northbound/southbound approaches and optimize the signal timing.
- TH 5 (Arboretum Boulevard) and Quamoelit St – modify to three-quarter access.
  - TH 5 (Arboretum Boulevard) and Commercial Avenue - Consider aligning Commercial Avenue and 80th Street to full-access at TH 5 (Arboretum Boulevard). Consider connecting TH 5 (Arboretum Boulevard) to Quamoelit St if access is restricted along TH 5 (Arboretum Boulevard) at Rose Street and Quamoelit St.
  - TH 5 (Arboretum Boulevard) (between CSAH 11 (Victoria Drive) (west) and CSAH 13 (Rolling Acres)) – Expand the roadway to a four-lane facility.
    - TH 5 (Arboretum Boulevard) and Stieger Lake Lane (East) – Consider access restriction or allow vehicles to find alternative routes.

City of Chanhassen Draft 2040 Comprehensive Plan (2018)

- The City desires potential intersection improvements at the following locations in the study area:
  - TH 5 (Arboretum Boulevard) /Minnewashta Parkway: turning movements at this location are difficult; a new traffic signal and turn lanes are anticipated in the future.
  - TH 5 (Arboretum Boulevard)/Crimson Bay Road/U of M Landscape Arboretum entrance: turning movements at this location are difficult and the elimination of turn lanes may improve its operational characteristics.
  - TH 41/78<sup>th</sup> Street: turning movements at this intersection are difficult; a traffic signal may be warranted in the future.
  - TH 5 (Arboretum Boulevard)/TH 41: intersection geometrics have been evaluated and additional turn lanes and through lanes are necessary on TH 41. Additionally, the south approach to the intersection contains a relatively steep grade that “must be lowered.”
  - TH 41/Water Tower Place: currently Water Tower Place ends short of TH 41 with a cul de sac. A future right-in/right-out connection is planned. Installation of this intersection would be dependent on roadway geometrics on TH 41 being improved south of TH 5 (Arboretum Boulevard).
- TH 5 (Arboretum Boulevard) west of TH 41 continues to have problematic congestion levels, and the City will continue to partner with Carver County, the City of Victoria, and MnDOT to plan for future improvements and secure funding.
- CSAH 18: Carver County, Chanhassen, and Chaska are currently planning for future improvements from TH 41 east to Galpin Boulevard.
- TH 41 needs to be expanded to four lanes from TH 7 south to the county line.

Name: Arboretum Area Transportation Plan – Existing and No Build Conditions  
Date: June 18, 2019

- The City is generally concerned that if regional trunk highways serving Chanhassen are not improved, there will be added traffic to local routes.
- The City supports MnDOT's access spacing guidelines.
- Land uses within and adjacent to the planning area are not anticipated to change in the 2040 planning horizon. Some residential development is anticipated roughly 1.5 miles east of TH 41 (Hazeltine Boulevard) north of TH 5 (Arboretum Boulevard) in the near term.

#### City of Chaska Draft 2040 Comprehensive Plan (2018)

- The area south of 82<sup>nd</sup> Street West in the project area is part of the North Chaska Greenbelt. It extends south generally to the Symphony Lane alignment. The function of the overall Greenbelt is to provide a buffer relative to adjacent cities to reinforce Chaska as a freestanding community. The area is zoned as rural residential (four dwellings per 40 acres, with private sewer/water).
- As identified in City's 2040 Land Use Plan, the largest concentration of industrial land use is in the vicinity of the TH 41/CSAH 18/Lyman Boulevard intersection.
- Expanding TH 41 to 4-lane from its current 2-lane design at CSAH 14 (Pioneer Trail) north to TH 7 would serve the freight network within the City well.
- 82<sup>nd</sup> Street West from CSAH 13 (Bavaria Road) to a future connection to TH 41 at Lyman Boulevard is identified as a potential jurisdictional transfer from the City of Chaska to Carver County.

#### Minnesota Landscape Arboretum Master Plan (2018)

##### MN Landscape Arboretum Master Plan

- Arboretum programs and visitor attendance is anticipated to grow 5-10 percent over the next decade. Currently 460,000 visit the Arboretum annually. The Master Plan focuses on improvements on the Arboretum site with some associated access changes. The following high priority recommendations resulted from the plan:
  - On-site parking lot expansions near the Visitor Center. Parking capacity and transit experience are considered weak characteristics of the Arboretum.
  - New second entrance drive, aligned with Minnewashta Parkway. This project will include changes to the existing entrance and a relocated Apple House near the new entrance.
  - New intersection entrance drive off of 82<sup>nd</sup> Street West into Red Barn Farm, with expanded parking.
  - A new bicycle trail constructed parallel to Highway 5.
  - Interior roadway resurfacing and parking improvements.
- Relevant goals for the plan include:

- Increase multi-modal accessibility
  - Improve service access from the surrounding context
  - Provide alternative points and modes of entry into the Arboretum to decrease entry wait times.
  - Improve access from Highway 5
- The proposed new facilities at the Arboretum can be supported by the surrounding utility infrastructure for energy, water and sanitary systems. Expansion will require utility coordination with surrounding communities.
- There are 15 miles of pedestrian pathways and seven miles of bicycle trails in the Arboretum that attract visitors. Connections exist to the surrounding system including a tunnel under TH 5 (Arboretum Boulevard) to Minnewashta Parkway. An existing shared use path runs on the north side of TH 5 (Arboretum Boulevard) that is planned to expand to the south side of the corridor and is anticipated for 2019 construction.
- The Gatehouse/Visitor Center Area is generally found confusing by users attempting to park or access the Arboretum site. Additionally, during special events at peak season, the Gatehouse is unable to keep up with demand and vehicles have been observed queueing along TH 5 (Arboretum Boulevard) to its intersection with TH 41 (Hazeltine Boulevard).
- The Arboretum has discussed opportunities with SW Transit for transit service during peak season weekends and special events. The proposed service would connect visitors to the Arboretum from nearby park and ride stations to alleviate traffic congestion and demand for parking on-site. (Note: A representative of SW Transit suggested the special events are currently serviced at the Arboretum; see Transit below).
- The plan states that the TH 5 (Arboretum Drive) entrance will continue to function as the primary visitor center/core gardens entrance for users traveling that corridor. All users will gain entry to the site along TH 5 (Arboretum Boulevard) by the public access loop flowing from the Gate House toward the Oswald Visitor Center, at 82<sup>nd</sup> Street West at the Red Barn Campus, or by the Carver County Proposed Bike Trail.
- Access will remain limited to paid entries through the Gate House on TH 5 (Arboretum Drive) with additional special event future entry points to be developed for the Chinese Garden and Horticulture and Operations Headquarters.
- The Framework Plan identifies four public entrances to the Arboretum including: TH 5 (Arboretum Boulevard) across from Minnewashta Parkway (to be improved); (2) TH 5 (Arboretum Boulevard) across from Crimson Bay Road; (3) 82<sup>nd</sup> Street West approaching TH 41 (Hazeltine Boulevard); (4) 82<sup>nd</sup> Street West roughly .75 miles east of CSAH 13 (Bavaria Road).

- Improved TH 5 (Arboretum Boulevard) entrance would include traffic signal, extended turn lanes for entering, and adding/extending eastbound acceleration lane for exiting.
- The Framework Plan identifies three service and member entrances to the Arboretum currently exist: One on 82<sup>nd</sup> Street West roughly .25 miles east of CSAH 13 (Bavaria Road); two on CSAH 13 (Bavaria Road) between TH 5 (Arboretum Boulevard) and CSAH 18/82<sup>nd</sup> Street West.

#### Highway 10 Draft Corridor Study Victoria – Chaska Area (2019)

The Highway 10 Corridor Study was underway during the development of the existing conditions document for the Arboretum Area Transportation Plan (ATP). However, the following comments were collected during Highway 10 (Engler Boulevard) focus group meetings.

1. Ambulance drivers suggested they use Highway 10 rather than the shorter TH 5 (Arboretum Boulevard) to respond to emergencies because they can move quicker on Highway 10.
2. Backups on TH 5 (Arboretum Boulevard) and TH 212 cause alternate routes to fill up including Highway 10, resulting in delays at its intersection with TH 41 (Chestnut Street).

#### Carver County Safety Plan (MnDOT, 2013)

The primary goal of this plan is to reduce severe crashes in the County. Infrastructure safety measures identified through the Safety Plan process are listed below. All of the identified measures were for the TH 5 (Arboretum Boulevard)/CSAH 13 (Rolling Acres Road/Bavaria Road) and TH 7/CSAH 13 (Rolling Acres Road) intersections, respectively.

- Confirmation lights (assist law enforcement in apprehending red light-running violators) - \$1,000 per intersection
- Pedestrian countdown timers with advanced walk timing - \$10,000 per intersection (County-nominated project is advanced walk timing @ \$1,000 per intersection)
- Flashing yellow arrow (County-nominated project) - \$10,000 per intersection

#### TH 5 Regional Trail Master Plan (Carver County, February 2018)

- The TH 5 Regional Trail is identified as a Regional Trail Search Corridor in the Metropolitan Council 2040 Regional Parks Policy Plan. It extends from the Lake Minnetonka LRT Regional Trail east to the Carver County/Hennepin County boundary. Most of the overall trail will use existing trail and/or sidewalk facilities, with improvements where necessary; however, some new segments will be

required. The entire trail ultimately would be ten feet wide, pending funding availability.

- Within the Study Area, the TH 5 Regional Trail would use existing local trail (with improvements where needed) along CSAH 13 (Rolling Acres Road) and TH 5 (Arboretum Boulevard) to connect to an existing underpass of TH 5 (Arboretum Boulevard) at Minnewashta Parkway, crossing into the Arboretum property to the south. Within the Arboretum, a new trail would need to be constructed from Arboretum Drive east to a proposed new underpass of TH 41 (Hazeltine Boulevard) south of the TH 5 (Arboretum Boulevard)/TH 41 intersection.
- The U of M Board of Regents will provide a right-of-way agreement to Carver County to allow the TH 5 Regional Trail to pass through the Arboretum. The trail alignment through the Arboretum will minimize impacts to significant trees, research areas, and gardens and will incorporate fencing, walls, and possibly boardwalks to achieve minimal disturbance. A conceptual alignment through the Arboretum (with two alternatives at the west end) is identified. Representatives of the Arboretum were part of the Task Force Committee for the Master Plan.
- The implementation of the trail will proceed as opportunities to coordinate with other agencies and projects occur, funding becomes available, and at the discretion of Carver County and local city councils. Carver County has acquired federal funds supporting the construction of the segment through the Arboretum in 2019.

*CSAH 18 from TH 41 to CSAH 13 (82nd Street West) Alternatives Analysis Technical Memorandum (prepared for Carver County, January 2011)*

- CSAH 18 is an important east-west corridor through the developed eastern portion of Carver County. Paralleling TH 5 (Arboretum Boulevard) to the south, it links CSAH 11 in Victoria to CSAH 17 in Chanhassen which then connects to TH 212. However, a gap exists between CSAH 13 (Bavaria Road) and TH 41.
- The purpose of this study was to evaluate improvements to 82nd Street West/Lyman Boulevard such that it can close the gap referenced above. 82nd Street West/Lyman Boulevard is a gravel roadway with sharp curves, an uncontrolled intersection with McKnight Road, and no non-motorized facilities.
- The study team included representatives from Carver County, the Cities of Chanhassen, Chaska, and Victoria, and the U of M Landscape Arboretum.
- 20-year traffic projections were: 2,400 vehicles per day (vpd) without improvement; 8,000 vpd with improvement. If TH 5 (Arboretum Boulevard) were increased to four-lane, this would drop the 20-year improved volume for CSAH 18/82nd Street West/Lyman Boulevard to 5,700 vpd. A single-lane roundabout at the intersection of improved CSAH 18/82nd Street West/Lyman Boulevard and McKnight Road would likely provide acceptable capacity and level of service for all future scenarios.

- Four design alternatives were evaluated using planning level costs and environmental screening. A critical constraint was to limit/avoid impacts to the Arboretum, a Section 6(f) resource.
  - Alternative 1 – Two-lane undivided, urban section, 40 mph design speed, 10-foot trail on one side (90-foot ROW)
  - Alternative 2 – Two lane divided, hybrid urban/rural with landscaped median, 40 mph design speed, 10-foot trail on one side (120-foot ROW)
  - Alternative 3 – Two lane divided, full rural section, 45 mph design speed, 10-foot trail on one side (140-foot ROW)
  - Alternative 4 – Two lane divided with landscaped median, urban section (no outside ditches), 40 mph design speed, 10-foot trail on one side (100-foot ROW)
- Alternative 4 was selected as the Preferred Alternative. It provides many of the positive attributes of the other alternatives while removing the negative attributes. The median provides a natural look consistent with the roadway setting. In addition, this alternative does not require the acquisition of residential buildings, and avoids all impacts to the Arboretum. The alternative was assumed to include a roundabout at the CSAH 18/W 82<sup>nd</sup>/McKnight Road intersection.

## Previous and Planned Projects

Various projects have been completed or are planned or programmed for completion within and around the study area. **Figure 1 (Appendix A)** identifies future projects in and around the study area. In addition, Carver County's transportation sales tax project list (included in the comprehensive plan summary) reflect projects that are at least partially funded.

Many other projects have been identified through previous plan review as needed projects that have not been finalized or funded. It may be that those projects are in the conceptual development stages and more firm recommendations will be confirmed through this Arboretum Transportation Plan process.

## Demographics and Trends

### *Population and Households*

Carver County is growing rapidly. Twenty-year population projections for Carver County estimate over 161,000 persons living in Carver County by 2040, detailed in **Table 1** below alongside projected households and employment trends.

Today, 60% of Carver County's approximately 100,000 people live in Chaska, Chanhassen, and Victoria and the combined population is anticipated to exceed 161,000 by 2040.

**Figure 2** provides a snapshot of area demographics for properties within the study area. The area identified contains over 17,000 residents or 17.1% of the County's population. Many of the area stakeholders are well-educated, white-collar workers. However, the study

corridors are also influenced by their travel sheds which go beyond the immediate study area. Both Highway 5 and 7 provide a primary east-west route for communities such as Waconia, St. Bonifacius, Minnetrista, Mayer, and Watertown to travel from western Carver County into the metropolitan area. Travel sheds will be identified early in the study by analyzing traffic pattern data.

The City of Chaska is the most populous with an estimated 2017 population of 25,578<sup>2</sup>. Population projections show a potential 35 percent increase in population from 2017 levels through 2040. The City of Victoria is also planning for substantial growth by 2040, nearly doubling its population from 8,679 in 2017 to 17,400 in 2040. Chanhassen had a 2017 population estimate of 25,108 which is anticipated to grow by over 11,500 between 2017 and 2040.

Household composition of this area is predominantly young families, reflected in high percentages of children and working-age adults. There are 17,000 residents in 5,800 households (81% families) with a median household income of \$133,000 per year. Median home values average \$451,000 and driving is the primary means of travel. The daytime population is 14,000 due to commuters leaving for work.

In addition to the projected growth in study area communities, growth in communities such as Waconia and Watertown west of the Arboretum study area will influence future traffic volumes on major roadways in the study area as they serve as commuting routes into/out of the metro area.

	Population				Households				Employment			
	2,010	2,020	2,030	2,040	2,010	2,020	2,030	2,040	2,010	2,020	2,030	2,040
Benton Township	786	740	720	710	297	300	300	300	274	300	320	330
Camden Township	922	900	860	840	329	340	340	340	56	70	80	80
Carver	3,724	6,300	10,300	15,500	1,182	2,120	3,630	5,600	187	650	1,030	1,700
Chanhassen*	22,952	26,700	31,700	37,100	8,352	10,000	11,900	14,000	9,746	13,200	14,400	16,298
Chaska	23,770	27,100	32,000	36,600	8,816	10,400	12,300	14,200	11,123	13,600	16,000	17,600
Cologne	1,519	2,100	2,940	3,910	539	800	1,170	1,600	270	370	420	470
Dahlgren Township	1,331	1,140	870	710	494	460	360	300	202	410	460	500
Hamburg	513	510	550	600	201	210	230	250	109	130	140	150
Hancock Township	345	360	390	410	127	140	160	170	10	10	10	10
Hollywood Township	1,041	1,030	1,130	1,170	387	410	470	500	90	150	170	180
Laketown Township	2,243	1,430	640	-	660	530	260	-	116	170	80	-
Mayer	1,749	2,070	2,520	2,950	589	750	980	1,200	151	180	190	200
New Germany	372	440	590	700	146	190	270	330	46	70	80	90
Norwood Young America	3,549	4,580	7,200	9,200	1,389	1,900	3,030	3,900	1,165	1,600	1,850	2,100
San Francisco Township	832	870	940	990	307	340	370	400	46	70	90	100

<sup>2</sup> 2017 population estimates for Chaska, Victoria, and Chanhassen are referenced from the U.S. Census Bureau's American Fact Finder site:  
<https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=CF>

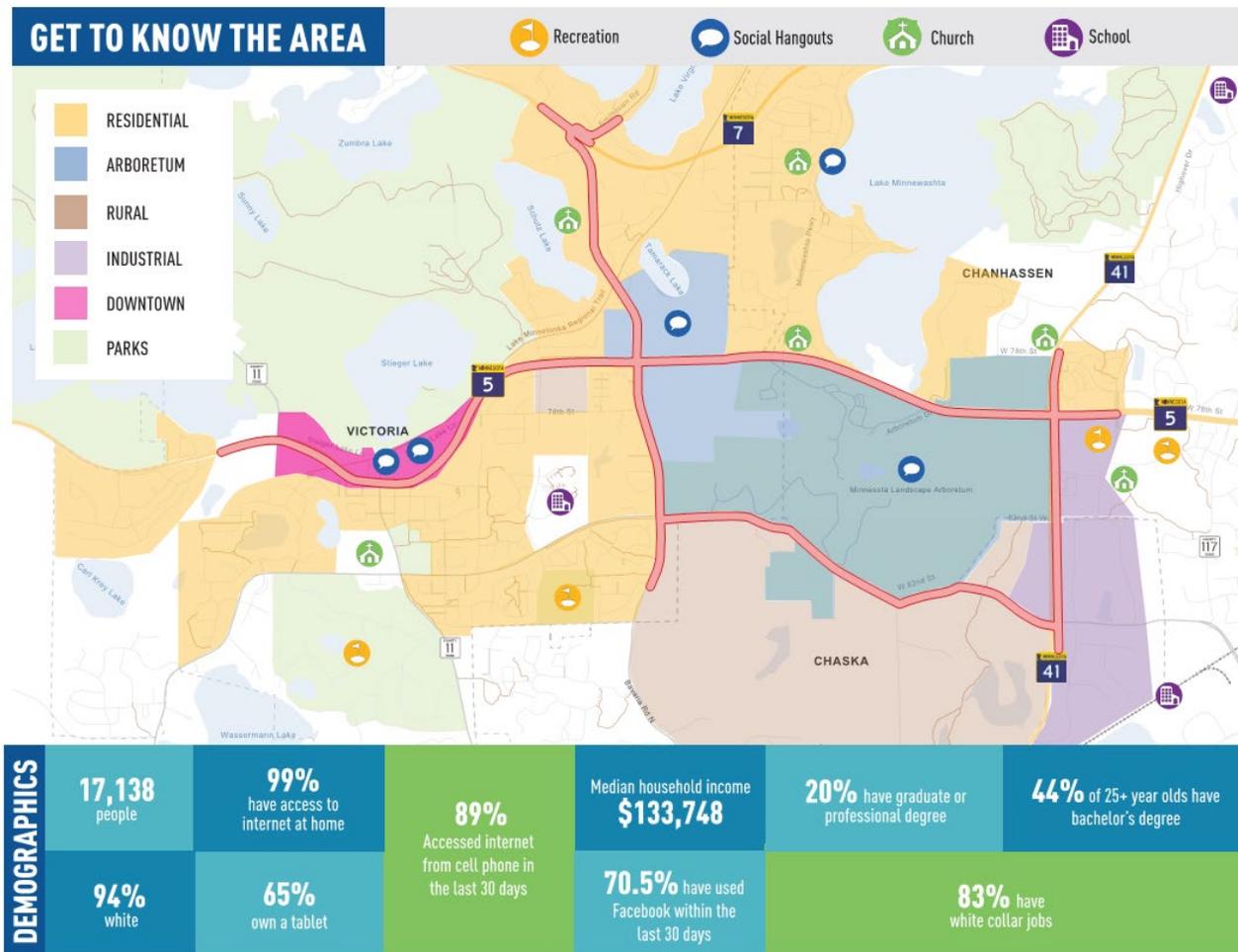
Victoria	7,345	10,000	12,600	15,400	2,435	3,500	4,570	5,700	1,502	2,100	2,380	2,600
Waconia	10,697	14,200	20,600	24,000	3,909	5,400	8,000	9,500	5,578	7,600	8,700	10,200
Waconia Township	1,228	1,320	1,430	1,480	434	490	560	600	98	240	330	380
Watertown	4,205	4,900	6,200	7,200	1,564	1,900	2,500	2,900	556	740	830	1,200
Watertown Township	1,204	1,160	1,120	1,100	468	490	500	500	392	410	420	430
Young America Township	715	670	660	670	266	270	280	300	119	120	120	120
<b>Carver County Total</b>	<b>91,042</b>	<b>108,520</b>	<b>135,960</b>	<b>161,240</b>	<b>32,891</b>	<b>40,940</b>	<b>52,180</b>	<b>62,590</b>	<b>31,836</b>	<b>42,190</b>	<b>48,100</b>	<b>54,738</b>

\*Only includes Carver County portion of city's growth area.

**Figure 3: Population, Household, and Employment Forecasts in Carver County**

*Age*

In 2016, the median age of Carver County residents was 38 years old. About 11 percent of residents are age 65 or older; as the general population ages, this percentage is expected to increase. Currently, about 14% of Carver County's population is under the age of 10. The median age through the study area is 39-years-old. **Figure 3** shows age distribution within the study area in comparison to Carver County.



**Figure 2. Study Area Demographic Snapshot**

The City of Chaska’s Draft 2040 Comprehensive Plan identifies school age children ages five to 14 as the largest age group in the population in both 2000 and 2015. However, this age group has decreased over that period while ages between 35 and 65 increased significantly.

The City of Victoria is anticipated to continue to attract empty nesters which will contribute to an increase in the median age over the next several years. Despite that, data from the City’s Comprehensive Plan suggests the City continues to grow as a good location for families with children. Data indicates that Victoria will generally continue to have a higher proportion of residents in the under 15, 35 to 44, and 45 to 54-year-old age ranges when compared to other communities in the area.

In 2015, the largest segment of Chanhassen’s population was 45 to 54 years old. Strong growth is anticipated across all age groups for the next 20 years. The City anticipates it will continue to attract a disproportionately large share of the region’s young families with children given its location in eastern Carver County and amenities.

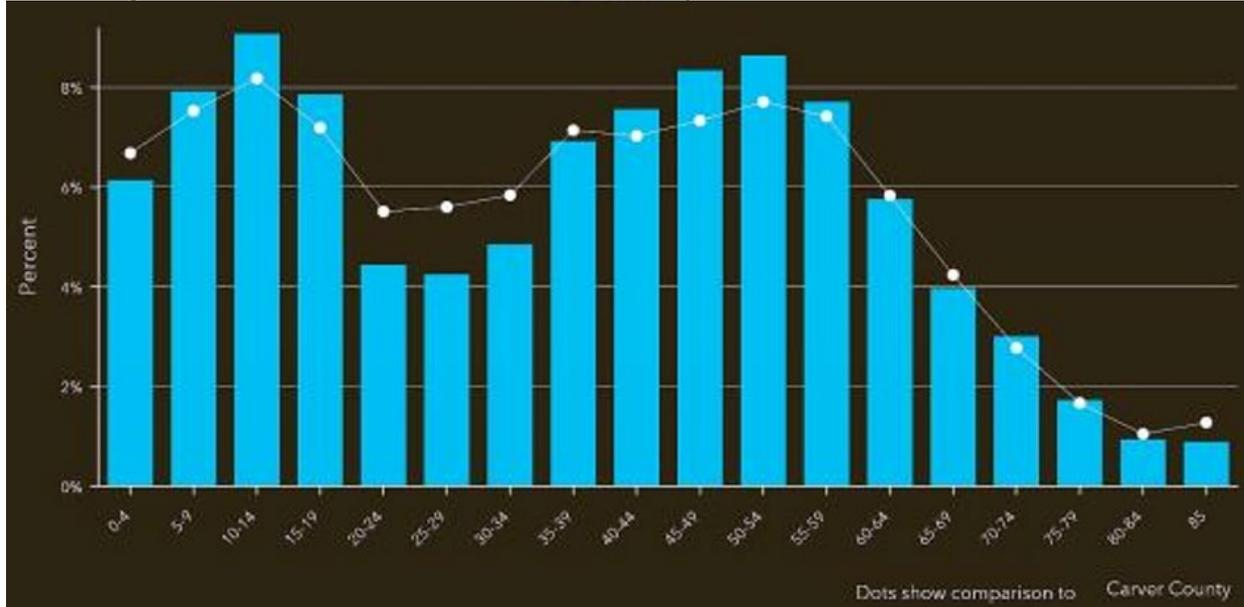
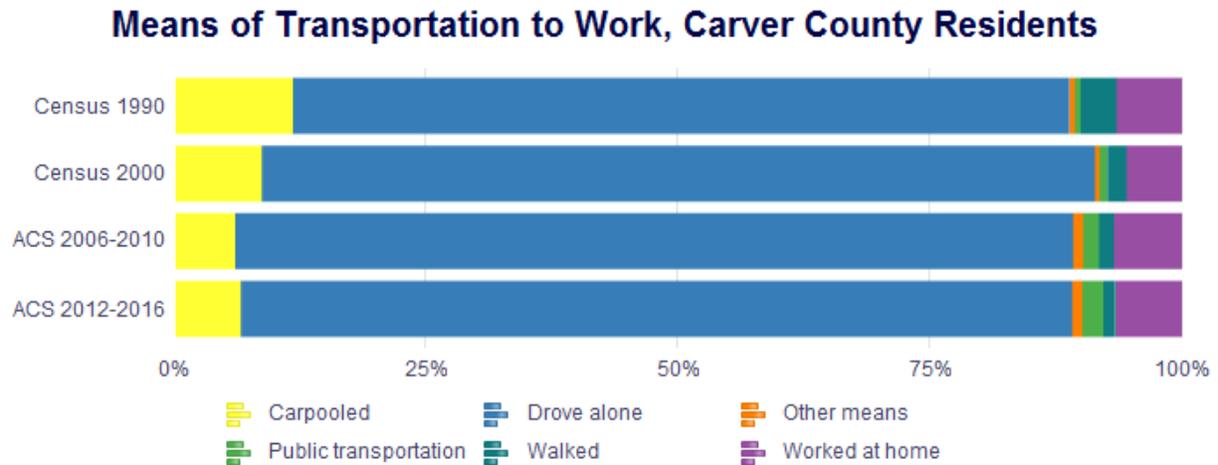


Figure 3. Age distribution in the planning area compared to Carver County. Source: ESRI Business Analyst

### Employment

Carver County is host to over 39,000 jobs, which is expected to increase over the next 20 years as population increases. By 2040, it is estimated there could be nearly 54,000 jobs located within Carver County. About one-third of Carver County’s total employment is in the City of Chaska. Most Carver County residents commute to work by personal vehicle (about 82 percent of County residents) (Figure 4).

The City of Chaska had an estimated 12,855 jobs in 2017 and is projected to bring in another 3,000 jobs from 2017 to 2040. 50% of total jobs in the City are Manufacturing and Educational Services. Victoria was estimated to have 1,100 jobs within the city as of 2016 which is anticipated to grow by nearly 1,500 positions through 2040. The City has traditionally functioned as a bedroom community, a trend that is anticipated to continue



**Figure 4 Source: Metropolitan Council, from US Census and American Community Survey Data**  
 for the next 25 years. The City of Chanhassen has seen a slight decline in the total number of employees among major employers since the adoption of the 2030 Comprehensive Plan. Despite this, the city has been attracting new office industrial and commercial businesses, bringing in over 700 new manufacturing jobs in the last 10 years.

The study area has 6,500 jobs in 440 businesses, with services and manufacturing being the largest industries. Workers who live here are primarily white-collar professionals. Households are tech savvy, with virtually all having access to the internet. This is one of the most affluent and well-educated communities in the region.

## Transportation System Characteristics

### Functional Classification

Several arterial roadways pass through the study area. TH 5 (Arboretum Boulevard) is an A minor expander providing a major east/west connection through Victoria, Chaska, and Chanhassen in the study area. It carries high volumes of personal vehicles and freight between its connections with CSAH 11 (Victoria Drive), CSAH 13 (Rolling Acres Road), and TH 41 (Chestnut Street N/Hazeltine Boulevard).

TH 41 (Hazeltine Boulevard/Chestnut Street) and CSAH 13 (Rolling Acres Road) are also A minor expanders in the study area. TH 41 (Hazeltine Boulevard/Chestnut Street) carries high volumes of personal vehicle and freight connecting to the regional road network via TH 212 and TH 169 to the south, nearby principal arterial roadways. CSAH 13 (Rolling Acres Road) provides a short connection from TH 5 (Arboretum Boulevard) to TH 7, a principal arterial to the north. A small portion of TH 7 at its intersection with CSAH 13 (Rolling Acres Road) is included in this study.

CSAH 13 (Bavaria Road) is an other arterial roadway providing a connection between TH 5 (Arboretum Boulevard) and CSAH 10 (Engler Boulevard) to the south. 82<sup>nd</sup> Street West/Lyman Boulevard is identified in the Carver County Comprehensive Plan and by the Metropolitan Council as an other minor arterial roadway running parallel to TH 5 (Arboretum Boulevard). Currently, 82<sup>nd</sup> Street West is a gravel road with low traffic volumes.

## Study Area Characteristics

The project was divided into six subareas given varying contexts when considering land uses served, roadway typical sections, and other traffic related characteristics (**Appendix A – Figure 5**). This section contains information for each subarea related to land use, traffic operations, safety, access, and non-motorized connections. This section concludes with a review of known social, economic, and environmental (SEE) resources and stormwater considerations within the study area. Study segments described in this section are as follows:

- Highway 5 West Subarea – One quarter of a mile west of CSAH 11 (Victoria Drive) to CSAH 13 (Rolling Acres Road/Bavaria Road)
- Highway 5 East Subarea – CSAH 13 (Rolling Acres Road)/CSAH 13 (Bavaria Road) to TH 41 (Chestnut Street)
- Rolling Acres Road Subarea – TH 5 (Arboretum Boulevard) to TH 7
- Bavaria Road Subarea – TH 5 (Arboretum Boulevard) to 82<sup>nd</sup> Street West
- 82<sup>nd</sup> Street West/Lyman Boulevard Subarea – Bavaria Road to TH 41 (Chestnut Street)
- Highway 41 Subarea – Lyman Boulevard to just north of West 78<sup>th</sup> St

Several figures are appended to this document relating to the existing characteristics described within each segment of the study area in the text below. Refer to **Appendix A** for the following graphics:

- **Figure 5** – Project Subareas
- **Figures 6-7** – Existing and Future Land Use
- **Figure 8** – Roadway Functional Class
- **Figure 9** – Roadway Jurisdiction
- **Figures 10-15** – Crash History (2013 – 2017) Map Series
- **Figures 16-21** – Access Inventory Map Series
- **Figures 22-30** – Pedestrian and Bicycle Connections Map Series
- **Figures 31-32** – AM and PM Peak Hour Operations
- **Figure 33** – Transit

## TH 5 West Subarea

The TH 5 West Subarea includes Carver County TH 5 (Arboretum Boulevard) west of the CSAH 13 (Rolling Acres Road)/Bavaria Road intersection. This entire segment is a two-lane undivided roadway with posted speed limits ranging from 35 mph from .25 miles west of Victoria Drive to Commercial Avenue to 55 mph from Commercial Avenue through CSAH 13 (Rolling Acres Road)/CSAH 13 (Bavaria Road), the eastern terminus of the segment. The study segment is hilly terrain with many horizontal curves, and numerous wetland areas. There are no parking accommodations on TH 5 (Arboretum Boulevard).

### *Land Use and Major Traffic Generators*

This segment passes through single-family residential and open space as it moves east from Auburn Lake. Industrial and commercial uses begin at CSAH 11 (Victoria Drive) and continue to the eastern end of Stieger Lake Lane as TH 5 (Arboretum Boulevard) passes by downtown Victoria. Single-family residential is the dominant land use in this segment. Land on the south side of TH 5 (Arboretum Boulevard) is being developed into multi-family residential which is adjacent to some existing multi-family residential closer to CSAH 13 (Rolling Acres Road/Bavaria Drive).

Victoria's downtown is a major traffic generator with various commercial, institutional, and multi-family uses in a small area. The City's Downtown Master Plan calls for significant mixed-use development known as the West Side Development in the northwest part of town. Additional mixed-use and residential development will only increase the draw to the downtown area. This may also apply more traffic pressure on the intersection of TH 5 (Arboretum Boulevard) and CSAH 11 (Victoria Drive) as Stieger Lake Lane is realigned to terminate at CSAH 11 (Victoria Drive).

The City of Victoria Fire Department has access to TH 5 (Arboretum Boulevard) via 80<sup>th</sup> Street.

### *Existing Traffic Operations*

This segment of TH 5 (Arboretum Boulevard) carries a range of 13,000 to 13,900 vehicles per day (vpd) based on 2017 Average Annual Daily Traffic Volumes (AADT) provided by MnDOT. This segment also carries a range of 360 to 430 heavy commercial vehicles per day.

The average intersection control delay is a volume-weighted average of delay experienced by all motorists entering the intersection on all intersection approaches. Intersections and each intersection approach are given a ranking from Level of Service (LOS) A through LOS F. LOS A indicates the best traffic operation, with vehicles experiencing minimal delays. LOS A through D is generally perceived to be acceptable to drivers. LOS E indicates that an intersection is operating at, or very near, its capacity and that drivers experience considerable delays. LOS F indicates an intersection where demand exceeds capacity and drivers experience substantial delays.

Results of the existing traffic operations analysis indicate that the TH 5 (Arboretum Boulevard)/CSAH 13 (Rolling Acres Road/Bavaria Road) and TH 5 (Arboretum

Boulevard)/Park Drive intersections operate at an overall LOS F during the a.m. peak hour. Queues from the TH 5 (Arboretum Boulevard)/CSAH 13 (Rolling Acres Road/Bavaria Road) intersection extend west and impact operations at TH 5 (Arboretum Boulevard) intersections with Park Drive, 78th Street, and Stieger Lake Lane. Queues have also been observed at TH 5 (Arboretum Boulevard) intersections with CSAH 11 (Victoria Drive), Stieger Lake Lane, and Park Drive within this subarea.

The intersections of TH 5 (Arboretum Boulevard) with CSAH 11 (Victoria Drive) and CSAH 13 (Rolling Acres Road/Bavaria Road) are signalized intersections in this subarea. All other intersections are side street stop controlled.

#### *2040 No-Build Traffic Conditions*

Scenario 1 is the no-build traffic conditions scenario in the Carver County model. It shows 2040 forecasted volumes over the existing roadway network. Model results shows TH 5 (Arboretum Boulevard) traffic volumes as over capacity throughout the study area, from TH 41 (Hazeltine Boulevard) to CSAH 11 (Victoria Drive).

#### *Crash History (2013-2017)*

Historic crash data in the study area was analyzed in the Existing Conditions Safety Memorandum (**Appendix D**). This analysis used data obtained from MnDOT for January 1, 2016 through December 31, 2017, as well as data from MnDOT's Minnesota Crash Mapping Analysis Tool (MnCMAT) for January 1, 2013 through December 31, 2015. The two crash data sets were combined to capture the most recent five-year period of record.

For crash summary purposes this subarea is assumed to extend from the west TH 5 (Arboretum Boulevard)/CSAH 11 (Victoria Drive) intersection to west of the TH 5 (Arboretum Boulevard)/CSAH 13 (Rolling Acres Road/Bavaria Road) intersection (**Figure 10**). The key results include:

- 32 intersection crashes; all intersections have a critical crash index less than 1.0
- 36 non-intersection crashes; subarea has a corridor critical crash index less than 1.0 (this analysis excludes intersection crashes)
- 1 fatal crash in the 2008-2017 timeframe, west of the west TH 5 (Arboretum Boulevard)/CSAH 11 (Victoria Drive) intersection
- No non-fatal severe crashes in the 2013-2017 timeframe
- No bike/pedestrian crashes in the 2013-2017 timeframe

#### *Access*

There are 26 access locations in this segment serving public streets along with commercial, residential, and agricultural properties. This segment exceeds public access spacing standards set by MnDOT and Carver County from CSAH 11 (Victoria Drive) to Commercial Avenue along TH 5 (Arboretum Boulevard) (**Figure 16**). The rest of the TH 5 (Arboretum Boulevard) corridor in this subarea meets public access standards.

The corridor does not meet private access standards for minor arterials due to the presence of several private driveways with direct access to TH 5 (Arboretum Boulevard). Six residential full access locations exist on the approach to CSAH 13 (Rolling Acres

Road/Bavaria Road) that are not consistent with the roadway’s arterial classification and are close to the intersection. These accesses are also located where a trail gap exists on the north side of TH 5 (Arboretum Boulevard). This area will require further access review.

#### *Pedestrian and Bicycle Connections*

Information from the Draft 2040 Carver County Comprehensive Plan regarding regional trail facilities is depicted in **Figure 22**. The regional facilities in or close to the TH 5 West Subarea are the Lake Minnetonka LRT Regional Trail (“LRT Regional Trail”) and the Baker Carver Regional Trail. Within this subarea, the LRT Regional Trail generally skirts the north edge of the downtown Victoria area. It crosses under TH 5 west of the primary downtown area and ends approximately 1,000 feet past this point. It is planned to be extended in the future. TH 5 (Arboretum Boulevard) through this subarea and the entire study area is a Regional Bicycle Transportation Network (RBTN) Tier 1 alignment. Hwy 11 (Victoria Drive) south of TH 5 is a RBTN Tier 2 Corridor.

More detailed local non-motorized information is provided in **Figure 23**. There currently are no non-motorized facilities along TH 5 through the subarea except for a sidewalk along a two block stretch of the downtown area and approximately ¼ mile of trail along the north side of the highway east of Park Drive. In general, speed limits drop as the roadway passes through downtown Victoria but the roadway is still designed like a highway with limited accommodations for downtown pedestrian traffic.

#### TH 5 East Subarea

The TH 5 East Subarea includes TH 5 (Arboretum Boulevard) east of the CSAH 13 (Rolling Acres Road/Bavaria Road) intersection. This entire segment is a two-lane undivided roadway with a posted speed limit 55 mph through TH 41 (Chestnut Street/Hazeltine Boulevard) the eastern terminus of the segment. The study segment is hilly terrain with many horizontal curves and numerous wetland areas. There are no parking accommodations on TH 5 (Arboretum Boulevard).

#### *Land Use and Major Traffic Generators*

This segment includes agricultural land leading into single family and rural residential uses traveling east from CSAH 13 (Rolling Acres Road/Bavaria Road). The Arboretum is the dominant land use in the eastern section of this segment and also a major traffic generator for the area.

Minnewashta Lake Regional Park is located on the north and provides area recreation. This park is accessed via TH 41 (Chestnut Street). A large office industrial complex is located east of the TH 5 (Arboretum Boulevard)/TH 41 (Chestnut Street) intersection along with single- and multi-family residential development that all generate ample traffic along TH 5 (Arboretum Boulevard).

The Chanhassen Recreation Center is located just under a mile east of the TH 5 (Arboretum Boulevard)/TH 41 (Chestnut Street) intersection providing a destination for area residents. Paisley Park is a tourist attraction just over a mile and a half east of the TH 5 (Arboretum Boulevard)/TH 41 (Chestnut Street) intersection which draws visitors from other areas.

Land uses within and adjacent to the planning area are not anticipated to change in the 2040 planning horizon. Some residential development is anticipated roughly 1.5 miles east of TH 41 (Hazeltine Boulevard) and north of TH 5 (Arboretum Boulevard) in the near term.

#### *Existing Traffic Operations*

This segment of TH 5 (Arboretum Boulevard) carries an estimated 26,000 vpd and an estimated 730 heavy commercial vpd (2012 data). Results of the existing traffic operations analysis indicate that the TH 5 (Arboretum Boulevard)/TH 41 (Hazeltine Drive) intersection operates at an overall LOS F during the p.m. peak hour. The TH 5 (Arboretum Boulevard) intersections with Minnewashta Parkway and Crimson Bay Road have legs that also operate at LOS F. All three intersections exhibit delays at or above two minutes in the p.m. peak hour.

#### *2040 No-Build Traffic Conditions*

Scenario 1 is the no-build traffic conditions scenario in the Carver County model. It shows 2040 forecasted volumes over the existing roadway network. Model results shows TH 5 (Arboretum Boulevard) traffic volumes as over capacity throughout the study area, from TH 41 (Hazeltine Boulevard) to CSAH 11 (Victoria Drive).

#### *Crash History (2013-2017)*

For crash summary purposes, this subarea is assumed to include the TH 5 (Arboretum Boulevard)/CSAH 13 (Rolling Acres Road/Bavaria Road) intersection and the TH 5 (Arboretum Boulevard)/TH 41 (Hazeltine Boulevard) intersection (**Figure 11**). The key results from the Existing Conditions Safety Memorandum include:

- 140 intersection crashes; the TH 5 (Arboretum Boulevard)/CSAH 13 (Rolling Acres Road/Bavaria Road) intersection and the TH 5 (Arboretum Boulevard)/TH 41 (Hazeltine Boulevard) intersections are critical crash intersections
- 62 non-intersection crashes; subarea is a critical crash corridor (this analysis excludes intersection crashes)
- 1 fatal crash in the 2008-2017 timeframe, in the vicinity of Lone Cedar Lane
- No non-fatal severe crashes in the 2013-2017 timeframe
- No bike/pedestrian crashes in the 2013-2017 timeframe

#### *Access*

There are 15 access locations in this segment serving public streets along with commercial, residential, and agricultural properties. This entire segment meets public access spacing standards set by MnDOT and Carver County (**Figure 17**). However, it does not meet private access standards for minor arterials due to the presence of several private driveways with direct access to TH 5 (Arboretum Boulevard).

#### *Pedestrian and Bicycle Connections*

Please refer to **Figure 22** for regional trail information and **Figure 24** for more detailed subarea information. Based on its 2018 Master Plan as summarized previously, the Highway 5 Regional Trail is proposed by Carver County to commence where the LRT Regional Trail crosses Hwy 13 (Rolling Acres Road). It is proposed to use the existing local

trail (with improvements) along Hwy 13 (Rolling Acres Road) and TH 5 (Arboretum Boulevard) east to Minnewashta Parkway where it would cross under the highway using an existing underpass. From there it is proposed to be built on new alignment south of TH 5 (Arboretum Boulevard) through the Arboretum and pass under Hwy 41 (Hazeltine Boulevard) using a new underpass. East of Hwy 41 (Hazeltine Boulevard), it is proposed to continue along TH 5 (Arboretum Boulevard) to the Carver County/Hennepin County boundary. TH 5 (Arboretum Boulevard) is a RBTN Tier 1 Alignment throughout the entire study area.

### Rolling Acres Road Subarea

The Rolling Acres Road Subarea includes CSAH 13 (Rolling Acres Road) from TH 7 in the north to TH 5 (Arboretum Boulevard). This section is primarily a two-lane roadway. The posted speed limit is 45 mph.

#### *Land Use and Major Traffic Generators*

CSAH 13 (Rolling Acres Road) north of Overlook Lane/Tamarack Trail is primarily surrounded by single-family residential properties with one church on the western side across from Inter Laken Road. Portions of the Arboretum make up adjacent land uses along the corridor south of Overlook Lane/Tamarack Trail.

The corridor's connections to TH 7 and TH 5 (Arboretum Boulevard) generate traffic on this roadway. Also, the U of M AppleHouse and the U of M Horticultural Research Center are destinations for traffic near the TH 5 (Arboretum Boulevard)/CSAH 13 (Rolling Acres Road) intersection.

#### *Existing Traffic Operations*

This segment of CSAH 13 (Rolling Acres Road) carries a range of 10,000 to 11,300 vpd. Results of the existing traffic operations analysis indicate that the TH 7/CSAH 13 (Rolling Acres Road) intersection operates at an overall LOS E exhibiting delays of nearly one minute during the p.m. peak hour.

#### *2040 No-Build Traffic Conditions*

Scenario 1 is the no-build traffic conditions scenario in the Carver County model. For CSAH 13 (Rolling Acres Road), the scenario forecasts traffic as under capacity from TH 7 to Interlaken, and over capacity from Interlaken to TH 5 (Arboretum Boulevard).

#### *Crash History (2013-2017)*

For crash summary purposes, this subarea is assumed to include the TH 7/CSAH 13 (Rolling Acres Road) intersection, but not the TH 41 (Arboretum Boulevard)/CSAH 13 (Rolling Acres Road/Bavaria Road) intersection (**Figure 12**). The key results of the Existing Conditions Safety Memorandum include:

- 22 intersection crashes; the TH 7/CSAH 13 (Rolling Acres Road) intersection is a critical crash intersection
- 35 non-intersection crashes; subarea is a critical crash corridor (this analysis excludes intersection crashes)

- No fatal crashes in the 2013-2017 timeframe
- No non-fatal severe crashes in the 2013-2017 timeframe
- No bike/pedestrian crashes in the 2013-2017 timeframe

### *Access*

There are 25 access locations in this segment serving public streets and trails along with commercial, residential, and agricultural properties. This entire segment meets public access spacing standards set by MnDOT and Carver County (**Figure 18**).

However, it does not meet private access standards for minor arterials due to the presence of several private driveways with direct access to CSAH 13 (Rolling Acres Road).

### *Pedestrian and Bicycle Connections*

As depicted in **Figure 26**, the only existing regional trail in this subarea is the LRT Regional Trail which crosses Hwy 13 (Rolling Acres Road) at-grade approximately 2,000 feet north of TH 5 (Arboretum Boulevard). As discussed in the TH 5 East Subarea heading above, the proposed TH 5 Regional Trail commences at the LRT Regional trail and proceeds along Hwy 13 (Rolling Acres Road) to the south prior to turning east along TH 5 (Arboretum Boulevard). Residents have expressed concern with this trail crossing due to sightlines and traffic speeds. Carver County is currently working on a design for an enhanced crossing with a pedestrian flashing system.

There is a local trail along the east side of Hwy 13 (Rolling Acres Road) beginning at TH 7 and extending south only approximately 500 feet. This segment has a signal-protected, marked crossing of TH 7 connecting to trail along Smithtown Road north of TH 7. The trail along Hwy 13 (Rolling Acres Road) resumes on the east side of the roadway approximately ¼ mile to the south, and continues all the way to TH 5 (Arboretum Boulevard). Thus, there is an approximately ¼ mile gap in a full trail connection between TH 7 (and to the north) and TH 5 (Arboretum Boulevard). This gap is specifically identified in the draft 2040 Victoria Comprehensive Plan.

### Bavaria Road Subarea

The Bavaria Road Subarea includes CSAH 13 (Bavaria Road) from TH 5 (Arboretum Boulevard) to 82nd Street West, roughly an eighth of a mile south of CSAH 18. This section is primarily a two-lane roadway. The posted speed limit is 45 mph.

### *Land Use and Major Traffic Generators*

The west side of CSAH 13 (Bavaria Road) south of TH 5 (Arboretum Boulevard) is a mix of single- and multi-family residential with some agricultural to the west. The east side is primarily Arboretum land with one agricultural property adjacent to the central portion of the segment.

Multi-family uses in the northern part of this segment are planned for expansion in Victoria's future land use plan, which will add some additional traffic along this roadway accessing the property via 78<sup>th</sup> Street.

The east side of this segment, south of 82nd Street West, is currently occupied by single-family/rural residential and agricultural uses. This area is considered the North Chaska Greenbelt and is planned to become entirely rural residential uses by the 2040 planning horizon.

The Holy Family Catholic High School is located west of the corridor, north of CSAH 18, with access from the adjacent Kochia Lane. The Victoria Recreation Center and Diethelm Park are also located along Kochia Lane, south of CSAH 18. Proximity of these properties to the corridor and available access indicate that CSAH 13 (Bavaria Road) is likely used to access these properties from surrounding areas.

#### *Existing Traffic Operations*

This segment of CSAH 13 (Bavaria Road) carries a range of 5,300 to 7,400 vpd. Results of the existing traffic operations analysis indicate that all intersections in this subarea operate at an overall LOS D or better during the a.m. and p.m. peak hours.

#### *2040 No-Build Traffic Conditions*

Scenario 1 is the no-build traffic conditions scenario in the Carver County model. For CSAH 13 (Bavaria Road), the scenario forecasts traffic as approaching capacity from TH 5 (Arboretum Boulevard) to 78<sup>th</sup> Street, and under capacity from 78<sup>th</sup> Street to 82<sup>nd</sup> Street West.

#### *Crash History (2013-2017)*

For crash summary purposes, this subarea is assumed to include the CSAH 13 (Bavaria Road)/CSAH 18/82<sup>nd</sup> Street West intersection, but not the TH 5 (Arboretum Boulevard)/CSAH 13 (Rolling Acres Road/Bavaria Road) intersection (**Figure 13**). The key results of the Existing Conditions Safety Memorandum include:

- 13 intersection crashes; the CSAH 13 (Bavaria Road)/CSAH 18/82nd Street intersection is a critical crash intersection
- 10 non-intersection crashes; this subarea has a corridor critical crash index less than 1.0 (this analysis does not include intersection crashes)
- No fatal crashes in the 2008-2017 timeframe
- No non-fatal severe crashes in the 2013-2017 timeframe
- No bike/pedestrian crashes in the 2013-2017 timeframe

#### *Access*

There are 16 access locations in this segment serving public streets and trails along with commercial, residential, and agricultural properties. This entire segment meets public access spacing standards set by MnDOT and Carver County (**Figure 19**). However, it does not meet private access standards for other arterials due to the presence of several private driveways with direct access to CSAH 13 (Rolling Acres Road).

#### *Pedestrian and Bicycle Connections*

There are no existing regional trails in this subarea or future regional trail search areas.

As depicted in **Figure 25**, there is an existing local trail on the west side of Hwy 13 (Bavaria Road) between TH 5 (Arboretum Boulevard) and 78<sup>th</sup> St, and between Applewood Circle

(north) and Hwy 18/82<sup>nd</sup> St West. The City of Victoria has identified the area between these segments as a trail gap, and has also identified the entire east side of Hwy 13 (Bavaria Road) between TH 5 (Arboretum Boulevard) and Hwy 18/82<sup>nd</sup> St West as a trail gap.

### 82<sup>nd</sup> Street West/Lyman Boulevard Subarea

The 82<sup>nd</sup> Street West/Lyman Boulevard Subarea includes 1.5 miles of 82<sup>nd</sup> Street West/Lyman Boulevard from CSAH 13 (Bavaria Road) to a planned .25-mile extension of Lyman Boulevard extending to TH 41 (Chestnut Street). This section of Lyman Boulevard is not yet constructed but is anticipated. Currently, 82<sup>nd</sup> Street West/Lyman Boulevard continues northeast from this location and terminates at TH 41 (Chestnut Street) roughly .5 miles north of the subarea terminus. This section is mostly gravel roadway aside from the short segment of Lyman Boulevard extending from TH 41 (Chestnut Street). The posted speed limit is 45 mph.

#### *Land Use and Major Traffic Generators*

82<sup>nd</sup> Street West/Lyman Boulevard traverses the southern border of the Arboretum property between CSAH 13 (Bavaria Road) and TH 41 (Chestnut Street). The southern side of the roadway is primarily agricultural with rural residential and some industrial uses to the east on the approach to TH 41 (Chestnut Street). The short segment of Lyman Boulevard in the subarea extending west from TH 41 (Chestnut Street) is surrounded by industrial uses.

This segment is currently a gravel roadway and is likely to be traveled by local traffic and agricultural vehicles. Carver County has plans to align 82<sup>nd</sup> Street West with Lyman Boulevard. This shift will undoubtedly bring improvements that increase mobility on the corridor providing another connection to area industrial uses on TH 41 from Victoria and points west.

#### *Existing Traffic Operations*

82<sup>nd</sup> Street West carries a range of 390 to 455 vpd. Results of the existing traffic operations analysis indicate that all intersections in this subarea operate at an overall LOS B or better during the a.m. and p.m. peak hours.

#### *2040 No-Build Traffic Conditions*

Scenario 1 is the no-build traffic conditions scenario in the Carver County model. The portion of 82<sup>nd</sup> Street West and Lyman Boulevard between CSAH 13 (Bavaria Road) and TH 41 (Chestnut Street) is not modeled in Scenario 1. West of CSAH 13 (Bavaria Road), CSAH 18 is forecasted to be under capacity.

#### *Crash History (2013-2017)*

For crash summary purposes, this subarea is assumed to not include the CSAH 13 (Bavaria Road)/CSAH 18/82<sup>nd</sup> Street West intersection, the TH 41 (Hazeltine Boulevard)/82<sup>nd</sup> Street West intersection, or the TH 41 (Hazeltine Boulevard)/CSAH 18 (Lyman Boulevard) intersection (**Figure 15**). Only the 82<sup>nd</sup> Street West/McKnight Road intersection and

intersecting roadway sections remain part of this summary. The key results of the Existing Conditions Safety Memorandum include:

- 2 intersection crashes; the 82nd Street West/McKnight Road intersection is a critical crash intersection
- 13 non-intersection crashes; the subarea is a critical crash corridor (this analysis excludes intersection crashes)
- No fatal crashes in the 2008-2017 timeframe
- No non-fatal severe crashes in the 2013-2017 timeframe
- No bike/pedestrian crashes in the 2013-2017 timeframe

### *Access*

There are 19 access locations along 82nd Street West/Lyman Boulevard in this segment serving public streets along with residential and agricultural properties. This entire segment meets public access spacing standards set by MnDOT and Carver County (**Figure 20**). There are 6 access locations along Lyman Boulevard in this segment including commercial access and to TH 41 (Hazeltine Boulevard/Chestnut Street). However, it is inconsistent with private access spacing standards set through Carver County ordinance. As a potential future county highway, minor arterial access separation of 500 feet for driveways will apply.

### *Pedestrian and Bicycle Connections*

The 2040 Carver County Comprehensive Plan does not identify any existing or planned regional trails in this subarea, although it does identify a proposed City trail along 82<sup>nd</sup> St West. **Figure 27** depicts more detailed information, including the City of Chaska's data identifying proposed City trail along this study segment. It also depicts the existing trail along the north side of Hwy 18 (Lyman Boulevard) west of Hwy 41 (Chestnut Street North). The *CSAH 18 from TH 41 to CSAH 13 (82nd St West) Alternatives Analysis Technical Memorandum* summarized previously identifies a 10-foot trail on one side of the roadway as part of the Preferred Alternative.

### TH 41 Subarea

The TH 41 Subarea includes TH 41 (Chestnut Street) from just north of 78<sup>th</sup> Street West south to Lyman Boulevard east of the CSAH 13 (Rolling Acres Road/Bavaria Road) intersection. This section is primarily a two-lane roadway with some portions divided by painted medians. Between 78<sup>th</sup> Street West and TH 5 (Arboretum Boulevard), the posted speed limit is 55 mph. This changes to 50 mph south of TH 5 (Arboretum Boulevard).

### *Land Use and Major Traffic Generators*

The Arboretum occupies the western side of TH 41 (Chestnut Street/Hazeltine Boulevard) from 78<sup>th</sup> Street West south to 82nd Street West. The eastern side of TH 41 (Chestnut Street/Hazeltine Boulevard), north of TH 5 (Arboretum Boulevard) is occupied by multi-family residential. Major industrial uses are located on the eastern side of TH 41 (Chestnut Street/Hazeltine Boulevard), south of TH 5 (Arboretum Boulevard) which expands to both sides of the corridor south of 82nd Street West.

This major industrial area serves as a major freight generator for TH 41 (Chestnut Street/Hazeltine Boulevard). Chanhassen's High School is located just over a mile from this segment along Lyman Boulevard providing a major destination and traffic generator as well. TH 41 (Chestnut Street) is generally a major regional freight corridor with connections to TH 212, TH 169, TH 5 (Arboretum Boulevard), and TH 7. This corridor also provides direct access to downtown Chaska four miles south.

#### *Existing Traffic Operations*

TH 41 (Hazeltine Boulevard/Chestnut Street) carries an estimated 13,700 vpd and 650 heavy commercial vpd. Results of the existing traffic operations analysis indicate that all intersections in this subarea operate at an overall LOS C or better during the a.m. and p.m. peak hours.

#### *2040 No-Build Traffic Conditions*

Scenario 1 is the no-build traffic conditions scenario in the Carver County model. For TH 41 (Chestnut Street), the scenario forecasts traffic as over capacity from 78<sup>th</sup> Street West to TH 5 (Arboretum Boulevard) and approaching capacity from TH 5 (Arboretum Boulevard) to Lyman Boulevard.

#### *Crash History (2013-2017)*

For crash summary purposes, this subarea is assumed to include the TH 41 (Hazeltine Boulevard)/82<sup>nd</sup> Street West and TH 41 (Hazeltine Boulevard)/CSAH 18 (Lyman Boulevard) intersections, but not the TH 5 (Arboretum Boulevard)/TH 41 (Hazeltine Boulevard) intersection (**Figure 14**). The key results of the Existing Conditions Safety Memorandum include:

- 37 intersection crashes; all intersections have a critical crash index less than 1.0
- 21 non-intersection crashes; subarea has a corridor critical crash index less than 1.0 (this analysis excludes intersection crashes)
- No fatal crashes in the 2008-2017 timeframe
- No non-fatal severe crashes in the 2013-2017 timeframe
- One bike/pedestrian crash in the 2013-2017 timeframe, occurred south of the TH 5 (Arboretum Boulevard)/TH 41 (Hazeltine Boulevard) intersection

#### *Access*

There are seven access locations in this segment serving public streets along with commercial and agricultural properties. This entire segment meets public and private access spacing standards set by MnDOT and Carver County (**Figure 21**).

#### *Pedestrian and Bicycle Connections*

The Draft 2040 Carver County Comprehensive Plan shows no existing or planned regional trail along Hwy 41 (Hazeltine Boulevard) in the study area. It does identify that Hwy 41 (Hazeltine Boulevard) through the study area is a RBTN Tier 2 alignment.

The narrative of the plan identifies that a Hwy 41 regional trail between the Hennepin County boundary to the north and downtown Chaska to the south would provide a key non-motorized link in eastern Carver County, and that developing a trail plan for this

corridor will result from a master plan process done in cooperation with other managing agencies.

As depicted in **Figure 28**, there is an existing City trail on the east side of Hwy 41 (Hazeltine Boulevard) and north of TH 5 (Arboretum Boulevard). Chaska data shows a proposed City trail on the west side of Hwy 41 (Chestnut Street) between 82<sup>nd</sup> St West and Hwy 18 (Lyman Boulevard).

### **Social, Economic, and Environmental (SEE) Considerations**

An environmental screening was completed for the entire study area. This screening included a high-level review of previously identified social, economic and environmental (SEE) resources. The following key findings are summarized from the environmental screening attached in **Appendix D**:

- *Section 4(f)/6(f)*: There are numerous trails and parks in the project area which would need Section 4(f) considerations. The Arboretum is also a Section 4(f) resource, as are historic properties in the project area. Additionally, the Carver Park Reserve and the Arboretum have received federal funding in the past which makes them Section 6(f) resources, requiring additional review, coordination, and potential mitigation actions.
- *Traffic noise*: There are various noise receptors within the study area corridors. This includes residential receptors, as well as Section 4(f) and/or 6(f) resources (parks, trails, Arboretum) and historic sites. In general, projects with federal funding involving the expansion or other substantive alteration of existing roads (or construction of new roads) require detailed noise analysis and outreach procedures.
- *Historic/archaeological*: The most notable historic sites in the study area relative to roadway planning and design are a number of structures, eligible for listing in the National Register of Historic Places, associated with past U of M agricultural research facilities (now part of the Arboretum). One group of these structures is in the northeast quadrant of the TH 5 (Arboretum Boulevard)/CSAH 13 (Rolling Acres Road) intersection, and the other is in the northwest quadrant of the TH 5 (Arboretum Boulevard)/TH 41 (Hazeltine Boulevard) intersection. Since these structures are in close proximity to TH 5 (Arboretum Boulevard) and/or TH 41, roadway planning and improvement would require careful consideration and coordination with cultural resource authorities, particularly if federal funding is involved. Improvements beyond the existing roadway footprint may need an archaeological survey to determine potential to impact unknown archaeological sites.
- *Wetlands*: National Wetlands Inventory (NWI) mapping shows that there are numerous wetland resources in the study area, and that roadway planning and design will need to consider the presence of such resources in terms of avoiding or limiting wetland impacts wherever possible.
- *Floodplain*: The existing TH 5 (Arboretum Boulevard) roadway is directly adjacent to floodplain associated with Auburn Lake East and Minnewashta Lake. It is within 500-900 feet of floodplain associated with Stieger Lake.

- *Drainage:* Approximately 85 percent of the study area is within the Minnehaha Creek Watershed District, 10 percent in the Carver County Watershed Management Organization, and five percent in the Riley Purgatory Bluff Creek Watershed District. All of these organizations have control requirements more restrictive than standard National Pollutant Discharge Elimination System requirements. Early coordination with these organizations will be very important to determine jurisdictional arrangements and associated control requirements, as well as discuss control strategies. The desired arrangement would be for one regulatory agency (likely the Minnehaha Creek Watershed District) to assume permitting authority for project work in the study area. Local soils are generally tight, which makes meeting infiltration standards challenging. There are impaired waters, which have somewhat elevated control requirements, within a mile of the study area.
- *Protected Species:* Based on US Fish and Wildlife (USFWS) information, there are two federally protected species known to be in Carver County: Northern long-eared bat (NLEB) and Rusty-patched bumble bee (RPBB). Future improvement projects would involve review using USFWS guidance, as well as potential consultation with USFWS and mitigation. Additionally, the Natural Heritage Information System (NHIS) database identified the following species within a mile of the project corridors: Minnesota Dwarf Lily (federally protected species identified within the Arboretum), and Least Darter, a Minnesota Species of Special Concern within Minnewashta Lake).

## Transit

Southwest (SW) Prime is a transit service provided by SouthWest (SW) Transit for portions of Eden Prairie, Chaska, Chanhassen, Carver, and Victoria. This is an on-demand service with rides requested through a smartphone app, website, or phone. The hours of operation are 6:30 pm to 7:00 pm Monday through Friday and 8:00 am to 6:00 pm Saturday. This service provides transfers between the Eden Prairie Zone and Chanhassen/Chaska/Carver/Victoria Zone between 10am and 3pm daily. Drop-offs and pick-ups occur at the SW Chanhassen Village Station on TH 212 and CSAH 101. Riders can connect to downtown Minneapolis/U of M via East Creek Station in Chaska, SW Village in Chanhassen, and SW Station in Eden Prairie. Service to Southdale is provided on Saturdays.

SW Prime provides service to over 430 riders per day. Just over 100 rides a day are to/from the cities of Chanhassen, Chaska, Carver, and Victoria. Five of the 100 trips per day are to/from the City of Victoria. SW does provide other services to the Arboretum during special events where attendance is high and on-site parking accommodations are low. Planned growth in the area surrounding the Arboretum has led to project partners acknowledging the need for TH 5 (Arboretum Boulevard) to accommodate future transit modes, although the implications for project design are still to be determined. The long-term vision for SW Prime is to have a fully autonomous electric fleet. **Figure 33** shows area transit facilities.

## Summary of Issues

- *Capacity Needs:* Some intersections are approaching capacity and others are over capacity during peak hours. Currently the TH 7/CSAH 13 (Rolling Acres Road) intersection operates at an overall LOS E approaching capacity. The intersections of TH 5 (Arboretum Boulevard) with CSAH 13 (Rolling Acres Road), Park Drive, and TH 41 (Hazeltine Boulevard) operate at an overall LOS F during peak hours.
- *Safety:* The intersections of TH 5 (Arboretum Boulevard)/CSAH 13 (Rolling Acres Road/Bavaria Road), TH 7/CSAH 13 (Rolling Acres Road), CSAH 13 (Bavaria Road)/CSAH 18/82nd Street West, 82nd Street West/McKnight Road, and TH 5 (Arboretum Boulevard)/TH 41 (Hazeltine Boulevard) are critical crash intersections.
- *System Linkages:* Study area corridors consist of a series of arterial roadways including A minor expanders to other arterials carrying significant volumes of vehicular traffic. The corridors function as a network of interconnected routes. If one isn't functioning correctly, others suffer. The system provides crucial local connections as well as connections to the regional highway system. TH 5 is a major freight corridor providing a major east west connection between the Cities of Waconia, Victoria, Chaska, Chanhassen and Eden Prairie while also providing connections between CSAH 13 (Rolling Acres Road/Bavaria Road), TH 41 (Hazeltine Boulevard), and TH 212. TH 41 (Hazeltine Boulevard/Chestnut Street) is also a major freight corridor connecting principal arterial roadways of TH 169, TH 212 and TH 7.
- *Local Connectivity & Accessibility:* TH 5 (Arboretum Boulevard) provides important local connections passing through both the City of Victoria's downtown as well as that of Chanhassen. The corridor also serves as the main point of entry to the Arboretum. TH 41 (Hazeltine Boulevard/Chestnut Street) also provides important local connections to major industrial areas and the downtown in the City of Chaska. Lyman Boulevard connects TH 41 (Hazeltine Boulevard/Chestnut Street) to the City of Chanhassen High School. Overall, local residential, commercial, industrial, institutional, and recreational uses depend on successful system function.
- *Consistency with State and Local Plans:* Many previous plans and studies have been completed studying system corridors and many planned projects have resulted. Proposed improvements include roadway expansion, roadway realignment and/or reconstruction, intersection reconfiguration, and pedestrian oriented safety improvements. Some of these projects have been programmed for implementation or are in the final design phase. All planned and programmed projects will need to be considered in the development of concept alternatives through this effort.

Previous planning efforts have also identified major population growth and some development/redevelopment along the TH 5 (Arboretum Boulevard) corridor (i.e. downtown expansion for the City of Victoria). Population growth coupled with additional commercial and residential uses will increase traffic volumes on an already congested system.

- *Modal Interrelationships:* The planning area is served by several regional trail connections including the Southwest Regional Trail, Lake Minnetonka LRT Regional

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Trail, and Baker-Carver Regional Trail. Data shows strong pedestrian and bicycle usage on the regional trails in the planning area. Gaps have been identified on local pedestrian/bicycle facilities throughout the system. Local and regional facilities are planned in the study area.

The area is serviced by SW Transit via the SW Prime dial-a-ride service which provides roughly 100 rides a day to/from the cities of Chanhassen, Chaska, Carver, and Victoria. SW Transit also services special events at the Arboretum. Project partners have expressed interest in enhancing transit services through the study area.

- *Environmental Considerations:* There are various social, economic, and environmental (SEE) resources in proximity to the planning area that need to be considered that include threatened and endangered species, section 4f and 6f properties, traffic noise receptors, historic/archaeological resources, and wetlands. Roadway drainage will be a big consideration as there are many impaired water bodies near the planning area.
- *Access Spacing.* With some noted exceptions, study area corridors meet public street access spacing standards. However, there are numerous private driveways that do not meet access spacing guidelines and may also deviate from ordinance requirements. These will need to be addressed during the study process.