HIGHWAY 10 CORRIDOR STUDY
VICTORIA-CHASKA AREA

M E M O R A N D U M

Date: November 1, 2018

To: Darin Mielke, P.E., Carver County, Deputy County Engineer

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Subject: Existing and No-Build Conditions - DRAFT
Highway 10 (Engler Boulevard) Corridor Study, Carver County, MN

Introduction

Carver County, in collaboration with Chaska, Victoria and Laketown Township, is working to identify transportation system improvements on Highway 10 (Engler Boulevard) (see study area map in Appendix A). This highway is one of Carver County's most important roadways due to the connections made and the volumes served. Highway 10 (Engler Boulevard) makes many connections through the county tying Chaska to Waconia to Watertown.

Carver County desires to guide future improvements to the Highway 10 (Engler Boulevard) corridor and establish improvement recommendations that ensure it operates safely and efficiently into the future. 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 a long-term implementation plan that can be phased in over time.

The purpose of this memorandum is to document existing and no-build conditions on Highway 10 (Engler Boulevard) and to identify and confirm issues along and near the corridor. This memo is organized by the following sections:

- Previous studies overview

- Demographics and trends
- Transportation system characteristics
- Study area characteristics
    - land use
    - existing and no-build traffic conditions
    - crash history
    - access
    - pedestrian/bicycle
- Social, environmental and economic resources
- Summary of issues

This information will guide the development of corridor goals and objectives and ultimately the identification of improvement alternatives for Highway 10 (Engler Boulevard).

Appendix A of this memo contains figures of each of the study area characteristics listed above and social, environmental and economic resources.

Previous Studies Overview

Several short- and long-range documents have been completed which provide planning direction for future transportation system needs within and near the Highway 10 (Engler Boulevard) corridor. The key points in each study relevant to Highway 10 (Engler Boulevard) are summarized below by plan title.

Highway 61 (Chaska Boulevard)/Highway 41 (Chestnut Street) Improvements Project (2018)

This plan identified improvements to the Highway 10 (Engler Boulevard) corridor at its intersections with Highway 41 (Chestnut Street), Highway 15 (Audubon Road), and Highway 61 (Chaska Boulevard). The following provides a summary of issues to consider in this study.

- *Highway 10 (Engler Boulevard)/Highway 41 (Chestnut Street) Intersection*
  This intersection is approaching capacity with a Level of Service (LOS) D during PM peak traffic. The left turning movements in all directions at this location experience unacceptable delays. Eight pedestrian and bicycle crashes identified previously pose concerns as multiple schools (Chaska Middle School East, Chaska Middle School West, and Chaska Elementary) are located in the northeast quadrant of this intersection and are major pedestrian traffic generators.

  Traffic volumes on both Highway 41 (Chestnut Street) and Highway 10 (Engler Boulevard) are projected to increase at this location which will exacerbate existing capacity issues. Intersection improvements identified as part of the study include the following:
    - Two through lanes on Highway 41 (Chestnut Street) and Highway 10 (Engler Boulevard) in all directions and dual northbound Highway 41 (Chestnut Street) left turn-lanes.
    - Center medians on Highway 41 (Chestnut Street) to channelize turning movements and provide refuge for pedestrians.
    - Two options were developed for pedestrian and bicycle crossings. The City of Chaska desired to enhance at-grade crossings through signal improvements in the short-term but to ultimately pursue the grade separated crossings of both Highway 41 (Chestnut Street) and Highway 10 (Engler Boulevard) in the future.

- *Highway 10 (Engler Boulevard)/Highway 61 (Chaska Boulevard)*
  Highway 10 (Engler Boulevard) and Highway 61 (Chaska Boulevard) traffic volumes are anticipated to increase substantially by 2040 which will require intersection improvements to accommodate that growth. A roundabout was recommended at this location.

Carver County 2040 Comprehensive Plan (2018)

The following projects were identified on Highway 10 (Engler Boulevard) in the Carver County 20-Year Transportation Tax Implementation:

- *2018-2023* from Clover Ridge Dr. to Highway 11 (Jonathon Carver Parkway)
- *2024-2028* from Highway 41 (Chestnut Street) to Highway 61 (Chaska Boulevard); from Highway 41 (Chestnut Street) to TH 212
- *2029-2033* from Highway 11 (Jonathon Carver Parkway) to Highway 43

- The Travel Demand Model identifies the capacity issues on Highway 10 (Engler Boulevard) for three scenarios including a no build, implementation of Capital Improvement Projects (CIP), CIP plus 20-Year Transportation Improvement Plan projects.
    - In a no-build scenario, Highway 10 (Engler Boulevard) through Laketown Township and from Bavaria Road to Highway 41 (Chestnut Street) are forecasted to be congested segments. West of Highway 43 (western access) and between Prescott Lane and Bavaria Road are segments along the corridor that are anticipated to be near congestion.
    - In scenario two, Highway 10 (Engler Boulevard) through Laketown Township and from Prescott Lane to Highway 41 (Chestnut Street) are anticipated to be congested. West of Highway 43 (western access) is anticipated to be near congestion.
    - Scenario three assumes conversion of most of the corridor to a four-lane roadway from a two-lane. Highway 10 (Engler Boulevard) from Highway 11 (Jonathon Carver Parkway) to the Laketown Township/City of Chaska line is anticipated to be congested.
    - Carver County is currently working with cities to finalize land use assumptions contributing to the development of the Travel Demand Model and inevitably the recommended 2040 traffic forecasts/alt scenario(s). A recommended 2040 traffic forecast is expected to be identified in November/December 2018.
- Highway 10 (Engler Boulevard) from Highway 61 (Chaska Boulevard) to the City of Waconia is identified as a Regional Bicycle Transportation Network (RBTN) Tier 2 Priority Search Corridor and is proposed as a Tier 2 Alignment between US 212 and Highway 61 (Chaska Boulevard). Highway 11 (Jonathon Carver Parkway) is also identified as a Tier 2 Alignment from Highway 10 (Engler Boulevard) to Highway 40 (Old Carver Road) in Carver.
- Highway 10 (Engler Boulevard) connects TH 7, TH 5, and TH 212 (a Tier 1 Freight Corridor) and provides access to freight generators in Waconia and Chaska. Several freight generators are clustered near the Highway 10 (Engler Boulevard)/Highway 61 (Chaska Boulevard) intersection.
- A list of recent and planned projects of the US and County Roadway System considered to support the freight network in Carver County include the reconstruction of Highway 10 (Engler Boulevard) east of Highway 11 (Jonathon Carver Parkway) and west of Creek Road (2017-2022 CIP).

Carver County – County Roadway Safety Plan (2013)

This plan has a goal of reducing severe crashes in the county by documenting at-risk locations. The following lists locations along Highway 10 (Engler Boulevard) identified through that process and recommended actions.

- The Highway 10 (Engler Boulevard) and Highway 43 (East) intersection is identified as a high priority by the County. Projects include the installation of street lights, signs, and markings at this intersection.
- The Highway 10 (Engler Boulevard) and Highway 11 (Jonathon Carver Parkway) intersection was recently signalized and no projects are assigned. This intersection was identified as a high priority.
- The Highway 10 (Engler Boulevard) and Highway 41 (Chestnut Street) intersection is a County nominated intersection planned for improvements including a flashing yellow arrow.
- The Highway 10 (Engler Boulevard) and Highway 43 (West) intersection is planned to have street lights installed.

City of Chaska 2030 Comprehensive Plan (2008)

- This plan is consistent with other plans illustrating the expansion of Highway 10 (Engler Boulevard) to four lanes from the western Chaska city limits to Highway 61 (Chaska Boulevard).

- Highway 11 (Jonathon Carver Parkway) from TH 212 to Highway 10 (Engler Boulevard) is anticipated to be expanded to four lanes and realigned at its intersection with Highway 44 (Big Woods Boulevard). Highway 11 (Jonathon Carver Parkway) from Highway 10 (Engler Boulevard) to Highway 18 is anticipated to be expanded to four lanes.

- Planned City Roadways in the plan include:
  - Clover Ridge Drive Extension – from Highway 10 (Engler Boulevard) to Highway 44 (Big Woods Boulevard). Construction has begun.
  - New east/west roadway connecting the Clover Ridge Drive extension to a new north/south roadway between Highway 10 (Engler Boulevard) and Highway 44, east of TH 212.
  - New north/south roadway between Highway 10 (Engler Boulevard) and Highway 44 (Big Woods Boulevard) just east of TH 212.

- Capacity issues are identified on Highway 10 (Engler Boulevard) from the western Chaska city limits to TH 212 and on Highway 15 (Audubon Road) as it approaches Highway 10 (Engler Boulevard) from the north.

- Roadways recommended for capacity improvements to address 2030 needs include the Clover Ridge Drive extension from Highway 10 (Engler Boulevard) to the new east-west roadway between the Clover Ridge Drive extension and the new north-south road (connecting Highway 10 (Engler Boulevard) to Highway 44 (Big Woods Boulevard) on the east side of TH 212.

City of Chaska 2040 Draft Comprehensive Plan (2018-2019)

- The Highway 10 (Engler Boulevard) corridor is identified as a Tier 2 Alignment on the RBTN. Creek Road is identified as a Tier 2 Corridor.

- The plan identifies future off-street trails on Highway 10 (Engler Boulevard) (consistent with the Carver County linking trail), Highway 11 (Jonathon Carver Parkway), Creek Road, Clover Ridge Drive south of Highway 10 (Engler Boulevard), on the TCWR rail line running SW to NE.
- Chaska places priority on planning local on- and off-road bikeway networks to connect to the designated Tier 1 and Tier 2 alignments. Local trails in Chaska provide important connections to the Minnesota River Bluffs LRT Regional Trail and the Southwest Regional Trail.
- TH 212 North intersection with Highway 10 (Engler Boulevard) is listed among top interstate truck count locations in Chaska exhibiting 1,650 HCAADT.
- The Highway 15 intersection with Highway 10 (Engler Boulevard) has been identified as having insufficient width requirements for a 10-ton truck posing safety and capacity issues.
- The reconstruction of Highway 10 (Engler Boulevard) east of Highway 11 (Jonathon Carver Parkway) and west of Creek Road (2017-2022 CIP) is a planned project anticipated to support the freight network in Chaska.
- A bus route crosses Highway 10 (Engler Boulevard) along Highway 41 (Chestnut Street) to the East Creek Station at the junction of the Highway 41 (Chestnut Street)/TH 212 interchange.

Highway 44 (Big Woods Boulevard) and TH 212 Interchange Design Project (2011)

- A Traffic operations analysis was completed for the Highway 44 (Big Woods Boulevard) and TH 212/Highway 44 (Big Woods Boulevard) Interchange project. This identified that a no-build scenario at the intersection would lead to capacity issues at the Highway 10 (Engler Boulevard)/TH 212 interchange. Partial interchange construction at the Highway 44 (Big Woods Boulevard)/TH 212 intersection would alleviate capacity issues at the Highway 10 (Engler Boulevard)/TH 212 interchange.

Southwest Chaska Plan (2012)

This plan identifies significant industrial growth in the southwest quadrant of the Highway 10 (Engler Boulevard)/TH 212 intersection. Development has begun north of Creek Road. Significant residential development is also proposed east of TH 212. Two future collector roadways are being constructed to accommodate this growth and development. These include an extension of Clover Ridge Drive from north of Highway 10 (Engler Boulevard) (already constructed between Highway 10 (Engler Boulevard) and Creek Road) and an extension of Prescott Drive from north of Highway 10 (Engler Boulevard) south to Highway 61 (Chaska Boulevard).

Chaska Creek AUAR/EAW/Independent Traffic Analysis (2010)

A traffic impact study was completed for the Chaska Creek Corporate Park that provides a mixed-use development consisting of retail, office, light industrial, and corporate campus. The intersections of Highway 10 (Engler Boulevard)/TH 212 (EB and WB) and Highway 10 (Engler Boulevard)/Clover Ridge Drive were included in the study. The AUAR prepared for the development assumed the following uses and sizes for trip generation: 1728 units of single-family residential; 482 units of residential townhomes; 1332 residential apartment units; 50,000 square feet of neighborhood retail; 20,000 square feet of office, and elementary school for 600 students. The daily external trips generated were projected to be 24,920 vehicles per day.

Recommended improvements for the traffic impact study performed for this effort assumed an improved Highway 10 (Engler Boulevard) to a four-lane section through its intersection with Clover Ridge Drive. Level of Service (LOS) was calculated for Highway 10 (Engler Boulevard) at it intersections with Clover Ridge Drive (improved to four lanes) and the US 212 East and West Ramps based on proposed development trip generation, Heights of Chaska trips, and background growth. The study made the following conclusions:

1. Highway 10 (Engler Boulevard) at Clover Ridge Drive: requires signalization with the following geometry:
    a. Eastbound right-turn lane and left-turn lane,
    b. Westbound right-turn lane and left-turn lane,
    c. Northbound dual right-turn lanes, a single through lane, and a single left-turn lane, and
    d. Southbound shared right-turn/through lane, and dual left-turn lanes.
2. Highway 10 (Engler Boulevard) at US 212 East and West Ramps: year 2030 traffic conditions reveal deficiencies at the interchange. To achieve acceptable LOS at these intersections, Heights of Chaska trips must be accorded alternate routes to redirect traffic away from Highway 10 (Engler Boulevard).

City of Chaska Safe Routes to School Plan

- This plan looked at the intersections of Highway 10 (Engler Boulevard) with Highway 41 (Chestnut Street), Crest Drive, and Park Ridge Drive/Skyview Drive. Various recommendations were provided to enhance pedestrian safety for those accessing the school property. The following are recommendations per intersection:
    - *Highway 41 (Chestnut Street) (Chestnut Street: Node 1)*:
        - Reduce Speed limit
        - Introduce protected left-turn green arrow (pedestrians have extended crossing times during green arrow)
        - Speed bump/raised intersection
    - *Crest Drive (Node 2)*:
        - Install sidewalk running along Highway 10 (Engler Boulevard)
        - Transform Crest Drive into a two-way street with pullover lanes and drop-offs near school doors.
    - *Park Ridge Drive/Skyview Drive (Node 3)*:
        - Define crosswalk across Highway 10 (Engler Boulevard)
        - Install speed limit sign at intersection
        - Lay new sidewalks and connect to existing network

  A more thorough look into these recommendations is necessary to understand which may be considered for implementation. This study will consider the recommendations where applicable during improvement concept development.

City of Victoria 2040 Comprehensive Plan (2018-2019)

- This plan shows the ultimate expansion of the City of Victoria boundary within Laketown Township south of Highway 10 (Engler Boulevard).
- Existing land use on Highway 10 (Engler Boulevard) through Laketown Township today consists of mostly agricultural uses mixed with rural residential. Future land use shows significant growth in commercial, industrial, and medium density residential uses east of

Highway 43. West of Highway 43 is planned to remain agricultural. Highway 10 (Engler Boulevard) from Highway 11 (Jonathon Carver Parkway) to West Chaska Creek is assumed to be expanded to a 4-lane divided arterial by 2040 which is consistent with the Carver County Plan and the Met Council's TPP.

- Highway 43 is anticipated to extend south from west intersection with Highway 10 (Engler Boulevard) through Augusta Road to Highway 43 (east) by 2040. This will be classified as a B Minor Arterial. Highway 43 from the east intersection with Highway 10 (Engler Boulevard) south to the city border will be classified as a future Major Collector roadway post jurisdictional change to the City.
- Red Fox Drive is anticipated to extend south through Marsh Lake Road to the Highway 10 (Engler Boulevard) and Highway 43 (east) Intersection by 2040.

Demographics and Trends

Population

Between 2000 and 2010, Carver County was one of the fastest growing counties in the State of Minnesota, increasing in population by over 20,000 persons from 70,000 to 91,000 persons. This rapid growth has continued since 2010, with an estimated population of over 100,000 persons in 2016. Twenty-year population projections for Carver County estimate over 161,000 persons living in Carver County by 2040, detailed in **Figure 1** below alongside projected households and employment trends.

The City of Chaska is the most populous city in Carver County with an estimated population of almost 27,00 in 2017. This is a 50% increase for the City's population in 2000 and about a 13% increase since 2010. As one of the cities in Carver County located closest to Minneapolis and St. Paul, the City of Chaska is expected to continue to grow into the future; population projections show a potential 35 percent increase in population from 2017 levels (**Figure2**).

The City of Victoria is also planning for substantial growth by 2040, nearly doubling its population from 9,000 in 2016 to 17,400 in 2040. In addition to the projected growth in Chaska and Victoria, growth in communities such as Waconia and Watertown west of the Highway 10 (Engler Boulevard) study area will influence future traffic volumes on Highway 10 (Engler Boulevard) as it serves as a major commuting route into/out of the metro area.

Age

The population's age distribution is important as it effects transportation usage. 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 (**Figure 3**).

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**).

City – Township	Population				Households				Employment			
	2010	2020	2030	2040	2010	2020	2030	2040	2010	2020	2030	2040
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	10,905	15,200	16,500	17,600
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	0	660	530	260	0	116	170	80	0
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
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	520	430
Young America Township	715	670	660	670	266	270	280	300	119	120	120	120
Carver County (total)	**91,042**	**108,520**	**135,960**	**161,240**	**32,891**	**40,940**	**52,180**	**62,590**	**31,866**	**42,190**	**48,100**	**53,840**

Figure 1 - Source: Draft 2040 Comprehensive Plan, Carver County

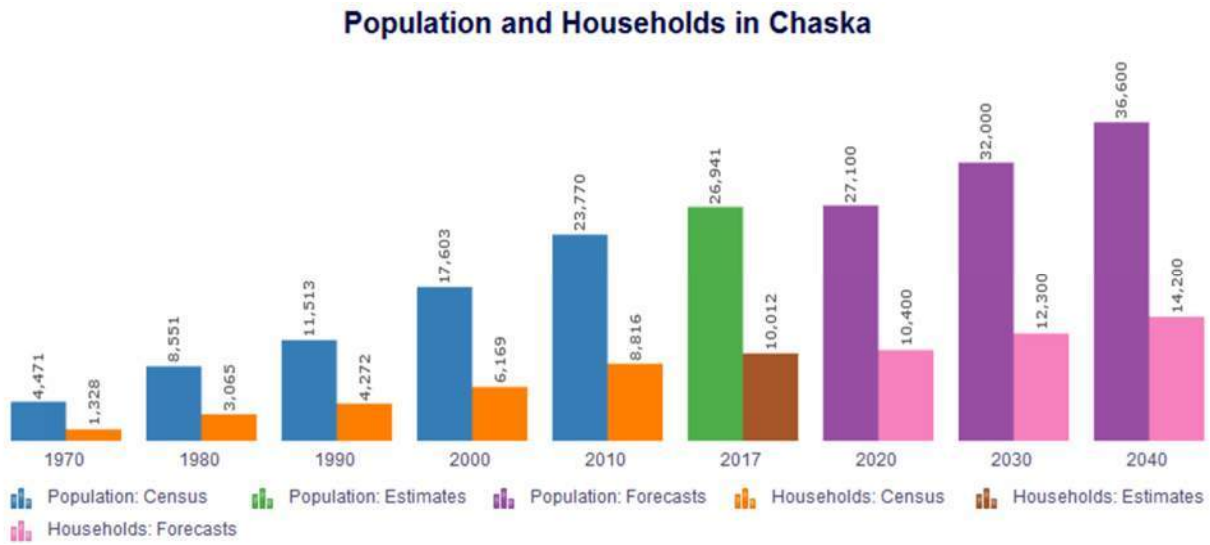

Figure 2 - Source: Metropolitan Council Population/Household Data and Projections

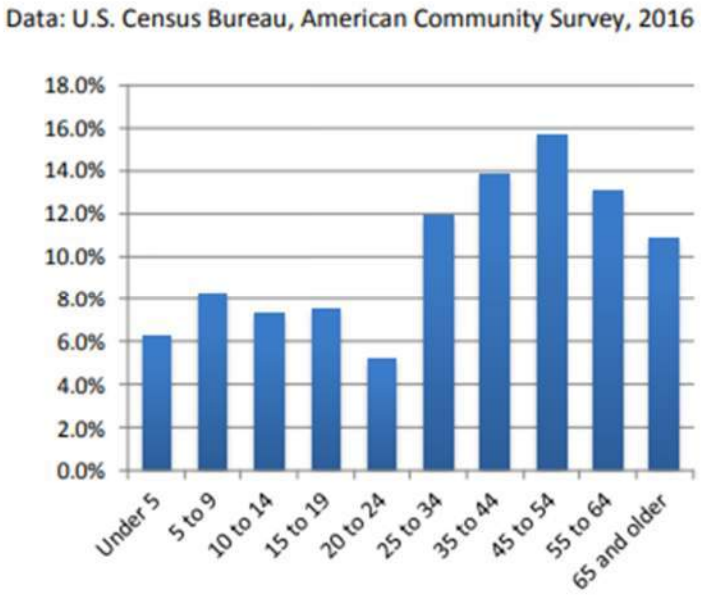

Figure 3 - Age Distribution by Total Percentage of the County Population. Source Draft 2040 Comprehensive Plan, Carver County

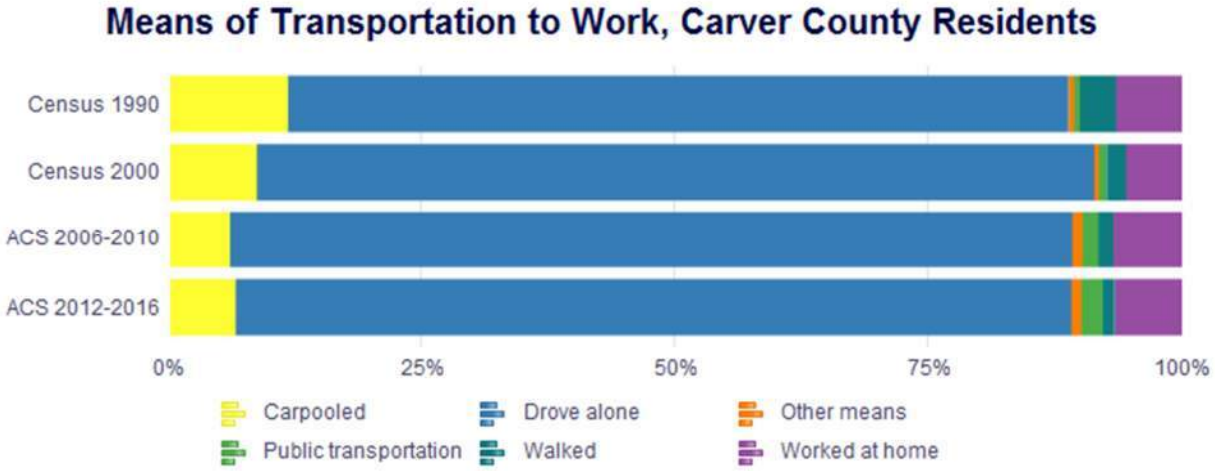

Figure 4 Source: Metropolitan Council, from US Census and American Community Survey Data4

Transportation System Characteristics

This section provides details on the transportation network characteristics on and near Highway 10 (Engler Boulevard) including descriptions of functional classification and connections, speed limits, number of lanes and parking accommodations.

Functional Classification

The functional classification system is used to create a roadway network that efficiently collects and distributes traffic from neighborhoods to the state highway system. A successful system coordinates and manages mobility, roadway design, and route alignment as well as seeks to match current and future access and land use with the adjacent roadway's purpose, speeds, and spacing. The functional classification system is comprised of principal arterials, minor arterials, major and minor collectors, and local roadways.

Highway 10 (Engler Boulevard) serves as a minor arterial roadway connecting Watertown, Waconia and Chaska. It serves a diverse mix of personal vehicle, freight, and transit traffic. TH 212, a principal arterial, intersects with Highway 10 (Engler Boulevard) in the central portion of the project area. Additional minor arterials (Highway 11 (Jonathon Carver Parkway), Highway 15 (Audubon Road), Highway 61 (Chaska Boulevard)), major collectors (Victoria Drive/Bavaria Road), and minor collectors (Clover Ridge Drive) intersect with the roadway along Highway 10 (Engler Boulevard).

Existing Traffic Speeds

The posted speed limit on Highway 10 (Engler Boulevard) varies from 40 to 55 miles per hour (mph). The speed limit is 55 mph from the western project limit to TH 212, it is 45 mph from TH 212 to Highway 41 (Chestnut Street), it is 40 mph from Highway 41 (Chestnut Street) to Ridge Lane, 50 mph from Ridge Lane to Highway 15 (Audubon Road), and 40 mph from Highway 15 (Audubon Road) to Highway 61 (Chaska Boulevard).

Existing Number of Lanes and Parking Accommodations

Highway 10 (Engler Boulevard) is a two-lane undivided roadway from its western terminus (west of Highway 43 (W)) to Chaska Creek (west of Creek Lane). Here it becomes a four-lane divided roadway shifting back to two lanes undivided as it approaches Prescott Lane. It continues as a two-lane undivided until it approaches Old Audubon Road where it shifts to four lanes undivided for the remainder of the corridor. No parking is allowed along any portion of the roadway. Traffic signals exist throughout the Highway 10 (Engler Boulevard) corridor at all major intersections. These include its intersections with:

1. Highway 11 (Jonathon Carver Parkway/Victoria Drive)
2. Clover Ridge Drive
3. TH 212 eastbound ramp
4. TH 212 westbound ramp
5. Highway 41 (Chestnut Street)
6. Highway 15 (Audubon Road)

Study Area Characteristics

The study area was divided into four segments for better identification of existing conditions related to land use, traffic operations, crash history, roadway access, and pedestrian and bicycle connections (**Figure 1**). This section also contains a review of known social, economic, and environmental (SEE) resources within the study area. Working west to east, the study segments described in this section are as follows:

- **Segment 1** – Western Subarea: Highway 10 (Engler Boulevard) from Highway 43 to the Eastern Laketown Township (TWP) Line
- **Segment 2** – Chaska West Subarea: Eastern Laketown TWP/Chaska Line to Victoria Drive
- **Segment 3** – Middle Chaska Subarea: Victoria Drive to Ridge Lane
- **Segment 4** – Chaska East Subarea: Ridge Lane to Highway 61 (Chaska Boulevard)

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 the **Appendix A** for the following graphics:

- **Figure 5** – Project Subareas
- **Figure 6** – Existing Land Use
- **Figure 7** – Future Land Use
- **Figure 8 & 9** – Traffic Operations
- **Figures 10 & 11** – 2040 Traffic Operations – No Build Scenario
- **Figure 12** – Crash History (2013-2017)
- **Figure 13** – Access Inventory
- **Figure 14** – Pedestrian and Bicycle Connections

Appendix B provides information on Carver County Functional Classification referenced in this section and derived from the Carver County 2040 Comprehensive Plan. Traffic operations and crash history information illustrated in the figures and described below are derived from the Existing Traffic Conditions Analysis Memo in **Appendix C**.

Segment 1 – Western Subarea: Highway 10 (Engler Boulevard) from Highway 43 to the Eastern Laketown Township (TWP) Line

Land Use and Major Traffic Generators

Land uses adjacent to these segments consist of mostly agricultural uses mixed with rural residential. There are no major traffic generators along these segments although residential neighborhoods are located north of Highway 10 (Engler Boulevard), accessed on Highway 43 and Highway 11 (Victoria Drive).

According to the City of Victoria Future Land Use Map, the area surrounding Highway 10 (Engler Boulevard) from the western project terminus (west of Highway 43) to Highway 11 (Jonathon Carver Parkway/Victoria Drive) is anticipated to experience significant growth in commercial, industrial, and multi-family residential uses as the city expands into Laketown TWP. Existing and future land use maps for the entire study area can be seen in **Figure 6** and **Figure 7** in **Appendix A**.

Existing Traffic Operations

This segment of Highway 10 (Engler Boulevard) carries a range of 11,700 to 14,100 vehicles per day and Highway 11 carries 6,100 per day based on Average Annual Daily Traffic Volumes (AADT).

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.

Almost all intersections in this segment are operating at generally acceptable levels of service (LOS A), however, the Highway 11 (Jonathon Carver Parkway/Victoria Drive) intersection exhibits LOS D during the AM peak hours and LOS C during the PM peak hours. Turning movements with delays include westbound, northbound and southbound left turning movements during the AM peak hour periods as well as the eastbound, northbound and northbound left turning movements during the PM peak hour periods. Within this segment most intersections are side street stop controlled with the exception of Highway 11 (Jonathon Carver Parkway/Victoria Drive) which is controlled by a traffic signal.

The Twin Cities & Western Railroad (TCWR) crosses Highway 10 (Engler Boulevard) between Highway 43 (eastern access) and Highway 11 (Victoria Drive). While MnDOT data shows this line carries approximately three trains per day, the TWCR suggests the rail carries at least two trains per day. Trains travel at 30 mph in the vicinity of the study area and they run fluidly; there is no set schedule.

According to the TCWR, there are no plans to expand services in this area. Expansion or an increase in services is strictly dependent on new development on the route that would require rail services for the transfer of goods. Currently, the TCWR does not have any stops in the vicinity of the project area and they have no safety concerns pertaining to the intersection of the rail with Highway 10 (Engler Boulevard). Existing traffic operations are illustrated for the entire study area in **Figure 8** and **Figure 9** in **Appendix A**.

No-Build Traffic Conditions

2040 no-build traffic conditions were developed using traffic forecasting scenarios provided by Carver County. This provides an understanding of roadway conditions if the corridor is left unimproved and serves as a basis for understanding appropriate treatments to remedy issues.

In the 2040 no-build scenario, traffic volumes along Highway 10 (Engler Boulevard) in this subarea are anticipated to increase to a range of 13,200 to 20,000 AADT. Highway 11 (Victoria Drive) is also anticipated to have increased traffic volume carrying 13,000 vehicles per day by 2040.

Results of the no-build analysis indicate unacceptable traffic delay by movement and vehicle queues along Highway 43 (west), Highway 43 (east), and Creek Road as they approach Highway 10 (Engler Boulevard). Queues range from 1,325 feet to 3,135 feet along these side streets. Major queuing is also anticipated to occur at the Highway 10 (Engler Boulevard)/Highway 11 (Victoria Drive) intersection along all approaches. This includes unacceptable traffic delay by movement during the AM and PM peak hours as well.

Most intersections exhibit a LOS F for both AM and PM peak periods with the exception of the Highway 10 (Engler Boulevard)/Highway 43 intersection which still operates at a LOS A in the PM Peak hour. 2040 No-Build traffic operations are illustrated for the entire study area in **Figure 10** and **Figure 11** in **Appendix A**.

Crash History (2013 – 2017)

A crash review was completed using the Minnesota Crash Mapping Analysis Tool (MnCMAT) which identified 44 crashes in this segment within a five-year period from 2013 to 2017. MnDOT uses a comparison of the crash rate and the critical rate when determining if safety issues exist at an intersection. The crash rate is the number of crashes per million entering vehicles (MEV). The critical rate is a statistical comparison based on similar intersections statewide. An observed crash rate greater than the critical rate indicates that the intersection operates outside of the expected, normal range. The critical index reports the magnitude of this difference and a critical index of less than one shows that the intersection is operating within the normal range.

Most intersections in this segment exhibit crash counts within a normal range during the five-year period. However, the Highway 10 (Engler Boulevard)/Highway 11 (Jonathan Carver Parkway/Victoria Drive) intersection exhibited 28 crashes and has a Critical Index of 1.14 which is outside of the normal range. These crashes included four right angle crashes and ten rear end crashes. There was one pedestrian/bicycle crash and two "A" crashes at this intersection within a ten-year period (2008 to 2017). Crash history is illustrated for the entire study area in **Figure 12** in **Appendix A**.

Access

There are 32 access points along Highway 10 (Engler Boulevard) in this segment including three primary accesses (.9 per mile), 1 secondary accesses (.3 per mile), and 28 private accesses (8.3 per mile). Both primary and secondary access counts fall within or below Carver County's recommendations for 9 to 19 accesses per mile along minor arterial roadways. There are two private accesses on Highway 11 (Victoria Drive) in the study area. Access is illustrated for the entire study area in **Figure 13** in **Appendix A**.

Pedestrian and Bicycle Connections

There are no bicycle or pedestrian facilities along Highway 10 (Engler Boulevard) in this segment of roadway, however, planned trails follow Highway 10 (Engler Boulevard) within the project corridor and along the TCWR Company railroad line. Pedestrian and bicycle connections are illustrated for the entire study area in **Figure 14** in **Appendix A**.

Stormwater Considerations

This segment of Highway 10 (Engler Boulevard) is currently a rural roadway section in an undeveloped area which does not have permanent stormwater management systems. It's located in the Chaska Creek and South Chaska Creek major drainage districts and has several large wetland complexes near the corridor. There are ten centerline culverts that perpetuate drainage through the corridor. It is expected that future corridor improvements will be able to meet stormwater requirements with minimal changes to existing conditions.

Segment 2 – Chaska West Subarea: Eastern Laketown TWP/Chaska Line to Victoria Drive

Land Use and Major Traffic Generators

This segment is surrounded by agricultural, residential development, commercial, institutional, and industrial land uses and contains the TH 212 interchange. Agricultural land uses are located primarily on the south side of Highway 10 (Engler Boulevard). The Stream Data Center provides major traffic generators located near the TH 212 interchange. Industrial development has begun along the recent Clover Ridge Drive roadway extension south from Highway 10 (Engler Boulevard) to Creek Road as part of the Chaska Creek Corporate Park development. Residential development, commercial, and institutional land uses are concentrated on the east side of the TH 212 interchange.

Industry is anticipated to continue growth both north and south of the project corridor. This includes expansion of the Stream Data Center business park to the north and expansion of the Chaska Creek Corporate Development Park to the south, consistent with the Southwest Chaska Growth Plan scenario.

The City of Chaska plans to maintain the western portion of the community that borders Laketown TWP as open space named the Chaska Green belt. This provides a buffer allowing the community to remain freestanding. The Chaska Greenbelt contains a mix of natural and developable properties. Development in this area is anticipated to be rural residential with a 5-acre minimum lot size, maximum four lots per 40 acres. Recreational facilities, agriculture, and hobby farms are other intended uses.

Existing Traffic Operations

This segment carries a range of 8,000 to 11,300 vehicles per day.

All intersections in this segment are operating at generally acceptable levels of service (LOS A and B) at the three signalized intersections (Clover Ridge Drive and TH 212 ramps) and two side street stop-controlled intersections (Prescott Lane and Victoria Drive). Unacceptable turning movement delays are found at the westbound TH 212 ramp traffic signal for westbound left turns during the AM peak hour period. Southbound traffic on Clover Ridge Drive experiences AM peak hour extended vehicle queues.

No-Build Traffic Conditions

In the 2040 no-build scenario, traffic volumes along Highway 10 (Engler Boulevard) in this subarea are anticipated to increase to a range of 15,300 to 21,500 AADT, almost double the existing range.

Results of the no-build analysis indicate vehicle queues along Clover Ridge Drive as it approaches Highway 10 (Engler Boulevard). Queues also extend into this subarea from along Highway 10 (Engler Boulevard) from its intersection with Bavaria Road. The intersections of Prescott Lane and Victoria Drive with Highway 10 (Engler Boulevard) exhibit unacceptable traffic delays by movement during the AM and PM peak hours.

The intersections of Clover Ridge Drive and the TH 212 EB and WB Ramps with Highway 10 (Engler Boulevard) exhibit acceptable LOS during peak hour periods in the 2040 scenario. However, the Prescott Lane and Victoria Drive intersections with Highway 10 (Engler Boulevard) exhibit a LOS E and LOS F for the AM peak hour period respectively, indicating they are anticipated to approach or exceed capacity by 2040.

Crash History (2013 – 2017)

Crash counts at the signalized intersection for the westbound TH 212 ramp intersection (7 crashes) exhibit crashes above the expected range for total crashes and severity. There were nine crashes (six rear end) at Clover Ridge Drive, two crashes at the northbound TH 212 ramp intersection, and two crashes at Victoria Drive within the five-year period as well.

Access

There is a total of 7 accesses within this segment including 3 primary accesses (1.6 per mile), 3 secondary accesses (1.6 per mile), and 1 private access (.5 per mile). Both primary and secondary access counts fall below Carver County's recommendations for 9 to 19 accesses per mile along minor arterial roadways.

Pedestrian and Bicycle Connections

A city trail is present along the north side of Highway 10 (Engler Boulevard) from Creek Road to Victoria Drive within this segment and is planned to be linked to regional trails. A regional trail is located along Clover Ridge Drive heading north, with a planned regional trail to the south.

Stormwater Considerations

Segment 2 of Highway 10 (Engler Boulevard) runs through two major drainage districts, Chaska Creek and Lower Chaska Creek, with the district divide occurring just west of the TH 212 interchange. Chaska Creek crosses the Highway 10 (Engler Boulevard) corridor approximately 0.5 miles west of TH 212. The existing crossing is a 72"x72" box culvert that was extended as part of the 2013 construction project. This is the only centerline culvert west of the TH 212 interchange. There is an existing 36-inch culvert crossing, just east of the interchange, that serves the wetland north of Highway 10 (Engler Boulevard), including much of the nearby MnDOT drainage and a portion of municipal runoff. This culvert discharges to Chaska Creek which is approximately 1,000-feet south of the corridor. This segment of Chaska Creek is listed as an impaired water on the Minnesota Pollution Control Agency's 2018 List of Impaired Waters. The creek is impaired for aquatic macroinvertebrate bioassessments and Fishes bioassessments. These impairments are construction related impairments that should be addressed as part of roadway improvements. There is currently no approved total maximum daily load (TMDL) for the impairments.

The roadway is predominately an urban roadway section except for the portion just west of the Chaska Creek culvert crossing. This results in most of the segment being served by storm sewer drainage systems for about 75% of the segment. There is a system of stormwater ponds and wetlands along the corridor that manage and treat stormwater runoff prior to discharge to Chaska Creek. Most of the existing infrastructure in this segment was constructed prior to current CCWMO and MPCA water quality standards and as such likely do not provide treatment capacity to meet current standards. It's anticipated stormwater infrastructure will need to be retrofitted into this segment to accommodate future stormwater quality needs.

Segment 3 – Middle Chaska Subarea: Victoria Drive to Ridge Lane

Land Use and Major Traffic Generators

This segment of Highway 10 (Engler Boulevard) primarily serves commercial, institutional, and residential land uses. Residential neighborhoods are accessed via White Oak Drive and south on Bavaria Road. This segment provides an important connection to downtown Chaska via Highway 41 (Chestnut Street) (Chestnut St). This segment provides access to public services such as the

community center, municipal services building, and fire station. Major traffic generators within this segment include:

- La Academia Elementary School, Chaska Middle Schools (West and East Campus)
- Chaska Community Center
- Chaska Municipal Services
- Chaska City Electric
- Holiday Gas Station
- Religious centers
- Childcare and preschools

Land uses along this segment of the corridor are established and not anticipated to change in the 2040 planning horizon.

Existing Traffic Operations

This segment carries a range of 7,300 to 7,600 vehicles per day.

All intersections in this segment are operating at generally acceptable levels of service (LOS A, B, C, and D) including the one signalized intersection (Highway 41 (Chestnut Street) (Chestnut St)) and four stop-sign controlled intersections (Bavaria Road, White Oak Drive, Crest Drive, and Skyview Drive/Park Ridge Drive). The Highway 41 (Chestnut Street) (Chestnut St) intersection operates at a LOS C during the AM peak hour periods and a LOS D during the PM peak hour periods. Turning movement delays exist for eastbound during the AM peak hour periods and southbound and westbound during the PM peak hour periods. Unacceptable traffic delays are found for the PM peak hour periods for eastbound and eastbound left turning vehicles, and for left turning vehicles that are northbound, westbound and southbound.

No-Build Traffic Conditions

In the 2040 no-build scenario, traffic volumes along Highway 10 (Engler Boulevard) in this subarea are anticipated to increase to a range of 12,300 to 14,600 AADT, almost double the existing range.

Results of the no-build analysis indicate vehicle queues at the Bavaria Road and Highway 41 (Chestnut Street) intersections with Highway 10 (Engler Boulevard) from the EB, WB, and SB approaches. Vehicle queues also exist along White Oak Drive on its NB approach to Highway 10 (Engler Boulevard). All intersections in this subarea exhibit unacceptable traffic delays by movement during AM and PM peak hour periods in the 2040 scenario.

The Highway 10 (Engler Boulevard)/Bavaria Road intersection exhibits a LOS F for both AM and PM peak hour periods indicating it will be over capacity by 2040. The Highway 10 (Engler Boulevard)/White Oak Drive intersection exhibits a LOS F for the PM peak hour period. The Highway 10 (Engler Boulevard)/Oak Ridge Drive/Skyview Drive intersection exhibits a LOS E during the PM peak hour period indicating it will be approaching capacity by 2040. Other intersections are anticipated to operate at acceptable LOS A-D during AM/PM peak hour periods.

Crash History (2013 – 2017)

There were 80 crashes within this segment for the five-year period from 2013 to 2017. There were 19 crashes at Bavaria Road, with 10 right angle and 4 rear end giving this intersection a critical index of 1.04 and showing that this intersection is experiencing a higher than usual number of

crashes compared to similar intersections statewide. Bavaria Road also experienced 2 pedestrian crashes documented in a 10-year timeframe from 2008 to 2017. White Oak Drive had eight crashes, with 2 rear end, 2 right angle, and 2 left angle crashes. White Oak Road also had 1 pedestrian crash during a 10-year timeframe from 2008 to 2017. There were 53 crashes at Highway 41 (Chestnut Street) (Chestnut St), with 33 rear end and 7 right angle crashes. Highway 41 (Chestnut Street) (Chestnut St) had 6 pedestrian crashes during a 10-year timeframe from 2008 to 2017.

Access

There is a total of 12 access locations within this segment including 3 primary accesses (2.7 per mile), 5 secondary accesses (4.6 per mile), and 4 private accesses (3.6 per mile). Primary access counts fall below, and secondary access counts fall within, Carver County's recommendations for 9 to 19 accesses per mile along minor arterial roadways.

Pedestrian and Bicycle Connections

A city trail is present along the north side of Highway 10 (Engler Boulevard) from Victoria Drive to Ridge Lane and is planned to integrate into a future Carver County linking trail. City trails also cross or meet Highway 10 (Engler Boulevard) at Bavaria Road, Highway 41 (Chestnut Street) (Chestnut St), and Ridge Lane. Sidewalks are present on Royal Oak Drive, White Oak Drive, Park Ridge Drive, and along the driveway to the Chaska Middle School-West Campus.

Stormwater Considerations

The third segment of Highway 10 (Engler Boulevard) is located entirely within the East Creek major drainage area as the major drainage divide is located at the Segment 2 and 3 boundaries. This segment is split evenly between rural and urban roadways. It begins on the west edge as an urban roadway and transitions to a rural section, just east of Bavaria Road and then back to urban at the Highway 41 (Chestnut St) intersection. East of the Highway 41 (Chestnut St) intersection the roadway transitions back to a rural section with ditches on both sides to convey runoff.

While the segment is entirely in the East Creek drainage area, Highway 41 (Chestnut St) is the ultimate high point of the corridor in this segment. Drainage west of Highway 41 (Chestnut St) drains west and north through wetland complexes, while drainage east uses open ditches to convey runoff to an unnamed tributary that flows south to East Creek.

This segment of the corridor does not currently have stormwater management systems that provide water quality improvements. The right of way west of Highway 41 (Chestnut Street) will limit opportunities for treatment within the corridor. There is potential to provide water quality improvements downstream of the corridor that meet the current permit requirements. East of Highway 41 (Chestnut Street), right of way opportunities are limited except for the Chaska school property. There could be opportunity to partner with the school system to implement water quality and water reuse systems to serve both participants prior to outletting to East Creek.

Segment 4 – Chaska East Subarea: Ridge Lane to Highway 61 (Chaska Boulevard)

Land Use and Major Traffic Generators

Uses along this segment include residential, industrial, commercial, and recreational uses. Industrial and commercial land uses are primarily on the south side of Highway 10 (Engler Boulevard), east of Ravoux Road. A large mobile home park is located north on Brandon Boulevard.

Major traffic generators within this segment include Brandondale Mobile Home Park, Southwest Regional Trail Connection, and commercial/industrial located south of Highway 10 (Engler Boulevard).

Land use along this segment of the corridor are established and not anticipated to change in the 2040 planning horizon.

Existing Traffic Operations

This segment carries a range of 3,350 to 5,000 vehicles per day.

The one traffic signal-controlled intersection is this segment (Highway 15 (Audubon Road)) is operating at generally acceptable levels of service, with a LOS C in both AM and PM peak hour periods. An unacceptable turning movement delay is found for PM westbound traffic making a left turn. The eastbound leg experiences AM peak period traffic queues.

No-Build Traffic Conditions

In the 2040 no-build scenario, traffic volumes along Highway 10 (Engler Boulevard) in this subarea are anticipated to increase to a range of 6,900 to 12,700 AADT, over double the existing range.

Results of the no-build analysis indicate vehicle queues at the Highway 10 (Engler Boulevard)/Highway 15 (Audubon Road) on both the EB and WB approaches. This intersection also exhibits unacceptable traffic delays by movement on the WB approach during AM and PM peak hour periods in the 2040 scenario.

The Highway 10 (Engler Boulevard)/Highway 15 (Audubon Road) intersection is anticipated to operate at acceptable LOS C/D at AM and PM peak hour periods respectively for the 2040 no-build scenario.

Crash History (2013 – 2017)

There were 5 crashes within this segment, all located at the Highway 15 (Audubon Road) intersection (4 rear end crashes). This intersection is operating within the expected range. No other crashes were documented within the five-year timeframe.

Access

There are currently ten access locations along this segment of the corridor including two primary accesses (2.1 per mile), four secondary accesses (4.3 per mile), and four private accesses (4.3 per mile). Primary access counts fall below, and secondary access counts fall within, Carver County's recommendations for 9 to 19 accesses per mile along minor arterial roadways.

Pedestrian and Bicycle Connections

A regional linking trail in planned along the north side of Highway 10 (Engler Boulevard) which will close a gap in the system from the MN River Bluffs Trail to the city trail at Brandon Boulevard. A city trail crosses Highway 10 (Engler Boulevard) west of Ravoux Road and connects to the Southwest Regional Trail. The regional trail also has a parking lot and access point on the north side of Highway 10 (Engler Boulevard) near the Old Audubon Street intersection and continues east along Highway 10 (Engler Boulevard) past the end of the segment, Highway 61 (Chaska Boulevard).

Stormwater Considerations

Segment 4 crosses three major drainage areas; East Creek, Minnesota River, and Chanhassen. While it crosses the Minnesota River major drainage area briefly, it is primarily located within the other two areas.

The western portion of the segment is a rural roadway, primarily bordered by steep surrounding grades and a large wetland complex. At the Segment 3 & 4 boundary, there is a 72-inch culvert that serves an unnamed tributary and discharges to East Creek, 2,000 ft. south of the corridor. The main East Creek culvert crossing is located at the base of the hill near Ravoux Road. The final waterbody crossing in this segment is a bridge over a diversion channel from East Creek that discharges directly to the Minnesota River. This crossing is the only portion of the project located within the Minnesota River major drainage area.

East of Brandon Road, the corridor transitions to urban roadway for the remainder of the segment. The western half of the segment drains to East Creek, facilitated by ditches on both sides of the corridor. Drainage east of Highway 15 (Audubon Road) is facilitated by a storm sewer system that discharges into a large wetland complex north of the corridor that is a part of the Seminary Fen. This wetland discharges to Assumption Creek which flows directly to the Minnesota River. Assumption Creek is listed as impaired on the Minnesota Pollution Control Agency's 2018 List of Impaired Waters for fishes bioassessment.

There is limited right of way available for stormwater management along the corridor to the west of the East Creek crossing, however, potential for improvements along the eastern portion of the segment exist. Careful consideration will be required to minimize corridor stormwater that drains to the fen.

Social, Economic, and Environmental (SEE) Concerns (All Segments)

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:**

1. A small portion of the project corridor near Ravoux Road is within the 100-year floodplain associated with Chaska East Creek.
2. Minnesota Department of Natural Resources Natural Heritage Information Systems data suggests threatened, endangered, and rare species do exist within the study area. The county is home to two federally protected species, northern long-eared bat and rusty patched bumble bee. The project may require review and potential mitigation with the US Fish and Wildlife Service.
3. The study area is dominated by agricultural, rural residential, developed residential, industrial and commercial uses with altered vegetation.
4. The land use west of TH 212 is primarily agricultural with much of it designated as Prime Farmland by the US Department of Agriculture. Any impacts to farmland will need to address applicable regional and local farmland conservation policies. If federal funding is involved, the National Resources Conservation Service will be required.
5. Several areas were identified along the corridor that have a known history of contamination based on the Minnesota Pollution Control Agency's "What's in My Neighborhood?" data. More detailed investigations may need to take place as roadway alternatives are implemented along the corridor.

6. There are three parks, three schools, and city and regional trails that are adjacent to the corridor that represent Section 4f and Section 6f properties. Impacts to these properties will need to be taken into consideration in a future environmental review.
7. The Brandondale Mobile Park is a large manufactured housing development north of the east end of the project corridor and has the potential for environmental justice populations.
8. Several noise receptor areas exist along the corridor including residences, parks, trails and schools. The need for noise analysis will be determined once individual improvement projects are identified.

Summary of Issues

- Today, intersections along Highway 10 (Engler Boulevard) mostly operate at acceptable levels. However, traffic along the corridor is anticipated to increase substantially as planned growth in the City of Victoria/Laketown Township, Chaska and areas to the west is realized. The intersections of Highway 10 (Engler Boulevard) with Highway 11 (Jonathon Carver Parkway), TH 212 eastbound ramp, and Highway 41 (Chestnut Street) exhibit LOS D during peak traffic periods indicating they are approaching capacity today.
- Unacceptable turning movements exist at the intersections of Highway 10 (Engler Boulevard) with Highway 11 (Jonathon Carver Parkway/Victoria Drive), Creek Road, TH 212 westbound and eastbound ramps, Bavaria Road, Highway 41 (Chestnut Street), and Highway 15.
- The intersections of Highway 43 (west and east entrances), Highway 11 (Jonathon Carver Parkway/Victoria Drive), Creek Road, Victoria Drive (Chaska), White Oak Drive, and Highway 41 (Chestnut Street) with Highway 10 (Engler Boulevard) are all anticipated to be over capacity by 2040 exhibiting a LOS F at one or both peak traffic periods.
- Most intersections also exhibit unacceptable traffic delays by movement from most approaches during the 2040 scenario as well.
- Extended vehicle queuing is anticipated to be problematic at most intersections as well; specific locations of concern include the intersections of Highway 43 (west and east entrances), Highway 11 (Jonathon Carver Parkway/Victoria Drive), Creek Road, White Oak Drive, and Highway 41 (Chestnut Street) with Highway 10 (Engler Boulevard).
- Crash issues exist at the intersections of Highway 10 (Engler Boulevard) (Engler Boulevard and Highway 11 (Jonathon Carver Parkway) and Bavaria Road where counts are above the expected range.
- The intersection of Highway 10 (Engler Boulevard) with Highway 41 (Chestnut Street) is approaching crash counts above expected range but also exhibited 6 pedestrian crashes. This issue is critical given the intersection's proximity to Chaska's Middle Schools, Elementary School, and Community Center.
- The Highway 10 (Engler Boulevard)/ TH 212 westbound ramp intersection is operating above expected severity range.
- Gaps exist in the pedestrian/bicycle system along the corridor through the western project area and from Ridge Lane to Old Audubon Road. Carver County's planned linking trail will complete the missing segments for a more complete system.
- There are various SEE resources in proximity to the study area that need to be considered and include prime farmland resources, threatened & endangered species, contaminated locations, 4f and 6f properties, and potential environmental justice populations.

APPENDIX A

Figures

Highway 10 Corridor Study Victoria-Chaska Area

Carver County

Figure 5 - Project Subareas

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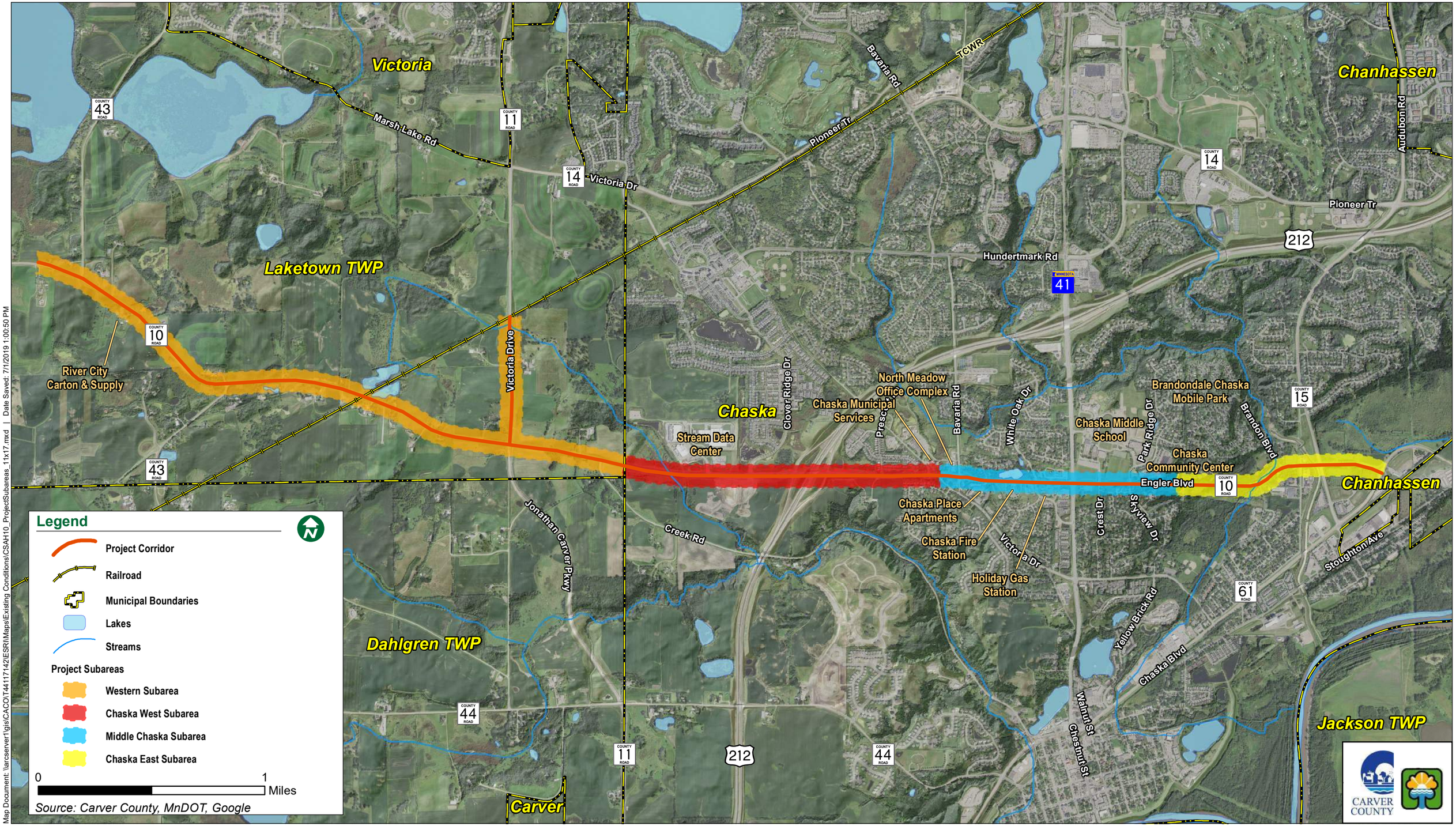

Legend

- Project Corridor
- Railroad
- Municipal Boundaries
- Lakes
- Streams

Project Subareas

- Western Subarea
- Chaska West Subarea
- Middle Chaska Subarea
- Chaska East Subarea

0 — 1 Miles

Source: Carver County, MnDOT, Google

CARVER COUNTY

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HIGHWAY 10 STUDY

Highway 10 Corridor Study Victoria-Chaska Area

Carver County

Figure 6 - Existing Land Use

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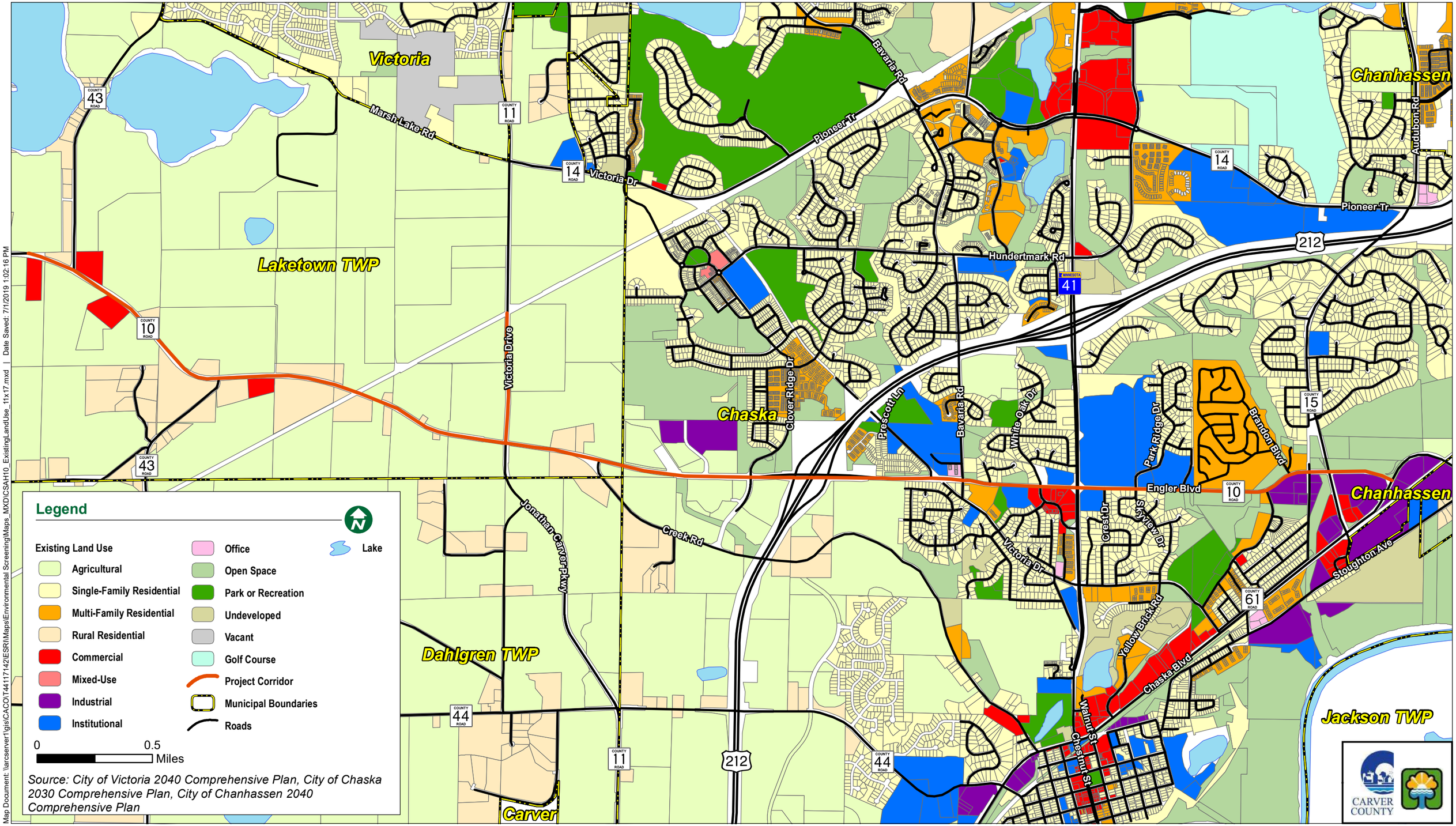

Legend

Existing Land Use

- Agricultural
- Single-Family Residential
- Multi-Family Residential
- Rural Residential
- Commercial
- Mixed-Use
- Industrial
- Institutional
- Office
- Open Space
- Park or Recreation
- Undeveloped
- Vacant
- Golf Course
- Project Corridor
- Municipal Boundaries
- Roads
- Lake

0 0.5 Miles

Source: City of Victoria 2040 Comprehensive Plan, City of Chaska 2030 Comprehensive Plan, City of Chanhassen 2040 Comprehensive Plan

CARVER COUNTY

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HIGHWAY 10 STUDY

Highway 10 Corridor Study Victoria-Chaska Area

Carver County

Figure 7 - Future Landuse

July 2019

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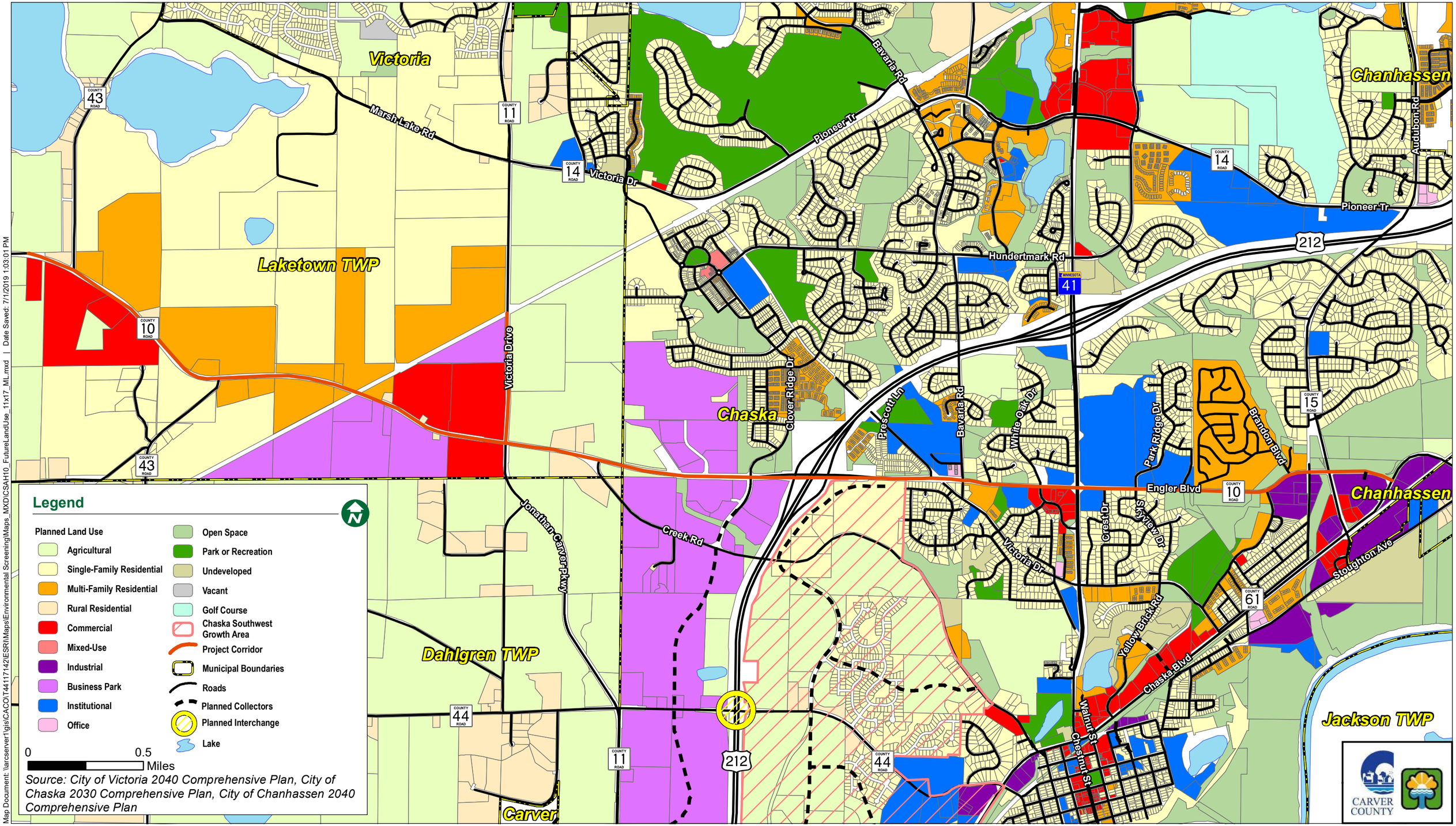

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Highway 10 Corridor Study Victoria-Chaska Area

Carver County

Figure 8 - Traffic Operations Subareas 1 & 2

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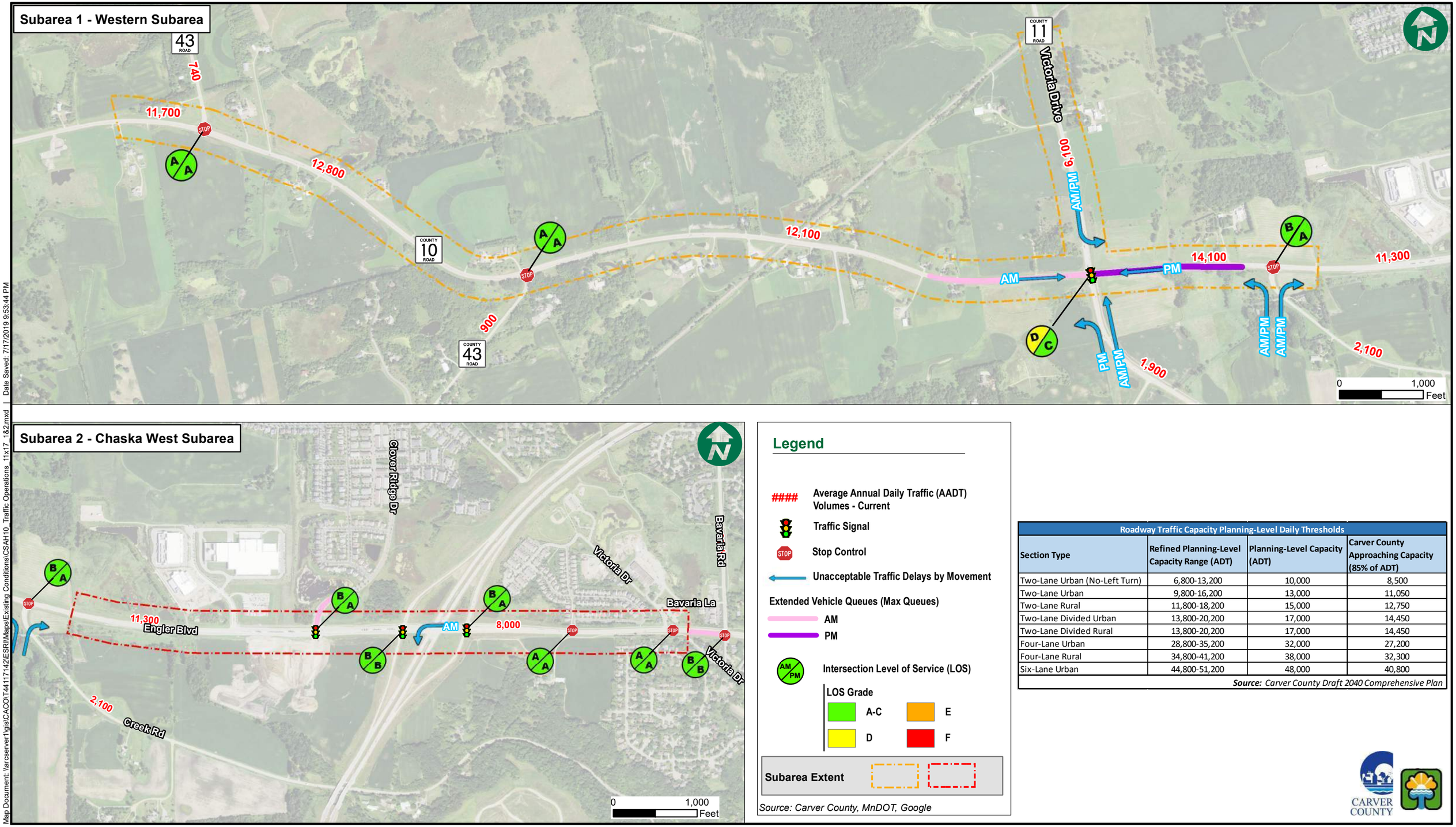

Legend

- #### Average Annual Daily Traffic (AADT) Volumes - Current
- Traffic Signal
- Stop Control
- Unacceptable Traffic Delays by Movement
- Extended Vehicle Queues (Max Queues)
  - AM
  - PM
- Intersection Level of Service (LOS)
- LOS Grade: A-C, D, E, F
- Subarea Extent

Source: Carver County, MnDOT, Google

Roadway Traffic Capacity Planning-Level Daily Thresholds

Section Type	Refined Planning-Level Capacity Range (ADT)	Planning-Level Capacity (ADT)	Carver County Approaching Capacity (85% of ADT)
Two-Lane Urban (No-Left Turn)	6,800-13,200	10,000	8,500
Two-Lane Urban	9,800-16,200	13,000	11,050
Two-Lane Rural	11,800-18,200	15,000	12,750
Two-Lane Divided Urban	13,800-20,200	17,000	14,450
Two-Lane Divided Rural	13,800-20,200	17,000	14,450
Four-Lane Urban	28,800-35,200	32,000	27,200
Four-Lane Rural	34,800-41,200	38,000	32,300
Six-Lane Urban	44,800-51,200	48,000	40,800

Source: *Carver County Draft 2040 Comprehensive Plan*

CARVER COUNTY

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HIGHWAY 10 STUDY

Highway 10 Corridor Study Victoria-Chaska Area

Carver County

Figure 9 - Traffic Operations Subareas 3 & 4

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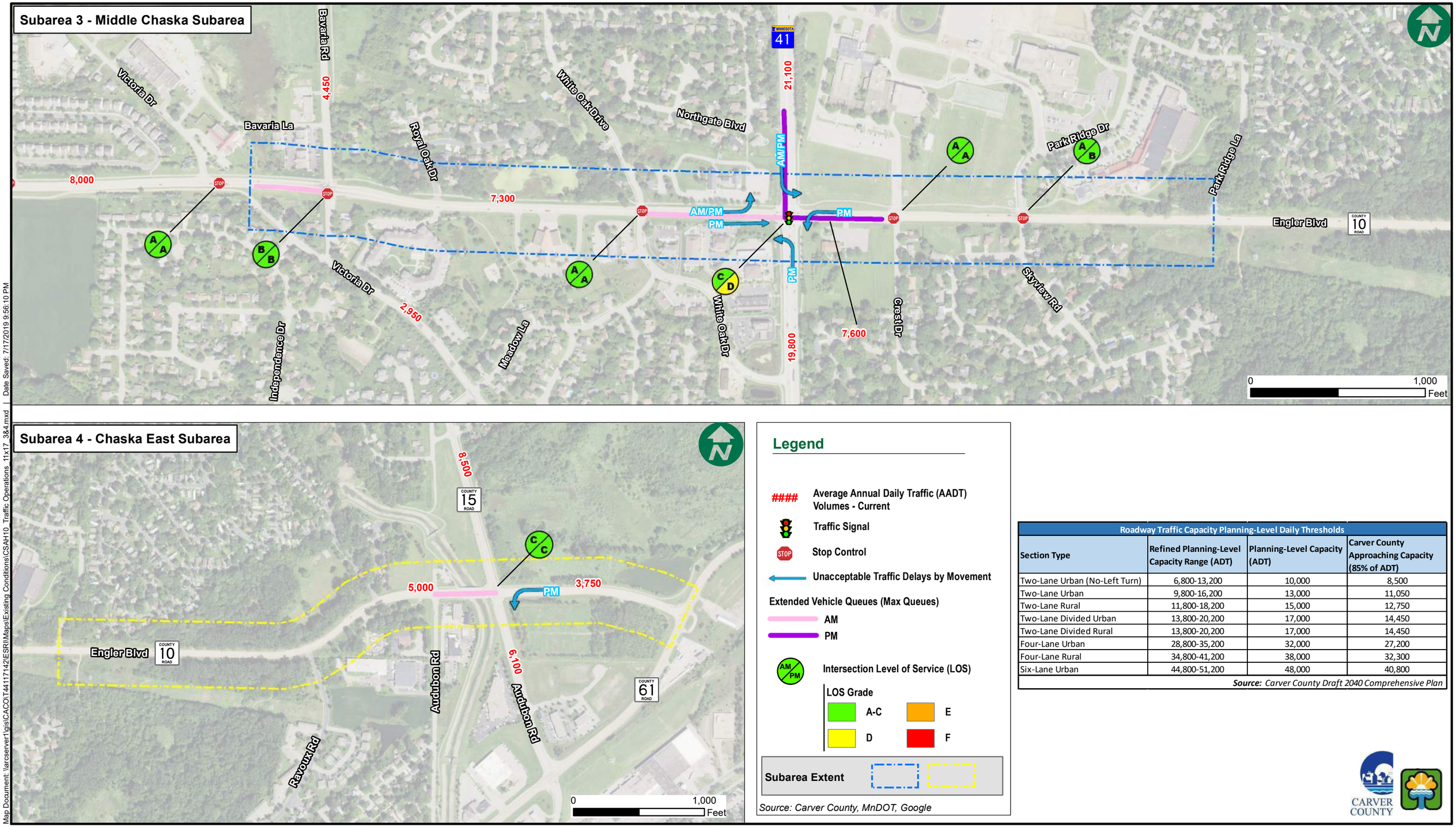

Legend

- #### — Average Annual Daily Traffic (AADT) Volumes - Current
- Traffic Signal
- Stop Control
- Unacceptable Traffic Delays by Movement
- Extended Vehicle Queues (Max Queues)
  - AM
  - PM
- Intersection Level of Service (LOS)
  - LOS Grade
    - A-C
    - D
    - E
    - F
- Subarea Extent

Source: Carver County, MnDOT, Google

Roadway Traffic Capacity Planning-Level Daily Thresholds

Section Type	Refined Planning-Level Capacity Range (ADT)	Planning-Level Capacity (ADT)	Carver County Approaching Capacity (85% of ADT)
Two-Lane Urban (No-Left Turn)	6,800-13,200	10,000	8,500
Two-Lane Urban	9,800-16,200	13,000	11,050
Two-Lane Rural	11,800-18,200	15,000	12,750
Two-Lane Divided Urban	13,800-20,200	17,000	14,450
Two-Lane Divided Rural	13,800-20,200	17,000	14,450
Four-Lane Urban	28,800-35,200	32,000	27,200
Four-Lane Rural	34,800-41,200	38,000	32,300
Six-Lane Urban	44,800-51,200	48,000	40,800

Source: *Carver County Draft 2040 Comprehensive Plan*

CARVER COUNTY

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HIGHWAY 10 STUDY

Highway 10 Corridor Study Victoria-Chaska Area

Carver County

Figure 10 - 2040 Traffic Operations Subareas 1 & 2

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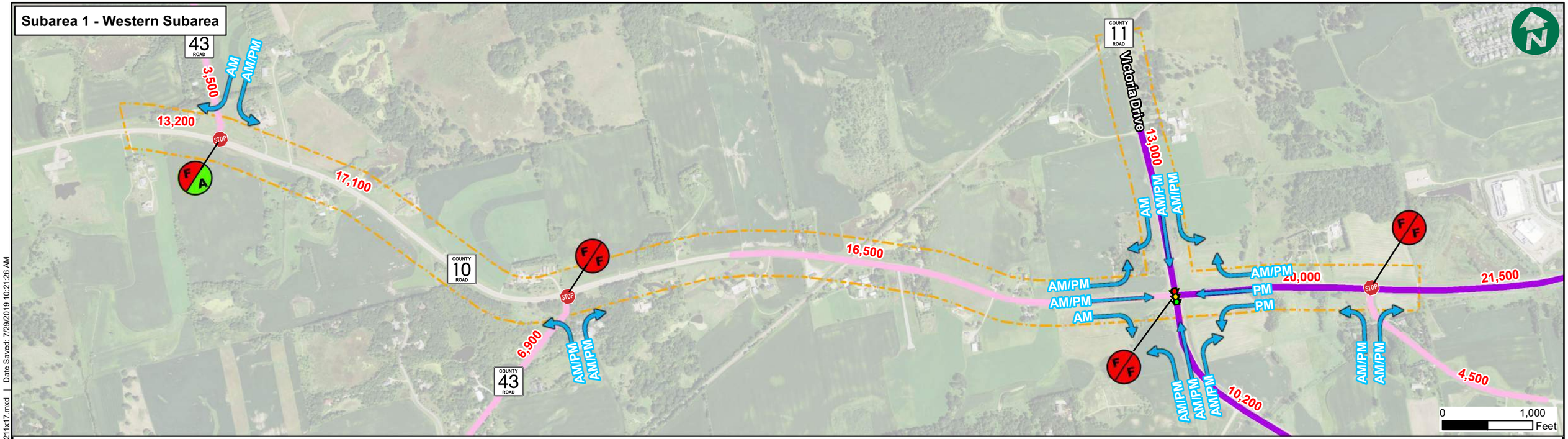

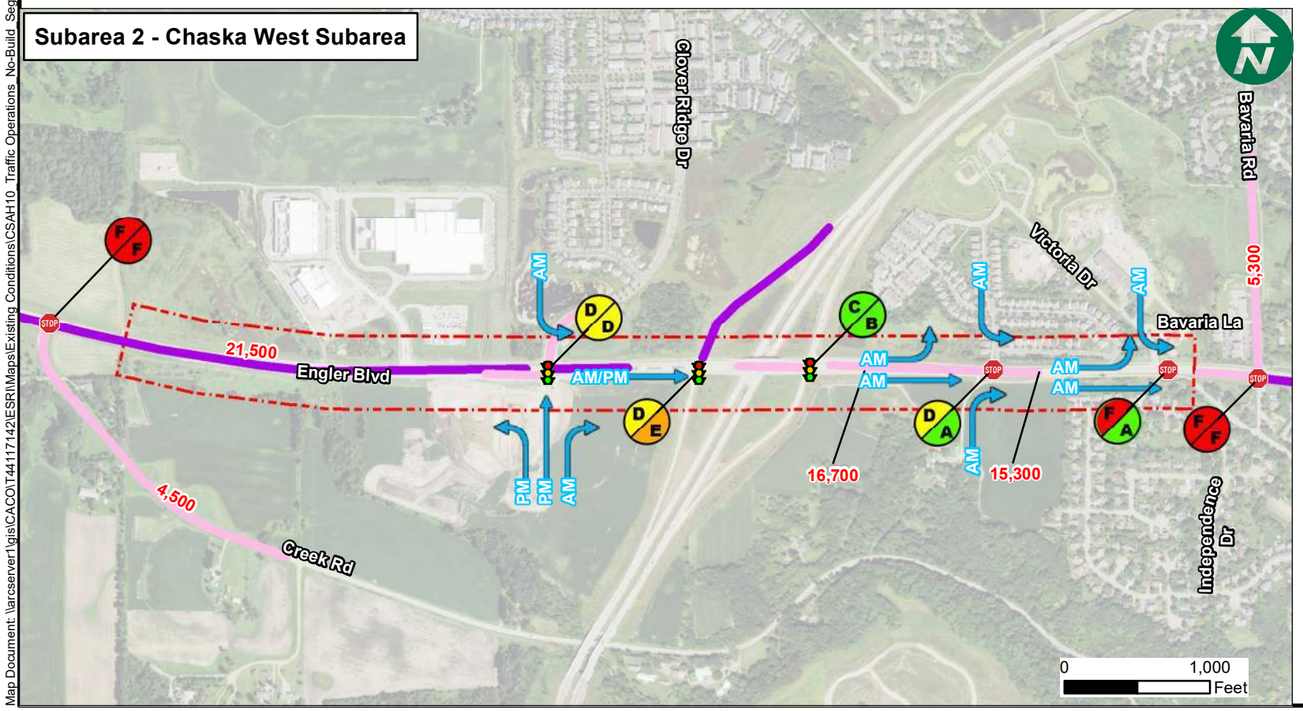

Legend

- #### 2040 Average Annual Daily Traffic (AADT) Volumes
- Traffic Signal
- STOP Stop Control
- Unacceptable Traffic Delays by Movement

Extended Vehicle Queues (Max Queues)

- AM
- PM

AM/PM Intersection Level of Service (LOS)

LOS Grade

A-C	E
D	F

Subarea Extent

Source: Carver County, MnDOT, Google

Roadway Traffic Capacity Planning-Level Daily Thresholds

Section Type	Refined Planning-Level Capacity Range (ADT)	Planning-Level Capacity (ADT)	Carver County Approaching Capacity (85% of ADT)
Two-Lane Urban (No-Left Turn)	6,800-13,200	10,000	8,500
Two-Lane Urban	9,800-16,200	13,000	11,050
Two-Lane Rural	11,800-18,200	15,000	12,750
Two-Lane Divided Urban	13,800-20,200	17,000	14,450
Two-Lane Divided Rural	13,800-20,200	17,000	14,450
Four-Lane Urban	28,800-35,200	32,000	27,200
Four-Lane Rural	34,800-41,200	38,000	32,300
Six-Lane Urban	44,800-51,200	48,000	40,800

Source: *Carver County Draft 2040 Comprehensive Plan*

CARVER COUNTY

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HIGHWAY 10 STUDY

Highway 10 Corridor Study Victoria-Chaska Area

Carver County

Figure 11 - 2040 Traffic Operations Subareas 3 & 4

July 2019

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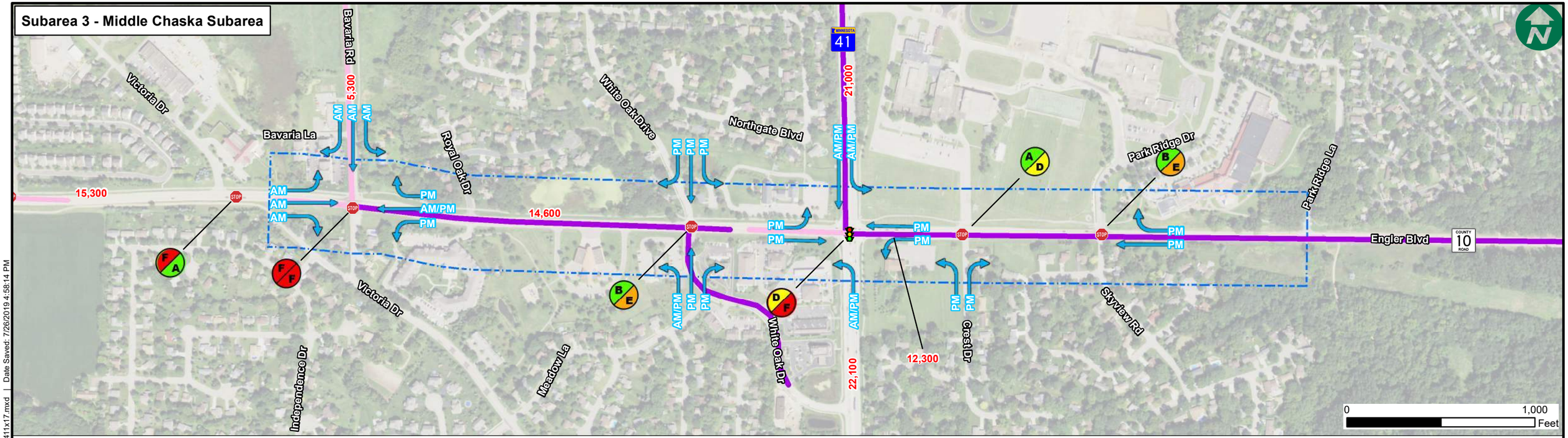

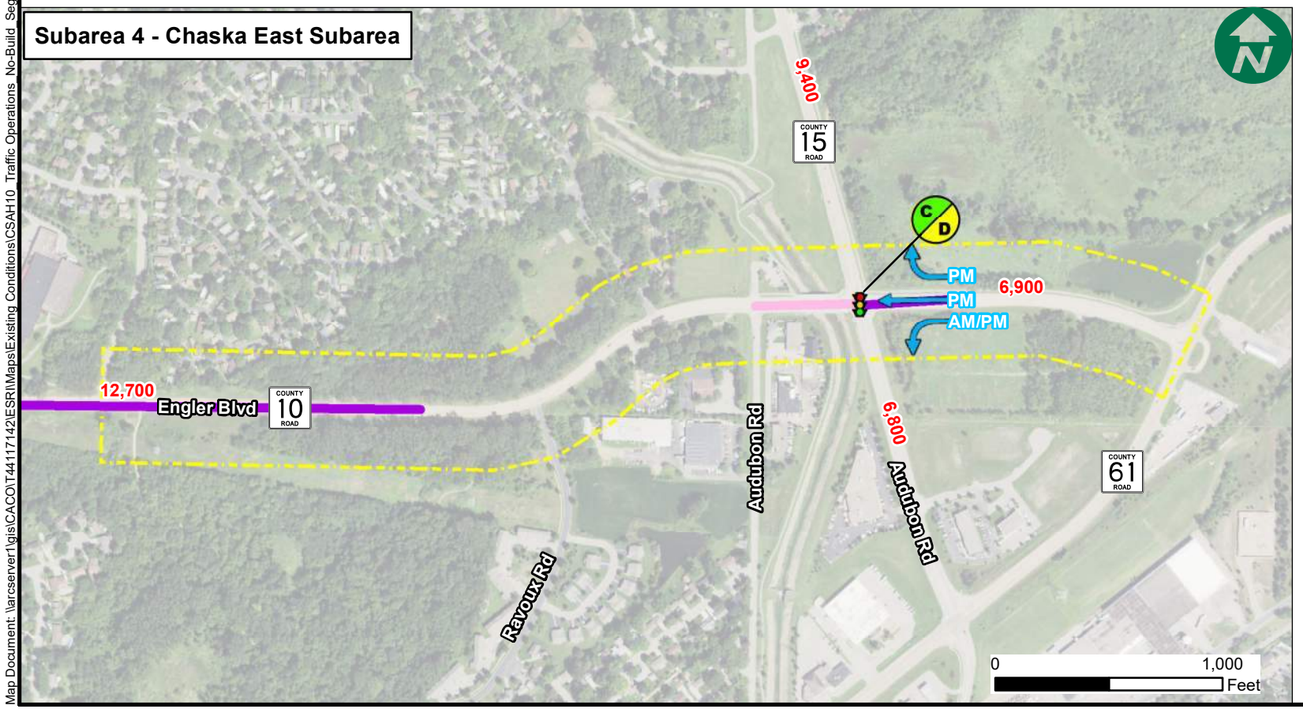

Legend

- #### 2040 Average Annual Daily Traffic (AADT) Volumes
- Traffic Signal
- STOP Stop Control
- Unacceptable Traffic Delays by Movement
- Extended Vehicle Queues (Max Queues)
  - AM
  - PM
- AM/PM Intersection Level of Service (LOS)
  - LOS Grade
    - A-C
    - D
    - E
    - F
- Subarea Extent

Source: Carver County, MnDOT, Google

Roadway Traffic Capacity Planning-Level Daily Thresholds

Section Type	Refined Planning-Level Capacity Range (ADT)	Planning-Level Capacity (ADT)	Carver County Approaching Capacity (85% of ADT)
Two-Lane Urban (No-Left Turn)	6,800-13,200	10,000	8,500
Two-Lane Urban	9,800-16,200	13,000	11,050
Two-Lane Rural	11,800-18,200	15,000	12,750
Two-Lane Divided Urban	13,800-20,200	17,000	14,450
Two-Lane Divided Rural	13,800-20,200	17,000	14,450
Four-Lane Urban	28,800-35,200	32,000	27,200
Four-Lane Rural	34,800-41,200	38,000	32,300
Six-Lane Urban	44,800-51,200	48,000	40,800

Source: *Carver County Draft 2040 Comprehensive Plan*

CARVER COUNTY

Highway 10 Corridor Study Victoria-Chaska Area

Carver County

Figure 12 - 5-Year Crash History (2013 - 2017)

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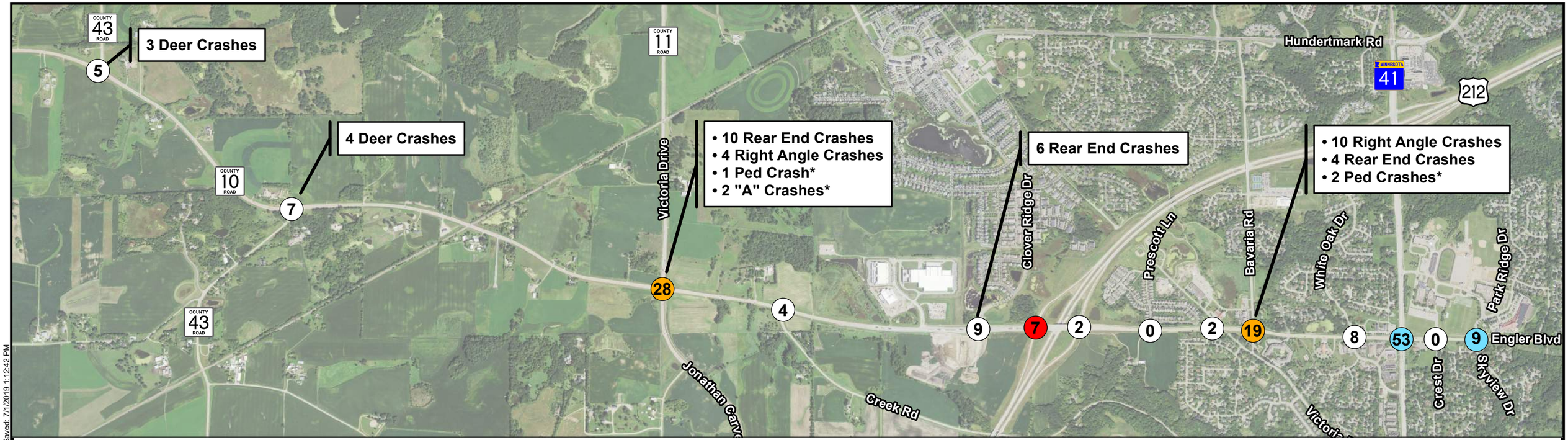

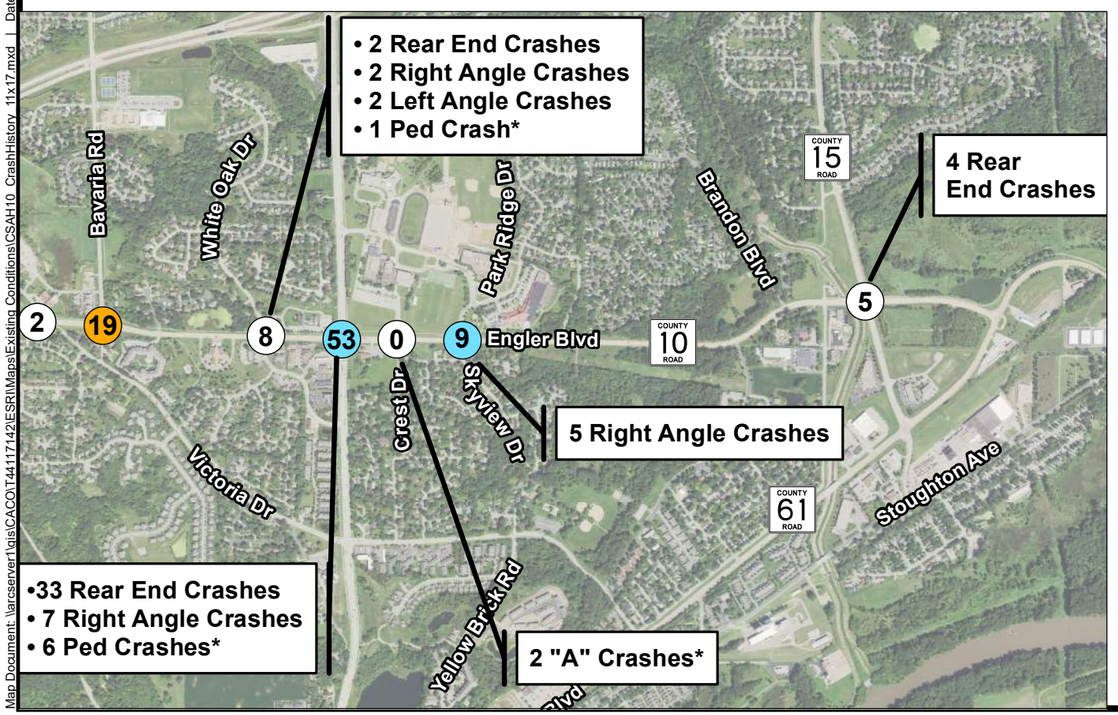

Legend

Crashes

- Intersection Operating at Above Expected Range Fatal/Injury Range
- Intersection Approaching Above Expected Range
- Intersection Operating at Above Expected Range
- Intersection Operating within Expected Range
- ## # of Observed Crashes

0 0.5 Miles

Source: Carver County, MnDOT, Google

Information

Intersection Crash Counts documented for a 5-year timeframe from 2013 - 2017

** Pedestrian and Fatal/Incapacitating Injury crashes documented for a 10-year timeframe from 2008 - 2017*

CARVER COUNTY

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Highway 10 Corridor Study Victoria-Chaska Area

Carver County

Figure 13 - Access Inventory

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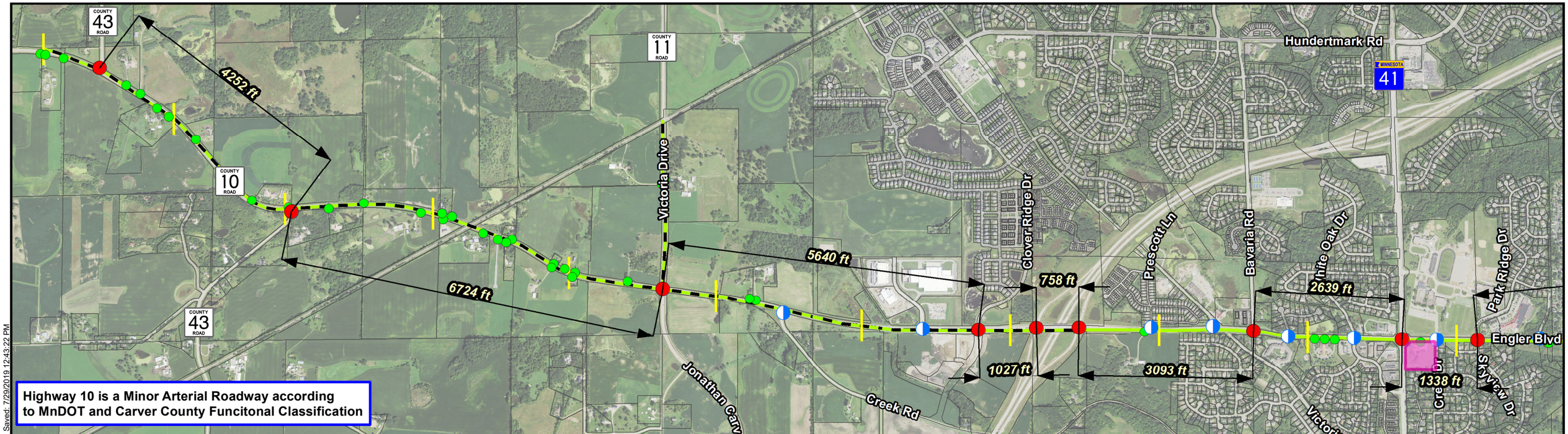
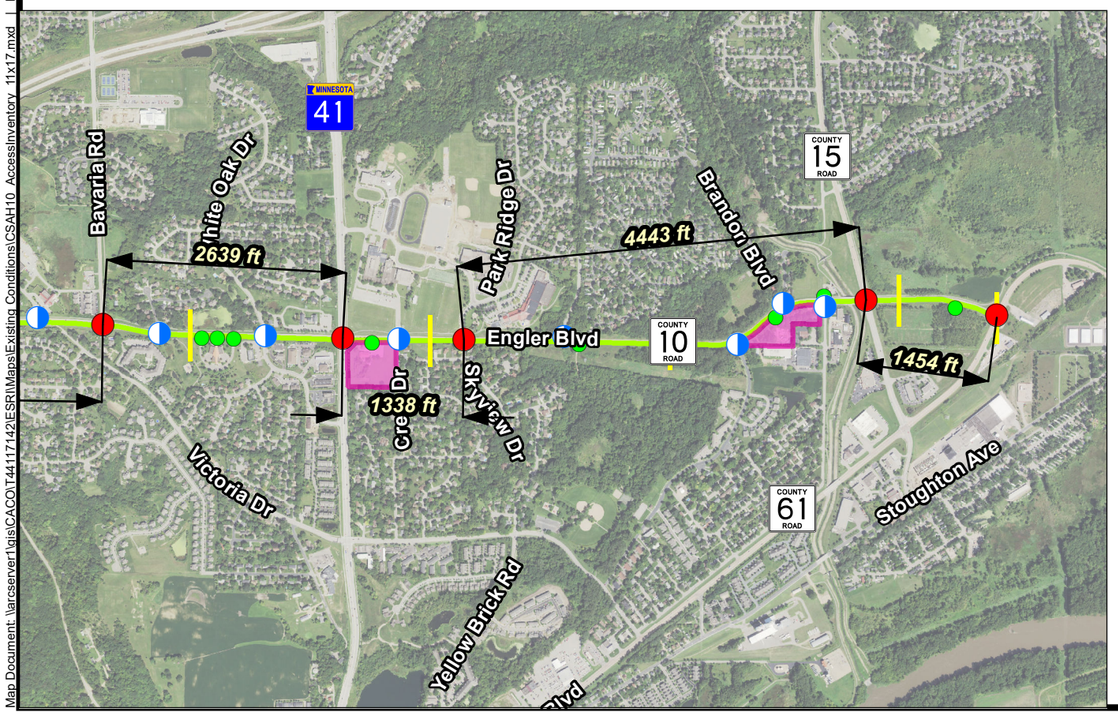
HIGHWAY 10 STUDY





Legend

Access Inventory

- Primary
- Secondary
- Private
- Private Shared

Road Type

- Rural, Exurban & Bypass
- Urban/Urbanizing
- Parcels
- Parcels with Potential for Side Street Access
- 1/2 Mile Mark (2640 ft)

1/8 Mile = 660 ft
1/4 Mile = 1320 ft

0 0.5 Miles

Source: Carver County, MnDOT, Google

Access	West of TH 212 (Rural, Exurban & Bypass)	East of TH 212 (Urban/Urbanizing)
Length of Segment (ft)	20,944	11,860
# Primary Access	6	6
Primary Access Per Mile	1.5	2.7
# of Secondary Access	2	9
Secondary Access Per Mile	0.5	4.0
# of Private Access	28	9
Private Access Per Mile	7.1	4.0

Minor Arterial	Primary (Full-Movement) Intersection Spacing		
	Rural, Exurban & Bypass	1/2 mile	3 access/mile
	Urban/Urbanizing	1/4 mile	5 access/mile
	Urban Core	300-600 feet	9 - 19 access/mile
	Secondary Intersection Spacing		
	Rural, Exurban & Bypass	1/4 mile	5 access/mile
	Urban/Urbanizing	1/8 mile	9 access/mile
	Urban Core	300-600 feet	9 - 19 access/mile

Note: *Highway 10, west of TH 212, is anticipated to change from a minor arterial roadway to a regional priority corridor functional classification. Access spacing recommendations for a regional priority corridor are ½-mile for secondary access and 1-mile for primary access. Highway 10 will reference this direction, but recommendations from this study will serve as guidance for agencies to follow as improvements are implemented.*

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Highway 10 Corridor Study Victoria-Chaska Area

Carver County

Figure 14 - Pedestrian and Bicycle Facilities

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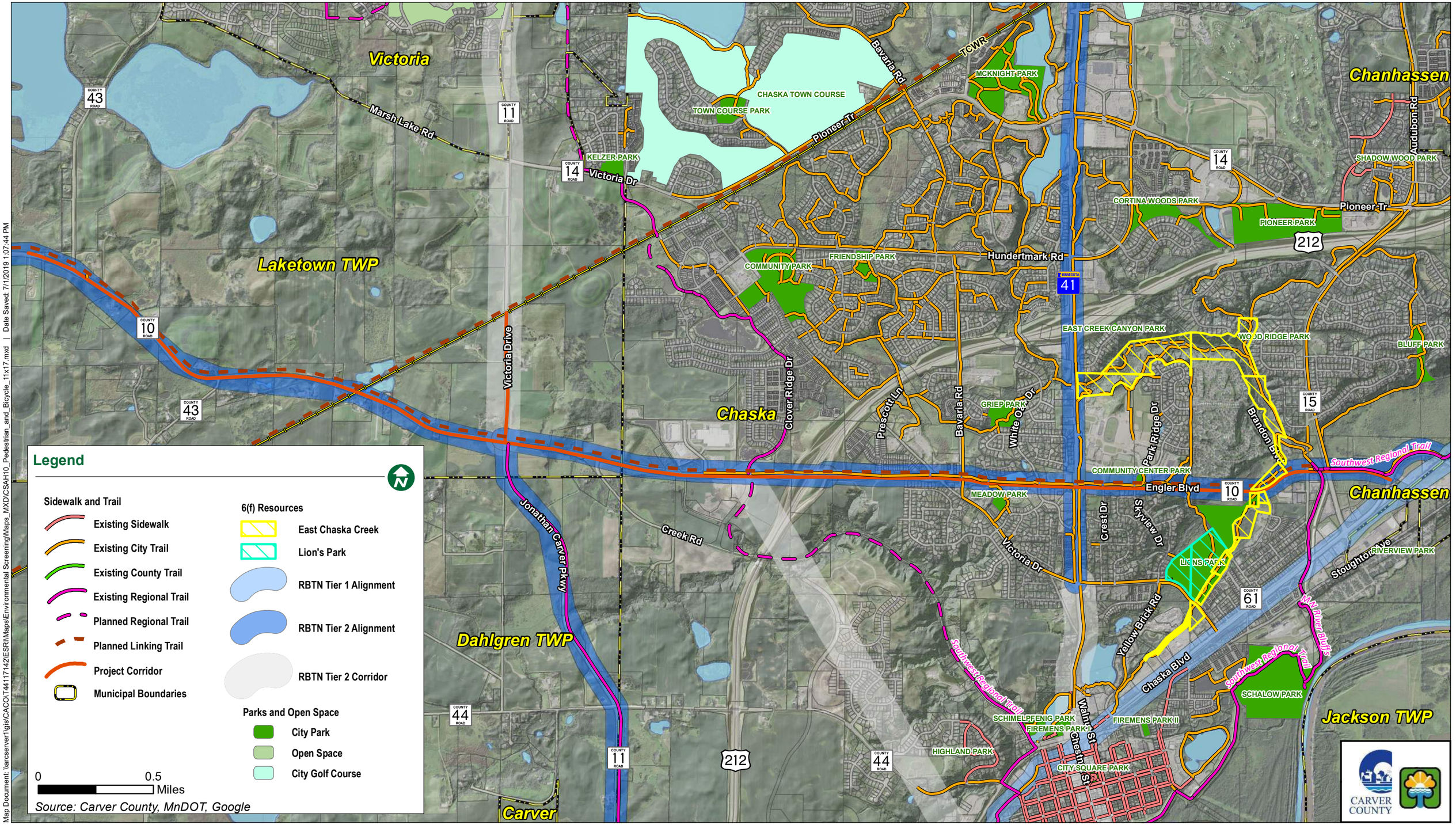

Legend

Sidewalk and Trail

- Existing Sidewalk
- Existing City Trail
- Existing County Trail
- Existing Regional Trail
- Planned Regional Trail
- Planned Linking Trail
- Project Corridor
- Municipal Boundaries

6(f) Resources

- East Chaska Creek
- Lion's Park

- RBTN Tier 1 Alignment
- RBTN Tier 2 Alignment
- RBTN Tier 2 Corridor

Parks and Open Space

- City Park
- Open Space
- City Golf Course

0 0.5 Miles

Source: Carver County, MnDOT, Google

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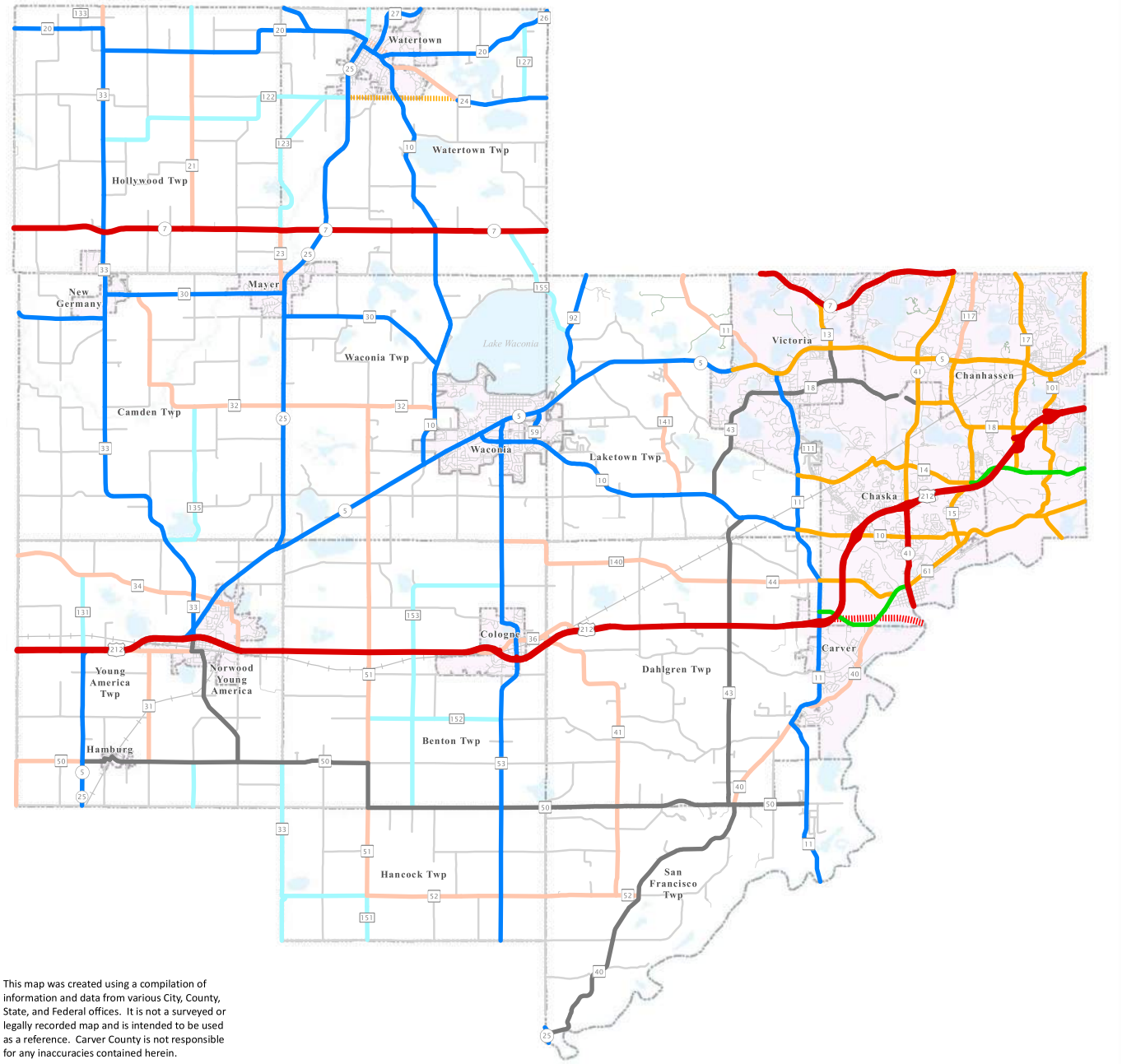
APPENDIX B

Carver County Functional Classification

Existing Functional Class

Figure 4.4



Legend

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

Planned Functional Class

- Principal Arterial
- A Minor Expander
- Major Collector

City/Township Boundary

- Existing City

0 1 2 4 Miles

This map was created using a compilation of information and data from various City, County, State, and Federal offices. It is not a surveyed or legally recorded map and is intended to be used as a reference. Carver County is not responsible for any inaccuracies contained herein.

CARVER COUNTY
Public Works Division
11360 Hwy 212, Suite 1
Cologne, MN 55322
(952) 466-5200

Created: 5/8/2019

APPENDIX C

Existing Traffic Conditions Analysis Memo

APPENDIX D

Environmental Screening

HIGHWAY 10 CORRIDOR STUDY
VICTORIA-CHASKA AREA

Social, Environmental, and Economic Resource Screening Table

Social, Economic, or Environmental Topic	Considerations	Existing/Planned Conditions
General Land Use	• Information from local planning documents • Transportation/land use compatibility and appropriate highway design • Potential impacts of transportation improvements	Existing land use information, is depicted in **Figure 1**. West of Trunk Highway (TH) 212, adjacent land use is primarily rural, with the exception of the Stream Data Center and single family residential directly west of TH 212. East of TH 212, adjacent land use is a mix of residential, commercial, public/institutional, and religious land uses. The Chaska Middle Schools (west and east campuses) and the Chaska Community Center are prominent land uses north of County State Aid Highway (CSAH) 10 and east of Chestnut Street (TH 10). Future land use information is depicted in **Figure 2**. It can be seen that Chaska does not plan any land use changes east of TH 212. It has identified the Chaska Southwest Growth Area directly east of TH 212 as depicted in **Figure 2**. This will be residential in the project area. West of TH 212, the City of Chaska identifies an expanded Business Park area on either side of CSAH 10. West of CSAH 11, the project corridor is within the urban growth area of the City of Victoria. It can be seen in **Figure 2** that Victoria envisions significant future commercial, business park, and multi-family development along the project corridor between CSAH 43 and CSAH 11.

Social and Community	• Access and compatibility considerations • Hospitals, schools, libraries, churches, government buildings	Social and institutional resources are depicted in **Figure 3**. It can be seen that they are all east of TH 212. Notable features include churches, parks, the Chaska Middle School (West and East campuses), and the Chaska Community Center.
Environmental Justice	• Avoid/mitigate disproportionate impacts to low income and minority populations • Federal funding triggers review and potential mitigation requirements	The portion of the project area with the most potential for an Environmental Justice population is the Brandondale Mobile Park. This is a large manufactured housing development north of the east end of the project corridor (see **Figure 3**). The closest Brandondale units are east of Ridge Lane and are 60 – 100 feet away from the current CSAH 10 roadway. This overall development is well screened from the roadway with a berm and foliage. There is also a multi-family development (Chaska Place) south of CSAH 10 and east of Bavaria Road; however, it is not believed to be home to a significant Environmental Justice population. If future work in the corridor involves federal funding, more detailed evaluation procedures would be required per FHWA Order 6640.23.
Traffic Noise	• Identify noise receptors • Comply with federal and state regulatory requirements • Potential mitigation (walls or other measures)	There are a number of potential noise receptors adjacent to the study corridor as defined in MnDOT requirements and guidelines (http://www.dot.state.mn.us/environment/noise/pdf/2017-noise-requirements.pdf). These include residences, parks, trails, and schools. Of these, the most sensitive and important for noise analysis procedures would be residences. Residential receptor areas are depicted in **Figure 3**. The need for noise analysis including potential mitigation evaluation will be determined once individual improvement projects are identified.
Section 4f/6f Resources	• Require special evaluation, coordination, and documentation: o Parks and trails o Wildlife & waterfowl refuges o School playgrounds o Public golf courses	**Section 4(f)** Parks and publicly-owned open spaces are depicted in **Figure 3**. It can be seen that Meadow Park, Community Center Park, and Lion's Park abut the project corridor. In addition, there are various publicly owned green spaces adjacent to the corridor within Chaska. These areas could be determined by FHWA to be Section 4(f) resources. Public schools that have outdoor play/recreation/sports areas are generally considered section 4(f) resources; this would include the Chaska Middle School complex. Trails are depicted on **Figure 4**; there is a City of Chaska trail along the north side of CSAH 10 from Ridge Lane in the eastern portion of the project corridor to Creek Lane west of TH 212. City trails also cross the project corridor at Bavaria Road, TH 41, and at two locations to the east not associated with roadways. **Section 6(f)**

		Section 6(f) resources have this designation because of special types of federal funding. Section 6(f) has a set of review and mitigation requirements, beyond Section 4(f) requirements, which need to be approved by the US National Parks Service (NPS). These requirements can be significant, as can the associated project schedule requirements. There is one Section 6(f) resource that comes in contact with the project corridor: East Chaska Creek Trail, which crosses CSAH 10 just west of Ravoux Road (see **Figure 4**). Lions Park is also a 6(f) resource and its 6(f) boundary as defined by NPS is located approximately 750 feet south of CSAH 10 (see **Figure 4**). While this is a relatively sizable separation, any future project at the east end of the study area should consider 6(f) factors associated with Lions Park and coordinate with the Grants/Section 6(f) office of MnDNR accordingly.
Farmland	• Farmland conservation policies	The land use adjacent to the project corridor west of TH 212 is primarily agricultural. Much of it is designated as Prime Farmland by the US Department of Agriculture. Any corridor improvement project impacting farmland would need to address applicable regional and local farmland conservation policies. If federal funding is involved, coordination with the National Resources Conservation Service using Form AD 1006 would be required.
Historic/archaeological	• Require special evaluation, coordination, and documentation • Avoid impacts per state, federal, and local regulations and guidelines	Known historic properties in the larger project area are depicted in **Figure 3**. There are no such properties west of TH 212 in the larger project area. Most of the known historic properties in Chaska are associated with the downtown area and would not be impacted by improvement projects to CSAH 10. The closest known historic property is the Mittelsted House on Mabel Court approximately 1/3 mile north of the project corridor, just west of CSAH 15. This property is not on the National Historic Register of Historic Places and is likely too far from the corridor to be impacted by an improvement project. Improvements to the project corridor could require more detailed cultural resource evaluation.
Soils/Erosion	• Compatibility with construction/drainage design	A preliminary review of soils information using the Natural Resources Conservation Service (NRCS) Web Soil Survey does not suggest notable characteristics of soils in the project area making them susceptible to high levels of erosion. Any improvement project would need to comply with National Pollutant Discharge Elimination System (NPDES) requirements regarding erosion control during construction activities. Prior to the construction of any improvements in the project corridor, geotechnical

		analysis would be performed which would evaluate the suitability of the local soils for construction and identify any corrective measures needed.
Utilities	• Conflicts with utilities may increase schedule/cost requirements	There are numerous utilities throughout the corridor which would need to be accounted for in any corridor planning/improvement project. This includes, depending on the segment of the corridor, overhead and buried power and communications lines, sanitary sewer, as well as storm sewer in the urban section (curb and gutter) portions of the corridor. The most notable considerations would be regional power transmission lines: a) in the vicinity of the Chaska Community Center and Middle School West, and b) a short segment of CSAH 10 east of Creek Road. In addition, a large regional gas distribution line runs under TH 41 perpendicular to the project corridor.
Water Resources	• Impacts need to be avoided/limited per regulatory requirements	**Wetlands - General** National Wetland Inventory (NWI) wetland areas as defined by the US Fish and Wildlife are depicted in **Figure 5**. While any improvement project or projects in the study corridor would likely need to have field wetland delineations performed, NWI mapping is a desktop exercise that indicates the scale of wetland impacts which could be encountered. The NWI information for the study area suggests that, while CSAH 10 improvement projects would likely have wetland involvement, it does not appear that there would be major impacts through most of the project corridor (see Seminary Fen information, below, as it pertains to the far eastern portion of study area). **Seminary Fen** There is a 600-acre wetland complex called the Seminary Fen Wetlands Complex north of CSAH 10 and east of CSAH 15 (see **Figure 5**). This complex includes calcareous fens, which ae the rarest type of wetlands and receive special protection under State Statute 103G.223. This prohibits any activity that directly or indirectly impacts these systems by means of filling, draining or other action that results in degradation of the fen, except when approved by the Commissioner of the Minnesota Department of Natural Resources. **Floodplain** As depicted in **Figure 5**, a small portion of the study corridor at the far east end is within floodplain associated with Chaska East Creek (see **Figure 5**). Otherwise, there is no floodplain involvement.
Drainage	• Existing drainage systems • Sensitive waters	Roughly the western half of the project corridor has rural section design, with roadway drainage conveyed via ditches. From approximately West Creek

	• Regulatory requirements	Road to the eastern project limit, roadway drainage is conveyed via a combination of urban section (curb and gutter) and rural section systems. The urban section areas are primarily associated with the crossings at TH 212, TH 41, and CSAH 15 respectively. Regional drainage runs generally east-southeast to the Minnesota River, which is an Impaired Water as identified by the Minnesota Pollution Control Agency (MPCA). As depicted in **Figure 5**, two streams cross the project corridor, Chaska Creek, and Chaska East Creek, both of which drain to the Minnesota River. Chaska Creek is an Impaired Water east of its confluence with Unnamed Creek, and Chaska East Creek is an Impaired Water. In general, discharging to Impaired Waters elevates National Pollutant Discharge Elimination System (NPDES) control requirements to a relatively limited degree. Any roadway improvement projects will need to comply with NPDES stormwater control requirements as administered by the MPCA, as well as Carver County Watershed Management Organization control requirements.
Contaminated Properties	• Potential construction delays/costs • Potential cleanup liability	The Minnesota Pollution Control Agency's (MPCA's) "What's In My Neighborhood" database is a useful tool for preliminary screening and planning purposes. Reviewing this data indicates that there is one known fuel spill site associated with Chaska Middle School West, but this was addressed and administratively closed by MPCA in 2004. The spill would have been well off the study corridor. No other sites of concern were identified.
Fisheries	• Trout streams • Fish migrations • Spawning runs • Unique habitat conditions	There are no Trout Streams in the project area. Assumption Creek is a Trout Stream to the east, but based on information in the Chaska Surface Water Management plan, the project corridor does not drain to Assumption Creek (CSAH 15 is a drainage divide).
Vegetation	• Native plant communities • Landscape vegetation • Functional vegetation • High value vegetation • Hazard trees	Most of the land adjacent to the project corridor is agricultural, residential, commercial, or institutional/civic. There are some wooded areas adjacent to CSAH 10, but they are not part of larger/regional forest resources. **Figure 5** depicts MnDNR's areas of Biodiversity Significance. The area directly east of CSAH 15 (part of the Seminary Fen complex referenced previously) shows Outstanding Biodiversity Significance. Also depicted are MnDNR's Regionally Significant Ecological Areas. It can be seen in **Figure 5** that there are such areas in or adjacent to the Seminary Fen area, within Lions Park

		south of CSAH 10 at the east end of the corridor, and adjacent to CSAH 10 on the north side at the railroad crossing in Laketown Township.
Protected Species	• Federal and state designations • Coordination and review requirements	Based on USFWS information, there are three federally protected species known to be in Carver County: • Northern long-eared bat • Minnesota dwarf trout lily • Rusty-patched bumble bee These species are present in all counties within Minnesota. Future improvement projects would involve review and potential mitigation using USFWS guidance. Based on are review of Natural Heritage Information System (NHIS) database administered by MnDNR, there are no known occurrences of state-protected species or habitat within ¼ mile of the project corridor.

HIGHWAY 10 STUDY

Highway 10 Corridor Study Victoria-Chaska Area

Carver County

Existing Land Use

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Victoria
Chanhassen
Laketown TWP
Chaska
Dahlgren TWP
Carver
Jackson TWP
Marsh Lake Rd
Victoria Dr
Pioneer Tr
Bavaria Rd
Audubon Rd
Hundertmark Rd
Victoria Drive
Clover Ridge Dr
Prescott Ln
Bavaria Rd
White Oak Dr
Park Ridge Dr
Brandon Blvd
Engler Blvd
Crest Dr
Sylvia Dr
Victoria Dr
Stoughton Ave
Yellow Brick Rd
Chaska Blvd
Walnut St
Chestnut St
Jonathan Carver Pkwy
Creek Rd
COUNTY 43 ROAD
COUNTY 10 ROAD
COUNTY 11 ROAD
COUNTY 14 ROAD
COUNTY 15 ROAD
COUNTY 44 ROAD
COUNTY 61 ROAD
MINNESOTA 41
212

Legend

Existing Land Use
- Agricultural
- Single-Family Residential
- Multi-Family Residential
- Rural Residential
- Commercial
- Mixed-Use
- Industrial
- Institutional
- Office
- Open Space
- Park or Recreation
- Undeveloped
- Vacant
- Golf Course
- Project Corridor
- Municipal Boundaries
- Roads
- Lake

0 0.5 Miles

Source: City of Victoria 2040 Comprehensive Plan, City of Chaska 2030 Comprehensive Plan, City of Chanhassen 2040 Comprehensive Plan

CARVER COUNTY

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Highway 10 Corridor Study Victoria-Chaska Area

Carver County

Future Landuse

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HIGHWAY 10 STUDY

Victoria
Laketown TWP
Chaska
Dahlgren TWP
Carver
Chanhassen
Jackson TWP

Marsh Lake Rd
Victoria Drive
Victoria Dr
Bavaria Rd
Pioneer Tr
Hundertmark Rd
Audubon Rd
Clover Ridge Dr
Prescott Ln
Bavaria Rd
White Oak Dr
Park Ridge Dr
Brandon Blvd
Engler Blvd
Crest Dr
Skyview Dr
Victoria Dr
Creek Rd
Jonathan Carver Pkwy
Stoughton Ave
Yellow Brick Rd
Chaska Blvd
Walnut St
Chestnut St

COUNTY 43 ROAD
COUNTY 11 ROAD
COUNTY 14 ROAD
COUNTY 10 ROAD
COUNTY 15 ROAD
COUNTY 61 ROAD
COUNTY 44 ROAD
MINNESOTA 41
212

Legend

Planned Land Use
- Agricultural
- Single-Family Residential
- Multi-Family Residential
- Rural Residential
- Commercial
- Mixed-Use
- Industrial
- Business Park
- Institutional
- Office
- Open Space
- Park or Recreation
- Undeveloped
- Vacant
- Golf Course
- Chaska Southwest Growth Area
- Project Corridor
- Municipal Boundaries
- Roads
- Planned Collectors
- Planned Interchange
- Lake

0 0.5 Miles

Source: City of Victoria 2040 Comprehensive Plan, City of Chaska 2030 Comprehensive Plan, City of Chanhassen 2040 Comprehensive Plan

CARVER COUNTY

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Highway 10 Corridor Study Victoria-Chaska Area

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Social Features

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HIGHWAY 10 STUDY

Victoria
Laketown TWP
Chaska
Chanhassen
Dahlgren TWP
Carver
Jackson TWP

Marsh Lake Rd
Victoria Drive
Victoria Dr
Bavaria Rd
Pioneer Tr
Audubon Rd
Hundertmark Rd
Clover Ridge Dr
Prescott Ln
Bavaria Rd
White Oak Dr
Park Ridge Dr
Brandon Blvd
Engler Blvd
Crest Dr
Skyview Dr
Victoria Dr
Creek Rd
Jonathan Carver Pkwy
Yellow Brick Rd
Chaska Blvd
Stoughton Ave
Walnut St
Chestnut St

MCKNIGHT PARK
HAZELTINE NATIONAL GOLF COURSE
CHASKA TOWN COURSE
TOWN COURSE PARK
KELZER PARK
CORTINA WOODS PARK
PIONEER PARK
SHADOW WOOD PARK
COMMUNITY PARK
FRIENDSHIP PARK
EAST CREEK CANYON PARK
WOOD RIDGE PARK
BLUFF PARK
GRIEP PARK
COMMUNITY CENTER PARK
MEADOW PARK
LIONS PARK
RIVERVIEW PARK
SCHALOW PARK
SCHIMELPFENIG PARK
FIREMENS PARK I
FIREMENS PARK II
HIGHLAND PARK
CITY SQUARE PARK

COUNTY 43 ROAD
COUNTY 11 ROAD
COUNTY 14 ROAD
COUNTY 10 ROAD
COUNTY 15 ROAD
COUNTY 61 ROAD
COUNTY 44 ROAD
MINNESOTA 41
212

Legend

- Project Corridor
- Municipal Boundaries
- Mobile Home Park
- Potential Residential Noise Receptors
- Golf Course
- Known Historic Sites
- Government Building
- Cemetery
- Church
- Library
- School

Parks and Open Space
- CITY PARK
- OPENSPACE

6(f) Resources
- East Chaska Creek
- Lion's Park

0 0.5 Miles

Source: FEMA, MnDNR Public Waters Inventory (PWI), MnDNR Native Plant Communities, US Fish and Wildlife Service (USFWS)

CARVER COUNTY

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Highway 10 Corridor Study Victoria-Chaska Area

Carver County

Figure 14 - Pedestrian and Bicycle Facilities

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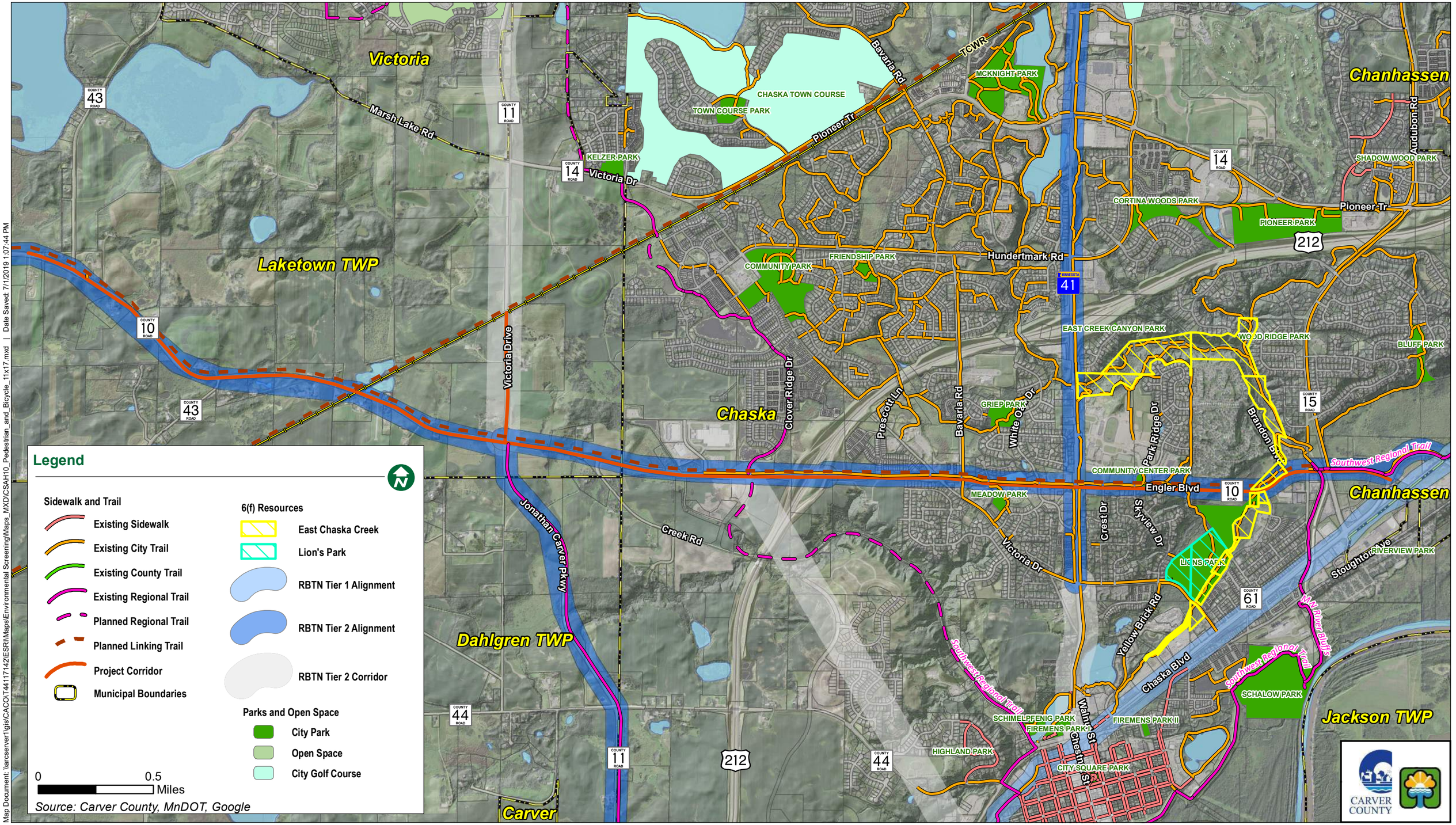
HIGHWAY 10 STUDY



Legend

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6(f) Resources

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- Lion's Park

- RBTN Tier 1 Alignment
- RBTN Tier 2 Alignment
- RBTN Tier 2 Corridor

Parks and Open Space

- City Park
- Open Space
- City Golf Course

0 0.5 Miles

Source: Carver County, MnDOT, Google

Map Document: \\arcserver1\gis\CACO\T44117142\ESRI\Maps\Environmental Screening\Maps_MXD\CSAH10_Pedestrian_and_Bicycle_11x17.mxd | Date Saved: 7/1/2019 1:07:44 PM

HIGHWAY 10 STUDY

Highway 10 Corridor Study Victoria-Chaska Area

Carver County

Natural and Biotic Features

June 2019

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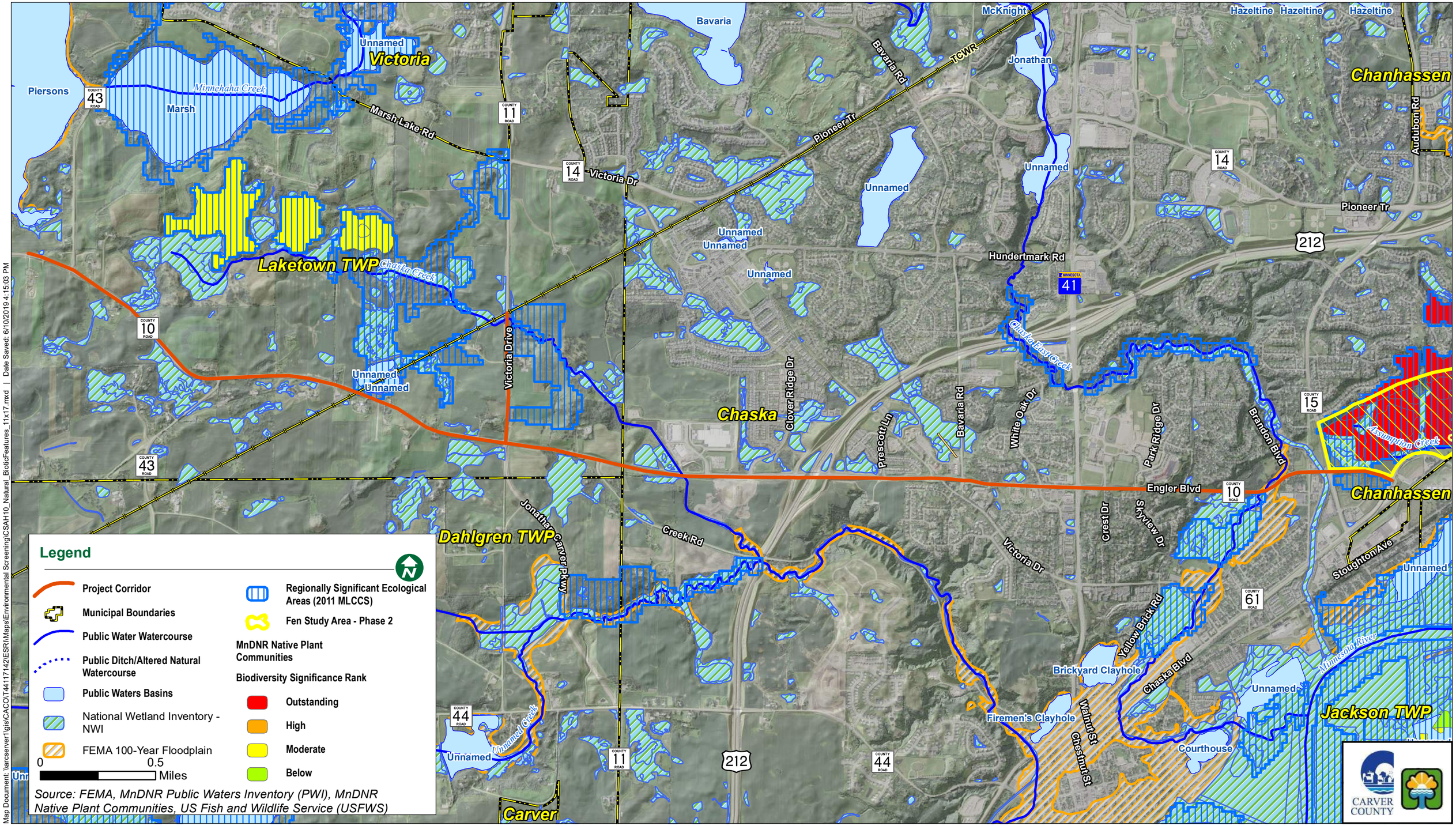

Legend

- Project Corridor
- Municipal Boundaries
- Public Water Watercourse
- Public Ditch/Altered Natural Watercourse
- Public Waters Basins
- National Wetland Inventory - NWI
- FEMA 100-Year Floodplain
- Regionally Significant Ecological Areas (2011 MLCCS)
- Fen Study Area - Phase 2

MnDNR Native Plant Communities

Biodiversity Significance Rank

- Outstanding
- High
- Moderate
- Below

0 0.5 Miles

Source: FEMA, MnDNR Public Waters Inventory (PWI), MnDNR Native Plant Communities, US Fish and Wildlife Service (USFWS)

CARVER COUNTY

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