

## CORRIDOR STUDY

**CH 17 from TH 13 to CH 101  
TH 13 from TH 19 to TH 282**

**Scott County, Minnesota  
in association with Mn/DOT, the Cities  
of Shakopee and Prior Lake, and the  
Townships of Cedar Lake and Spring Lake**

*Final Report - September 2009*



Multidisciplined. Single Source.  
Trusted Solutions.

This Page Left Blank Intentionally

# **FINAL REPORT**

## **Corridor Study**

**CH 17 from TH 13 to CH 101**

**TH 13 from TH 19 to TH 282**

*Scott County, Minnesota - in association with Mn/DOT, the  
Cities of Shakopee and Prior Lake, and Townships of Cedar  
Lake and Spring Lake*

Prepared By:

Short Elliott Hendrickson Inc.  
10901 Red Circle Drive, Suite 200  
Minnetonka, MN 55343  
952.912.2600

SEH No. A-SCOTT0602.00

September 2009

This Page Left Blank Intentionally

# **Scott County Highway 17 and TH 13 Corridor Study**

## **Approved By:**

- City of Shakopee per City Council Resolution No. 6891, on April 7, 2009
- City of Prior Lake per City Council Resolution No. 08-162 on December 15, 2008
- Spring Lake Township per Board Resolution No. 09-005 on February 12, 2009
- Cedar Lake Township per Board Resolution No. 09-01 on January 6, 2009
- Scott County per County Board Resolution No. 2009-075 on May 12, 2009
- Minnesota Department of Transportation letter of support dated February 6, 2009

## **Agency Acknowledgments and Contacts**

Scott County Public Works Division  
Highway Department  
600 Country Trail East  
Jordan, Minnesota 55352  
952-496-8346

Mn/DOT Metropolitan Division  
Waters Edge  
1500 West County Road B2  
Roseville, MN 55113  
651-582-1000

City of Shakopee  
129 S. Holmes Street  
Shakopee, MN 55379  
952-233-9300

City of Prior Lake  
4646 Dakota Street SE  
Prior Lake, MN 55372  
952-447-9800

Spring Lake Township  
20381 Fairlawn Avenue  
Prior Lake, MN 55372  
952-492-7030

Cedar Lake Township  
27750 Teale Avenue  
New Prague, MN 56071  
952-758-4943

This Page Left Blank Intentionally

## **RESOLUTION NO. 6891**

### **A Resolution of the City of Shakopee Approving the Study of County Highway 17 and Trunk Highway 13 Corridors Which Includes a Long Term Vision for the Corridor to be a Principal Arterial from U.S. 169 to the Southern Boundary of Scott County**

**WHEREAS**, Scott County Association for Leadership and Efficiency (SCALE) has made a county wide effort to educate communities on the importance of a transportation system to support and sustain economic development in the county; and

**WHEREAS**, SCALE has focused its community outreach efforts to address the importance of balancing the interface between land use and transportation along highways in the County and has emphasized the need for both mobility corridors and land access corridors in the county to sustain the future growth; and

**WHEREAS**, the City as a member of SCALE wishes to support north south mobility in the county and the need to have principal arterial spacing, generally every 3 miles, to properly support the development of the urbanizing areas in the City and County; and

**WHEREAS**, the County had originally identified the County Highway 21 Corridor as the north south principal arterial in this area in the Scott County Transportation Plan 2000 – 2020; and

**WHEREAS**, when the County and Cities reviewed the 2030 Scott County Transportation Plan, they evaluated the connectivity of County Highway 21, it became apparent that the corridor would not serve the mobility function needed for the regional Highway System in this area due to the lack of a supporting road system and the existing development patterns of the communities of Shakopee and Prior Lake; and

**WHEREAS**, the Cities of Shakopee and Prior Lake, Townships of Cedar Lake and Spring Lake, and the Minnesota Department of Transportation have jointly participated in this multi jurisdictional corridor study of County Highway 17 and State Trunk Highway 13 to develop a long term vision for the corridor, identified the local roadway system components necessary to support the corridor vision and developed preliminary recommendations to serve as guidance for future project development; and

**WHEREAS**, among other things the corridor study recommends that County Highway 17 from TH169 to the south and State TH 13 from State TH 19 to State TH 282 serve as the north south principal arterial corridor in this area; and

**WHEREAS**, in the 2030 Transportation Plan the County has identified County Highway 17 from TH 169 to the south as a future principal arterial roadway and recommended County Highway 17 north of State Trunk Highway 169 remain as a minor arterial roadway; and

**WHEREAS**, the City acknowledges that vision and commits to working with the County in supporting that vision in its development and redevelopment activities adjacent to the County Highway 17 corridor; and

**WHEREAS**, the City and County wish to work together to preserve the mobility function of County Highway 17 south of TH 169; and

**WHEREAS**, the City and County understand the importance the supporting road network and access spacing plays in supporting the operations and function of a principal arterial roadway; and

**WHEREAS**, the County recognizes that the City does not have complete jurisdiction over properties needed to develop the supporting road network for the County Highway 17 vision; and

**WHEREAS**, the City and County recognize further, more detailed, study will be needed during the detailed design process to address current access spacing deficiencies in the corridor which are inconsistent with the County Highway 17 principal arterial vision south of TH 169; and

**WHEREAS**, this revised future functional class system vision has required the County and City to jointly review the access spacing allowed on both County Highway 17 and County Highway 21; and

**WHEREAS**, the City acknowledges the County's authority to permit, modify or close access to a County Highway in the future.

**NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SHAKOPEE, MINNESOTA:**

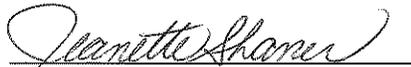
1. The City and County agree that the long term function of County Highway 17 south of TH169 is a principal arterial where the primary focus on the road is to support mobility with appropriate access to the local roadway system and land uses.
2. The City and County agree that preserving the County Highway 17 corridor south of TH 169 as a principal arterial enables the County Highway 21 corridor to be managed as a minor arterial corridor with access spacing consistent with that function.
3. The County and City accept the design concept contained in the Study for the segment of County Highway 17 between St. Francis Ave to County Highway 42, recognizing there are a number of issues (e.g. access and right-of-way configuration) that need to be resolved through the actual design process. The City and County are committed to working together to resolve issues as the design process proceeds forward.
4. The County and City are committed to working together to develop an expansion project in 2014 involving all or a portion of this segment (Segment C) from St Francis to County Highway 42.

5. The County will apply for regional Federal funds on the Segment C project as part of the 2009 regional solicitation from the Transportation Advisory Board.
6. The County will proceed with appropriate project development and environmental review for the segment C project.
7. The City and County should work together to further study County Highway 17 at the intersections with County Highway 42, County Highway 78 and Valley View Road to determine the appropriate full intersection control.
8. The City and County should continue to explore opportunities for a park and ride on the west side of County Highway 17 in the vicinity of the Valley View intersection.
9. The City and County should continue to work on developing alternate routes of access to those neighborhoods that are currently served by only one outlet.
10. The City and County will continue to plan and work cooperatively to develop a supporting road system consistent with the vision of the corridor.
11. The City, when opportunities arise through the development process, supports the removal of private accesses from County Highway 17.
12. The City and County will work together with property owners to find cost effective solutions for removing existing private accesses from County Highway 17.
13. The City and County will continue to work together on the segment of County Highway 17 north of State Highway 169 to examine solutions and find ways to improve operations and safety of the corridor to support its minor arterial function through additional detailed traffic analysis and examination of design alternatives.

Adopted in regular session of the City Council of the City of Shakopee, Minnesota,  
held this 7<sup>th</sup> day of April, 2009.

  
\_\_\_\_\_  
Mayor of the City of Shakopee

**ATTEST:**

  
\_\_\_\_\_  
Deputy City Clerk

This Page Left Blank Intentionally



4646 Dakota Street S.E.  
Prior Lake, MN 55372-1714

**RESOLUTION 08-162**

**ACCEPTING THE SCOTT COUNTY ROAD 17 / TRUNK HIGHWAY 13 CORRIDOR STUDY**

**Motion By:** LeMair                      **Second By:** Erickson

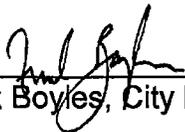
- WHEREAS,** Scott County identified the need for a long range concept plan for the County Road 17 / Trunk Highway 13 corridor; and
- WHEREAS,** the Study identifies recommended alternatives for access locations and supporting roadway locations; and
- WHEREAS,** the Study identifies recommended short term and long range alternatives for the intersection of CSAH 17/TH 13/TH 282 ; and
- WHEREAS,** The recommendations of the Corridor Study have received support as the best plan to serve the long-term transportation needs.

**NOW THEREFORE, BE IT HEREBY RESOLVED BY THE CITY COUNCIL OF PRIOR LAKE MINNESOTA** as follows:

1. The recitals set forth above are incorporated herein.
2. The City Council hereby accepts the Corridor Study as submitted.

PASSED AND ADOPTED THIS 15TH DAY OF DECEMBER 2008.

	YES		NO
Haugen	X	Haugen	
Erickson	X	Erickson	
Hedberg	X	Hedberg	
LeMair	X	LeMair	
Millar	X	Millar	

  
\_\_\_\_\_  
Frank Boyles, City Manager

This Page Left Blank Intentionally

## RESOLUTION #09-005

Spring Lake Township, Scott County, Minnesota

### A RESOLUTION APPROVING THE SCOTT COUNTY ROAD 17 / TRUNK HIGHWAY 13 CORRIDOR STUDY

Motion By: Berens Second By: Borka

- WHEREAS,** Scott County and Mn/DOT identified the need to establish a long range concept plan for the County Road 17 / Trunk Highway 13 corridor; and
- WHEREAS,** the Study identifies recommended locations for public roadway access and a future supporting, parallel and connecting roadway network; and
- WHEREAS,** the Study identifies a recommended long term concept plan for TH 13 and County Road 17 as a continuous four lane divided highway; and
- WHEREAS,** MnDOT's Access Management Guidelines for TH 13 between TH 19 and TH 282 have been established by the Corridor Study; and
- WHEREAS,** The recommendations of the Corridor Study have received multi-agency and public support as the best plan to serve the long-term transportation needs.

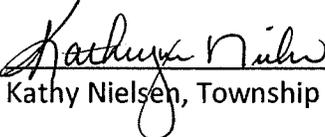
**NOW THEREFORE, BE IT HEREBY RESOLVED BY THE SPRING LAKE TOWNSHIP BOARD** as follows:

1. The recitals set forth above are incorporated herein.
2. The Spring Lake Township Board hereby approves the recommendations of the Corridor Study subject to the following:
  - a. Figures 8f through 8l show full access intersection locations on TH 13 at CSAH 8, CSAH 10, Butterfly Lane (to the east only), and 190<sup>th</sup> Street resulting in spacing that exceeds the stated 1 mile full access goal and ½ mile partial access goal. The township reserves the opportunity to support future full access to the west at Butterfly Lane and additional right-in/right-out access points at select locations that satisfy the ½ mile spacing goal with confirmation of safe intersection sight distance, consistent with the Access Management Plan and subject to MnDOT permitting requirements.
  - b. Recognizing that one of the stated Study Purposes is to "Identify and address needs (now through 2030)" and that one of the stated Study Goals for Segment A & B is to "Develop a long-term vision for CH 17 , TH 13 AND supporting roadways", the township stipulates that supporting roadway improvements necessary to mitigate access changes initiated by a highway improvement project be included in that project and that funding for future implementation of corridor study recommendations accommodate related supporting roadways.

- c. Recognizing the need to restrict access at certain intersections to either "right-in/right-out" or "3/4 access" scenarios, the township asks that accommodations for larger vehicles be made at associated "U-turn" locations. The township feels strongly that, if left turns are restricted, the resulting "U-turn" needs should be accommodated to the maximum extent possible.

PASSED AND ADOPTED THIS 12TH DAY OF FEBRUARY, 2009.

	YES		NO
<b>Berens</b>	X	<b>Berens</b>	
<b>Borka</b>	X	<b>Borka</b>	
<b>Kelley</b>	X	<b>Kelley</b>	

  
Kathy Nielsen, Township Clerk

**RESOLUTION 09-01**

**APPROVING THE SCOTT COUNTY ROAD 17 / TRUNK HIGHWAY 13 CORRIDOR STUDY**

**Motion By:** Rob Puncoschar      **Second By:** Roman Sticha

- WHEREAS,** Scott County and Mn/DOT identified the need to establish a long range concept plan for the County Road 17 / Trunk Highway 13 corridor; and
- WHEREAS,** the Study identifies recommended locations for public roadway access and a future supporting, parallel and connecting roadway network; and
- WHEREAS,** the Study identifies a recommended long term concept plan for TH 13 and County Road 17 as a continuous four lane divided highway; and
- WHEREAS,** The recommendations of the Corridor Study have received multi-agency and public support as the best plan to serve the long-term transportation needs.

**NOW THEREFORE, BE IT HEREBY RESOLVED BY THE CEDAR LAKE TOWNSHIP BOARD** as follows:

1. The recitals set forth above are incorporated herein.
2. The Cedar Lake Township Board hereby approves the recommendations of the Corridor Study as submitted.

PASSED AND ADOPTED THIS 6TH DAY OF JANUARY 2009.

	YES		NO

Armita Novotny  
Armita Novotny, Township Clerk

This Page Left Blank Intentionally

**BOARD OF COUNTY COMMISSIONERS  
SCOTT COUNTY, MINNESOTA**

<b>Date:</b>	May 12, 2009
<b>Resolution No.:</b>	2009-075
<b>Motion by Commissioner:</b>	Hennen
<b>Seconded by Commissioner:</b>	Wolf

**RESOLUTION NO. 2009-075; APPROVING CH 17/TH 13 CORRIDOR STUDY**

WHEREAS, the Cities of Shakopee and Prior Lake, Townships of Cedar Lake and Spring Lake, and the Minnesota Department of Transportation have jointly participated in this multi jurisdictional corridor study of CH 17 and State TH 13 to develop a long term vision for the corridor; and

WHEREAS, the traffic forecast modeling and analysis, land use plans and the makeup of the regional transportation system guided the multijurisdictional team along with the public engagement process to the study recommendations; and

WHEREAS, in the 2030 Transportation Plan the County has identified CH 17 from TH 169 to the south as a future principal arterial roadway and recommended CH 17 north of State TH 169 remain as a minor arterial roadway; and

WHEREAS, the corridor study recommends that CH 17 from TH 169 to the south and State TH 13 from State TH 19 to State TH 282 serve as the north south principal arterial corridor in this area; and

WHEREAS, the County, City, State and Township partners acknowledge the corridor's vision and commit to working together in supporting that vision in development and redevelopment activities adjacent to the CH 17 and TH 13 corridor; and

WHEREAS, the Cities of Shakopee and Prior Lake and Scott County wish to work together to preserve the mobility function of CH 17 south of TH 169; and

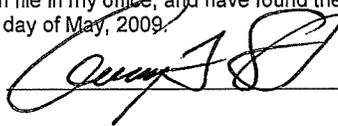
WHEREAS, the Cities and County understand the importance the supporting road network and access spacing plays in supporting the operations and function of a principal arterial roadway.

NOW THEREFORE BE IT RESOLVED, that the Board of Commissioners in and for the County of Scott, Minnesota, hereby authorizes Resolution No. 2009-075, approving the CH 17/TH 13 Corridor Study.

<b>COMMISSIONERS</b>	<b>VOTE</b>			
Wagner	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Absent	<input type="checkbox"/> Abstain
Wolf	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Absent	<input type="checkbox"/> Abstain
Hennen	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Absent	<input type="checkbox"/> Abstain
Marschall	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Absent	<input type="checkbox"/> Abstain
Ulrich	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Absent	<input type="checkbox"/> Abstain

State of Minnesota)  
County of Scott )

I, Gary L. Shelton, duly appointed qualified Interim County Administrator for the County of Scott, State of Minnesota, do hereby certify that I have compared the foregoing copy of a resolution with the original minutes of the proceedings of the Board of County Commissioners, Scott County, Minnesota, at their session held on the 12<sup>th</sup> day of May, 2009 now on file in my office, and have found the same to be a true and correct copy thereof. Witness my hand and official seal at Shakopee, Minnesota, this 12<sup>th</sup> day of May, 2009.



Interim County Administrator

Administrator's Designee

This Page Left Blank Intentionally



Minnesota Department of Transportation

Metropolitan District

Waters Edge  
1500 West County Road B-2  
Roseville, MN 55113-3174

February 6, 2008

Greg Ilkka, P.E.  
Assistant Scott County Engineer  
Scott County Public Works  
600 Country Trail East  
Jordan, MN 55352-9339



Re: CH 17 and TH 13 Corridor Study  
Scott County  
Letter of Support

Dear Mr. Greg Ilkka:

Please accept this letter of support from the Minnesota Department of Transportation (Mn/DOT) Metro District to Scott County for the CH 17 and TH 13 Corridor Study Final Report. The study included CH 17 between TH 13 to CH 101 and TH 13 between TH 19 to TH 282. The study was completed with Scott County serving as the lead agency in partnership with Mn/DOT, the Cities of Shakopee and Prior Lake, and Spring Lake and Cedar Lake Townships.

The purpose of the study is to develop a long term vision for the corridor and for the local roadway system components that support it. This includes recommendations on access management and corridor widths. Mn/DOT will seek a functional reclassification of TH 13 between TH 19 and TH 282 from its present category (A Minor Arterial – Connector) to the A Minor Arterial – Expander category as a first step towards ultimate reclassification as a Principal Arterial.

In addition, Mn/DOT will seek an access management reclassification from a Category 4B classification to a Category 7 classification as identified in the study. And finally, Mn/DOT will work towards an eventual jurisdictional transfer of segments of TH 13 and/or CH 17.

Thank you for the opportunity to be a partner in the study. Please contact me at 651-234-7729 or [Lynn.Clarkowski@dot.state.mn.us](mailto:Lynn.Clarkowski@dot.state.mn.us) with any questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'Lynn Clarkowski'.

Lynn Clarkowski, P.E.  
Mn/DOT Metro District South Area Manager

Cc:

Karen Clysdale, Mn/DOT Metro District Principal Planner  
Lars Impola, Mn/DOT Metro District Traffic Engineer – Traffic Support  
Cyrus Knutson, Mn/DOT Metro District Jurisdiction Program Manager  
Nicole Peterson, Mn/DOT Metro District South Area Engineer  
Tod Sherman, Mn/DOT Metro District Planning Supervisor

This Page Left Blank Intentionally

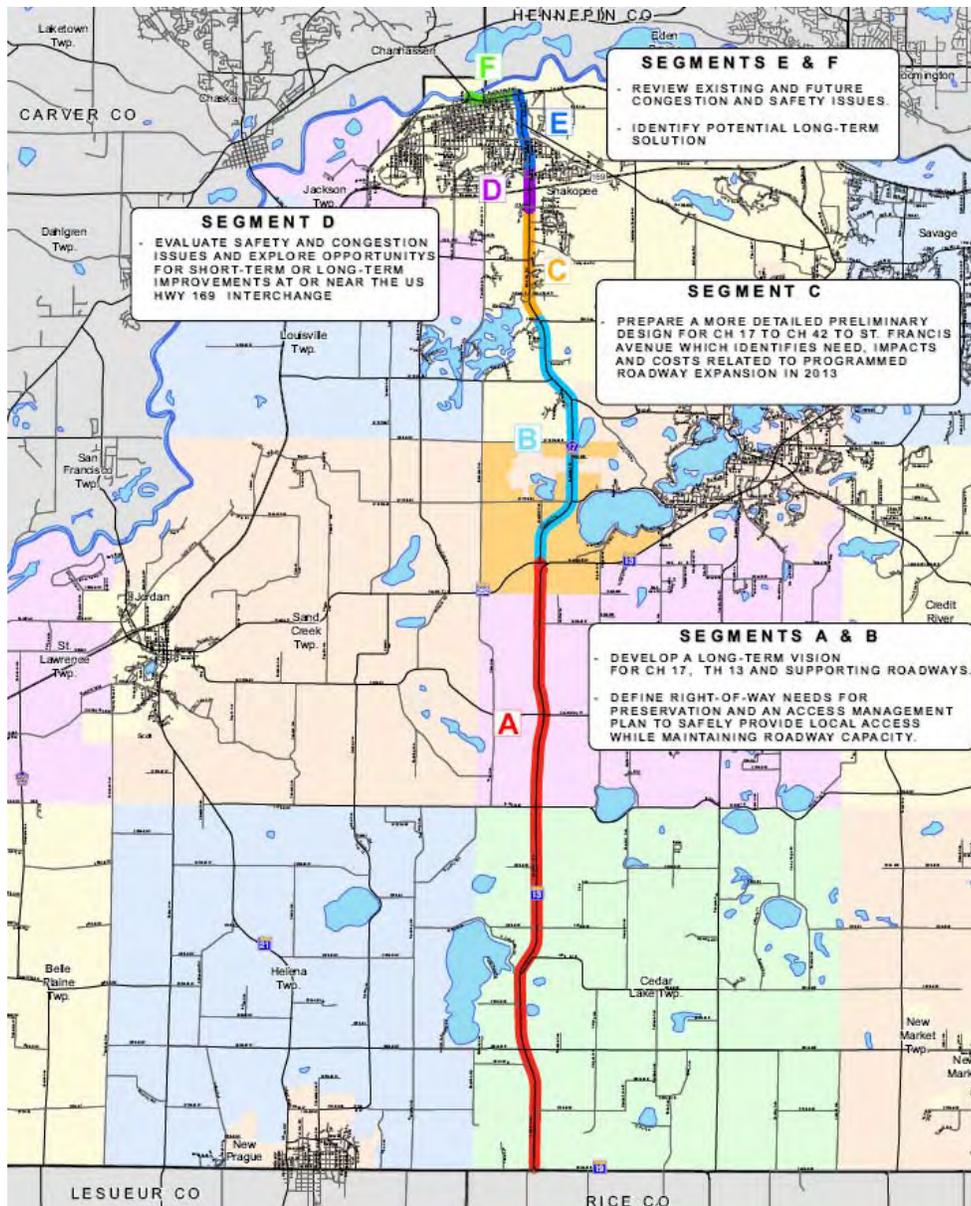
# Executive Summary

## E1.0 Study Overview

This study has been performed with Scott County serving as the lead agency in partnership with Mn/DOT, along with the Cities of Shakopee and Prior Lake, and Spring Lake and Cedar Lake Townships.

The primary purpose of this study was to develop a long-term vision for the CH 17 and TH 13 corridor, and for the local roadway system components that support it. The vision was developed through a public engagement process that built broad understanding and support of the purpose and need which resulted in acceptance by the County Board and respective City Councils and Township Boards.

The corridor is divided into unique study segments based upon geography, roadway operational issues, land uses, development density, roadway jurisdiction and programmed improvements. The segments are illustrated in the graphic below.



---

CH 17 and TH 13 have different operating characteristics and adjacent land uses through the 18-mile corridor. Below is a listing of study goals for each segment:

- **Segments A & B:** Develop a long-term vision for CH 17, TH 13 and supporting roadways. Define right-of-way needs for preservation and an access management plan to safely provide local access while maintaining roadway capacity.
- **Segment C:** Prepare a more detailed preliminary design for CH 17 from CH 42 to St. Francis Avenue that identifies needs, impacts, and costs related to programmed roadway expansion in 2013.
- **Segment D:** Evaluate safety and congestion issues and explore opportunities for short-term or long-term improvements at and near the US Hwy. 169 interchange.
- **Segments E & F:** Review existing and future congestion and safety issues. Identify potential long-term solutions.

The six segments of the corridor each have different issues that must be resolved on a short, medium, and long-range basis. First, the north end of the corridor (Segments D, E, and F) is mature but must adapt itself to accommodate the connection of two Principal Arterial highways with higher traffic volumes and more intensive perimeter development requiring more complex traffic operations solutions. The mid-section of the corridor (Segments B and C) is an emerging growth area with immediate and short-term needs spurred by municipal annexation, utility extensions, and extensive platted developments. Lastly, the southern piece of the corridor (Segment A) is principally rural but in the very certain path of growth. As such, it represents an opportunity to plan for a roadway of Principal Arterial performance and design standards, including the preservation of right-of-way before significant development pressures mount.

The study identified the type of roadway facility that should be planned for each segment of this corridor to achieve or maintain its long-range operational, safety and performance goals. The study also identified the need for additional connecting and supporting roadways that would allow the CH 17 / TH 13 corridor to function at an optimal level while maintaining access to adjacent land uses and providing alternative routes for local trips.

### **E1.1 Summary of Study Purpose**

Scott County, Minnesota, is expected to absorb a considerable share of the projected one million new residents of the Twin Cities by 2030. Planned and programmed improvements to US 169 and other regional trunk highways and county highway routes will more efficiently and safely deliver current and future travelers to their destinations in and through Scott County. The County needs a continuous north-south Principal Arterial roadway to increase the functionality of these roadways and provide an appropriately spaced viable alternative to other Principal Arterials in the region. The development of a north-south Principal Arterial highway will also increase the likelihood of realistic, and therefore successful, multimodal features, including facilities to serve transit patrons, bicyclists, and pedestrians.

Scott County and its study partners have identified the need for a corridor vision to upgrade and combine CH 17, a key local route, with TH 13 to create a new regional highway that will help meet the travel needs of its growing population and provide a greater balance to local and state roadway investments.

CH 17 and TH 13 are currently classified as Minor Arterials. However, City, County, State, and Township officials recognize the significant traffic demand that the corridor will carry and envision the need to manage and preserve the corridor as they would a Principal Arterial. Development expected to occur in the Cities of Shakopee and Prior Lake and rural areas beyond, will magnify the

---

need to: preserve the CH 17/TH 13 corridor for roadway expansion; manage local access opportunities; and develop a supporting roadway network of Arterials and Collectors to collect and distribute trips to and from roadways functioning as Principal Arterials (like CH 17/TH 13).

## **E1.2 Summary of Findings**

Findings were developed based upon review of Scott County's draft land use plan, transportation plan and comprehensive plan traffic forecasts. These findings reinforced the importance of the CH 17 / TH 13 corridor through Scott County and confirmed the direction of activities included in this corridor study.

1. Scott County's planned 2030 growth must be served with adequate transportation facilities that address issues with travel congestion and safety. The CH 17 and TH 13 Corridor is located within the path of planned urbanizing growth and will have significant capacity, safety, and mobility needs by 2030.
2. CH 17 and TH 13 represent a key future north-south travel corridor in a geographically central location in Scott County. There is no other corridor in the County that provides a similar, largely direct continuous north-south connection.
3. The proposed reclassification of CH 17 and TH 13 in the Scott County Transportation Plan Update to a Principal Arterial highway will connect the corridor to other existing and planned Principal Arterial highways, including US 169, CH 42, CH 78, TH 19 and the future new TH 41 river crossing.
4. The CH 17 interchange with US 169 represents a regional highway system need. Long range planning (2030) for this interchange needs to be conducted concurrently to maintain future acceptable levels of mobility, performance, and safety.
5. A key feature of a Principal Arterial highway is a high level of mobility. This mobility can be achieved, in part, by restricting direct access to/from adjacent parcels in order to provide for reduced traffic conflicts, in turn providing a higher-speed facility for a larger volume of vehicles. Traffic forecasts indicate that improvements will be needed prior to 2030 in order to maintain this level of mobility.
6. The CH 17 segment of the Corridor will experience unacceptable levels of congestion prior to 2030. The needs of this segment must therefore be addressed first.
7. The TH 13 segment of the Corridor is not forecast to be unacceptably congested before 2030, although intersection safety and operational issues may appear before then. Volumes on this segment of the Corridor are expected to increase approximately 40 to 50 percent between 2030 and 2050 from which operational and safety issues may develop.
8. Preservation of adequate right-of-way in the corridor for 2030 Principal Arterial highway capacity improvements is essential to prevent costly buyouts and unnecessary delays in constructing improvements.
9. Design solutions for 2030 needed improvements will include divided four-lane expressway alternatives and interconnecting Minor Arterial and Collector roadway improvements.
10. Planned 2030 designs should not preclude 2050 long-range needs (i.e., potential freeway design) in the Corridor.

- 
11. Local governments can support the County's long-range plan by coordinating long-range land use and transportation planning, zoning, and building permit implementation. This includes communities in Scott, Rice, and LeSueur Counties.

### **E1.3 Summary of Concepts Developed**

This corridor study identified 2030 traffic demands and defined the future roadway section needed to serve those demands. Concept design solutions for 2030 needed improvements generally include:

- A divided four-lane expressway with parallel and interconnecting Minor Arterial and Collector roadway improvements.
- Design speed of this corridor is 60 mph and has been achieved for the entire corridor for both horizontal and vertical design speed.
- The desirable right-of-way envelope to be preserved for the corridor is 200 feet for the long-term plan. Right of way needs for the 2013 project may be adapted on a site specific basis to suit existing adjacent land uses when possible.
- The 2030 corridor concept plan has ten-foot wide trails shown on both sides of CH 17 as well as along TH 13 through the entire corridor.
- Twelve-foot wide right-side roadway shoulders will serve as future bus shoulder lanes.
- Three concepts were developed for the intersection of CH 42 and CH 17. The concepts include a signalized intersection, a multi-lane roundabout, and a grade separated intersection.
- A preliminary drainage analysis has been completed for the 2030 concept plan. Locations for potential stormwater treatment ponds, infiltration ditches, and drainage directional flow arrows are detailed on the 2030 design concept.
- A supporting roadway network concept plan has been developed in conjunction with the access management measures.

Below is a listing of the primary concepts that were developed through this study process. These figures can be found in the full report version of the Corridor Study Report or on Scott County's website. [http:// www.co.scott.mn.us/17Study](http://www.co.scott.mn.us/17Study)

- Figures 8A – 8P display the 2030 vision plan for the corridor.
- Figures 10A – 10D display the supporting roadway network concept plan.
- Figure 13 displays the 2013 Preliminary Design Layout for Segment C.
- Figure 14 displays the roundabout alternative at the CH 17/CH 42 intersection
- Figure 15 displays the grade-separated alternative at the CH 17/CH 42 intersection

### **E2.0 Recommendations and Implementation Planning**

The CH 17 / TH 13 Study Management Team (SMT) recommends that the findings of this corridor study be approved by each agency having adjacent land use authority and/or roadway jurisdiction.

Approval by each agency may be subject to conditions that are independently prescribed as recorded in the respective council/board resolutions.

---

## **E2.1 Corridor-wide Recommendations**

### **E2.1.1 Adopt the CH 17 / TH 13 Corridor Study**

- The Scott County Board, City of Shakopee and Prior Lake Councils, Cedar Lake and Spring Lake Township Boards, and Mn/DOT should approve the TH 13 / CH 17 Corridor Study as the Vision for the corridor to be used as a decision making guide as future infrastructure improvements are considered and as local development requests are received, including the preservation of right-of-way for the future roadways and access management measures to preserve safety and corridor performance.
- Scott County and the Cities of Shakopee and Prior Lake should incorporate the findings of this study into the next update of the Transportation Plan component of their respective Comprehensive Plans.
- The Cities of Shakopee and Prior Lake, Scott County, and Cedar Lake and Spring Lake Townships should maintain and/or adopt policies or ordinances that assist with the implementation and goals of this plan.
- Each agency should identify projects and prioritize their implementation based upon available project financing.
- Each agency should take advantage of opportunities along the corridor as they arise to implement recommendations and findings of this study.
- Scott County and Mn/DOT should seek functional reclassification of CH 17 and TH 13 from their present category (A Minor Arterial – Connector) to the A Minor Arterial – Expander category as a first step towards ultimate reclassification as a Principal Arterial.
- Mn/DOT and Scott County should continue planning for jurisdictional transfers of segments of TH 13 and/or CH 17.
- Scott County, the Cities of Shakopee and Prior Lake and Cedar Lake and Spring Lake Townships should use the concept long-term plans and supporting roadway network as a guide to assess the compatibility of new development proposals within the corridor.

### **E2.1.2 Corridor Preservation**

- Cedar Lake and Spring Lake Townships will continue planning roadway networks complimentary to the concept roadway network defined in this study of TH 13 / CH 17.
- Scott County, the Cities of Shakopee and Prior Lake and Cedar Lake and Spring Lake Townships will continue to advance opportunities to preserve right of way for supporting and connecting roadway network improvements to allow CH 17 / TH 13 to function as a future Principal Arterial. Corridors need to be identified and preserved to serve this function.
- Scott County should consider early acquisition of selected properties on an opportunity basis prior to environmental study for the 2013 project, as specified in the Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA-LU).
- Preservation of adequate right-of-way should be supported by each affected agency in the study area along TH 13 and CH 17 and its existing and future supporting roadway network. Advance planning for these improvements is essential to prevent costly buyouts and potential unnecessary delays in constructing improvements.

- 
- Agencies should continue efforts to preserve right-of way by applying existing ordinances and utilizing planning tools to achieve consistent setback goals parallel to CH 17 and TH 13. Current setback ordinances vary between agencies. Applying public value credits, requesting dedication of roadway right of way, trail easements, and drainage easements for pond location right of way through platting are possible considerations.
  - Scott County, Mn/DOT, the Cities of Shakopee and Prior Lake, and the Townships of Cedar Lake and Spring Lake should continue to pursue right of way preservation initiatives in the corridor. Methods that should be considered and utilized as appropriate include:
    - Voluntary early acquisitions
    - Purchase of development rights
    - Purchase options
    - Official map
    - Letters of agreement with developers
    - Right of first refusal
    - Donations of property
    - Contributions, exchanges of property
    - Access management
    - Use of local government land use tools

## **E2.2 Segment Recommendations**

### **E2.2.1 Segment A**

- Cedar Lake Township and Spring Lake Township are engaged in a roadway system planning study complementary the supporting roadway network planning performed as part of this Corridor Study for CH 17 and TH 13. They should build upon ideas developed as part of this study.
- The County should work with Mn/DOT, using programs such as the Cooperative Agreement program, to aid in implementing access management along TH 13
- Mn/DOT will continue to monitor the performance and safety of TH 13. At the time when performance and/or safety problems occur, Mn/DOT will work towards implementation of appropriate corrective actions consistent with the Vision for the corridor as outlined in this study.
- Mn/DOT and Scott County should coordinate with Rice County, in support of a roadway extension southerly from the TH 13 and TH 19 intersection as is shown in Rice County's Transportation Plan

### **E2.2.2 Segment B**

- Scott County, Spring Lake Township, and the City of Prior Lake should continue to manage access to the undeveloped areas adjacent to the TH 282/TH 13/CH 17 intersection preserving opportunities for short term and long-term access.
- Scott County, Mn/DOT, Spring Lake Township and the City of Prior Lake should continue to plan land use and transportation improvements that are complimentary to one another. This planning study identified a concept plan for access and local street connectivity that focused

---

access to the southwest and northeast quadrants of the TH 282/TH 13/CH 17 intersection while preserving the northwest and southeast quadrants for future interchange ramps. This concept plan, or one of similar effectiveness, should be acknowledged in future planning efforts in the area.

- Scott County, Mn/DOT, Spring Lake Township and the City of Prior Lake should plan to implement recommendations made by the Metropolitan Council's recently completed a transit study which identified a need to plan for a future transit station and 200 parking stall park and ride facility near the TH 282 / TH 13/ CH 17 intersection.
- The City of Prior Lake, through their land use authority, should remove private access from CH 17 when the opportunities arise.
- Scott County will continue to monitor the performance and safety of CH 17. At the time when performance and/or safety problems occur, the County will work towards implementation of appropriate corrective actions consistent with the Vision for the corridor as outlined in this study.

### **E2.2.3 Segment C**

- Scott County and the City of Shakopee should approve the Segment C Preliminary Design Layout acknowledging that further refinement will occur as the final design proceeds.
- Scott County and City of Shakopee should advance opportunities for right of way acquisition for the 2013 project (Segment C).
- Scott County should consider soliciting federal funding opportunities for Segment C (2009 Federal solicitation)
- Scott County should proceed with the appropriate environmental review path for Segment C, preliminarily identified as an Environmental Assessment (EA).
- Scott County should conduct appropriate traffic studies of the CH 17 intersections with CH 42, CH 78, and Valley View Road to determine the appropriate full access intersection control (traffic signal versus roundabout).
- Scott County and the City of Shakopee should continue coordination with Betaseed, St. Francis Hospital and the Mooers Avenue residential neighborhood east of the hospital to develop a concept for the new east-west roadway that is shown in the 2013 project.
- Scott County and the City of Shakopee should continue to work with St. Francis Hospital to consider emergency vehicle ingress and egress to the hospital campus.
- Transit planning should continue as opportunities are explored for right of way acquisition for a park and ride facility on the west side of CH 17 north of the proposed Valley View Road.
- The City of Shakopee should continue to develop alternative routes of access to neighborhoods that are currently served by a single point of access or those that may be affected by access management or safety improvement measures recommended as part of the long-term vision for the CH 17 corridor. Potential alternative routes of access are identified in the supporting roadway concept plan developed as a part of this study.
- The City of Shakopee should continue planning for supporting roadways in the Segment C area to provide alternative access routes to neighborhoods consistent with the Vision for the corridor as outlined in this study. Scott County and the City of Shakopee should determine the preferred CH 42 at CH 17 intersection build alternative for 2013, while preserving the right-of-way for the future grade separated alternative.

- 
- The City of Shakopee, through their land use authority, should remove private access from CH 17 when the opportunities arise.

#### **E2.2.4 Segment D**

- The CH 17 interchange with US 169 represents a regional highway system need. Long range planning (2030) for this interchange needs to be conducted concurrently to maintain future acceptable levels of mobility, performance, and safety consistent with the operation goals of a Principal Arterial.
- Scott County, Mn/DOT and the City of Shakopee should develop safety and capacity improvement projects at and near the US 169 interchange.
- The City of Shakopee and Scott County should further evaluate capacity and safety improvements for Vierling Drive in the vicinity of CH 17.

#### **E2.2.5 Segment E**

- The City of Shakopee and Scott County should further evaluate and develop concept plans to determine feasibility and impacts of a five lane section on CH 17 from Vierling Drive to CH 101.
- The City of Shakopee and Scott County should continue to monitor the CH 17 railroad crossing and work with the railroad to minimize traffic delays especially during peak traffic periods.

#### **E2.2.5 Segment F**

- Scott County and the City of Shakopee should develop preliminary and final design plans to reconstruct CH 101 from Spencer Street to CH 17 for construction in 2010 with the intention of acquiring no additional permanent right-of-way.
- Scott County and the City of Shakopee should take advantage of future opportunities to implement access management techniques to preserve the long-term safety and capacity of CH 101.

### **E2.3 Continued Agency Coordination**

- The study partners should meet periodically subsequent to the completion of this study to ensure that development and project implementations are consistent with the long term vision for the corridor and to determine if adjustments are needed.
- Mn/DOT and the County should continue to work with the Cities, Townships and Metropolitan Council to establish the future functional classification of the corridor as a Principal Arterial.
- Mn/DOT and Scott County should continue to work together to determine the long-term jurisdictional designation for the corridor (i.e. jurisdictional trade of TH 13 and CH 17). Mn/DOT should determine if future TH 13 designation of the current CH 17 segment aligns with their system planning.
- The Cities of Shakopee and Prior Lake and Scott County should work with Mn/DOT to satisfy the requirements of Minnesota Statute 505.03 Subd. 2. Under this Statute all Cities, Towns, and Counties are required to provide Mn/DOT (Commissioner of Transportation) with a copy of all preliminary plats adjacent to all State Highways, regardless of the need for access, before official action is taken by the local agency. Mn/DOT has applied this language to include all developmental actions (Change of Use, Variances, etc.) as a way of notifying Mn/DOT of all potential access locations and potential impacts to the roadway. This request is not stated in any

---

legal statute but is supported by the Statute above and by Minnesota Rules 8810.5200, which requires a review, through the permit process, and approval of the access by Mn/DOT.

- The Cities, County, and Townships should work with Mn/DOT to provide a contiguous local transportation system with logical street extensions and properly spaced full movement intersections as development occurs.
- Scott County, Shakopee and Prior Lake should continue coordination with the Mdewakanton Sioux Community as undeveloped land areas within the corridor are acquired by the Sioux Community.

This Page Left Blank Intentionally

---

## Table of Contents

Acknowledgements and Approvals  
Executive Summary  
Table of Contents

	Page
<b>E1.0 Study Overview</b> .....	<b>ES - 1</b>
E1.1 Summary of Study Purpose .....	ES - 2
E1.2 Summary of Findings .....	ES - 3
E1.3 Summary of Concepts Developed .....	ES - 4
<b>E2.0 Recommendations and Implementation Planning</b> .....	<b>ES - 4</b>
E2.1 Corridor-wide Recommendations .....	ES - 5
E2.2 Segment Recommendations.....	ES - 6
E2.3 Continued Agency Coordination .....	ES - 8
<b>1.0 Study Purpose</b> .....	<b>1</b>
1.1 Authority.....	2
1.2 Related Studies.....	2
1.3 Study Scope.....	3
<b>2.0 Purpose and Need</b> .....	<b>3</b>
2.1 Population Growth .....	4
2.2 Key Link in the Regional Transportation System .....	4
<b>3.0 Study Goals and Objectives</b> .....	<b>4</b>
<b>4.0 Preliminary Findings of Fact</b> .....	<b>8</b>
<b>5.0 Study Team and Public Outreach Activities</b> .....	<b>9</b>
5.1 Study Leadership Team (SLT).....	9
5.2 Study Management Team (SMT).....	10
5.3 Citizen Advisory Committee (CAC).....	10
5.4 Shakopee City Council.....	11
5.5 Shakopee Chamber of Commerce .....	11
5.6 Prior Lake City Council .....	11
5.7 Spring Lake Township Board of Supervisors.....	12
5.8 Cedar Lake Township Board of Supervisors .....	12
5.9 Scott County Board of Commissioners .....	12
5.10 Open House Meetings .....	12
5.11 Website .....	13
5.12 Property Owner / Small Group Meetings .....	14
<b>6.0 General Corridor Characteristics</b> .....	<b>14</b>
6.1 Segment A – TH 13 from TH 19 to TH 282/CH 17 .....	15
6.2 Segment B – CH 17 from TH 13 to CH 42.....	15
6.3 Segment C – CH 17 from CH 42 to St. Francis Avenue .....	16
6.4 Segment D – St. Francis Avenue to Prairie Lane .....	16

---

## Table of Contents (Continued)

6.5	Segment E – Prairie Lane to CH 101 .....	17
6.6	Segment F - CH 101 from CH 17 to CH 69 (Minnesota River Crossing intersection) .....	17
<b>7.0</b>	<b>Environmental Screening .....</b>	<b>17</b>
7.1	Right-of-Way and Relocation .....	23
7.2	Wetlands and Water Resources .....	24
7.3	Wildlife (Flora/Fauna) and Threatened/Endangered Species .....	24
7.4	Cultural Resources .....	24
7.5	Farmland .....	24
<b>8.0</b>	<b>Traffic Analysis .....</b>	<b>25</b>
8.1	Existing Conditions .....	25
8.1.1	Crash Analysis .....	25
8.1.2	Data Collection .....	26
8.1.3	Existing Traffic Patterns .....	26
8.1.4	Traffic Analysis .....	26
8.2	2030 Traffic Forecasts .....	28
8.2.1	Average Daily Traffic (ADT) Forecast Methodology .....	28
8.2.2	Turning Movement Forecast Methodology .....	29
8.3	Future Traffic Analysis .....	29
8.3.1	2030 No Build Analysis .....	29
8.3.2	2030 Build Analysis .....	30
8.4	Traffic Analysis - Findings and Conclusions .....	31
<b>9.0</b>	<b>2030 Roadway Concept Plan .....</b>	<b>32</b>
9.1	Principal Arterial / Typical Section .....	32
9.2	2030 Roadway Concept Plan and Profile .....	33
9.3	Supporting Roadways .....	34
9.4	Future Needs of CH 17 North of US 169 .....	34
9.5	TH 282 / TH 13 / CH 17 Sub-area .....	35
9.6	CH 42 / CH 17 Concepts .....	35
9.7	Preliminary Drainage Pond Locations – 2030 Concept Plan .....	36
9.8	Right-of-Way .....	37
9.9	Concept Evaluation .....	37
<b>10.0</b>	<b>Trails .....</b>	<b>38</b>
10.1	Pedestrian Issues .....	38
10.2	Future Trail System .....	38
<b>11.0</b>	<b>Transit .....</b>	<b>39</b>
11.1	Transit Assessment .....	39
11.2	Transit Recommendations .....	40
<b>12.0</b>	<b>Access Management Plan .....</b>	<b>40</b>
12.1	Need for Access Management .....	40

---

## Table of Contents (Continued)

12.2 Policies.....	40
12.3 Current Access Conditions and Evaluation.....	41
12.4 Recommendations for Future Access.....	42
12.5 Implementation Strategies .....	44
12.6 Access Management Conclusion.....	48
<b>13.0 2013 Layout - Plan and Profile.....</b>	<b>48</b>
13.1 Roadway Geometric Design .....	48
13.2 Cost Estimate.....	50
13.3 Preliminary Construction Limits .....	51
13.4 R/W Impacts .....	51
13.5 Preliminary Drainage Analysis – 2013 Project.....	52
13.6 Utilities .....	53
13.7 Permits and Approvals.....	54
<b>14.0 Recommendations and Implementation Planning .....</b>	<b>54</b>
14.1 Corridor-wide Recommendations .....	54
14.1.1 Adopt the CH 17 / TH 13 Corridor Study.....	54
14.1.2 Corridor Preservation .....	55
14.2 Segment Recommendations.....	56
14.2.1 Segment A .....	56
14.2.2 Segment B .....	56
14.2.3 Segment C .....	57
14.2.4 Segment D .....	58
14.2.5 Segment E .....	58
14.2.6 Segment F.....	58
14.3 Continued Agency Coordination .....	58

### List of Tables within Report

Table 1 SEE Impacts .....	19
Table 4 LOS .....	27
Table 12 Existing Access Points.....	41

### Tables included in the Table Section at the End of Report

Table 2 Segment Crash Rates
Table 3 Intersection Related Crash Types
Table 5 Existing AM Peak Hour MOE's
Table 6 Existing PM Peak Hour MOE's
Table 7 2030 AM Peak Hour No Build MOE's
Table 8 2030 PM Peak Hour No Build MOE's
Table 9 2030 AM Peak Hour Build MOE's

---

## Table of Contents (Continued)

Table 10 2030 PM Peak Hour Build MOE's

Table 11 Intersection Evaluation

### List of Figures

Figure 1	Corridor Segments
Figure 2	Public Participation Plan
Figures 3A-3D	Issues
Figures 4A-4B	Human Impacts
Figures 5A-5B	Environmental Impacts
Figure 6	Existing Traffic Volumes
Figure 7	2030 Traffic Volumes
Figures 8A-8P	2030 Layout and Access Management
Figure 9	Typical Sections
Figure 10A-10D	Supporting Roadway Network
Figure 11	TH 282 Grade Separated Subarea
Figure 12	TH 282 Interim Subarea
Figure 13	2013 Layout
Figure 14	CH 42 Roundabout
Figure 15	CH 42 Grade Separation

### List of Appendices

Appendix A	Public Involvement
Appendix B	Rice County Transportation Plan
Appendix C	Freeway Vision
Appendix D	Access Management Guidelines
Appendix E	Cost Estimates
Appendix F	Scott County 2030 Land Use Plan

# FINAL REPORT

## Corridor Study

### CH 17 from TH 13 to CH 101 TH 13 from TH 19 to TH 282

Prepared for Scott County, Minnesota  
In association with Mn/DOT, the Cities of Shakopee and Prior Lake, and  
Townships of Cedar Lake and Spring Lake

---

#### 1.0 Study Purpose

The primary purpose of this study was to develop a long term vision, or plan, for the CH 17 and TH 13 corridor, and for the local roadway system components that support it. The vision has been developed through a process which engaged the public in the understanding of the purpose and need such that the resulting recommendations could be carried to the County Board and respective City Councils and Township Boards for acceptance.

The corridor is divided into unique study segments based upon geography, roadway operational issues, land uses, development density, roadway jurisdiction and programmed improvements. The segments are illustrated on **Figure 1**.

The six segments of the corridor each have different issues that must be resolved on a short, medium, and long-range basis. First, the north end of the corridor (Segments D, E, and F) is mature but must adapt itself to accommodate the connection of two Principal Arterial highways with higher traffic volumes and more intensive perimeter development requiring more complex traffic operations solutions. The mid-section of the corridor (Segments B and C) is an emerging growth area with immediate and short-term needs spurred by municipal annexation, utility extensions, and extensive platted developments. Lastly, the southern piece of the corridor (Segment A) is principally rural but in the very certain path of growth. As such, it represents an opportunity to plan ahead for a roadway of Principal Arterial performance and design standards, including the preservation of right-of-way before significant development pressures mount.

The study explored the type of Principal Arterial facility south of US 169 that is appropriate for this corridor and how, over time, it will achieve its long-range operational and performance goals.

---

## 1.1 Authority

This study has been performed with Scott County serving as the lead agency in partnership with Mn/DOT, along with the Cities of Shakopee and Prior Lake, and Spring Lake and Cedar Lake Townships.

## 1.2 Related Studies

A variety of planning activities has been or currently is in process within and around the study corridor.

- Scott County is in the process of updating its comprehensive plan. As part of the plan update, the county prepared “build out” scenarios that identified future urban growth areas and areas not planned for future municipal services or urban densities. The draft land use map from the County’s Comprehensive Plan in Appendix F. As part of the process, the County has developed a countywide traffic forecast which has identified 2030 and 2050 forecast traffic demands. Forecast demands in both timeframes have allowed the County to identify roadway capacity deficiencies. As part of the Comprehensive Plan update the County prepared the “build out” scenarios. In addition, the comprehensive plan identifies appropriate future functional classifications for County Highways based on future growth patterns (post 2030).
- Within the City of Shakopee - the floating Metropolitan Urban Service Area (MUSA) plus land purchased by Shakopee Mdewakanton Sioux Community (SMSC). The SMSC owns large tracts of land within CH 17 corridor. Roadway planning opportunities by public agencies through these areas are unclear.
- The City of Prior Lake and Spring Lake Township have adopted an orderly annexation plan through 2014 for land areas adjacent to the CH 17 corridor.
- Scott County and Cedar Lake, Spring Lake, Credit River, and New Market Townships are engaged in a roadway system planning study which compliments the supporting roadway network concept planning performed as part of this Corridor Study for CH 17 and TH 13. This study is part of a detailed area plan (DAP) for the long term unserved area east of the corridor.
- The Metropolitan Council and Mn/DOT completed a Principal Arterial study for the Twin Cities metro area in June 2008.
- The Metropolitan Council is studying possible sanitary sewer treatment plant locations that would accelerate growth in Scott County. Transportation needs and growth constraints need to be acknowledged simultaneously.
- A potential future jurisdiction change for CH 17 (north of TH 282) and TH 13 (east of CH 17) will be identified in Mn/DOT’s 2008 TSP Update.
- Mn/DOT is engaged in an EIS for a future TH 41 River Crossing from Scott County into Carver County. The new river crossing is not anticipated to be constructed prior to 2030.

- 
- Rice County’s Transportation Plan indicates a planned roadway extension of the TH 13 corridor southerly across TH 19 into Rice County.

### 1.3 Study Scope

This study documents existing and future issues within the fully developed north end of the corridor and identifies solutions to address these problems. It provides guidance for the design of the programmed expansion (2013) of CH 17 from St. Francis Avenue south through CH 42, and provides a long-term plan for preserving rights-of-way and managing access along those areas that are still undeveloped.

CH 17 and TH 13 have different operating characteristics and adjacent land uses through the 18-mile corridor that has been segmented and illustrated on **Figure 1**. Below is a listing of study goals for each segment:

- **Segments A & B:** Develop a long-term vision for CH 17, TH 13 and supporting roadways. Define right-of-way needs for preservation and an access management plan to safely provide local access while maintaining roadway capacity.
- **Segment C:** Prepare a more detailed preliminary design for CH 17 from CH 42 to St. Francis Avenue that identifies needs, impacts, and costs related to programmed roadway expansion in 2013.
- **Segment D:** Evaluate safety and congestion issues and explore opportunities for short-term or long-term improvements at and near the US 169 interchange.
- **Segments E & F:** Review existing and future congestion and safety issues. Identify potential long-term solutions.

The vision allows each agency to preserve right of way, manage access points, define the connecting and parallel supporting roadway network needs and allow land use plans to evolve acknowledging the importance of the corridor in the regional system.

### 2.0 Purpose and Need

Scott County, Minnesota, is expected to absorb a considerable share of the projected one million new residents of the Twin Cities by 2030. Planned and programmed improvements to US 169 and other regional trunk highways and county highway routes will more efficiently and safely deliver current and future travelers to their destinations in and through Scott County. The County needs a continuous north-south Principal Arterial roadway to increase the functionality of these roadways and provide an appropriately spaced viable alternative to other Principal Arterials in the region. The development of a north-south Principal Arterial highway will also increase the likelihood of realistic, and therefore successful, multimodal features, including facilities to serve transit patrons, bicyclists, and pedestrians.

Scott County and its study partners have identified the need for a corridor vision to upgrade and combine CH 17, a key local route, with TH 13 to create a new regional highway that will help meet the travel needs of its

---

growing population and provide a greater balance to local and state roadway investments.

## **2.1 Population Growth**

Scott County, Minnesota, is expected to absorb a considerable share of the projected one million new residents of the Twin Cities by 2030. Scott County's population is expected to grow from approximately 125,000 today to at least 220,000 by 2030. Population growth through 2050 is forecast to be 396,600. Regional planning discussions have considered the effects of adding a new wastewater treatment facility that could serve long-term growth up to 1,000,000 residents in Scott County.

## **2.2 Key Link in the Regional Transportation System**

The CH 17/TH 13 corridor is centrally located in Scott County between I-35W and US 169 which serve regional travel demands as Principal Arterials. US 169 is primarily a north-south route. However, it is aligned in an east-west orientation across northern Scott County. The east-west oriented segment of US 169 has interchanges with three important river crossings serving trips from Scott County to and from employment centers north of the river. TH 41 crosses the Minnesota River into Chaska, TH 101 crosses from Shakopee to Chanhassen and the US 169 Bloomington Ferry Bridge crosses from Shakopee and Savage to Bloomington and Eden Prairie. These three river crossings combined serve nearly 90,000 vehicles per day. The study corridor is positioned within the Scott County Highway network such that it will contribute to serving traffic demand growth to/from any of the three river crossings. The potential for added population growth and the geographic location of the corridor reinforces the need to preserve CH 17 and TH 13 as major transportation facilities.

CH 17 and TH 13 are currently classified as Minor Arterials. However, City, County, State, and Township officials recognize the significant traffic demand that the corridor will carry and envision the need to manage and preserve the corridor as they would a Principal Arterial. Development expected to occur in the Cities of Shakopee and Prior Lake and rural areas beyond, will magnify the need to: preserve the CH 17/TH 13 corridor for roadway expansion; manage local access opportunities; and, develop a supporting roadway network of Arterials and Collectors to collect and distribute trips to and from roadways functioning as Principal Arterials (like CH 17/TH 13).

## **3.0 Study Goals and Objectives**

The CH 17/ TH 13 Study Management Team (SMT), comprised of representatives from Scott County, Mn/DOT, the Cities of Shakopee and Prior Lake, and the Townships of Cedar Lake and Spring Lake, developed goals and objectives with recognition of the study's purpose and need. These goals and objectives are as follows:

### **Goal 1: Use corridor deficiencies (existing and future) to identify needs.**

Objectives:

- 
- Determine existing and future capacity, safety, and mobility issues in each corridor segment.
  - As a future Principal Arterial roadway, determine what components are needed to achieve appropriate levels of performance.
  - Assess the regional roadway system and postulate the effects a Principal Arterial roadway will have on these facilities.
  - Identify and address concerns with other systems planning elements that may be inconsistent with the vision (land use, natural resources, and major utility planning).

**Goal 2: Address immediate and growing safety, capacity and mobility needs by determining the appropriate medium-range (through 2030) facility type for the corridor as a Principal Arterial.**

Objectives:

- Assess the regional and local pros and cons of an expressway design applied through the corridor.
- Consider a medium-range (through 2030) plan for an expressway design through the study corridor.
- Consider grade separated intersections (interchanges) as possible elements of an expressway concept.
- Develop a medium-range solution that does not preclude implementation of a long range vision (i.e., potential freeway design).

**Goal 3: Define short-and medium-range corridor improvement projects by segment (2013-2030).**

Objectives:

*Segment A:*

- Produce high level concept drawings on aerial base mapping, an access inventory, and an access management plan for the corridor.
- Identify full-access and partial access locations and, based on 2030 forecast demands, define potential intersection traffic control needs and develop a concept level supporting roadway system for future refinement to preserve the corridor.

*Segment B:*

Produce a concept level layout for CH 17 that defines the roadway section needed to serve traffic demands through 2030, right of way to be preserved, full access locations, lane assignments, intersection configurations, supporting roadway system considerations, and potential storm water pond locations.

*Segment C:*

Produce a staff-approved geometric layout for CH 17 that defines the roadway section needed to serve traffic demands through 2030, right of way to be acquired, full access locations, lane assignments, intersection

---

configurations, supporting roadway system considerations, and preliminary drainage design and storm water management considerations.

Include typical sections, vertical and horizontal alignments and critical cross sections where constraints are present.

*Segments A, B, and C*

- Consider very long range needs as a backdrop to medium term decisions. Scott County is developing a 2050 traffic forecast for long range visioning purposes.
- Upon acknowledgement of 2050 traffic forecasts, identify an approach to address long-range planning, including the following activities:
  - Identify potential alternatives for interchange locations, access modifications, and connecting roadway needs.
  - Preserve estimated right-of-way through official mapping, platting, or other appropriate means, for a Principal Arterial of freeway design.
  - Plan for project development process(es) for these segments, e.g. preliminary design, environmental documentation, etc.
  - Work with the local governments to protect the preservation areas from development through land use planning and zoning requirements and incentives.
  - Develop agreements for acceptable “interim” land uses in the corridor and future areas to be acquired for right-of-way.

*Segment D:*

Consider geometric alternatives such as those that have been examined through traffic modeling as part of this study.

Examine interchange configurations with greater capacity to identify potential long term solutions.

- Consider very long range needs as a backdrop to medium term decisions. Scott County is developing a 2050 traffic forecast for long range visioning purposes.
- Upon acknowledgement of 2050 traffic forecasts, identify an approach to address long-range planning needs, which may include the following activities:
  - Identify potential interchange types that may serve very long-term needs. These may include system-to-system-type interchange movements at US 169 or partial clover leaf, or single point diamond configurations that would require expansion or replacement of the CH 17 bridge over US 169.
  - Preserve estimated right-of-way through official mapping, platting, or other appropriate means.

- 
- Plan for project development process(es) for this segment, e.g. preliminary design, environmental documentation, etc.
  - Work with the City of Shakopee to protect the preservation areas from development through land use planning and zoning requirements.
  - Develop agreements for acceptable “interim” land uses in future areas to be acquired for right-of-way.

*Segment E:*

Determine capacity needs of 2030 forecast traffic demands and evaluate operational benefits of differing operating section types (3-lane, 4-lane, 5-lane sections; divided or undivided sections)

- Assess the effects that trains have on peak period traffic flow and queuing of vehicles waiting for the train to clear.
- Consider very long range needs as a backdrop to medium term decisions. Scott County is developing a 2050 traffic forecast for long range visioning purposes.
- Upon acknowledgement of 2050 traffic forecasts, outline an approach to address long-range planning needs, which may include the following tasks:
  - Plan for a 5-lane section through Shakopee from Prairie Lane to CH 101
  - Identify access consolidation locations
  - Determine potential rail crossing improvements
  - Encourage future land uses with access needs that are compatible with a higher functioning facility

*Segment F:*

- Determine capacity needs of 2030 forecast traffic demands and evaluate operational benefits of differing operating section types ( 4-lane or 5-lane sections; divided or undivided sections)
- Consider very long range needs as a backdrop to medium term decisions. Scott County is developing a 2050 traffic forecast for long range visioning purposes.
- Upon acknowledgement of 2050 traffic forecasts, outline an approach to address long-range planning needs, which may include the following tasks:
  - Plan for a 5-lane section through Shakopee from Prairie Lane to CH 101
  - Identify access consolidation locations
  - Encourage future land uses with access needs compatible with higher functioning facility

---

**Goal 4: Address long-range (post 2030) safety, capacity, and mobility needs by determining the appropriate facility type for the corridor as a Principal Arterial highway. Assess the regional and local pros and cons of a potential freeway design applied through the corridor.**

Objectives:

- Consider a long term (post 2030) vision that could include a freeway facility for the study corridor
- Apply designs and compare the effects of planning-level freeway standards on right-of-way needs, access spacing, frontage/Local roadway connectivity, multimodal travel potential, environmental effects, etc.
- Develop a high-level alternative for a freeway design through the corridor.

#### **4.0 Preliminary Findings of Fact**

Preliminary findings were developed based upon review of Scott County's draft land use plan, transportation plan and comprehensive plan traffic forecasts. These findings reinforced the importance of the CH 17 / TH 13 corridor through Scott County and confirmed the direction of activities included in this corridor study.

1. 1. Scott County's planned 2030 growth must be served with adequate transportation facilities that address issues with travel congestion and safety. The CH 17 and TH 13 Corridor is located within the path of planned urbanizing growth and will have significant capacity, safety, and mobility needs by 2030.
2. CH 17 and TH 13 represent a key future north-south travel corridor in a geographically central location in Scott County. There is no other corridor in the County that provides a similar, largely direct continuous north-south connection.
3. The proposed reclassification of CH 17 and TH 13 in the Scott County Transportation Plan Update to a Principal Arterial highway will connect the corridor to other existing and planned Principal Arterial highways, including US 169, CH 42, CH 78, TH 19 and the future new TH 41 river crossing.
4. The CH 17 interchange with US 169 represents a regional highway system need. Long range planning (2030) for this interchange needs to be conducted concurrently to maintain future acceptable levels of mobility, performance, and safety.
5. A key feature of a Principal Arterial highway is a high level of mobility. This mobility can be achieved, in part, by restricting direct access to/from adjacent parcels in order to provide for reduced traffic conflicts, in turn providing a higher-speed facility for a larger volume of vehicles. Traffic forecasts indicate that improvements will be needed prior to 2030 in order to maintain this level of mobility.
6. The CH 17 segment of the Corridor will experience unacceptable levels of congestion prior to 2030. CH 17 segments of concern include:

- 
- The existing two lane configuration south of 17<sup>th</sup> Avenue should be expanded to four lanes. Expansion should occur systematically; to and through major east west arterial intersections to facilitate collection and distribution of longer trips (i.e. extend the existing four lane section to CH 78, and/or to CH 42, etc).
  - The existing four lane section between 17<sup>th</sup> Avenue and Vierling Drive should be expanded. Additional through lanes and turn lanes will be needed to serve movements to and from the US 169 interchange. Use of the existing bridge deck over US 169 should be maximized to defer bridge replacement.
  - CH 17 north of Vierling Drive operates as a three lane section (includes a center two way left turn lane). An additional through traffic lane in each direction will be needed.
7. The TH 13 segment of the Corridor is not forecast to be unacceptably congested before 2030, although intersection safety and operational issues may appear before then. Volumes on this segment of the Corridor are expected to increase approximately 40 to 50 percent between 2030 and 2050 from which operational and safety issues may develop.
  8. Preservation of adequate right-of-way in the corridor for 2030 Principal Arterial highway capacity improvements is essential to prevent costly buyouts and unnecessary delays in constructing improvements.
  9. Design solutions for 2030 needed improvements will include divided four-lane expressway alternatives and interconnecting Minor Arterial and Collector roadway improvements.
  10. Planned 2030 designs should not preclude 2050 long-range needs (i.e., potential freeway design) in the Corridor.
  11. Local governments can support the County's long-range plan by coordinating long-range land use and transportation planning, zoning, and building permit implementation. This includes communities in Scott, Rice, and LeSueur Counties.

## **5.0 Study Team and Public Outreach Activities**

The primary goal of the corridor study was to develop a long-range plan for CH 17 and TH 13 and for the local roadway system components that support it. The plan, or “vision”, was developed through a process which thoroughly engaged the public in the understanding of the purpose and need such that recommendations were carried to the County Board and respective City Councils and Township Boards for acceptance. See **Figure 2**, CH 17 / TH 13 Public Participation Plan, for a representation of the committee roles and responsibilities and the decision making process.

### **5.1 Study Leadership Team (SLT)**

The purpose of the Study Leadership Team was to manage and deliver the corridor study. Tasks included preparing deliverables for the Study Management Team and the Citizens Advisory Committee review and comment. This group also managed communications and intergovernmental concerns.

---

## 5.2 Study Management Team (SMT)

The Study Management Team consisted of the agency representatives listed below. The SMT's role was to review and comment on process delivery and content of technical products. They provided direction for the Study Leadership Team and reviewed issues and concerns of the Citizens Advisory Committee. The SMT prepared recommendations for solutions for the Scott County Board, Shakopee City Council, Prior Lake City Council, Spring Lake Township Board, Cedar Lake Township Board, and Mn/DOT.

- Greg Ilkka                      Scott County Project Manger
- Marty Schmitz                Scott County/Planning
- Craig Jenson                  Scott County/Public Works
- Michael Sobota               Scott County/Planning
- Joe Gustafson                Scott County/Public Works
- Ken Johnson                 Mn/DOT/Area Engineer
- Nicole Rosen                 Mn/DOT/Area Engineer
- Karen Clysdale              Mn/DOT/Planning
- Bruce Loney                 Shakopee/Public Works
- Michael Leek                 Shakopee/Planning
- Larry Poppler                Prior Lake/Public Works
- Danette Moore              Prior Lake/Planning
- Jane Kansier                Prior Lake/Planning
- James Andrew               Met Council
- Eugene Berens               Spring Lake Township
- Gerald Williams             Cedar Lake Township
- Scott McBride               SEH
- Mike Kotila                  SEH
- Eric Johnson                 SEH

The SMT group met monthly over an eighteen month period from May 2007 through November, 2008.

## 5.3 Citizen Advisory Committee (CAC)

The CAC consisted of the representatives listed below. The role of the CAC members was to participate in the corridor study as key local representatives and advocates of the cities and townships, along with agency staff from Scott County and Mn/DOT. The CAC reviewed and commented on study deliverables and communicated issues and concerns.

- Paul Krueger                 Edina Realty
- Don Crofut                    Crofut Family Winery & Vineyard
- Cindy Vincent                St. Francis Medical Center
- Art Quinn                     Betaseed
- Kevin O'Brien               Greystone Construction
- Colleen Zastrow             Resident, City of Shakopee
- Mark Sailer                  Sailers Nursery
- Mayor Jack Haugen        City of Prior Lake

- 
- Greg Ilkka                      Scott County
  - Ken Johnson                   Mn/DOT
  - Bruce Loney                   City of Shakopee
  - Larry Poppler                City of Prior Lake
  - Eugene Berens                Spring Lake Township
  - Gerald Williams              Cedar Lake Township
  - Scott McBride                SEH
  - Mike Kotila                    SEH

The CAC met seven times through the course of the study. The CAC provided feedback to the SMT on draft findings and served as liaisons to business representatives and residents in the corridor.

#### **5.4 Shakopee City Council**

There were four presentations made to the Shakopee City Council. The first presentation, on March 12, 2008, informed the Council of the study's purpose, community issues and preliminary findings of fact.

The second presentation to the Shakopee City Council occurred on October 21, 2008. The presentation focused on the findings and also updates made to the 2013 project and the 2030 long term corridor plan. Also discussed at this Council meeting were the Moores Avenue Traffic Study recommendations.

The third presentation the Council occurred on November 24, 2008. The primary focus of this presentation was to discuss the supporting roadway network. The presentation included discussing needed connections and reasoning for providing such connections. Also discussed at this presentation was the draft study recommendations that the Council will be asked to approve as the Study is completed.

The Shakopee City Council approved the corridor study and its recommendations on April 7, 2009. A copy of City Council Resolution No. 6891 is incorporated into this final report document.

#### **5.5 Shakopee Chamber of Commerce**

A presentation was made to the Shakopee Chamber of Commerce on April 23, 2008. The presentation included purpose and need for the study and shared preliminary findings and concept drawings. The meeting was well attended with over 50 Chamber members being present. Members generally expressed broad support for planning roadway capacity improvements, especially near the US 169 interchange. Maintaining access to commercial areas while providing safe and efficient traffic flow was the primary interest. Concerns for property impacts and railroad crossing delays on CH 17 were expressed.

#### **5.6 Prior Lake City Council**

Two presentations were made to the Prior Lake City Council throughout this study's process. The first presentation was on February 19, 2008 informed the Council of the study's purpose, community issues and preliminary findings of fact.

---

The Prior Lake City Council accepted the corridor study and its recommendations on December 15, 2008. A copy of City Council Resolution No. 08-162 is incorporated into this final report document.

### **5.7 Spring Lake Township Board of Supervisors**

A joint meeting of Spring Lake and Cedar Lake Township Boards occurred in workshop format on February 21, 2008. The Boards were informed of the study's purpose, community issues and preliminary findings of fact.

The Spring Lake Township Board of Supervisors reviewed and discussed study recommendations on January 8, 2009 and approved the corridor study with stipulations on February 12, 2009. A copy of Board Resolution No. 09-005 is incorporated into this final report document.

### **5.8 Cedar Lake Township Board of Supervisors**

A joint meeting of Spring Lake and Cedar Lake Township Boards occurred in workshop format on February 21, 2008. The Boards were informed of the study's purpose, community issues and preliminary findings of fact.

A presentation was made to the Cedar Lake Township Board of Supervisors on January 6, 2009. This presentation focused on the study's findings and recommendations. The Board approved the corridor study per Resolution 09-01 which is incorporated into this final report.

### **5.9 Scott County Board of Commissioners**

There were three presentations made to the Scott County Board of Commissioners during the course of this study. The first presentation was on February 12, 2008, which informed the Board of the study's purpose, community issues and preliminary findings of fact.

The second presentation to the Scott County Board of Commissioners occurred on October 21, 2008. The presentation focused on the findings and local agency issues. In addition, updates made to the 2013 project and the 2030 long term corridor plan were discussed.

The Scott County Board of Commissioners considered findings and recommendations and approved the study on May 12, 2009. A copy of Resolution No. 2009-075 is included within this final report.

### **5.10 Open House Meetings**

#### *Open House 1*

The public was invited to attend an Open House on June 26, 2007 to help identify existing issues and to share their thoughts about CH 17 and TH 13. Forty one individuals signed in at the open house.

At the first open house the public was able to:

1. Become familiar with the study process and schedule.
2. Assist in identifying existing issues along the corridor.
3. Assist in developing potential solutions to existing and future problems along the corridor.

---

The input received at the Open House was used to identify issues of greatest concern along the corridor, which have been addressed in this study. The input was needed to ensure the study team gains a comprehensive understanding of the issues from those who use these highways everyday. County, State, City, Township, and consultant team staff were available to discuss issues and listen to concerns. Maps and more information were available for review and the public was asked to provide written comments. A summary of the written comments along with responses is included in **Appendix A**.

#### *Open House 2*

The public was invited to attend the study's second Open House on April 8, 2008 to view study concepts developed to date and to share thoughts about County Highway 17 and Trunk Highway 13 with study representatives. Over 60 people signed in at the open house.

The public was asked to attend and:

1. Offer opinions on the concept drawings developed to date.
2. Speak to study representatives one-on-one about the study.
3. Participate in the development of potential solutions.

County, State, City, Township, and consultant team staff were available to discuss issues and listen to concerns. Maps and more information were available for review and again the public was asked to provide written comments. A summary of the written comments along with responses is included in Appendix A.

#### *Open House 3*

The public was invited to attend the study's third Open House on October 28, 2008 to view study's recommendations and to share thoughts about County Highway 17 and Trunk Highway 13 short term (2013) and long term (2030) plans with study representatives. Approximately 30-40 people attended the open house.

The public was asked to attend and:

1. Offer opinions on the recommended plan drawings.
2. Speak to study representatives one-on-one about the study.
3. Participate in planning for the future of this corridor.

County, State, City, Township, and consultant team staff were available to discuss issues and listen to concerns. Maps and more information were available for review and again the public was asked to provide written comments. A summary of the written comments from the public is included in Appendix A.

### **5.11 Website**

A study website was established early on in the study process and was updated as new materials were made available to the public. The web site

---

contains study information, graphics, and meeting announcements, as well as contact information.

<http://www.co.scott.mn.us/17Study>

### **5.12 Property Owner / Small Group Meetings**

To coordinate the new east-west road (Valley View Road) that will replace the function of St. Francis Boulevard a meeting with Beta Seeds and St. Francis Hospital was held on March 3, 2008. Both parties have had involvement in the planning for this street connection which is part of Segment C layout planned for construction in 2013. Input was received from both parties relative to access needs, right of way needs, and alignment considerations.

Multiple meetings and conversations have occurred with St. Francis Hospital regarding a secondary access for emergency vehicles to get into the hospital quickly. This study resulted in allowing a northbound right turn lane to the emergency room at the hospital.

Residents in the neighborhood east of Sarazin Street, especially those on Mooers Avenue and Mathias Road, are concerned that the proposed Valley View Road connection between CH 17 and Sarazin Street will alter traffic patterns resulting in increased traffic demands on their streets. In response to this concern, the City of Shakopee performed a traffic study to estimate the magnitude of change that should be expected. The previous Valley View alignment study was adopted by the City before many of the homes in area were built. After traffic study was completed the City invited neighborhood, Hospital and Betaseed representatives to a joint meeting which was held on July 31, 2008.

Neighborhood traffic study results and neighborhood concerns were shared with the Shakopee City Council on November 24, 2008. The City Council approved staff recommendation to plan Mooers Avenue to be converted to a one-way street between for one block easterly of Sarazin Street. The street would serve one-way traffic in the westbound direction. Implementation will be coordinated with the final design and construction of Valley View Road westerly of Sarazin Street.

## **6.0 General Corridor Characteristics**

This corridor study considers the reclassification of Scott County State Aid Highway (CH) 17 and Minnesota Trunk Highway (TH) 13 from a Minor Arterial into a continuous Principal Arterial roadway, either as an expressway or freeway design, from US 169 on the north, to TH 19 on the south, a distance of approximately 18 miles. In addition, a segment of CH 17 between US 169 and CH 101 through Shakopee has been included to assess the need for safety and capacity improvements, although this segment will remain as a Minor Arterial facility. See **Figures 3A – 3D** for a series of graphics that display existing conditions and issues.

The existing lane configuration of CH 17/TH 13 transitions from a three and four-lane facility in developed areas of Shakopee to a two-lane rural roadway extending through southern Shakopee, Prior Lake, Spring Lake Township,

---

and northern Cedar Lake Township. The most southerly 1-1/2 mile segment is a rural four lane divided highway to its intersection with TH 19 near New Prague.

The corridor is divided into unique study segments based upon geography, issues, development density, and programmed improvements. These study segments are described below, including characteristics and current issues. The segments are illustrated on **Figure 1**.

### **6.1 Segment A – TH 13 from TH 19 to TH 282/CH 17**

Segment A is a 10-mile segment of TH 13, a rural two lane highway through Spring Lake Township and Cedar Lake Township except for the southerly one and one-half miles which is a four lane divided section. The Scott County 2030 future land use plan identifies future urban uses generally west of the corridor and future rural areas east of the corridor. See the draft land use map from the County's Comprehensive Plan in Appendix F.

Current traffic demands on Segment A range from 5100 to 8100 vehicles per day (2007 AADT). Traffic forecasts for TH 13 south of TH 282 developed for this corridor study indicate a 2030 demand of almost 18,000 vehicles per day, which exceeds the capacity of the existing two lane roadway.

Land uses through the study area are primarily agricultural with pockets of residential use near the communities of Lydia, St. Patrick and lakeshore residential communities around Cedar Lake. Farm and residential accesses commonly occur with direct driveway access to the State Highway. Public roadway access occurs at County Highway and Township Road intersections typically spaced at one mile or more.

TH 13 at the south end intersects TH 19, an east-west Minor Arterial with regional connections to I-35 and US 169 and beyond. The Scott County 2030 Comprehensive Plan update identifies TH 19 as a future Principal Arterial. TH 13 is routed on TH 19 to the west through the City of New Prague where it turns south again at TH 21. This type of north-south route discontinuity is common along the border line between Scott, Rice, and LeSueur Counties. Rice County's transportation plan identifies a future improvement that would extend the corridor directly south from the TH 19 intersection curving westerly to follow the Rice and LeSueur County line to the south. See **Appendix B** for a graphic from the Rice County Transportation Plan which displays the addition of a southern leg at the TH 13 and TH 19 intersection. Acknowledging multi-jurisdictional planning for regional improvements like this are important considerations in the development of a long term vision for TH 13.

### **6.2 Segment B – CH 17 from TH 13 to CH 42**

Segment B, the southernmost part of CH 17, is a two lane rural highway with 2005 average daily traffic volumes (AADT's) ranging from 5800 to 9800 vehicles per day. Traffic forecasts for CH 17 developed for this corridor study indicate a 2030 demand along Segment B ranging from 16,500 to 22,000 vehicles per day, which exceeds the capacity of the existing two lane roadway.

---

The south end of the segment lies within a seven square mile section of Spring Lake Township that is planned for orderly annexation by the City of Prior Lake through 2014. Development interest in this area is high but is dependent upon the extension of City utilities, programmed to occur in 2010 in conjunction with reconstruction of CH 12 along the north side of Spring Lake, westerly to the CH 17 corridor.

The north end of Segment B lies within the City of Shakopee and ties into Segment C at the CH 42 intersection. Land areas adjacent to CH 17 are guided for residential development in the City's Comprehensive Plan. Several residential developments are currently served, each with public street access to CH 17. Development of the open parcels in between and beyond those already developed is expected to occur. Local and Collector roadway systems that connect the existing subdivision streets have not been defined but will be an integral part of the corridor planning process to create a supporting roadway system that would allow full access to CH 17 to be reduced, thus preserving its mobility function over time.

### **6.3 Segment C – CH 17 from CH 42 to St. Francis Avenue**

Segment C is programmed for reconstruction in Scott County's Transportation Improvement Plan as an expansion project in 2013. Corridor study work for this segment includes a preliminary staff approved layout - a higher level of design than desired for the adjacent segments. Therefore, data collection, right of way mapping and vertical and horizontal design will be carried forward at greater level of detail and confidence than is necessary for other segments.

Segment C is a two lane rural highway with a 2005 AADT of 13,400 vehicles per day. CH 42 intersects CH 17 at the south end of Segment C. CH 42 is a 4-lane divided Minor Arterial serving east-west trips through developing areas of Prior Lake and Shakopee. CH 42 contributes and distributes a significant traffic demand to/from CH 17 especially on Segment C to the north. CH 78 intersects CH 17 one mile to the north of CH 42. Together, CH 42 and CH 78 provide east-west mobility, but rely upon CH 17 to carry some of these east-west trips. The window of opportunity to realign CH 42 to become the east leg of the CH 78 intersection may have passed due to development that has occurred in the area easterly of CH 17. Segment C should be designed to serve the north south mobility need in the corridor as well as the intersection turning demands created by the discontinuity of the east-west CH 42/CH 78 corridor. Northerly of CH 78, Segment C extends to St. Francis Avenue where it connects to study Segment D and the US 169 interchange.

### **6.4 Segment D – St. Francis Avenue to Prairie Lane**

Segment D is approximately one mile in length and includes the interchange with US 169. It is currently a four lane divided section serving 27,100 vehicles per day (2005 AADT). Commercial and retail land uses are prevalent along this segment. "Big box" traffic generators like Cub Foods and Target anchor shopping centers in the immediate area. St. Francis Medical Center and its associated clinic and medical offices contribute to traffic demands at the interchange. CH 17, and TH 13 to the south, conveys

---

longer trips through the study area, a large portion of which, are served by the US 169 interchange.

The interchange does experience delays and congestion under today's demands. Continued growth, locally and regionally, will further burden capacity of the existing configuration. The existing width of the bridge deck over US 169 will limit the number of traffic lanes that can be served. The bridge does have roadway shoulder areas that may provide opportunity for increasing left turn storage capacity by reconfiguring the use of the bridge deck. Entrance and exit ramp lane configurations could potentially be expanded for additional capacity.

### **6.5 Segment E – Prairie Lane to CH 101**

Segment E is an urban three lane section serving 14,900 vpd (2005 AADT count taken between CH 16 and 4<sup>th</sup> Avenue). Commercial, retail, and high density residential land uses adjacent to Segment E are served by local street intersection access and mid-block driveway accesses. The center two-way left turn lane provides safe left turn access through the segment with minimal disruption to flow in the through lanes. 2030 traffic demands in the corridor will be evaluated to determine if the three lane section will continue to operate with acceptable levels of service. Alternative sections, with added capacity will be evaluated through traffic modeling to determine the long term configuration that should be planned.

### **6.6 Segment F - CH 101 from CH 17 to CH 69 (Minnesota River Crossing intersection)**

Segment F is an urban undivided four lane section serving 20,100 vpd between CH 17 and CH 101 - the river crossing intersection (2005 AADT). Commercial and retail land uses are predominant adjacent to Segment F which are served by local street intersection access and mid-block driveway accesses. Turn lanes are present to serve the CH 17 intersection and at the CH 101 intersection but are typically not present throughout the rest of the segment where left turns and right turns are made from the through traffic lanes. 2030 traffic demands in the corridor will be evaluated to determine if the four lane section will continue to operate with acceptable levels of service. Alternative sections, with added capacity and safety treatments will be evaluated through traffic modeling to determine the long term configuration that should be planned.

## **7.0 Environmental Screening**

A preliminary environmental screening was conducted which assumes the corridor will be widened for needed 2030 capacity improvements between US 169 and TH 13 in its current location. See Table 1 below which is a matrix identifying the typical Social, Economic, and Environmental (“SEE”) impact categories used by the Minnesota and National Environmental Protection Acts (MEPA and NEPA) for consideration as the 2030 concept plan for the study is evaluated. Table 1 lists the SEE categories; identified references used to determine potential issues and concerns, and summarized our initial review comments for each category.

---

See **Figures 4A/4B** and **5A/5B**, which illustrate human environment and natural environment features described in the matrix, respectively.

The environmental screening was performed for the entire TH 13/CH 17 corridor. Detailed plans or concept solutions were not available at the time of evaluation. The following summary captures the most significant environmental issues that will need to be addressed in a future scoping document or environmental review process as individual projects are developed within the corridor.

**Table 1  
SEE Impacts**

<b>Social Economic Environmental ("SEE") Category</b>	<b>SEE Review Resources Used</b>	<b>SEE Review Comments</b>
<b>Air Quality</b>	Mn/DOT HPDP Guidance	The proposed improvements are not anticipated to have significant air quality impacts or cause air quality related concerns because the forecast traffic volumes are lower than the volumes of traffic typically associated with carbon dioxide (CO) concentrations approaching state air quality standards. According to the Mn/DOT Hotspot Screening Method Flow Chart, the benchmark AADT (77,200 trips) will not be reached at any intersections nor does the site of the proposed roadway improvements affect any of the MPCA monitored locations or top seven intersections in the Twin Cities Metropolitan Area. An analysis may, however, be required by the EPA or FHWA to assess the effects of anticipated mobile source air toxic (MSAT) emissions.
<b>Noise</b>	23 CFR 772 and MN Statute 116.07	Based on FHWA standards, the 2030 Concept Plan is not assumed to be a Type I project. Therefore, procedures for abatement of highway traffic noise would not apply in accordance with 23 CFR 772. The 2030 planned roadway corridor will be a local and state roadway without full control of access, which is exempt from Minnesota Noise Standards, per Minnesota Statutes, Section 116.07 Subd. 2a. A review of aerial photography revealed one sensitive noise receptor (St. Francis Medical Center) but no other sensitive receptors such as schools or churches.
<b>Wetlands</b>	Minnesota WCA Rules, NWI mapping, Scott Co. Comprehensive Plan	The 2030 Concept Plan will affect between 15-50 acres wetlands where right-of-way needs will be widened for the expressway section north of TH 13. Wetlands immediately adjacent to the existing right-of-way are located predominantly south of the CH 17 intersection with CH 42, in the community of Shakopee. One wetland with a functional rank classified as "Unique" (Howard Lake) exists near the corridor in Prior Lake. As the 2030 Concept Plan advances to preliminary design, new Minnesota Wetland Conservation Act [M.S.Chapter 8420.1010 - 1060] rules in effect since August 6, 2007 may require increased wetland mitigation ratios and mitigation in place, in kind, or in advance, upland buffers on mitigation wetlands, ineligible storm water ponding credits, and new credits for preservation of wetlands under threat from development. These concerns should be noted in a future Environmental Assessment. See also <b>Figures 5A and 5B</b> for wetland features in the study area.
<b>Water Resources</b>	NWI Mapping, Scott County SWCD	Water resource features in the CH 17/TH 13 Corridor include high quality lakes (O'Dowd, Prior, and Cedar Lakes). There are also several State Watershed Management Areas (WMAs) located along or within one mile of the corridor, the most notable being the St. Patrick WMA south of 245 <sup>th</sup> Street (CH 56). One creek crossing (Porter Creek) occurs one-half mile south of the TH 13 /CH 8 intersection, and there are other areas adjacent to the corridor containing extensive ditching and streams. See also <b>Figures 5A and 5B</b> for water resources in the study area.
<b>Floodplains</b>	FIRM mapping	According to the FIRM map for this area, there is floodplain located adjacent to Porter Creek in the study corridor. Many smaller floodplain areas are isolated adjacent to area lakes. See also <b>Figures 5A and 5B</b> for floodplain resources in the study area.

Social Economic Environmental ("SEE") Category	Review Resources Used	SEE Review Comments
<b>Drainage</b>	Scott County SWCD, SWMPs for Shakopee and Prior Lake	A storm water management system for transportation improvements should be designed based on the County and Municipal SWMP standards of the Scott County WMO and Prior Lake- Spring Lake Watershed District, whichever is more stringent. In areas proposed with Urban design sections, pond outlet control structures should be designed to allow water movement in natural flow line patterns to minimize turbulence, to provide good self-cleaning characteristics, and to minimize erosion. Stormwater ponds designed for the 2030 Concept Plan will need to address volume control utilizing methods. There are 4 proposed stormwater ponds identified by the Prior Lake SWMP adjacent to the CH 17 corridor.
<b>Water Quality</b>	SWMPs for Shakopee and Prior Lake	The Cities of Shakopee and Prior Lake maintain Surface Water Management Plans that recommend the continued improvement of higher water quality standards for certain subwatersheds in each community. In Prior Lake, Spring Lake near the study corridor is listed on the MPCA's Impaired Waters list due to excess nutrients, mercury, and fish consumption advisory (FCA). Spring Lake's Sustainable Water Quality Management Plan (2004) should be consulted for water quality management techniques to incorporate into the 2030 Concept Plan's design.
<b>Wildlife</b>	MnDNR's Natural Heritage Information Systems (NHIS) Resources; SEH wildlife biologist's previous work in the area and understanding of regulations	There are no significant concentrations or occurrences of wildlife in the study area; however, there are locations north of Spring Lake that contain NHIS resources (see <b>Figures 5A and 5B</b> ). The study can expect an "average" number of typical species common to Scott County and normal distribution of occurrences. There may be some fish resource concerns with the area lakes. Publicly funded wildlife resources will require coordination under the Fish & Wildlife Coordination Act, including issues related to the neighboring Minnesota Valley National Wildlife Refuge. MNDNR may also have state owned easements in the study area. Coordinate with USFWS for federal and MNDNR for state.
<b>Fisheries</b>	(Same as Wildlife)	(Same as Wildlife)
<b>Vegetation</b>	FHWA NEPA Guidance and federal Executive Order on Nuisance Species	Buckthorn populations and other noxious weeds in study area will need to be evaluated in the NEPA studies. Evaluate the 2030 Concept Plan's potential to induce the spread of noxious weeds.
<b>Threatened/ Endangered Species</b>	Federal Endangered Species Act and Minnesota Endangered Species statute [M.S. 84.0895]; MnDNR - NHIS	It is possible there are remnant native prairie areas; however, much of the land has been tilled. There are no known major Threatened or Endangered Species (State-and Federally-listed) known to reside in the study area, or unique habitats.
<b>Utilities</b>	Reviewed aerial photography	Utilities are located in the study area including telephone and communication switching equipment, cable television, and electrical power lines. Impacts on existing utilities are anticipated and relocation of lines may be required.

Social Economic Environmental ("SEE") Category	Review Resources Used	SEE Review Comments
<b>Soils</b>	Scott Co. Soil Survey	According to the Scott County Soil Survey, the roadway corridor passes across three associations -- Lester, Webster, Glencoe; Hayden, Lester soils and peat bogs; and Burnsville, Hayden, Kingsley, and Scandia. Drainage classes range from "very poorly drained" to "well drained" and primarily correspond with the percentage of slope the soil is found on the landscape. Water table depths range from +1 foot above the surface to greater than 6 feet below the ground surface.
<b>Farmland</b>	2020/2030 Land Use plans	Each of the local governments in the study area identifies current "farmland" as rural residential property. Some of these properties operate as working family farms while others could be considered "hobby" farms or non-farm acreages. Lands planned to be engaged in long-term agricultural production should be evaluated as "farmland" impacts in a future environmental impact documentation process.
<b>Erosion</b>	USGS Quad Map	There are no substantial elevation changes in the study area. The 2030 Concept Plan is not expected to create significant erosion control challenges.
<b>Steep Slopes</b>	USGS Quad Map	Based on USGS topographic map, the study area appears to be gently rolling. Slopes are typically associated with low-lying drainage basins.
<b>Contaminated Properties</b>	Historical aerial photo inspection; land use history	A limited contaminated property file search should be conducted for the corridor to collect recognized environmental conditions on properties that may be affected by improvements to the corridor. A search identified thirteen properties within close proximity of the corridor. Some sites appear to have greater potential of environmental concern than others. A full Phase I environmental site assessment (ESA) is recommended for the corridor at the time of NEPA documentation or right-of-way acquisition.
<b>Land Use</b>	Draft 2030 Scott County Land Use Plan; 2030 Prior Lake Land Use Plan	<p><u>Existing Land Use:</u> North of CH 42, the corridor is developed as commercial and medium to higher density residential. South of CH 42 and north of TH 13, the corridor is developed -- or developing -- with low density residential 1.2-4/acre) or large-lot (2.5 acre minimum) development. At TH 13 to the south, the land use is large-lot residential or agricultural.</p> <p><u>Future Land Use Plan:</u> The 2030 MUSA includes an expansion of Prior Lake in the study area. This expansion calls for low density residential (0-4 dwelling units/acre), except at the CH 17/TH 13 intersection, which includes medium density residential (4.1-7 units/acre), community retail development, and planned industrial land uses. South of the intersection, the land uses are expected to remain rural residential.</p>
<b>Economic Issues</b>	Photo inventory	Existing businesses located along these segments of the corridor include highway commercial and office/retail establishments near the CH 17 and US 169 interchange, including the St. Francis Medical Center and Mystic Lake Casino. Businesses in this area will be affected by future access changes and potential property acquisitions for future roadway right-of-way.

Social Economic Environmental ("SEE") Category	Review Resources Used	SEE Review Comments
<b>Parks</b>	2030 Scott County Draft Comprehensive Plan; 2030 Prior Lake Comprehensive Plan	Howard Lake neighborhood park is located approximately .25 miles east of the corridor north of 165 <sup>th</sup> St. East. Spring Lake Community and Spring Lake Regional Parks are located approximately 0.5 miles east of the study corridor in Prior Lake. There are 6 neighborhood parks planned for Prior Lake's recent annexation area within the study corridor.
<b>Recreation</b>	2030 Scott County Draft Comprehensive Plan; 2030 Prior Lake Comprehensive Plan	Recreation areas within the study corridor include four golf courses: Stonebrook (Shakopee), The Wilds and The Meadows (Prior Lake), and Creeks Bend Golf Course (Cedar Lake Township). Two adult athletic complexes are proposed in the Prior Lake annexation area adjacent to the study corridor.
<b>Section 4(f)/6(f)</b>	LAWCON list checked	No 6(f); likely 4(f) resources may include WMA's adjacent to the study area and potentially eligible NRHP historic properties.
<b>Social and Environmental Justice</b>	Census data collected (down to block group level)	Very small minority and low-income populations; no EJ impacts expected; should confirm with local knowledge (city/County staff)
<b>Right-of-way and Relocation</b>	Reviewed aerial photography with concept alternative drawings (including estimated future right-of-way).	Future improvements to the 2030 four-lane expansion of the CH 17 Corridor will require acquisition of permanent right-of-way/easements and temporary construction easements. Without extraordinary measures such as frontage/backage road connections and parcel replatting, several properties with direct highway access will also become landlocked or incompatible with future planned development. The permanent right-of-way requirements may result in acquisition of residential and commercial properties. The degree of acquisition (partial vs. total takings) will be dependent on proposed improvements and future right-of-way negotiations including the property owner's willingness to sell and appraised values of the parcel(s). Property acquisition and relocation will be conducted in accordance with the Uniform Relocation and Real Property Acquisition Act of 1970, as amended. At this time, there are an estimated 270 properties affected, and of that total, some 26 properties would become landlocked with access closures associated with future roadway improvements, or will become incompatible with planned future land uses in the study area.
<b>Aesthetics</b>	HPDP Guidance	There are no high quality vistas offering unique views located in the study area. A Visual Impact Assessment (VIA) may need to be completed, however, as part of the NEPA review process.
<b>Community Facilities</b>	Cities of Shakopee, Prior Lake websites checked	With the exception of the recreational facilities and the hospital described above, there are no community facilities such as schools, churches, government buildings, post office, and libraries within the corridor area.
<b>Cultural Resources</b>	SHPO database checked; tribal lands received from Scott County	NRHP-eligible properties found, including 5 archaeological and 8 architectural history properties found, 1 historic site in proximity of the study area, including many at the hamlet of Lydia. Shakopee Mdewakanton Sioux (Dakota) Community tribal lands are located in Prior Lake adjacent to the corridor. See <b>Figures 4A and 4B</b> for cultural resources located in the study vicinity.

Social Economic Environmental ("SEE") Category	Review Resources Used	SEE Review Comments
<b>Pedestrian and Bicycle Facilities</b>	Transportation / Parks and Trails Plans of Cities of Shakopee, Prior Lake	At present, there are limited pedestrian and bicycle facilities in the corridor, located primarily near the US 169 and CH 17 interchange. Pedestrian and bicycle facilities are planned by the communities of Shakopee and Prior Lake along their respective jurisdictional limits of the study corridor. For instance, a County-regional trail is planned to connect Howard Lake Road NW to CH 17. A local trail is proposed to connect CH 17 from Howard Lake Neighborhood Park and also along 170 <sup>th</sup> St. East/Shoreline Avenue (Spring Lake area).
<b>Traffic</b>	2030 Scott County Transportation Plan forecasts; 2030 Prior Lake Transportation Plan, Mn/DOT traffic maps	Existing (2005) traffic volumes range from 27,100 vpd near US 169 to 13,400 north of CH 42. South of CH 42 to TH 13, existing volumes range from 5,800 to 9,800 vehicles per day. From TH 13 south, volumes range from 5,100 to 8,100 vehicles per day.  Forecast (2030) volumes increase to 46,000 vpd near US 169 to 34,000 vpd north of CH 42. South of CH 42 to TH 13, 2030 volumes increase from 15,200 to 24,000 vpd. From TH 13 south, forecast volumes range from 7,500 vpd to 13,000 vpd.
<b>Transit and Inter-modal Issues</b>	N/A	Shakopee Transit provides transit service to area businesses in the vicinity of the US 169 and CH 17 interchange. Beyond dial-a-ride type services available through public and private agencies, no other existing or proposed transit services or facilities such as park and ride lots are found in the study area.
<b>Local Access and Community Impacts</b>	N/A	Access management needs and control strategies will be considered as part of future roadway improvements. Access closures, consolidations, or restrictions may result in measurable community impacts.
<b>Construction Impacts</b>	Mn/DOT HPDP Guidance	Construction impacts such as construction noise, dust, air quality, traffic detours, and vibrations have been considered. Based on typical construction techniques, no substantial construction impacts are anticipated. Furthermore, construction impacts are temporary in nature and local ordinances regulate daytime hours of construction, acceptable noise levels, and fugitive dust requirements.
<b>Cumulative Impacts</b>	N/A	New commercial and residential developments along the corridor may occur. The incremental impact of these actions would be occurring in an environment that is currently experiencing development and corresponds to city zoning and land use plans. All future development and roadway improvements will be subject to environmental documentation where potential impacts will be evaluated in comparison to past and present effects on human and natural environment resources in a cumulative impacts review.

### 7.1 Right-of-Way and Relocation

Approximately 270 individual land parcels exist adjacent to the CH 17/TH 13 Corridor. All will be directly or indirectly affected as recommendations from this study are implemented over time. Potential impacts vary from right

---

of way needs to access modifications. Approximately 26 properties adjacent to CH 17, most of which are occupied by single family residences, will become either landlocked with improvements associated with future right of way needs and associated access closures, or become incompatible land uses as the highway evolves into an integrated component of the local governments' 2030 land use plans. This estimate is based on a review of the parcels that could not, without extraordinary measures, be provided with private access from an alternative public right-of-way (either existing or future). Additional roadway connections (backage or frontage) illustrated on the concept plan will help provide private access to existing platted or future platted properties abutting CH 17 in a manner consistent with future access spacing appropriate for a Principal Arterial highway.

## **7.2 Wetlands and Water Resources**

Several wetland resources, with impacts ranging from an estimated 15-50 acres, will be affected by future implementation of the 2030 Concept Plan. The highest quality wetland with a functional rank of "Unique" is Howard Lake, located southwest of the Mystic Lake complex in Prior Lake. Storm water drainage and pond storage will need to be accomplished in accordance with adopted Storm Water Management Plans of the local governments and the area watershed management organizations and Prior Lake - Spring Lake Watershed District.

## **7.3 Wildlife (Flora/Fauna) and Threatened/Endangered Species**

There are no significant concentrations of wildlife populations, although several reported rare, threatened, or endangered species have been found to exist to the north of Spring Lake. These include State-listed species such as the Blanding's Turtle and Big Tick Tre-foils. In addition, the DNR's Natural Heritage Inventory identified a section within Cedar Lake Township within the study area where a rare species (Kitten Tails) has been reported. Specific project-related effects on these resources would be determined during detailed environmental documentation during preliminary design of any future project.

## **7.4 Cultural Resources**

One farmstead at the intersection of CH 17 and CH 78 in Shakopee is potentially eligible for the National Register of Historic Places. The farmstead property (but not likely the buildings) would be potentially impacted by roadway widening. There are also a number of other reported National Register-eligible properties in the study corridor, most of which are located adjacent to the TH 13 segment in Spring Lake Township. Tribal lands may also be potentially affected by the 2030 Concept Plan to the southwest of the Mystic Lake complex.

## **7.5 Farmland**

Although each of the local governments identifies its lowest density 2030 future land uses as "rural residential", some of these properties currently produce agricultural commodities and will likely continue to be engaged in long-term agricultural production. To implement the Principal Arterial design standards for appropriate access spacing, future new connecting roadways (frontage/backage) located apart from the 2030 Concept Plan

---

corridor will require the greatest amount of farmland, which will occur as farmland is developed. Such properties located within the 2030 MUSA should be evaluated for farmland impacts when future right-of-way needs are identified.

## **8.0 Traffic Analysis**

### **8.1 Existing Conditions**

Most of today's traffic congestion along the corridor occurs in the urbanized, developed area through Shakopee especially through the US 169 interchange and adjacent retail shopping center accesses. There are other traffic issues in the rural section south of the more developed areas including excessive speeds, skewed intersections, and access related safety issues.

#### **8.1.1 Crash Analysis**

As part of the CH 17/TH 13 Corridor Study, a crash analysis was done using Mn/DOT's Crash Mapping Analysis Tool (CMAT). Crashes reported between January 1<sup>st</sup>, 2003 and December 31<sup>st</sup>, 2005 were included in the analysis. Within the three year study period there were a total of 405 crashes that occurred along the eighteen mile corridor with 374 of those occurring at intersections. Three fatalities were reported during the analysis timeframe, all three occurred on the two-lane rural section of TH 13.

**Table 2** shows all of the crash and severity rates for each segment of the eighteen mile corridor. Many of the segments have experienced crash and severity rates above the 2006 Metro District averages for similar roadway types. CH 17 between CH 101 and CH 82 has experienced very high rates for both crash and severity compared to the metro averages. There also are some spot areas south of CH 82, along the rural 2-lane sections that experienced crash rates and severity rates above the average for the period.

**Table 2 Segment Crash Rates - See table section at end of report.**

**Table 3** shows all of the intersection crashes sorted by crash type. For the same three year period, 374 out of the 405 total crashes occurred at intersections or access locations along the corridor. Most of the signalized intersections between the Minnesota River crossing and 17<sup>th</sup> Avenue, south of US 169 had either intersection crash rates or severity rates higher than the metro average for similar types of controlled intersections. Seven of those intersections had 20 or more crashes in the three year time frame. CH 17 intersections with Vierling Avenue, the North and South US 169 ramp terminals and 17<sup>th</sup> Avenue, all experienced more than 30 crashes at each intersection. This segment also serves the highest traffic demands and experiences the most congestion issues. South of 17<sup>th</sup> Avenue, there were a total of fourteen stop-controlled intersections along CH 17/TH 13 that also had crash and severity rates above the state averages. Most of this segment operated as a rural two lane highway without consistent use of turn lanes or bypass lanes. In 2007, Scott County did make various bypass lane, and right turn lane improvements within the corridor.

The intersection of TH 13 at CH 2 (260<sup>th</sup> Street) was reconstructed from a two-way stop intersection into a roundabout controlled intersection during

---

the analysis period. As a two way stop intersection, there were 13 reported crashes resulting in one fatality, eight personal injuries, a crash rate of 2.5 crashes per million entering vehicles and a severity rate of 5.8. After construction of the roundabout, four crashes occurred resulting in three personal injuries. The crash rate was reduced to 1.60 and the severity rate was reduced to 3.1.

### **8.1.2 Data Collection**

Existing AM and PM peak period intersection turning movement counts were collected by SEH during May of 2007. Three intersections had been previously counted by Scott County during 2006 and 2007. Scott County data was used from CH 101 at 1st Avenue East, CH 17 at CH 78, and the AM count for CH 17 at CH 16. SEH performed manual counts at the intersection of CH 17 at TH 13 with pneumatic tube counts at the east and south legs while the All-Way stop intersection was manually counted. The turning movement volumes at the roundabout at CH 17 and CH 2 were estimated based on tube counts entering and exiting each leg of the intersection. See **Figure 6** for a summary of existing traffic volumes.

**Table 3 Intersection Related Crash Types - See table section at end of report.**

### **8.1.3 Existing Traffic Patterns**

Travel patterns evident within the turning count data reveal distinct north-south trends and east-west trends. The predominant movement of north-south trips on TH 13 south of the CH 17/TH 13/TH 282 intersection is to continue north-south on CH 17 rather than TH 13 through Prior Lake. Similarly, east-west traffic on TH 282 and TH 13 east of CH 17 tend to continue to travel east or west as they travel through this intersection.

### **8.1.4 Traffic Analysis**

A Synchro/SimTraffic software micro-simulation traffic model was developed evaluate traffic operations within the corridor. This analysis tool allows analysis of individual intersections as well as the interaction between closely spaced intersections.

Synchro/SimTraffic calculates a measure of delay experienced by simulated vehicles and assigns a Level of Service (LOS) based upon the calculated delay. LOS is a qualitative rating system used to describe the efficiency of traffic operations at an intersection or within a corridor. Six LOS grades are defined, designated by the letters A through F. These levels are defined below:

**Table 4  
LOS**

<b>Level of Service</b>	
<b>LOS</b>	<b>Traffic Operations</b>
A	Primarily free-flow operations at average travel speeds; unimpeded maneuvering; delay at intersections is minimal
B	Reasonably unimpeded operations, average travel speeds; maneuvering is only slightly restricted; unsubstantial delay at intersections
C	Stable operations; maneuvering and lane changing is more restricted than at LOS B; lower travel speeds
D	Typical goal for peak volume operations; small increases in flow can cause substantial increases in delay and decreases in speed
E	Congestion; significant delays; low travel speeds; commonly occurs when a facility is near capacity
F	Extremely low speeds; significant congestion; extensive queuing; usually indicates an over-capacity condition

Further description and LOS criteria for signalized intersections can be found in Chapter 16 of the 2000 Highway Capacity Manual.

During the AM peak period, operating conditions at the primary intersections along CH 17 and TH 13 are all at or above a LOS D. However, operations at the intersection of TH 101 and 1<sup>st</sup> Avenue West at the Minnesota River Crossing are very poor. The river bridge operates at capacity as well as the intersections north of the river at TH 212. Congestion occurs on the TH 101 segment over the river causing operational issues at the TH 101 and 1<sup>st</sup> Avenue West intersection. The heavy westbound right turn movement incurs delays which cause queues to spill back along 1<sup>st</sup> Avenue, extending through the signalized intersection at 1<sup>st</sup> Avenue East and beyond, blocking access to and from Spencer Street.

The PM peak hour experiences more congestion than the AM peak. Traffic patterns change and the directional distribution is more evenly spread out in the PM than during the AM period. Again, all of the corridor intersections operate at a LOS D or better; however, there are more individual approaches and turning movements that that experiences LOS E or F. The largest congestion issue area includes the closely spaced signals at on CH 17 at US 169 ramps and Vierling Avenue.

The northbound left turn at Vierling Avenue serves well over 500 vehicles per hour, which is significantly higher than the single left turn lane capacity provided. Northbound left turn queues fills up the left turn storage lane provided and extends back into the US 169 north ramp intersection.

The north ramp intersection experiences operational problems as well. The approach from westbound US 169 to CH 17 will spill back down to the freeway and occupy the shoulder during portions of the PM peak. This

---

approach is served by two lanes at the intersection with a demand of over 1100 vehicles per hour.

The attached **Tables 5 and 6** show all of the Measures of Effectiveness (MOE's) including traffic volumes, delays and LOS values for corridor intersections analyzed.

**Table 5 Existing AM Peak Hour MOE's - See table section at end of report.**

**Table 6 Existing PM Peak Hour MOE's - See table section at end of report.**

## **8.2 2030 Traffic Forecasts**

Scott County's Comprehensive plan update process included the development of County-wide 2030 forecasts and 2050 County-wide travel demand forecasts. The 2030 forecast work performed as part of this corridor study has been correlated with the findings of the County-wide forecast.

### **8.2.1 Average Daily Traffic (ADT) Forecast Methodology**

Average daily traffic (ADT) forecasts for the CH 17/TH 13 corridor study were prepared based on the Twin Cities regional demand model (TCRM). The methodology followed using the TCRM forecasts was based on methods and procedures described in the Mn/DOT Metro District guidelines, "Twin City Travel Demand Forecast prepared for Mn/DOT Metro". These guidelines cover the following:

Model requirements: The current version the Twin Cities regional model (TCRM) from the Metropolitan Council (August 2006) is to be used. For CH 17/TH 13 corridor study, the 2030 regional model was used.

Model and Parameter Adjustments to Model Inputs, Revised March 24, 2003

Model Output Checks for Reasonableness and Post-processing adjustments, revised October 21, 2003.

Documentation of Forecasts, July 29, 2003.

This model utilizes the traditional four step modeling process: trip generation, trip distribution, mode split, and traffic assignment. Model input includes the roadway network and land use data. Land uses in the TCRM are represented in terms of population, households, and employment statistics. Employment is broken into two types: commercial retail and other. The TCRM converts that information into trip generation and ultimately assigns the trips to the region.

The most recent version release of the TCRM (August 2006) was used to develop traffic forecast for the modeled roadways within the CH17/TH 13 study area. The specific process used in developing traffic forecasts for this study utilized the following steps:

The base model was reviewed, and obvious network discrepancies were identified and corrected

---

Relevant network modifications were identified in the base year model and were made to the 2030 network.

The land use and socio-economic data for 2030 were reviewed

2030 model outputs were adjusted using post-processing guidelines

Traffic forecasts were evaluated for reasonableness.

Traffic forecasts were compared to the most recent Scott County 2030 forecasts identified in the Scott County Transportation Plan. Minor adjustments were made to the CH 17 / TH 13 Corridor study forecasts to correlate with the transportation plan forecast.

The projected year 2030 traffic levels are included in **Figure 7**.

### **8.2.2 Turning Movement Forecast Methodology**

Roadway network link forecasts from the model were converted into AM and PM peak hour turning movement forecasts for the purpose of operational analysis.

The following steps were used in developing the 2030 AM and PM peak hour turning movement forecasts for this study:

Current turning movement counts were collected at study intersections.

AM and PM peak hour growth rates were determined based upon the increase in traffic between the modeled base year 2005 and the modeled forecast model 2030.

Growth rates were applied to the current turning movement counts.

Intersection forecasts traffic volumes were balanced so the entering traffic volume equaled the exiting traffic volume for each intersection.

Turning movement forecasts for the study intersections were evaluated for reasonableness.

The resulting 2030 AM and PM traffic forecasts by movement are shown in **Figure 7**.

## **8.3 Future Traffic Analysis**

### **8.3.1 2030 No Build Analysis**

The analysis for the no build condition includes all existing geometrics with the addition of any planned improvements that are going to be funded with certainty. Since there is a planned improvement on CH 17 between 17<sup>th</sup> Avenue and CH 42 in the year 2013, the geometric changes were included in the no build analysis. No other capacity improvements were made; however signal timing and traffic control changes were modified along the corridor.

Based on the no build model results, both the AM and PM peak periods will suffer severe gridlock with long queues and delays without capacity improvements. In the AM peak, the heavy northbound demands create long queues that spillback into upstream intersections causing more delay. Eleven of the 26 intersections analyzed operated at a LOS E or LOS F.

---

In the PM peak, 17 of the 26 intersections operate with a LOS E or F. Again the long queues spillback into adjacent intersections creating gridlock along the corridor. Between CH 101 and 17<sup>th</sup> Avenue, CH 17 becomes completely congested. Another heavily congested area is CH 17 between CH 42 and TH 13, where the long queues on the 2-lane road quickly spill back into other intersections.

The attached **Tables 7 and 8** show all of the Measures of Effectiveness (MOE's) including traffic volumes, delays and LOS values.

**Table 7 2030 AM Peak Hour No Build MOE's - See table section at end of report.**

**Table 8 2030 PM Peak Hour No Build MOE's - See table section at end of report.**

### 8.3.2 2030 Build Analysis

The analysis for the build condition identified significant need for capacity improvements along the corridor. One of the biggest needs will be the continuation of CH 17 as a four-lane roadway south of CH 42 beyond its junction with TH 13/TH 282. Most of the county highway intersections on this segment will need to be signalized with side street capacity, including turning lanes, in order to provide acceptable operations into the future. Four through lanes will also be needed on the northern segment of CH 17 between Vierling Avenue and CH 101.

The intersection of CH 17 and TH 13/282 was modified to a full access intersection, removing the existing three-intersection configuration. This change will provide enough capacity for the future growth in the area.

Major improvements around the US 169 interchange will also be needed by 2030, including three southbound through lanes between the Vierling Avenue and 17<sup>th</sup> Avenue. Northbound CH 17 will need three through lanes between 17<sup>th</sup> Avenue and the south ramp of the US 169 interchange. The existing CH 17 bridge deck will need to be re-striped to accommodate the additional lanes utilizing the full width of the bridge deck for travel lanes (including shoulders), unless the interchange configuration is modified.

Without capacity improvements at the TH 101 river crossing, the AM peak period will experience major congestion problems from spillback traffic that can't cross the river. Westbound traffic will queue along 1<sup>st</sup> Avenue, almost to the CH 17/CH 101 intersection. All other intersections will operate with a LOS D or better.

The PM peak hour will operate with all intersections at a LOS D or better, however there will be some movements and a few approaches a LOS E or F. Many left turn movements will operate with LOS E or F due to the increased cycle lengths with protected phasing, making the turning traffic wait for a green arrow.

The attached **Tables 9 and 10** show all of the Measures of Effectiveness (MOE's) including traffic volumes, delays and LOS values.

---

**Table 9 2030 AM Peak Hour Build MOE's - See table section at end of report.**

**Table 10 2030 PM Peak Hour Build MOE's - See table section at end of report.**

#### **8.4 Traffic Analysis - Findings and Conclusions**

By the year 2030, traffic demands in Scott County will have increased beyond the capacity of many of its major and Minor Arterials. In order to accommodate the increase in demand, roadway improvements and expansion will need to take place.

*Segment A:*

TH 13 between TH 19 and TH 282 will be able to continue to operate as a two-lane roadway; however traffic control and turn lane improvements may be needed at the major intersections. Even though the two-lane section will serve the projected traffic demands, right-of-way should be preserved where needed to accommodate a wider, four-lane section for traffic levels beyond the 2030 forecast year.

*Segment B:*

CH 17 between CH 42 and TH 13/282 will need capacity improvements to operate as a four-lane facility. With this capacity increase, growing traffic demands through the 2030 forecast year can be served.

*Segment C:*

It is assumed that the programmed 2013 improvements will be in place in 2030. This will extend the existing four-lane section south of the CH 42 intersection. The 2013 project provides the capacity needed between St. Francis Avenue and CH 42. On CH 17 between 17<sup>th</sup> Avenue and US 169, an additional lane will be needed on CH 17, increasing from four to six through traffic lanes.

*Segment D:*

The existing five-lane section between the US 169 ramps and Vierling Drive will need to be expanded in order to serve intensified traffic demands. Traffic lanes on the existing CH 17 Bridge over US 169 should be re-allocated on the bridge deck to provide the maximum capacity possible without replacement of the bridge while maintaining the existing diamond interchange configuration. If, in the future, the bridge is considered for replacement due to structural condition, consideration should be given to differing interchange configurations that may serve traffic patterns. (i.e. a loop ramp serving the westbound movement from US 169 to southbound CH 17).

*Segment E:*

CH 17 will need to be expanded to accommodate the increase in traffic demands. The existing three-lane section between Vierling Drive and CH 101 will not be able to serve the increase in traffic demand. Expanding the roadway width to accommodate a five-lane section will allow for the 2030

---

demands to be served. Based upon traffic demand growth rates assumed the need expand to five lane operation could occur in the 2015 timeframe.

*Segment F:*

The east-west segment of CH 101, on the north end of the corridor study currently operates as a four-lane undivided roadway. The four through lanes will serve the 2030 through traffic demands. However, left turn safety along the corridor is an issue that will grow with traffic demands. City and County staff advise that existing pavement condition necessitates reconstruction. The County is considering moving ahead with reconstruction in 2010 due to growing maintenance concerns. Widening of the roadway to allow a center left turn lane should be included to separate out the turning traffic. This will improve traffic flow and provide safer operations along the east-west corridor. Access management tools should be applied to parcels in the corridor to reduce mid-block turning conflicts as land use changes occur.

## **9.0 2030 Roadway Concept Plan**

Concept design solutions for 2030 needed improvements generally include a divided four-lane expressway complimented by a network of potential parallel and interconnecting minor arterial and collector roadway improvements. **Figures 8A-8P** display the TH 13 / CH 17 2030 Design Concept and proposed Access Management Plan.

Planned 2030 concepts should not preclude 2050 long-range needs (i.e., potential freeway design) in the Corridor. Therefore, this study process included developing a concept for a well functioning principal arterial with at-grade intersection control that will serve needs to 2030 (or beyond) without precluding the opportunity for a future freeway. A “vision plan” for CH 17 and TH 13 as a freeway is depicted in **Appendix C**. This concept assumes that freeway interchanges are provided at two mile intervals without direct public street or private accesses.

## **9.1 Principal Arterial / Typical Section**

As previously discussed, the TH 13 / CH 17 corridor is being planned as a Principal Arterial. Mn/DOT’s existing right-of-way width on TH 13, in Segment A, varies from 200 to 375 feet. The existing right-of-way corridor width on the CH 17 segment varies, but in most cases is 100 feet. The right-of-way envelope proposed to be preserved for the corridor is 200 feet.

The proposed section for CH 17 in Segment D is a six lane design from 17<sup>th</sup> Avenue to Vierling Avenue. This section is proposed to fit within a 200 foot right-of-way corridor. The proposed section includes a 10 foot wide trail on both sides of the roadway. Also included are 12 foot right shoulders, to accommodate the potential future need for bus shoulder lanes. The travel lanes are proposed at 12 feet wide. The inside shoulders are 2 feet, which serves as a safety / driver reaction distance to the raised curb. The center median is 30 feet wide which provides width for dual left turn lanes at the public intersections if needed. The center median is proposed as concrete near the intersections and vegetated/grass when the median is greater than 10 feet wide. The vegetated sections can be depressed to facilitate infiltration and reduce storm water run-off. The concept cross section is narrowed across

---

the US 169 bridge to maximize interchange capacity without replacing the bridge.

Segments B and C are planned as a divided 4-lane urban roadway. Again, there are 10 foot trails proposed on either side in the 200 foot wide right of way envelope. The outside shoulders are 12 feet wide, which could accommodate bus shoulder lanes. The travel lanes are 12 feet wide and the inside shoulder consists of a 2 foot reaction area. The center median is 30 feet wide consistently, which allows for dual left turning lanes at intersections and provide opportunity for two stage crossings at two-way stop controlled intersections such as Wood Duck Trail. The center median is concrete at intersections and grass when the median is greater than 10 feet wide.

The section transitions from a four lane urban section to a four lane rural section one half mile south of TH 282 in Segment A. Travel lanes are shown as 12 feet wide. Inside shoulders are 4 feet wide. The centerline to centerline spacing is 90 feet as recommended in Mn/DOT's Road Design Manual. The center median is 58 feet wide. There are many instances in Segment A where the existing right of way corridor is already greater than the planned 200 feet envelope.

See **Figure 9** for a graphic of the typical sections described above.

## **9.2 2030 Roadway Concept Plan and Profile**

The 2030 plan and profile of the TH 13 / CH 17 corridor are shown on **Figures 8A – 8P**. Design speed of this corridor is 60 mph and is achieved for the entire corridor for both horizontal and vertical design speed. As discussed in **Section 12.0**, full access intersection spacing is generally 1 mile and secondary right-in / right-outs at ½ mile spacing. All public intersections are shown as having right and/or left turn lanes dependent upon the degree of access anticipated to serve existing uses or future access needs. Approach intersection geometry shown should be verified when during the next stage of preliminary design. Future supporting roadway connections, which are further discussed in **Section 12.0**, are shown on the graphics as dashed blue lines. A 10' trail is shown on both sides of the TH 13 / CH 17 corridor. Under this 2030 plan, private driveways have not been tied into the proposed geometry. Residences should be limited to one driveway and access will be a right-in / right out. Opportunities should be taken to realign private access to existing or future supporting roadways.

Below is a listing of some of the specific improvement opportunities within the corridor to address 2030 projected deficiencies:

Beginning on the south end of the corridor, Rice County's Transportation Plan identifies a future roadway extension from TH 13 south of TH 19 as shown on **Figure 8A**.

The existing 4-lane section north of TH 19 should remain with the addition of turn lanes and a median closure at selected locations.

The existing roundabout at CH 2 and TH 13 is shown as being expanded to a 2-lane roundabout.

---

One half mile south of TH 282 (south edge of Prior Lake's orderly annexation area) the proposed cross section transitions from a 4-lane rural divided roadway to a 4-lane urban divided roadway.

Reconstruction of CH 82 has recently been completed. The roadway that was constructed will match into the 2030 plan as shown on **Figure 8L**.

CH 42 is also being planned as a 4-lane Principal Arterial. Roadway geometrics depicted assume future extension of this cross section to the east.

CH 17 alignments are shifted easterly near Wood Duck Trail to avoid acquisition of homes in the area.

CH 78 is being planned as a future Principal Arterial. The concept plan assumes future extension of a four lane cross section to the west.

St. Francis Avenue, from CH 17 to Sarazin Street will be eliminated when 2013 improvements are constructed. A new street constructed a block south of St. Francis will provide that connection and also extend west to the residential neighborhood off of Valley View Road.

3 through lanes are needed on SB CH 17 from Vierling Drive through the 17<sup>th</sup> Avenue intersection.

3 through lanes are needed on NB CH 17 from 17<sup>th</sup> Ave to the EB entrance ramp to US 169.

The section is narrowed across the US 169 bridge in order to save the structure. The outside shoulders are eliminated over the bridge.

### **9.3 Supporting Roadways**

A supporting roadway network concept plan has been developed in conjunction with the access management measures. Supporting roadways are needed to relieve CH 17 and TH 13 from the short local trips and also serve the businesses and residences in the study area. These supporting roadways will provide connections to Collectors and Arterials and will provide safe access to CH 17 and TH 13 at a public intersection with turn lanes.

A broad network of potential future supporting roadways is shown in **Figures 10A – 10D**. A continuous parallel supporting Collector roadway is depicted within approximately one mile from CH 17 / TH 13 on the east and west. Lakes, wetlands, and developed parcels constrain opportunities for future parallel and connecting roadways. Supporting roadways shown are intended to represent important functional future connections but are not intended to infer a preferred alignment. As development occurs, this supporting roadway connections plan should be referred to as specific roadway location and alignment decisions are made.

### **9.4 Future Needs of CH 17 North of US 169**

This corridor study identified 2030 traffic demands and defined the probable roadway section type that should be planned for CH 17 from Vierling Drive to CH 101 but did not further explore feasibility or define the impacts of added lanes. Further study of these issues should be planned that should include the following considerations:

---

The 2030 concept plan ends north of Vierling Drive, where the existing cross section is reduced to three lanes. The 2030 forecast indicates that a five lane section will be needed north of this location as the note indicates on the graphic. Based upon the traffic growth rates assumed through 2030, the need to expand CH 17 to a five lane section should be anticipated by approximately 2015.

Grade separating CH 17 from the railroad tracks was suggested at the April 23<sup>rd</sup>, 2008 Shakopee Chamber of Commerce meetings. This should be studied further as this area is in the next stage of planning.

Improvements on Vierling Drive west of CH 17 are depicted in the concept plan drawings. Access modifications are shown that include eliminating left turn movements at the first entrance to the retail shopping center and enhancing the second entry location with a roundabout intersection to accommodate u-turns. These roadway concept and access changes should be the subject of further study.

### **9.5 TH 282 / TH 13 / CH 17 Sub-area**

The TH 282 / TH 13 / CH 17 subarea consists of a large land area near the intersection that is included in the City of Prior Lake and Spring Lake Township's orderly annexation plan. Land use near this intersection is currently guided by the Scott County 2030 Comprehensive Plan update for future uses. In the future, the area will be guided by the City's Comprehensive Plan towards retail shopping, and light industrial uses as well as medium density and low density housing. When developed, this area will become a large traffic generator. Access to this area from CH 17/TH 13 and TH 282 will be desired. Principal Arterial access spacing guidelines may be perceived as too restrictive. Therefore, this study identified a strategy that maximizes the level of accessibility while achieving capacity and safety goals. This concept plan was developed in two stages but is driven by the very long term condition that may include a grade separated interchange.

**Figure 11** demonstrates a future grade separated concept at TH 282 / TH 13 / CH 17 along with the supporting roadway network and the proposed land uses. This Parclo A interchange is the long range vision for this area. The shorter term concept shows a roundabout in the middle and 2 fairly closely spaced intersections on each side corresponding to where the ramp terminal intersections would be in the parclo. In the interim time frame (through 2030), the land uses could develop and be built with a roundabout at TH 282 / TH 13 / CH 17 and the supporting roadway network could be constructed to provide access to the different land uses as the area develops. **Figure 12** represents roadway access conditions during an interim condition. By planning this in stages, the supporting roadways and their intersections with TH 13 could be constructed in the proper locations to match the long range vision for this area.

### **9.6 CH 42 / CH 17 Concepts**

Three concepts were developed for the intersection of CH 42 and CH 17. The concepts included a signalized intersection (**Figure 13**), a roundabout (**Figure 14**), and a grade separated intersection (**Figure 15**).

---

The at-grade channelized intersection includes four lanes of travel on CH 17 through the intersection. Signalization of this intersection would be anticipated. Southbound dual left turn lanes are provided along with southbound, northbound and westbound free right turn lanes. Access to the residential development westerly of CH 17 is provided via the west leg of 29<sup>th</sup> Avenue at the intersection. The existing severe skew angle of the intersection was reduced to 70 degrees, which satisfies Mn/DOT's design guide. Further skew reduction would be desirable, however right of way needs make this more costly and difficult to achieve.

The roundabout intersection includes 2 lanes of travel on CH 17 through the roundabout. Northbound and westbound free right turn lanes are provided due to the skew of the intersection.

The grade separated intersection removes most intersection conflicts by having northbound traffic travels unimpeded over CH 42 on a bridge. For northbound traffic, a standard exit ramp to CH 42 would be constructed, as well as a northbound entrance ramp from CH 42 to northbound CH 17. Access to the residential development westerly of the interchange is provided via Marcia Lane. Southbound travelers would have an inside (left side) turn/deceleration lane to CH 42. Southbound to eastbound traffic would conflict with the westbound to southbound traffic, which would turn into a southbound acceleration lane. Interchange exit and entrance ramp lengths for this concept extend the limits of construction and impact compared to the at-grade alternatives. Access from CH 17 to Wood Duck Trail would not be viable due to its proximity to entrance ramp merge and diverge locations on CH 17.

Providing access from CH 17 to Marcia Lane requires a southbound right turn lane and a channelized northbound left turn lane. The median width at this intersection is 30 feet wide to allow a two stage eastbound to northbound left turn to be made. Additional impact to existing private access and additional right-of-way issues would occur with this option compared to the at-grade alternatives.

The 3 concepts developed for the intersection of CH 42 and CH 17 were evaluated in a matrix which looked in 4 general areas, including performance, safety, impacts, and cost. The matrix aided in the evaluation of the alternatives. The roundabout emerged as the best concept based upon the evaluation matrix. The roundabout provides the best performance, least impacts, and the lowest cost. The roundabout is safer than the signalized intersection, but not as safe as a grade separated option, which removes much of the traffic from the intersection conflicts. See **Table 11** for the intersection evaluation matrix.

**Table 11 Intersection Evaluation - See table section at end of report.**

### **9.7 Preliminary Drainage Pond Locations – 2030 Concept Plan**

A preliminary drainage analysis has been completed for the 2030 concept plan. Potential stormwater treatment ponds, infiltration ditches, and drainage directional flow arrows are detailed on the 2030 design concept on **Figures 8A-8P**. The potential pond and infiltration ditch locations were determined

---

from the existing contours and topography, the existing and proposed roadway profile, the existing wetlands and floodplain locations, and the R/W impacts. The sizing of the treatments should be further analyzed and determined as more detailed design occurs as the corridor is segmented into manageable projects. It is likely that all the storm water features shown will not be required. In some instances there will be choices such as a pond or an infiltration ditch. It is certain that storm water regulations will change throughout the development of the project, which may cause the need for alternative methods of storm water treatment.

The MPCA resources showed two impaired lakes (July 2008) within 1 mile of the study corridor which will trigger additional construction requirements. In addition from FEMA, there are both 100 yr & 500 yr floodplains that will be directly affected by the concept. Several of these locations (Porter Creek, Howard Lake and other miscellaneous wetlands) will likely be impacted significantly by the concept and will need to be analyzed before further design occurs in these areas.

### **9.8 Right-of-Way**

For the majority of the corridor the 200 foot right of way envelope will be sufficient for the roadway and trail improvements that would be necessary for construction and maintenance of the 2030 Concept Plan. There may be sections that require retaining walls or slope easements to manage the proposed profile.

Generally the concept layouts show equal right-of-way requirements from each side unless design parameters do not allow or if other constraints come into play.

### **9.9 Concept Evaluation**

Three concepts were developed for the intersection of CH 42 and CH 17. An evaluation was performed which considered four general categories for comparison: Performance; Safety; Impacts; and, Cost. Evaluation results were compiled in a matrix.

The roundabout emerged as the highest scoring solution based upon the evaluation matrix. The roundabout provides the best performance, least impacts, and the lowest cost. Based upon comparison of crash rates used in the evaluation, a roundabout may be safer than the signalized intersection, but not as safe as a grade separated option, which removes much of the traffic from the intersection conflicts.

Local experience with multi-lane roundabouts on high speed, high volume corridors in Minnesota is limited. There are many such improvements currently being planned for implementation in advance of 2013. Greater local experience regarding safety, operation and driver behavior within multi-lane roundabouts will be available prior to final decisions needing to be made for the CH 17 Segment C project.

The interchange concept impacts other local street accesses, such as closure of access to Wood Duck Trail. Closure of access on CH 17 at Wood Duck Trail would require construction of parallel supporting roadways. These supporting roadways are not deemed viable in the short term. Therefore, the

---

interchange solution should be carried forward as a potential long term solution.

The SMT recommends that both at-grade solutions (roundabout and signalized alternatives) be carried forward to be considered in the 2013 project for Segment C.

See **Table 11** for the intersection evaluation matrix.

**Table 11 Intersection Evaluation - See table section at end of report.**

## **10.0 Trails**

The existing CH 17/TH 13 corridor has in place trails only in the urban area north of St. Francis Avenue. The remainder of the corridor, south of St. Francis Avenue has paved highway shoulders that are used by some pedestrians and bicyclists. The typical cross section considered in the long term 2030 concept plan and the 2013 plan for Segment C includes trails on each side of the roadway.

### **10.1 Pedestrian Issues**

The CH 17 and TH 13 corridor has many opportunities for trail system improvements. Existing sidewalks and trails are in place on the northern end of the study corridor through the developed areas of Shakopee generally north of US 169 with connections to the City's sidewalk and trail system. A ten foot wide bituminous trail extends along the east side of CH 17 across US 169 supported by a dedicated trail bridge. The trail extends southerly across 17<sup>th</sup> Avenue terminating at St. Francis Avenue near the St. Francis Medical Center campus.

Many comments were received at the corridor study open house events that supported additional trails to be considered in the corridor. Many feel unsafe walking or biking along the shoulders of CH 17 / TH 13. General support for trail improvements has been received at all public engagements.

### **10.2 Future Trail System**

Scott County's Regional Trail Plan includes a future multi-use trail alignment following the east side of CH 17 from CH 82 to CH 17. This trail corridor would be part of a system that links Cleary Lake Regional Park and Spring Lake Regional Park to the Minnesota River State Trail. The regional trail alignment would cross CH 17 at CH 78 and travel westerly along the north side of CH 78.

Scott County does have a draft policy for trails on both sides versus one side. Serving pedestrians and bikes on both sides of the corridor is desirable to minimize crossings of CH 17.

Both the City of Shakopee and the City of Prior Lake support pedestrian and bicycle improvement planning in the corridor.

Mn/DOT allows trails in highway right-of-way through limited use permit but does not pay to build or maintain trails.

---

The 2030 corridor concept plan has ten foot wide trails shown on both sides of CH 17 as well as along TH 13 through the entire corridor. The 2013 Project Layout for Segment C has been developed with ten foot trails on both sides of the roadway.

## **11.0 Transit**

Currently, there are no transit facilities or established transit service routes along CH 17 and TH 13. Expansion of transit systems in the Shakopee area should include a plan for park and ride facility along CH 17 to serve developing needs.

The CH 17 corridor should also be planned to accommodate future bus service. Roadway shoulders should be planned with adequate width to allow the potential to operate bus shoulder lanes.

A new park and ride facility located southerly of the US 169 interchange should be considered to serve commuting trips to/from the south.

### **11.1 Transit Assessment**

Shakopee's public transit service offers van pools, circulator and commuter bus service to residents of Shakopee and neighboring communities. Services are designed to compliment those provided by Scott County, the Metropolitan Council, neighboring communities, and transit providers.

The community circulator and summer shuttles transport people to common destinations within the city. The Blue Xpress bus service, which began July 16, 2007, transports commuters to and from downtown Minneapolis, Monday through Friday. BlueXpress is a joint service between Shakopee Transit and Laker Lines.

Buses continue to roll up US 169 to Interstate Highway 394 en route to downtown Minneapolis. View the Lakes Lines/BlueXpress route map at:

[http://www.ci.shakopee.mn.us/pages/Transit/BlueXpress04\\_08.pdf](http://www.ci.shakopee.mn.us/pages/Transit/BlueXpress04_08.pdf)

Transit riders can catch the Blue Xpress bus at the Southbridge Crossings Transit Station Park and Ride located on Crossings Boulevard at the intersection of County Highway 18 and US 169 or at the Shepherd of the Lake Park and Ride at 13760 McKenna Road in Prior Lake.

A new 545 space park and ride facility is programmed near Scott CH 16 and CH 21 in the City of Shakopee.

There is an unmet need of 530 spaces by 2030 in the US 169 South corridor. City and County staff have preliminarily identified two additional sites to be considered to serve growing demands:

- West side of CH 17 north of new Valley View Road (south of US 169). Based upon preliminary demand values this site should be planned to serve approximately 280 vehicles.
- Expansion of the existing park and ride facility at Southbridge Crossing should be planned to serve an additional 250 vehicle spaces.

---

## **11.2 Transit Recommendations**

Opportunities to establish a park and ride facility along CH 17 near Valley View Road should be further explored. These opportunities could include right of way acquisition or access considerations along Valley View Road within the design of the CH 17 2013 project.

The recommendations from this study are to construct twelve foot wide right-side roadway shoulders to serve as future bus shoulder lanes.

## **12.0 Access Management Plan**

### **12.1 Need for Access Management**

Access management is an implementation strategy to maintain the effective flow of traffic and the safety of all roads while accommodating the access needs of adjacent land development. Successful access management requires cooperation between land use and transportation interests in order to maximize the public's investment in Minnesota's roads.

Effective application of access management strategies will benefit all users in the following ways: reduces congestion; improves safety; preserves road capacity; postpones the need for roadway widening; reduces travel time for the delivery of goods and services; provides easy movement to destinations; and promotes sustainable community development.

Access management applies planning and design techniques to land use and transportation system development to improve the safety and efficiency of a roadway, while allowing adequate access to local development. Access management techniques can utilize short-term projects that can improve or maintain existing traffic flow along a corridor but still be a part of the long-range plan for the corridor. The impact of an access management plan for a corridor is not limited to the adjacent property. A well orchestrated plan addresses transportation needs beyond the immediate area and takes those needs into consideration when planning the local road network to support the regional route.

To realize the full benefit of access management planning in the County Highway 17 and TH 13 corridor, a unified commitment is needed from land use authorities, public agency representatives and policy makers.

Stakeholders in this regional corridor include State of Minnesota, Scott County, the Cities of Shakopee and Prior Lake and the Townships of Cedar Lake and Spring Lake as well as residents, business owners, developers and all other road users. Partnerships developed between these groups are critical to the achievement of the access management plan for CH 17 and TH 13.

### **12.2 Policies**

The Minnesota Department of Transportation's Access Management Manual outlines access management policies for all roadways ranging from local streets to interstate highways. The initial criterion in the categorization of a roadway is the functional classification and identification of its strategic importance. After the primary categorization, further sub-categories are defined based on the existing and planned land use in the area around the roadway corridor. CH 17 and TH 13 through Scott County are currently

---

categorized as Minor Arterials but are being planned as a contiguous Principal Arterial. This corridor is centrally located within the county and serves as primary north-south route through areas that have yet to reach their full development potential.

Even though CH 17 and TH 13 are serving as Minor Arterials through Scott County, the level of development throughout the corridor varies from a near fully developed suburban condition at the northern end of the corridor in Shakopee, to urbanizing conditions in southern Shakopee and in Prior Lake to rural areas in Spring Lake and Cedar Lake Townships in the south half of the corridor.

Scott County and Mn/DOT have established access spacing guidelines which outline intersection spacing goals based on land use, roadway type, or traffic volume. Included in this report as **Appendix D** are guidelines adopted by both agencies which were used in development of the access spacing criteria for this CH 17/TH 13 corridor study. To facilitate the corridor's operation as a Principal Arterial, a full access intersection spacing goal of one mile, with partial access every half-mile has been established to satisfy Mn/DOT and Scott County Principal Arterial access management guidelines.

This access management plan constitutes a Category 7 Access Management Plan according to Mn/DOT's definitions. A Category 7 Access Management Plan is intended to be a specific plan developed to fit area access conditions for a specific corridor. The Category 7 Plan provides guidance for retrofitting transportation system and access points over time, with the goal of achieving access that is more consistent with the intent of the guidelines.

### 12.3 Current Access Conditions and Evaluation

Prior to the development of this corridor study and the preparation of this access management plan, access to CH 17/TH 13 was permitted on an as needed basis without the guidance of a comprehensive strategy. As a result, many existing developments have limited access choices and many have only direct access to CH 17/TH 13 without connections to other supporting roadways. **Table 12** provides an accounting of the number of existing access points along the CH 17 / TH 13 corridor in the study area.

**Table 12**  
**Existing Access Points**

Segment	Private	Public	Total
TH 19 to TH 13	43	15	58
TH 13 to CH 42	50	11	61
CH 42 to 17th Avenue	28	9	37
Total	121	35	156

**Table 12** indicates that the existing access density of 156 accesses in 16.4 miles is far in excess of the long term goal of a Principal Arterial.

---

## 12.4 Recommendations for Future Access

Access needs are emerging along Highways 13 and 17 as new residential, commercial, and industrial developments are locating on “prime” real estate near the highway. The need for a future system of frontage and backage roads has become increasingly apparent in order to manage accessibility and improve safety. In addition, planning is needed for a future system of county and local roadways to serve contiguous development with logical street extensions as the communities grow. The future local and County Highway system, including a system of frontage and backage roads, will effectively help Mn/DOT, Scott County and the local governments manage potential development along TH 13 and CH 17.

A large supporting roadway network comprised of Collectors and local streets will be needed to implement the full access management plan.

**Figures 10A – 10D** demonstrate a supporting roadway network concept plan necessary for the implementation of the access management recommendations within the corridor. These supporting roadways would serve all residences and businesses in the growth areas. It is important that a network be established and that these roadways be continuous so that future developments will have effective and safe connections to the CH 17/TH 13 corridor. Travelers on CH 17 and TH 13 will benefit from the supporting roadways by enjoying improved operating speeds and safer intersections. Businesses along CH 17/TH 13 will benefit from the new roadway connections by having improved access to local roads for customers in the surrounding area. As segments of the corridor plan are completed, private driveways will be converted to right-in/right-out operation or will be rerouted to adjacent local streets that are not yet in place. Turns to and from the Arterial will be provided at public intersections where left and right turn lanes should be constructed. A list of the recommended supporting roadways is below.

### Frontage Roads

- New Langford Avenue from 253<sup>rd</sup> St. to County Highway 64
- Langford Way from Parkfield Avenue to TH 13

### Backage Roads

- Vergus Avenue from TH 19 to County Highway 64
- Zinn Avenue from County Highway 64 to TH 13
- Baseline Avenue from TH 19 to CH 2
- New Street from 253<sup>rd</sup> Street to 247<sup>th</sup> Street
- Xeon Avenue from County Highway 64 to County Highway 8
- New Street from TH 282 to Marcia Lane
- New Street from New Development to County Highway 72
- New Street from Spring Lake Regional Park Development to CH 82
- Maple Trail from County Highway 42 to Valley View Road
- Independence Way from County Highway 42 to Valley View Road

- 
- Fairhaven Drive from Lakeview Drive South to County Highway 79
  - Lakeview Drive South from Fairhaven Drive to County Highway 78
  - Evergreen Lane from County Highway 78 to Weston Lane

#### **Cross Streets**

- 190<sup>th</sup> Street from County Highway 79 to County Highway 81
- Peace Avenue from Dominion Avenue to Independence Way
- Wood Duck Trail from County Highway 17 to Independence Way

#### **Intersections**

Components of this Access Management plan will be implemented as local development and highway improvement projects along TH 13 and CH 17 are constructed by public agencies or by private developers. In addition to the supporting roadway network being expanded, key intersections will be developed to facilitate connections between local and regional roadways. Full access intersections will be spaced at approximately one mile intervals. This spacing allows for a good balance between accessibility to TH 13/CH 17 and mobility. Partial access intersections, mainly right-in/right-out intersections, will be at roughly half-mile intervals. Drawings and exhibits included in this report identify possible locations for future full and partial access intersections.

Intersection approach geometrics, as shown in the long term concept plan, were developed based upon anticipated traffic volumes and assumed need for two-way stop or full access traffic control with a signal or roundabout. Specific locations, geometric configurations, and traffic control should be defined in accordance with Mn/DOT's Intersection Control Evaluation procedures when individual intersection needs are being determined.

The 2030 concept plan depicts where all future public street intersections should be located. These intersecting roadways are shown on graphics, as shown in **Figures 8A through 8P**, which demonstrate the frontage road connections necessary to manage access for current and future developments.

#### **Special Development Planning Zones**

The City of Prior Lake and Spring Lake Township have established an orderly annexation plan for several square miles of sparsely developed land near the intersection of TH 13, TH 282, and County Highway 17. These parcels are being planned for Commercial Retail Shopping, Planned Industrial, and Medium Density Residential uses, developers for which typically prefer easy and obvious access points near high traffic intersections. This development practice competes directly against the access spacing goals for a Principal Arterial (one mile full access and half mile partial access spacing).

**Figure 11** (Long Term) and **Figure 12** (Interim) are concept plans for local roadway and access conditions that if implemented would provide a higher level of access near the intersection than could otherwise be planned. The long term plan for the roadway is represented as a partial cloverleaf

---

interchange (known as a Parclo A interchange configuration). The folded loop ramps in the northwest and southeast quadrants of the intersection would establish at grade intersection locations on TH 13 east of CH 17 and on TH 282 west of CH 17. These locations are utilized in the interim plan as potential accesses serving development of the northeast and southwest quadrants. This strategy would be coupled with local roadways bridged over the Principal Arterial in the long term plan. The bridge crossings could occur at locations utilized as partial access points in the interim plan.

### **Segment C - The 2013 Project**

Scott County's planned 2013 project which will construct the 4-lane urban section from south of CH 42 to south of 17<sup>th</sup> Avenue will address many of the access issues on this segment. In the 2013 project area there are 27 private access points which provide access primarily to single family homes. There are 7 public street intersections currently in the layout area. With the construction of the 2013 layout a median will be constructed which will prohibit full access from all private driveways. Many driveways have been rerouted or modified from 2 access points to a single access point. With these treatments private access would be reduced from 25 access points to 15. Public street intersections would be reduced by implementing cul-de-sacs since reasonable access is provided at alternative locations. Today there are 8 public street access points in the layout area and with construction of the 2013 project this number is proposed to be reduced to 4.

## **12.5 Implementation Strategies**

With the adoption of this plan, the following standards should be evaluated when land use changes along the corridor are proposed in order to determine the effect on the roadway system (prior to approving the land use change):

Requests for changes in land use (or land use density) for existing access facilities that are being "reused" as well as proposed new accesses.

Each time a new business opens, either on a new site or as part of a property redevelopment, and also if the use itself changes (i.e., a fast-food restaurant replaces an antique shop, for example), the impact of the new use on local traffic should be evaluated.

### **Existing Access Points**

Existing private access may remain in use, but may be subject to modification or closure at the time of development, redevelopment, change in traffic pattern, or intensification in the land use.

Public street intersections that do not conform to the spacing standards may remain in place, but may be subject to modification, restriction, or closure when adjacent property is redeveloped, highway improvements are made, or operational and safety issues indicate necessity.

### **Maximum number of access points**

The number of access points on a property, particularly an Arterial roadway, should be limited and spaced far enough apart so that conflicting movements are minimized and safe operation is promoted.

---

### **Indirect use of the roadway system for access during property subdivision.**

When property abutting a Collector or Arterial roadway is to be subdivided or developed, direct access to the trunk highway or County system should not be used in lieu of an adequate internal traffic circulation system.

### **Restricted intersection movements**

Circumstances where restricted turning or crossing movements are appropriate:

- Where numerous low-volume access points exist and the spacing between them does not permit adequate left-turn tapers and storage bays for inbound vehicles.
- At access points close to an intersection where inbound or outbound left turns would have to be made within areas where traffic is queued during any period of the day.
- Where other conditions such as sight distance prevent left turns, right turns or crossing movements from being made safely.
- Where a particular parcel is provided with more than one access point and volumes do not justify left-turn access into and/or from both access points.
- When a parcel has access provided by both a signalized access point and an unsignalized access point, left turns should be prohibited at the unsignalized location.
- When other capacity, delay, operational, or safety conditions make specific left turns detrimental to the public interest (usually identified on a "case-by-case" basis).

Turning movement restrictions on the Principal Arterial system should be enforced with barrier type medians, channelization or driveway channelization as appropriate and allowable under Mn/DOT or Scott County design criteria. Signing should also be required. The signing should conform to the provision of the Minnesota Manual of Uniform Traffic Control Devices (MMUTCD), Mn/DOT, and local policies.

### **Shared access**

Certain geometric, land use and site conditions could require shared access among two or more developments or properties. This would occur when frontages are small and each development or property is unable to meet the requirements previously described. In these instances, shared access should be provided to adjacent developments or properties. The need for shared access should be determined on a site-specific basis.

### **Cross easements**

If shared access is considered to be appropriate, then the access facility for the property seeking approval should be designed in a manner to permit shared access by adjacent parcels, and the applicant should be required to

---

grant access easements for the benefit of the adjacent parcels. When the owner(s) of the adjacent parcels submits an application for approval of access, access should be provided in accordance with the approved shared access point.

If an applicant is required to grant access easements for the benefit of adjacent parcels, then a recapture agreement could be pursued to reimburse the applicant for shared costs. (A recapture agreement is an agreement authorizing the owner of a property upon which a shared access facility is constructed to recapture a pro-rata portion of the cost of the facility from the owners of properties served by the shared facility.)

### **Spacing of adjacent access points**

To provide for safe and efficient traffic movements and operations, adjacent access points should be located a sufficient distance from intersecting streets. Three means of accomplishing spacing such as this are as follows:

- Require that access be shared with an adjacent access facility via a cross-easement.
- Require that indirect access to another road be used.
- Require that the access facility restrict turning movements to right-in and right-out only.

### **Alignment with existing access roads or facilities**

When new access points are being proposed, consideration should be made for aligning new and existing access to improve safety.

### **Proximity to adjacent intersections and access facilities**

If construction of an access facility requires the widening of and improvements to a roadway, and an existing intersection or access facility falls within the limits of construction, then such a widening or improvements should extend through and beyond the intersection or access facility before tapering down to the existing pavement width. Exclusive left-turn lanes should be provided at the existing intersection or access facility.

### **Turn-arounds and parking**

No access should be permitted if such access would require backing or turning maneuvers onto one of the trunk or County highways in Scott County. Provisions for turn-arounds should be made outside the highway right-of-way. No access should be permitted if such access would result in parking on the highway or within its right of way. This provision may need to be applied with caution inside established business districts that currently provide curb parking, especially if sidewalks and pedestrian activity are present.

### **Access to corner lots**

For an abutting property located at the intersection of a trunk or County highway and a local road, no access point should be permitted onto the trunk

---

or County highway system and all access should be indirect via the local road.

### **Access to subdivided or previously platted lots**

Land subdivided prior to the date an access management policy or ordinance is adopted should comply with the requirements of the adopted policy to the greatest extent possible. A variance procedure should be developed for property for which access may be requested and for which compliance with the aforementioned criteria may not be practicable. In Scott County, there may be examples where shared access or indirect access is possible given the age of the platted subdivisions and small sized lots.

### **Traffic Impact Studies**

In general, a comprehensive traffic impact study is required if any of the following conditions are expected:

- The development will generate 100 or more new a.m. or p.m. peak hour vehicle trips.
- The development will generate 750 or more new daily vehicle trips.
- New development traffic will substantially affect an intersection or roadway segment already identified as operating at an unacceptable level of service.
- The development would likely create a hazard to public safety.
- The location of the development is in an environmentally or otherwise sensitive area, or in an area which is likely to generate public controversy.
- The development will substantially change the off-site transportation system or connections to it.

Certain types of development, because of their size, nature, or location, are less likely to result in traffic impacts and therefore do not require the investment of time or effort in conducting a comprehensive traffic analysis. At a minimum, all development projects will need to prepare some documentation such as driveway/access locations, consistency with local comprehensive plans, and discussion of access management guidelines.

The Scott County Highway Department, at its discretion, may require that a Traffic Impact Study be prepared for any development, regardless of size, if there are concerns over safety, operational issues, or if located in an area heavily impacted by traffic.

### **Spacing Guidelines**

To function effectively, adjacent access points should be spaced to ensure safe and efficient traffic movements and operations and should be located a sufficient distance from intersecting streets. The following three means of access should be considered:

1. Require that access be shared with an adjacent access facility via a cross-easement.

- 
2. Require that indirect access to another road be used.
  3. Require that the access facility restrict turning movements to right-in, right-out only.

### **Intersections Spacing on Cross Streets**

Where Minor Arterial intersections occur on CH 17 and TH 13 the first full movement intersection on the Minor Arterial should be spaced ¼ mile from the intersection with CH 17 and TH 13. For Collectors it should be 1/8 mile and for other public streets it should be at least 300’.

## **12.6 Access Management Conclusion**

As Scott County cities and townships develop in an organized manner, supporting roadways should be constructed in conjunction with the proposed new developments. All access to TH 13 and CH 17 should be provided from the supporting roadways to the public intersections that are identified to have full access in the future.

## **13.0 2013 Layout - Plan and Profile**

The 2013 CH 17 layout is shown in the attached foldout plan as **Figure 13**. The preliminary design includes most of the design features shown in the 2030 concept plan from south of CH 42 to north of St. Francis Boulevard.

When construction of improvements shown in the 2013 layout is complete, the four-lane section from US 169 would extend southerly through the CH 42 intersection.

The primary difference between the 2013 Layout and the 2030 Concept Plan is that full access is maintained in the 2013 plan at Wood Duck Trail intersection. This access is shown to be converted to right-in/right-out operation in the 2030 Concept Plan. This change is only feasible if supporting roadway improvements are made.

The 2013 Layout extends the existing CH 17 four-lane divided section from just north of the existing St. Francis Avenue intersection southerly through the CH 42 intersection. A transition is shown from four lanes to two lanes south of CH 42.

Three alternatives were developed for the intersection treatment at CH 42 including:

- A conventional channelized and signalized intersection
- A roundabout
- A grade separated interchange.

Each of these intersection options will serve the 2030 traffic demands as drawn. See **Section 9.6** for a discussion on the alternatives developed for this intersection.

## **13.1 Roadway Geometric Design**

CH 17 is planned as being a divided four-lane urban roadway through the 2013 Layout area. Ten foot wide trails are proposed on each side of the

---

roadway within a desired 200 foot wide right of way corridor. The outside roadway shoulders are twelve feet in width, which could accommodate bus operation as bus shoulder lanes. The travel lanes are each twelve feet in width. The inside (left) shoulder consists of a two foot wide driver reaction/safety area. The center median is 30 feet wide throughout the length of the layout, which allows for dual left turning lanes at intersections. The center median is proposed as concrete near the intersections when the median width is ten feet or less. The 30 foot wide median sections are proposed to be depressed and vegetated to facilitate storm water infiltration and decrease run-off.

The design speed for the corridor is 60 mph. Horizontal, vertical and intersection sight distance for 60 mph or greater is achieved for the entire corridor. (See **Figures 8M – 8O** for the 2013 profiles).

As discussed in **Section 12.0**, full access public street intersection spacing is generally one-mile with secondary right-in / right-outs at one-half mile spacing. All public street intersections are shown with right and/or left turn lanes. Recommended supporting roadway connections, which are further discussed in **Section 12.0**, are shown on the graphics as dashed blue lines. A ten foot wide trail is shown on both sides of the TH 13 / CH 17 corridor. Driveways have been rerouted to adjacent local streets, or, are tied into the proposed roadway alignment if rerouting opportunities are not available. Residences should be limited to one driveway. Access to private driveways, if perpetuated onto the highway should be designed to serve right-in / right out movements only. Opportunities should be taken to relocate private access to the supporting roadways.

Below is a listing of some of the specific improvements in the study area:

- South of CH 42 the CH 17 cross-section transitions from the existing two-lane rural divided roadway to a proposed four-lane urban divided roadway.
- Based upon the future traffic demands and proposed upgrade to principal arterial, CH 42 east of CH 17 should be planned as a future four-lane divided highway
- The alignment of CH 17 is shifted easterly near Wood Duck Trail to minimize impacts to developed residential properties in the area.
- Based upon the future traffic demands and proposed upgrade to principal arterial, CH 78 west of CH 17 should be planned as a future four-lane divided highway.
- St. Francis Avenue from CH 17 to Sarazin Street, will be removed in the 2013 project. A new street, anticipated to be Valley View Road, will be constructed to replace the function of St Francis Avenue and to improve connectivity of Valley View Road as an east-west Collector route.

Today, Wood Duck Trail provides the only paved public street access to the Dominion Hills neighborhood. Alternative local street connections should be planned as shown in the 2030 layout.

---

The 2013 Segment C layout depicts local street intersections on CH 17 at Dominion Avenue, Chateau Avenue, and Blue Heron Trail to be eliminated by creating cul-de-sacs. Emergency vehicle access to/from CH 17 should be provided at Dominion Avenue as noted on the layout.

### 13.2 Cost Estimate

Mn/DOT's LWD (length, width, depth) cost estimating method was used to develop high-level estimates of the proposed work. Estimates are included in **Appendix E**, "Cost Estimates." An LWD cost estimate summary for the project is shown below.

The estimate for this project should be updated as more information is known and the design is refined. The estimates resulted in a construction cost estimate of \$21.1 million for the 2013 Segment C Layout (in 2008 dollars). Below is a listing of what is, and is not, accounted for in the estimates.

The estimate for the recommended concept includes the following:

- Paving and grading as shown in the layout
- General utility impacts
- Retaining walls
- Soil stabilization
- Roadway lighting
- Traffic signals
- Signing and striping
- Project development and delivery cost is assumed to be 15 percent of the estimated construction cost
- A risk factor of 10 percent has been included in the estimate to allow for unknown costs at this time.

The estimate for the recommended concept DOES NOT include the following:

- Sub-surface drainage collection system
- Noise Walls
- Ponding or other methods to treat additional runoff
- Right-of-Way acquisition

*(Note: The reader is cautioned that these estimates are given to provide an "order of magnitude" estimate only and should be considered approximate at this stage. All costs in these estimates are in 2008 dollars. The estimated costs are useful in programming long-range funding for improvements and in assessing jurisdictional responsibilities. A detailed engineer's estimate will provide a complete evaluation of costs, including land acquisition if needed, when each plan component advances in the design stage.)*

---

### **13.3 Preliminary Construction Limits**

Preliminary construction limits are depicted in the 2013 Layout. Construction limits were developed based upon design cross sections for the entire 2013 layout area and are available for review at SEH or Scott County.

### **13.4 R/W Impacts**

The majority of this segment of the corridor consists of an existing 100 foot wide of right-of-way. The proposed section consumes a 200 foot wide corridor. Scott County intends to proceed with right-of-way acquisition on a parcel by parcel basis. Where it is cost effective to acquire the 100 feet on either side of the highway centerline, it will be. When acquiring the full 100 foot wide (from center line) is cost prohibitive or unduly impact to the existing land use, the acquired section with will be reduced to what is necessary or reasonable to construct the roadway, with trails, snow storage space, drainage accommodations, slopes and /or retaining walls.

The horizontal and vertical alignments shown in the 2013 Segment C Layout have been developed and refined to constrain the construction limits within the desired 200 foot corridor wherever possible. There are limited areas that will require retaining walls or slope easements to manage the proposed profile and cross section within the 200 foot width.

The residential property in the southeast quadrant of the intersection of CH 78 and CH 17 has been identified as a probable total acquisition with the construction of the 2013 project. There are other homes that are in close proximity to the proposed right-of-way lines.

Below are the City of Shakopee's setback ordinances to assist in identification of homes that would result in non-conforming conditions after roadway improvements are completed.

#### **Rural Residential Setbacks:**

(Per Shakopee Zoning Ordinance Chapter 11 Part 24 Sub 5.C)

- Front yard: 40 feet
- Side yard: 20 feet
- Rear yard: 40 feet

#### **Urban Residential Setbacks:**

(Per Shakopee Zoning Ordinance Chapter 11 Part 28 Sub 5.C)

- Front yard: 30 feet
- Side yard: 10 feet
- Rear yard: 30 feet

Further south there are impacts to some outbuildings north of CH 42 and west of CH 17. These buildings will need to be removed with the construction of this project.

---

### **13.5 Preliminary Drainage Analysis – 2013 Project**

Drainage impacts of the planned reconstruction of CH 17 from CH 42 to 17<sup>th</sup> Avenue have been considered. The proposed construction will consist of going from a two-lane rural section to a four-lane divided urban section, reconstruction of several cross roads (CH 42, CH 78, Valley View Road, and the addition of a trail system.

The result of the proposed construction will not change any major drainage boundaries, since the roadways will follow existing roadway alignments. An integrated drainage system consisting of catch basins, storm sewer, ditches, and culverts will be required to accommodate the reconstructed roadway design. Storm water ponds will be utilized for water quality and rate control purposes and will follow the Local Water Plan for Shakopee for standard sizing criteria.

A hydrologic analysis for routing and water quality purposes was performed for the project area. The pond locations were identified and analyzed from the existing contours / topography, the existing/proposed roadway profile, the existing wetlands and floodplain locations, and associated right of way impacts.

The runoff volume for sizing the water quality ponds was calculated from a 2.5 inch rainfall. The required pond sizes for water quality are based only on the runoff from the CH 17 project and drainage areas that discharge directly into the proposed ponds or drainage system. A conservative approach to pond sizing, the NURP Standard, was used at this preliminary level. It is anticipated that a combination of treatments will be needed to satisfy the various permitting authorities. The combination of practices could include conventional ponding, infiltration/filtration practices, pretreatment, and/or biofiltration. A final model incorporating the assumed development, pond outlet systems, final highway drainage system, and contributions from any other ponds will need to be developed.

Due to the complexity and interconnectivity of the pond systems, the most current hydrologic model of the system should be used for the final design of the storm water drainage, storage, and treatment systems. The model was not created in this study.

#### **Recommended Storm Water Ponds**

##### **Pond P-1**

Pond P-1 will receive water directly from drainage area 1. A proposed storm sewer system will be used to carry runoff to Pond P-1. Drainage area 1 will require a total of 2.8 acre-feet of dead storage for water quality purposes.

##### **Pond P-2**

Pond P-2 will receive water directly from drainage area 2. A proposed storm sewer system will be used to carry runoff from the impervious area to Pond P-2. The non-impervious drainage area will discharge directly into the pond. Drainage area 2 will require a total of 7.1 acre-feet of dead storage for water quality purposes.

---

### **Pond P-3**

Pond P-3 will receive water directly from drainage area 3. A proposed storm sewer system will be used to carry runoff to Pond P-3. Drainage area 3 will require a total of 0.9 acre-feet of dead storage for water quality purposes.

### **Ponds P-4 / P-5**

Ponds P-4 and P-5 will receive water directly from drainage area 4-5. A proposed storm sewer system will be used to carry runoff from the impervious area to Ponds P-4 and P-5. The non-impervious drainage area will discharge directly into Pond P-4 with an equalizer culvert going between Pond P-4 and Pond P-5. Drainage area 4-5 will require a total of 4.7 acre-feet of dead storage for water quality purposes.

### **Pond P-6**

Pond P-6 will receive water directly from drainage area 6. A proposed storm sewer system will be used to carry runoff from the impervious area to Pond P-6. The non-impervious drainage area will discharge directly into the pond. Drainage area 6 will require a total of 3.6 acre-feet of dead storage for water quality purposes.

### **Drainage Design Follow-ups**

Final design of the storm water ponds and drainage system should consider the following:

- Land acquisition and final location of Ponds P-1 to P-6 will need to be addressed.
- Once the final storm sewer system is designed, the final pond size for sediment removal needs to be checked to make sure the ponding area assumptions are correct.
- Verify upstream and downstream hydrologic assumptions with the City of Shakopee to make sure any additional discharge is accounted for in the design.
- The ponding system must be analyzed for the 100-year rainfall event. Additional storage and/or outlet sizing must be analyzed in order to provide adequate storm water storage with minimal cost and minimal disturbance to adjacent properties.
- A detailed plan for overland emergency overflow paths for roadway sag points should be completed for the final plans.
- Existing routes should be maintained for major drainage courses.
- Volume control should be considered where it is practical.

### **13.6 Utilities**

The preliminary design process included identification of existing public and private utilities within Segment C. Utility owners responded to a Gopher State One Call design location information request.

### **Fiber Optic**

---

There is an underground fiber optic cable on the west side of CH 17 through Segment C.

### **Gas**

The only underground gas line identified through the Gopher State One Call process is on the east side of CH 17 from CH 42 for about 1100 feet to the north.

### **Overhead Electric Lines**

There is an overhead electric line on the east side of CH 17 from CH 42 to existing Valley View Road. There is another overhead electric line on the west side of CH 17 from CH 78 running north to approximately 600' south of 17<sup>th</sup> Avenue where it crosses CH 17 and continues running north to US 169.

### **Phone**

An underground telephone line runs on the west side of CH 17 through Segment C. A phone line runs on the east side of CH 17 from Wood Duck Trail north through 17<sup>th</sup> Avenue.

### **Traffic Signals**

There is a traffic signal with underground conduits and in-pavement loop detectors at the intersections of CH 78 and CH 17 and at 17<sup>th</sup> Avenue and CH 17.

### **Underground Electric Cable**

There is an underground electric cable on the east side of CH 17 from existing Valley View Road through the St. Francis Blvd. intersection.

## **13.7 Permits and Approvals**

It is anticipated that several federal, state, regional, and local permits, approval, and reviews will be required for the proposed 2013 action. Furthermore, continued public and agency involvement / outreach at all levels in the decision-making process will occur throughout future project development processes.

## **14.0 Recommendations and Implementation Planning**

The CH 17 / TH 13 Study Management Team (SMT) recommends that the findings of this corridor study be approved by each agency having adjacent land use authority and/or roadway jurisdiction.

Approval by each agency may be subject to conditions that are independently prescribed as recorded in the respective council/board resolutions.

### **14.1 Corridor-wide Recommendations**

#### **14.1.1 Adopt the CH 17 / TH 13 Corridor Study**

- The Scott County Board, City of Shakopee and Prior Lake Councils, Cedar Lake and Spring Lake Township Boards, and Mn/DOT should approve the TH 13 / CH 17 Corridor Study as the Vision for the corridor

---

to be used as a decision making guide as future infrastructure improvements are considered and as local development requests are received, including the preservation of right-of-way for the future roadways and access management measures to preserve safety and corridor performance.

- Scott County and the Cities of Shakopee and Prior Lake should incorporate the findings of this study into the next update of the Transportation Plan component of their respective Comprehensive Plans.
- The Cities of Shakopee and Prior Lake, Scott County, and Cedar Lake and Spring Lake Townships should maintain and/or adopt policies or ordinances that assist with the implementation and goals of this plan.
- Each agency should identify projects and prioritize their implementation based upon available project financing.
- Each agency should take advantage of opportunities along the corridor as they arise to implement recommendations and findings of this study.
- Scott County and Mn/DOT should seek functional reclassification of CH 17 and TH 13 from their present category (A Minor Arterial – Connector) to the A Minor Arterial – Expander category as a first step towards ultimate reclassification as a Principal Arterial.
- Mn/DOT and Scott County should continue planning for jurisdictional transfers of segments of TH 13 and/or CH 17.
- Scott County, the Cities of Shakopee and Prior Lake and Cedar Lake and Spring Lake Townships should use the concept long-term plans and supporting roadway network as a guide to assess the compatibility of new development proposals within the corridor.

#### **14.1.2 Corridor Preservation**

- Cedar Lake and Spring Lake Townships will continue planning roadway networks complimentary to the concept roadway network defined in this study of TH 13 / CH 17.
- Scott County, the Cities of Shakopee and Prior Lake and Cedar Lake and Spring Lake Townships will continue to advance opportunities to preserve right of way for supporting and connecting roadway network improvements to allow CH 17 / TH 13 to function as a future Principal Arterial. Corridors need to be identified and preserved to serve this function.
- Scott County should consider early acquisition of selected properties on an opportunity basis prior to environmental study for the 2013 project, as specified in the Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA-LU).
- Preservation of adequate right-of-way should be supported by each affected agency in the study area along TH 13 and CH 17 and its existing and future supporting roadway network. Advance planning for these improvements is essential to prevent costly buyouts and potential unnecessary delays in constructing improvements.

- Agencies should continue efforts to preserve right-of way by applying existing ordinances and utilizing planning tools to achieve consistent setback goals parallel to CH 17 and TH 13. Current setback ordinances vary between agencies. Applying public value credits, requesting dedication of roadway right of way, trail easements, and drainage easements for pond location right of way through platting are possible considerations.
- Scott County, Mn/DOT, the Cities of Shakopee and Prior Lake, and the Townships of Cedar Lake and Spring Lake should continue to pursue right of way preservation initiatives in the corridor. Methods that should be considered and utilized as appropriate include:
  - Voluntary early acquisitions
  - Purchase of development rights
  - Purchase options
  - Official map
  - Letters of agreement with developers
  - Right of first refusal
  - Donations of property
  - Contributions, exchanges of property
  - Access management
  - Use of local government land use tools

**14.2 Segment Recommendations**

**14.2.1 Segment A**

- Cedar Lake Township and Spring Lake Township are engaged in a roadway system planning study complementary the supporting roadway network planning performed as part of this Corridor Study for CH 17 and TH 13. They should build upon ideas developed as part of this study.
- The County should work with Mn/DOT, using programs such as the Cooperative Agreement program, to aid in implementing access management along TH 13
- Mn/DOT will continue to monitor the performance and safety of TH 13. At the time when performance and/or safety problems occur, Mn/DOT will work towards implementation of appropriate corrective actions consistent with the Vision for the corridor as outlined in this study.
- Mn/DOT and Scott County should coordinate with Rice County, in support of a roadway extension southerly from the TH 13 and TH 19 intersection as is shown in Rice County’s Transportation Plan

**14.2.2 Segment B**

- Scott County, as the agency having land use authority for unincorporated areas and the City of Prior Lake, as the future land use authority through an orderly annexation agreement with Spring Lake Township should continue to manage access to the undeveloped areas adjacent to the TH

---

282/TH 13/CH 17 intersection preserving opportunities for short term and long-term access.

Scott County, Mn/DOT, Spring Lake Township and the City of Prior Lake should continue to plan land use and transportation improvements that are complimentary to one another. This planning study identified a concept plan for access and local street connectivity that focused access to the southwest and northeast quadrants of the TH 282/TH 13/CH 17 intersection while preserving the northwest and southeast quadrants for future interchange ramps. This concept plan, or one of similar effectiveness, should be acknowledged in future planning efforts in the area.

Scott County, Mn/DOT, Spring Lake Township and the City of Prior Lake should plan to implement recommendations made by the Metropolitan Council's recently completed a transit study which identified a need to plan for a future transit station and 200 parking stall park and ride facility near the TH 282 / TH 13/ CH 17 intersection.

- The City of Prior Lake, through their land use authority, should remove private access from CH 17 when the opportunities arise.

Scott County will continue to monitor the performance and safety of CH 17. At the time when performance and/or safety problems occur, the County will work towards implementation of appropriate corrective actions consistent with the Vision for the corridor as outlined in this study.

#### **14.2.3 Segment C**

- Scott County and the City of Shakopee should approve the Segment C Preliminary Design Layout acknowledging that further refinement will occur as the final design proceeds.
- Scott County and City of Shakopee should advance opportunities for right of way acquisition for the 2013 project (Segment C).
- Scott County should consider soliciting federal funding opportunities for Segment C (2009 Federal solicitation)
- Scott County should proceed with the appropriate environmental review path for Segment C, preliminarily identified as an Environmental Assessment (EA).
- Scott County should conduct appropriate traffic studies of the CH 17 intersections with CH 42, CH 78, and Valley View Road to determine the appropriate full access intersection control (traffic signal versus roundabout).
- Scott County and the City of Shakopee should continue coordination with Betaseed, St. Francis Hospital and the Mooers Avenue residential neighborhood east of the hospital to develop a concept for the new east-west roadway that is shown in the 2013 project.
- Scott County and the City of Shakopee should continue to work with St. Francis Hospital to consider emergency vehicle ingress and egress to the hospital campus.

- Transit planning should continue as opportunities are explored for right of way acquisition for a park and ride facility on the west side of CH 17 north of the proposed Valley View Road.
- The City of Shakopee should continue to develop alternative routes of access to neighborhoods that are currently served by a single point of access or those that may be affected by access management or safety improvement measures recommended as part of the long-term vision for the CH 17 corridor. Potential alternative routes of access are identified in the supporting roadway concept plan developed as a part of this study.
- The City of Shakopee should continue planning for supporting roadways in the Segment C area to provide alternative access routes to neighborhoods consistent with the Vision for the corridor as outlined in this study. Scott County and the City of Shakopee should determine the preferred CH 42 at CH 17 intersection build alternative for 2013, while preserving the right-of-way for the future grade separated alternative.
- The City of Shakopee, through their land use authority, should remove private access from CH 17 when the opportunities arise.

**14.2.4 Segment D**

The CH 17 interchange with US 169 represents a regional highway system need. Long range planning (2030) for this interchange needs to be conducted concurrently to maintain future acceptable levels of mobility, performance, and safety consistent with the operation goals of a Principal Arterial.

Scott County, Mn/DOT and the City of Shakopee should develop safety and capacity improvement projects at and near the US 169 interchange.

- The City of Shakopee and Scott County should further evaluate capacity and safety improvements for Vierling Drive in the vicinity of CH 17.

**14.2.5 Segment E**

The City of Shakopee and Scott County should further evaluate and develop concept plans to determine feasibility and impacts of a five lane section on CH 17 from Vierling Drive to CH 101.

The City of Shakopee and Scott County should continue to monitor the CH 17 railroad crossing and work with the railroad to minimize traffic delays especially during peak traffic periods.

**14.2.6 Segment F**

Scott County and the City of Shakopee should develop preliminary and final design plans to reconstruct CH 101 from Spencer Street to CH 17 for construction in 2010 with the intention of acquiring no additional permanent right-of-way.

Scott County and the City of Shakopee should take advantage of future opportunities to implement access management techniques to preserve the long-term safety and capacity of CH 101.

**14.3 Continued Agency Coordination**

- The study partners should meet periodically subsequent to the completion of this study to ensure that development and project

---

implementations are consistent with the Vision for the corridor and to determine if adjustments are needed.

- Mn/DOT and the County should continue to work with the Cities, Townships and Metropolitan Council to establish the future functional classification of the corridor as a Principal Arterial.
- Mn/DOT and Scott County should continue to work together to determine the long-term jurisdictional designation for the corridor (i.e. jurisdictional trade of TH 13 and CH 17). Mn/DOT should determine if future TH 13 designation of the current CH 17 segment aligns with their system planning.
- The Cities of Shakopee and Prior Lake and Scott County as land use authority for the unincorporated area, should work with Mn/DOT to satisfy the requirements of Minnesota Statute 505.03 Subd. 2. Under this Statute all Cities, Towns, and Counties are required to provide Mn/DOT (Commissioner of Transportation) with a copy of all preliminary plats adjacent to all State Highways, regardless of the need for access, before official action is taken by the local agency. Mn/DOT has applied this language to include all developmental actions (Change of Use, Variances, etc.) as a way of notifying Mn/DOT of all potential access locations and potential impacts to the roadway. This request is not stated in any legal statute but is supported by the Statute above and by Minnesota Rules 8810.5200, which requires a review, through the permit process, and approval of the access by Mn/DOT.
- The Cities, County, and Townships should work with Mn/DOT to provide a contiguous local transportation system with logical street extensions and properly spaced full movement intersections as development occurs.
- Scott County, Shakopee and Prior Lake should continue coordination with the Mdewakanton Sioux Community as undeveloped land areas within the corridor are acquired by the Sioux Community.

This Page Left Blank Intentionally

---

## **List of Tables**

Table 2 - Segment Crash Rates

Table 3 - Intersection Related Crash Types

Table 5 - Existing AM Peak Hour MOE's

Table 6 - Existing P Peak Hour MOE's

Table 7 - 2030 AM Peak Hour No Build MOE's

Table 8 - 2030 PM Peak Hour No Build MOE's

Table 9 - 2030 AM Peak Hour Build MOE's

Table 10 - 2030 PM Peak Hour Build MOE's

Table 11 - Intersection Evaluation

**Table 2  
CSAH 17 and TH 13 Corridor Study  
Segment Crash Rates  
2003 - 2005**

Description			Length (miles)	Segment ADT (2005)	3-year MVMT	FAT	INJ			PD	Total	Crash Rate	Severity Rate	Roadway Type
Section	From	To					A	B	C					
F	MN-101 Bridge	CSAH-17	0.85	20,100	18.72	0	0	7	8	39	54	2.88	4.06	Urban 4-lane
E	CSAH-17	4th Ave	0.25	13,200	3.62	0	0	3	8	25	36	9.96	13.83	Urban 3-lane
	4th Ave	CSAH 16 (Eagle Creek Blvd)	0.25	14,900	4.08	0	1	4	9	15	29	7.10	12.00	Urban 3-lane
D	CSAH 16 (Eagle Creek Blvd)	Vierling Dr	0.90	24,800	24.46	0	0	5	12	37	54	2.21	3.11	Urban 3-lane
	Vierling Dr	Hwy 169 South Ramp	0.30	24,800	8.15	0	0	2	17	50	69	8.46	11.04	Urban 4-lane divided
	Hwy 169 South Ramp	CSAH 82 (17th Ave)	0.22	27,100	6.53	0	0	5	3	22	30	4.59	6.58	Rural 4-lane divided
C	CSAH 82 (17th Ave)	CSAH 42 (29th Ave)	1.93	13,400	28.34	0	1	6	3	27	37	1.31	1.94	Rural 2-lane
B	CSAH 42 (29th Ave)	CSAH 14 (35th Ave)	1.00	9,000	9.86	0	0	4	2	2	8	0.81	1.83	Rural 2-lane
	CSAH 14 (35th Ave)	CSAH 82 (Howard Lake Rd)	0.49	9,800	5.26	0	0	3	3	18	24	4.56	6.27	Rural 2-lane
	CSAH 82 (Howard Lake Rd)	CSAH 12 (170th St)	2.34	6,500	16.67	1	1	1	0	2	5	0.30	0.84	Rural 2-lane
	CSAH 12 (170th St)	TH 13/282	0.68	5,800	4.32	0	0	2	2	6	10	2.31	3.70	Rural 2-lane
A	TH 13/282	CSAH 8 (220th St)	3.96	8,100	35.15	0	0	3	3	8	14	0.40	0.65	Rural 2-lane
	CSAH 8 (220th St)	CR 64 (240th St)	1.99	6,400	13.96	1	1	0	0	4	6	0.43	0.93	Rural 2-lane
	CR 64 (240th St)	TH 19	4.11	5,100	22.97	1	1	7	7	13	29	1.26	2.48	Rural 2-lane
<b>Total</b>	<b>MN-101 Bridge</b>	<b>TH 19</b>	<b>19.27</b>	<b>9,200</b>	<b>194.13</b>	<b>3</b>	<b>5</b>	<b>52</b>	<b>77</b>	<b>268</b>	<b>405</b>	<b>2.09</b>	<b>3.16</b>	
<b>2006 Data</b>	<b>MN-101 Bridge</b>	<b>TH 19</b>	<b>19.27</b>	<b>9,200</b>	<b>64.71</b>	<b>0</b>	<b>1</b>	<b>18</b>	<b>16</b>	<b>59</b>	<b>94</b>	<b>1.45</b>	<b>2.30</b>	

**Metro District Average Rates -  
Mn/DOT 2006 Data**

Section Type	ADT	Crash Rate	Severity Rate
Rural 2-lane	5,000-7,999	1.10	1.80
Rural 2-lane	>8,000	1.30	1.90
Urban 2-lane	>8,000	2.90	4.10
3-lane	NA	3.10	4.30
Urban 4-lane undivided	NA	5.60	7.60
Urban 4-lane divided	NA	4.60	6.40
Rural 4-lane divided	NA	1.90	2.40

Table 3  
CSAH 17 and TH 13 Corridor Study  
Intersection Related Crash Types  
2003 - 2005

Segment	Location	Rear End	Sideswipe - same direction	Left turn	Ran off road - left side	Right Angle	Right Turn	Ran off Road - Right Side	Head On	Sideswipe Opposing	Other / Unknown	Total	ADT (2005)	Crash Rate per MCV	Benchmark (Metro 2006)	Fatalities	Personal Injury	Property Damage	Ped/Bike Involved	Severity Rate	Benchmark (Metro 2006)
F	MN-101 Bridge (signal)	8	2	3	0	3	1	0	1	0	2	20	22,200	0.80	0.70	0	4	16	0	1.10	1.00
	1st Ave E (signal)	2	0	1	0	0	0	0	1	0	1	5	20,100	0.20	0.70	0	1	4	0	0.30	1.00
	Spencer St S	0	0	1	0	2	0	0	0	0	0	3	21,825	0.10	0.20	0	0	3	0	0.10	0.30
	Fillmore St S	2	0	0	0	0	0	0	0	0	0	2	20,100	0.10	0.20	0	2	0	0	0.20	0.30
	Main St	1	0	0	0	1	0	0	0	1	0	3	20,100	0.10	0.20	0	1	2	1	0.20	0.30
	Market St	3	0	0	0	2	0	0	0	0	0	5	20,800	0.20	0.20	0	3	2	0	0.40	0.30
	Minnesota St	1	1	0	0	2	0	1	0	0	0	5	20,100	0.20	0.20	0	0	5	0	0.20	0.30
	Dakota St	2	0	0	0	2	0	0	0	0	1	5	20,100	0.20	0.20	0	3	2	1	0.40	0.30
	Prairie St	1	1	0	0	0	0	0	1	0	0	3	20,100	0.10	0.20	0	1	2	0	0.20	0.30
Naumkeag St	1	0	0	0	0	0	0	0	0	0	1	20,100	0.00	0.20	0	0	1	0	0.00	0.30	
E	MN-101 at CR 17 (signal)	11	0	2	0	5	0	0	0	1	2	21	24,400	0.80	0.70	0	3	18	0	0.90	1.00
	3rd Ave E	0	0	0	0	1	0	0	0	0	0	1	13,200	0.10	0.20	0	0	1	0	0.10	0.30
	4th Ave E (signal)	3	0	4	0	5	0	0	0	0	0	12	18,100	0.60	0.70	0	7	5	0	1.10	1.00
	Eagle Creek Blvd (signal)	13	1	1	0	9	0	0	3	1	0	28	25,225	1.00	0.70	0	14	14	0	1.70	1.00
D	Garden Ln	0	1	0	0	0	0	0	0	0	0	1	24,800	0.00	0.20	0	0	1	0	0.00	0.30
	Shakopee Ave E	0	0	2	0	0	0	0	0	0	0	2	24,800	0.10	0.20	0	0	2	0	0.10	0.30
	10th Ave E (signal)	7	1	1	0	1	0	0	0	0	0	10	28,750	0.30	0.70	0	4	6	0	0.50	1.00
	11th Ave E	1	0	0	0	0	0	0	0	0	0	1	24,800	0.00	0.20	0	1	0	0	0.10	0.30
	Prairie Ln	3	0	0	0	0	0	0	0	0	0	3	24,800	0.10	0.20	0	2	1	0	0.30	0.30
	Vierling Dr E (signal)	12	7	4	0	7	0	0	1	0	2	33	38,850	0.80	0.70	0	7	26	1	1.00	1.00
	Hwy 169 North Ramp (signal)	29	2	0	0	4	0	0	0	0	2	37	24,800	1.40	0.70	0	9	28	0	1.80	1.00
	Hwy 169 South Ramp (signal)	24	1	2	0	2	0	1	0	0	2	32	27,100	1.10	0.70	0	10	22	0	1.40	1.00
17th Ave E (signal)	12	3	1	0	7	1	2	1	0	3	30	33,300	0.80	0.80	0	8	22	3	1.20	1.10	
C	St Francis Ave	1	0	1	0	2	0	0	0	0	0	4	13,400	0.30	0.20	0	0	4	0	0.30	0.40
	Valley View Rd E	0	0	0	0	0	0	0	0	0	0	0	13,400	0.00	0.20	0	0	0	0	0.00	0.40
	CR-78 (signal)	9	1	1	0	2	0	0	0	0	0	13	16,200	0.70	0.80	0	1	12	0	0.90	1.10
	Wood Duck Trail E	3	0	0	1	1	0	0	0	0	0	5	13,400	0.30	0.20	0	3	2	0	0.70	0.40
	Blue Heron Trail S	0	0	0	0	0	0	1	0	0	0	1	13,400	0.10	0.20	0	0	1	0	0.10	0.40
	CR-42	1	1	0	0	5	1	0	0	1	0	9	14,600	0.60	0.20	0	5	4	0	1.00	0.40
B	Marcia Lane S	0	0	0	0	0	0	0	0	0	0	0	9,000	0.00	0.20	0	0	0	0	0.00	0.40
	Norton Dr	0	0	0	0	0	0	0	0	0	0	0	9,000	0.00	0.20	0	0	0	0	0.00	0.40
	CR-14	1	1	1	0	1	0	1	1	0	0	6	10,850	0.50	0.20	0	4	2	0	1.00	0.40
	Eaglewood Ln	2	0	1	0	1	0	1	1	0	0	6	9,800	0.60	0.20	0	1	5	0	0.70	0.40
	Howard Lake Rd (CR 82)	4	0	2	0	5	1	1	0	1	1	15	11,500	1.20	0.20	0	4	11	0	1.70	0.40
	160th St E	0	0	0	0	0	0	0	0	0	0	0	6,500	0.00	0.20	0	0	0	0	0.00	0.40
	161st St E	0	0	0	0	0	0	0	0	0	0	0	6,500	0.00	0.20	0	0	0	0	0.00	0.40
	165th St E	0	0	0	0	0	0	0	0	0	0	0	6,500	0.00	0.20	0	0	0	0	0.00	0.40
	170th St E (CR-12)	0	0	0	0	1	0	0	0	0	0	1	6,800	0.10	0.20	0	1	0	0	0.40	0.40
	Langford Ave	0	0	0	0	0	0	0	0	0	0	0	5,800	0.00	0.20	0	0	0	0	0.00	0.40
	TH 282 (4-way stop)	2	0	0	1	1	0	0	0	0	0	4	10,000	0.40	0.60	0	1	3	0	0.50	0.80
	TH 13 East intersection	2	0	0	0	1	0	0	1	0	0	4	6,900	0.50	0.20	0	2	2	0	0.90	0.40
	TH 13 West intersection	0	0	2	0	0	0	0	0	0	0	2	8,100	0.20	0.20	0	1	1	0	0.50	0.40
A	186th St E	0	0	0	0	0	0	0	0	0	0	0	8,100	0.00	0.20	0	0	0	0	0.00	0.40
	190th St E	0	0	1	0	0	0	0	0	0	0	1	8,100	0.10	0.20	0	1	0	0	0.20	0.40
	Butterfly Ln	0	0	0	0	0	0	0	0	0	0	0	8,100	0.00	0.20	0	0	0	0	0.00	0.40
	Langford Way North End	0	0	0	0	0	0	0	0	0	0	0	8,100	0.00	0.20	0	0	0	0	0.00	0.40
	CR-10 (205th St E)	2	0	0	0	1	0	1	0	0	0	4	9,000	0.40	0.20	0	2	2	0	0.70	0.40
	Langford Way South End	0	1	0	0	0	0	0	0	0	0	1	8,100	0.10	0.20	0	0	1	0	0.10	0.40
	215th St E	0	0	0	0	0	0	0	0	0	0	0	8,100	0.00	0.20	0	0	0	0	0.00	0.40
	CR-8 (220th St E)	1	0	1	0	1	0	1	1	0	0	5	9,175	0.50	0.20	0	1	4	0	0.70	0.40
	230th St E	0	0	0	0	0	0	0	0	0	0	0	5,800	0.00	0.20	0	0	0	0	0.00	0.40
	CR-64 (240th St E)	1	0	1	0	1	0	1	0	0	0	4	5,768	0.60	0.20	1	0	3	0	1.30	0.40
	Old Hwy 13 Blvd	0	0	0	0	0	0	0	0	0	0	0	4,650	0.00	0.20	0	0	0	0	0.00	0.40
	247th St E	0	0	0	0	0	0	0	0	0	0	0	4,650	0.00	0.20	0	0	0	0	0.00	0.40
	253rd St E	0	0	0	0	0	0	0	0	0	0	0	4,650	0.00	0.20	0	0	0	0	0.00	0.40
	260th St E (4-way Stop)	0	0	0	0	12	0	0	0	0	1	13	7,025	2.50	0.60	1	8	4	0	5.80	0.80
	260th (Roundabout)	0	0	0	0	2	0	0	0	1	1	4	7,025	1.60		0	3	1	0	3.10	
	263rd St E	0	0	0	0	0	0	0	0	0	0	0	4,650	0.00	0.20	0	0	0	0	0.00	0.40
	270th St E	0	0	0	0	0	0	0	0	0	0	0	4,650	0.00	0.20	0	0	0	0	0.00	0.40
	TH 19	4	0	0	1	2	0	1	0	0	1	9	9,175	0.90	0.20	0	3	6	1	1.40	0.40
<b>Total</b>		<b>169</b>	<b>24</b>	<b>33</b>	<b>3</b>	<b>92</b>	<b>4</b>	<b>12</b>	<b>12</b>	<b>6</b>	<b>19</b>	<b>374</b>				<b>2</b>	<b>121</b>	<b>251</b>	<b>7</b>		

**Table 5**  
**Existing AM Peak Hour MOE's**  
**SimTraffic Analysis**  
**CH 17/TH 13 Corridor Analysis**

Intersection	Approach	Demand Volumes (Veh/Hour)				Delay (s/veh)						LOS By Approach		LOS By Intersection	
		Left	Thru	Right	Total	Left		Thru		Right		Delay (S/Veh)	LOS	Delay (S/Veh)	LOS
						Delay	LOS	Delay	LOS	Delay	LOS				
1st Ave W @ Mn-101 Bridge (Signal)	SB	356	0	78	434	28.2	C	0.0	A	1.7	A	24.3	C		
	EB	468	136	0	604	30.0	C	8.0	A	0.0	A	25.2	C	99.6	F
	WB	0	85	1022	1,107	0.0	A	68.8	E	185.6	F	175.9	F		
1st Ave E @ Mn-101 (Signal)	NB	150	0	33	183	24.8	C	0.0	A	9.2	A	21.9	C		
	EB	0	491	25	516	0.0	A	4.6	A	3.2	A	4.5	A	13.2	B
	WB	19	877	0	896	40.7	D	16.3	B	0.0	A	16.5	B		
Spencer St @ Mn-101	NB	125	0	61	186	6132.5	F	0.0	A	4196.5	F	5412.1	F		
	EB	0	481	30	511	0.0	A	0.8	A	0.7	A	0.8	A	171.1	F
	WB	24	827	0	851	5.6	A	23.6	C	0.0	A	23.0	C		
Market St @ Mn-101	NB	26	0	20	46	29.8	D	0.0	A	10.7	B	18.7	C		
	SB	1	0	4	5	19.8	C	0.0	A	7.6	A	10.0	B		
	EB	1	474	7	482	13.1	B	0.8	A	0.4	A	0.8	A	1.3	A
Minnesota St @ Mn-101	WB	5	793	2	800	2.5	A	0.5	A	0.5	A	0.5	A		
	NB	24	2	11	37	28.3	D	22.7	C	12.7	B	23.4	C		
	SB	3	0	5	8	14.3	B	0.0	A	16.3	C	15.6	C		
CR-17 @ Mn-101 (Signal)	EB	5	461	13	479	4.9	A	0.5	A	0.2	A	0.5	A	1.5	A
	WB	13	833	2	848	4.5	A	1.1	A	4.0	A	1.1	A		
	NB	446	15	105	566	27.1	C	11.4	B	8.7	A	23.5	C		
4th Ave @ CR-17 (Signal)	SB	20	12	6	38	18.2	B	5.5	A	6.8	A	11.7	B		
	EB	6	351	146	503	19.4	B	14.4	B	13.2	B	14.0	B	17.2	B
	WB	32	432	6	470	19.0	B	12.4	B	6.1	A	12.8	B		
10th Ave @ CR-17 (Signal)	NB	99	521	115	735	13.6	B	9.4	A	6.6	A	9.6	A		
	SB	13	154	24	191	20.8	C	5.1	A	1.3	A	5.9	A		
	EB	48	89	38	175	25.1	C	18.6	B	6.8	A	17.9	B	10.8	B
CR-16 @ CR-17 (Signal)	WB	33	66	46	145	26.8	C	18.7	B	8.5	A	16.2	B		
	NB	36	375	111	522	9.0	A	6.1	A	3.0	A	5.5	A		
	SB	57	136	3	196	15.4	B	5.7	A	1.6	A	7.8	A		
10th Ave @ CR-17 (Signal)	EB	4	50	20	74	17.4	B	12.3	B	6.8	A	11.3	B	11.2	B
	WB	138	82	143	363	32.7	C	32.8	C	4.4	A	21.7	C		
	NB	45	417	2	464	7.3	A	4.2	A	3.1	A	4.5	A		
Vierling Dr @ CR-17 (Signal)	SB	3	228	23	254	10.8	B	2.4	A	1.5	A	2.4	A		
	EB	61	3	41	105	21.0	C	16.7	B	3.2	A	13.0	B	5.4	A
	WB	28	10	10	48	18.2	B	18.9	B	5.1	A	14.5	B		
North 169 Ramp @ CR-17 (Signal)	NB	241	604	108	953	35.5	D	14.7	B	4.1	A	18.5	B		
	SB	56	316	122	494	49.4	D	18.1	B	4.5	A	17.5	B		
	EB	145	84	286	515	32.5	C	27.1	C	4.9	A	17.2	B	18.8	B
South 169 Ramp @ CR-17 (Signal)	WB	104	96	85	285	36.9	D	31.1	C	5.8	A	25.6	C		
	NB	76	662	0	738	27.4	C	9.4	A	0.0	A	11.1	B		
	SB	0	615	94	709	0.0	A	14.6	B	2.8	A	12.9	B	13.4	B
17th Ave @ CR-17 (Signal)	WB	155	1	278	434	26.6	C	2.1	A	13.5	B	17.9	B		
	NB	0	522	780	1,302	0.0	A	14.4	B	11.5	B	12.7	B		
	SB	296	440	0	736	18.3	B	6.4	A	0.0	A	11.3	B	13.3	B
St Francis Ave @ CR-17	EB	139	1	122	262	34.3	C	3.3	A	8.8	A	22.8	C		
	NB	146	579	60	785	64.3	E	41.5	D	6.8	A	44.1	D		
	SB	208	253	126	587	64.3	E	34.7	C	7.6	A	39.8	D		
St Francis Ave @ CR-17	EB	418	163	55	636	39.6	D	25.7	C	15.0	B	33.9	C	36.5	D
	WB	31	159	314	504	21.0	C	34.7	C	20.7	C	25.3	C		
	NB	6	588	69	663	0.3	A	1.2	A	0.2	A	1.1	A		
St Francis Ave @ CR-17	SB	157	180	10	347	5.6	A	0.4	A	0.0	A	3.0	A		
	EB	0	0	0	0	0.0	A	0.0	A	0.0	A	0.0	A	2.5	A
	WB	18	2	176	196	14.0	B	39.3	E	5.2	A	6.2	A		

**Table 5 (continued)**  
**Existing AM Peak Hour MOE's**  
**SimTraffic Analysis**  
**CH 17/TH 13 Corridor Analysis**

Intersection	Approach	Demand Volumes (Veh/Hour)				Delay (s/veh)						LOS By Approach		LOS By Intersection	
		Left	Thru	Right	Total	Left		Thru		Right		Delay (S/Veh)	LOS	Delay (S/Veh)	LOS
						Delay	LOS	Delay	LOS	Delay	LOS				
CR-78 @ CR-17 (Signal)	NB	285	561	3	849	28.2	C	17.5	B	9.9	A	20.7	C		
	SB	2	234	83	319	41.1	D	33.1	C	9.6	A	26.9	C		
	EB	96	5	174	275	44.0	D	50.2	D	5.1	A	18.4	B	23.0	C
	WB	2	7	17	26	56.9	E	54.7	D	7.1	A	21.2	C		
CR-42 @ CR-17	NB	0	504	112	616	0.0	A	5.6	A	6.2	A	5.7	A		
	SB	160	121	4	285	13.2	B	9.3	A	10.4	B	10.8	B		
	EB	11	2	0	13	19.9	C	6.3	A	0.0	A	18.8	C	8.0	A
	WB	34	0	191	225	27.6	D	0.0	A	5.4	A	8.7	A		
CR-14 @ CR-17	NB	53	528	0	581	5.3	A	5.2	A	0.0	A	5.2	A		
	SB	0	130	28	158	0.0	A	2.2	A	0.5	A	1.9	A	5.1	A
	EB	89	0	41	130	11.0	B	0.0	A	3.1	A	8.6	A		
CR-82 @ CR-17	NB	0	472	76	548	0.0	A	6.0	A	6.0	A	6.0	A		
	SB	72	86	0	158	3.6	A	2.1	A	0.0	A	2.8	A	5.2	A
	WB	25	0	101	126	8.6	A	0.0	A	4.5	A	5.3	A		
CR-12 @ CR-17	NB	0	434	7	441	0.0	A	9.3	A	8.5	A	9.3	A		
	SB	16	112	1	129	3.8	A	1.8	A	0.0	A	2.1	A		
	EB	6	1	0	7	3.2	A	0.0	A	0.0	A	3.2	A	3.7	A
	WB	7	1	98	106	5.3	A	8.6	A	5.6	A	5.6	A		
TH-282/TH 13 @ CR-17	NB	11	345	0	356	8.6	A	16.4	C	0.0	A	16.2	C		
	SB	16	75	35	126	8.7	A	13.7	B	5.1	A	10.6	B		
	EB	45	168	7	220	8.5	A	12.6	B	6.6	A	11.6	B	12.8	B
	WB	0	137	52	189	0.0	A	11.3	B	3.7	A	9.4	A		
TH-282 @ CR-17 East leg	NB	0	0	163	163	0.0	A	0.0	A	2.7	A	2.7	A		
	EB	0	184	0	184	0.0	A	15.4	C	0.0	A	15.4	C	6.6	A
	WB	55	189	0	244	3.4	A	2.0	A	0.0	A	2.4	A		
TH-282 @ CR-17 South leg	NB	0	356	163	519	0.0	A	12.4	B	11.8	B	12.2	B		
	SB	0	82	0	82	0.0	A	14.0	B	0.0	A	14.0	B	11.5	B
	WB	55	0	0	55	2.4	A	0.0	A	0.0	A	2.4	A		

**Table 6**  
**Existing PM Peak Hour MOE's**  
**SimTraffic Analysis**  
**CH 17/TH 13 Corridor Analysis**

Intersection	Approach	Demand Volumes (Veh/Hour)				Delay (s/veh)						LOS By Approach		LOS By Intersection	
		Left	Thru	Right	Total	Left		Thru		Right		Delay (S/Veh)	LOS	Delay (S/Veh)	LOS
						Delay	LOS	Delay	LOS	Delay	LOS				
1st Ave W @ Mn-101 Bridge (Signal)	SB	1103	0	483	1,586	40.4	D	0.0	A	5.8	A	30.9	C		
	EB	150	132	0	282	30.5	C	11.5	B	0.0	A	22.0	C	23.7	C
	WB	0	181	567	748	0.0	A	23.1	C	5.4	A	10.3	B		
1st Ave E @ Mn-101 (Signal)	NB	90	0	125	215	20.3	C	0.0	A	17.1	B	18.5	B		
	EB	0	1067	49	1,116	0.0	A	9.4	A	5.5	A	9.2	A	9.4	A
	WB	74	708	0	782	28.7	C	5.0	A	0.0	A	7.2	A		
Spencer St @ Mn-101	NB	34	0	58	92	45.3	E	0.0	A	13.7	B	26.3	D		
	EB	0	1046	241	1,287	0.0	A	2.5	A	3.0	A	2.6	A	3.6	A
	WB	70	667	0	737	17.0	C	1.8	A	0.0	A	3.2	A		
Market St @ Mn-101	NB	12	0	9	21	30.0	D	0.0	A	13.4	B	22.3	C		
	SB	4	1	7	12	11.5	B	0.0	A	10.5	B	10.8	B		
	EB	3	1008	42	1,053	7.0	A	1.8	A	1.8	A	1.8	A	1.8	A
Minnesota St @ Mn-101	WB	22	695	13	730	13.6	B	1.0	A	0.7	A	1.4	A		
	NB	8	0	12	20	30.8	D	0.0	A	12.3	B	19.5	C		
	SB	9	2	20	31	19.8	C	31.3	D	8.9	A	12.6	B		
CR-17 @ Mn-101 (Signal)	EB	19	993	36	1,048	5.0	A	1.1	A	0.7	A	1.1	A	1.6	A
	WB	13	683	9	705	10.4	B	1.2	A	2.1	A	1.4	A		
	NB	249	20	81	350	39.1	D	31.0	C	16.0	B	32.4	C		
4th Ave @ CR-17 (Signal)	SB	23	20	10	53	25.9	C	19.1	B	2.5	A	19.4	B		
	EB	8	495	494	997	12.7	B	20.9	C	21.2	C	21.0	C	20.8	C
	WB	112	464	26	602	26.2	C	11.1	B	6.5	A	13.6	B		
CR-16 @ CR-17 (Signal)	NB	111	314	43	468	28.9	C	6.4	A	4.0	A	10.5	B		
	SB	40	584	43	667	13.6	B	11.9	B	11.6	B	12.0	B		
	EB	65	74	154	293	34.7	C	33.5	C	18.4	B	25.7	C	15.2	B
10th Ave @ CR-17 (Signal)	WB	56	64	39	159	39.5	D	23.7	C	10.2	B	25.0	C		
	NB	30	389	150	569	22.6	C	6.8	A	4.3	A	6.8	A		
	SB	174	626	20	820	21.7	C	9.9	A	6.7	A	12.3	B		
Vierling Dr @ CR-17 (Signal)	EB	7	96	37	140	5.5	A	28.0	C	16.2	B	23.9	C	14.8	B
	WB	160	34	120	314	58.3	E	62.2	E	4.2	A	35.6	D		
	NB	130	508	18	656	22.5	C	4.3	A	2.0	A	7.9	A		
North 169 Ramp @ CR-17 (Signal)	SB	18	635	103	756	10.1	B	7.2	A	3.9	A	6.9	A		
	EB	85	22	181	288	43.3	D	28.8	C	8.5	A	20.0	C	10.2	B
	WB	29	18	18	65	33.4	C	34.4	C	18.0	B	28.1	C		
South 169 Ramp @ CR-17 (Signal)	NB	562	515	214	1,291	86.5	F	26.8	C	8.7	A	50.7	D		
	SB	114	505	205	824	63.9	E	41.4	D	17.4	B	38.9	D		
	EB	160	152	520	832	51.9	D	55.1	E	19.0	B	32.3	C	42.3	D
17th Ave @ CR-17 (Signal)	WB	174	148	81	403	61.5	E	48.4	D	5.2	A	44.0	D		
	NB	137	674	0	811	50.2	D	26.3	C	0.0	A	29.9	C		
	SB	0	966	237	1,203	0.0	A	33.7	C	7.8	A	28.6	C	49.6	D
St Francis Ave @ CR-17	WB	574	1	560	1,135	87.0	F	0.0	A	85.1	F	86.1	F		
	NB	1	687	287	975	0.0	A	31.5	C	6.1	A	23.3	C		
	SB	247	1214	0	1,461	18.3	B	6.8	A	0.0	A	8.6	A	15.3	B
St Francis Ave @ CR-17	EB	115	2	118	235	30.5	C	32.6	C	16.7	B	23.7	C		
	NB	131	390	57	578	67.0	E	46.7	D	7.4	A	47.0	D		
	SB	442	565	374	1,381	77.3	E	40.0	D	13.5	B	45.5	D		
St Francis Ave @ CR-17	EB	210	237	87	534	36.1	D	32.7	C	20.9	C	31.7	C	39.6	D
	WB	121	239	382	742	35.3	D	47.0	D	16.0	B	28.9	C		
	NB	3	350	35	388	4.1	A	1.3	A	0.2	A	1.2	A		
St Francis Ave @ CR-17	SB	185	610	5	800	4.4	A	0.9	A	0.0	A	1.8	A		
	EB	5	0	10	15	8.4	A	0.0	A	4.7	A	6.2	A	2.8	A
	WB	68	0	205	273	15.3	C	0.0	A	5.9	A	7.7	A		

**Table 6 (continued)**  
**Existing PM Peak Hour MOE's**  
**SimTraffic Analysis**  
**CH 17/TH 13 Corridor Analysis**

Intersection	Approach	Demand Volumes (Veh/Hour)				Delay (s/veh)						LOS By Approach		LOS By Intersection	
		Left	Thru	Right	Total	Left		Thru		Right		Delay (S/Veh)	LOS	Delay (S/Veh)	LOS
						Delay	LOS	Delay	LOS	Delay	LOS				
CR-78 @ CR-17 (Signal)	NB	216	283	0	499	33.7	C	15.5	B	0.0	A	23.2	C		
	SB	6	581	101	688	50.3	D	71.2	E	31.9	C	64.4	E		
	EB	70	1	239	310	47.5	D	11.7	B	12.3	B	20.2	C	50.2	D
	WB	0	0	3	3	0.0	A	0.0	A	2.7	A	2.7	A		
CR-42 @ CR-17	NB	0	237	47	284	0.0	A	3.6	A	6.4	A	4.0	A		
	SB	257	494	6	757	18.8	C	19.5	C	11.7	B	19.2	C		
	EB	7	2	1	10	30.8	D	54.3	F	0.0	A	40.9	E	15.8	C
	WB	105	4	237	346	45.3	E	46.5	E	6.3	A	17.3	C		
CR-14 @ CR-17	NB	45	202	0	247	5.4	A	4.3	A	0.0	A	4.5	A		
	SB	0	532	58	590	0.0	A	3.3	A	2.0	A	3.2	A	4.0	A
	EB	51	0	67	118	8.1	A	0.0	A	5.3	A	6.4	A		
	WB	0	174	40	214	0.0	A	3.4	A	3.4	A	3.4	A		
CR-82 @ CR-17	NB	0	174	40	214	0.0	A	3.4	A	3.4	A	3.4	A		
	SB	113	460	0	573	3.7	A	4.2	A	0.0	A	4.1	A	4.9	A
	WB	109	0	82	191	12.6	B	0.0	A	4.7	A	9.1	A		
	EB	1	165	8	174	8.8	A	6.3	A	1.7	A	6.2	A		
CR-12 @ CR-17	NB	1	165	8	174	8.8	A	6.3	A	1.7	A	6.2	A		
	SB	76	433	28	537	4.7	A	5.3	A	6.0	A	5.3	A		
	EB	5	3	1	9	8.0	A	7.6	A	0.7	A	7.5	A	5.4	A
	WB	11	8	44	63	5.2	A	11.0	B	4.5	A	5.7	A		
TH-282/TH 13 @ CR-17	NB	10	112	0	122	6.5	A	12.4	B	0.0	A	12.2	B		
	SB	36	328	69	433	15.8	C	21.4	C	11.2	B	19.5	C		
	EB	37	113	26	176	6.4	A	10.7	B	5.8	A	9.0	A	14.8	B
	WB	0	188	32	220	0.0	A	11.7	B	5.3	A	10.8	B		
TH-282 @ CR-17 East leg	NB	0	0	67	67	0.0	A	0.0	A	2.1	A	2.1	A		
	EB	0	149	0	149	0.0	A	13.9	B	0.0	A	13.9	B	6.0	A
	WB	138	220	0	358	3.8	A	3.3	A	0.0	A	3.5	A		
	SB	0	122	67	189	0.0	A	10.3	B	8.2	A	9.6	A		
TH-282 @ CR-17 South leg	NB	0	354	0	354	0.0	A	16.3	C	0.0	A	16.3	C	11.8	B
	SB	0	0	0	0	0.0	A	0.0	A	0.0	A	3.0	A		
	WB	138	0	0	138	3.0	A	0.0	A	0.0	A	3.0	A		
	EB	8	192	5	205	10.5	B	5.7	A	10.5	B	6.1	A		
CR-10 @ CR-17	NB	8	192	5	205	10.5	B	5.7	A	10.5	B	6.1	A		
	SB	6	505	18	529	8.6	A	16.6	C	13.4	B	16.3	C		
	EB	8	15	23	46	2.9	A	11.2	B	5.6	A	7.1	A	12.8	B
	WB	21	19	7	47	8.3	A	14.3	B	1.2	A	10.3	B		
CR-8 @ CR-17	NB	12	128	16	156	8.7	A	5.7	A	2.7	A	5.8	A		
	SB	35	402	93	530	11.4	B	12.4	B	9.6	A	11.9	B		
	EB	24	71	22	117	5.1	A	12.2	B	4.7	A	9.3	A	10.4	B
	WB	34	40	5	79	8.7	A	14.5	B	4.5	A	11.8	B		
CR-64 @ CR-17	NB	10	139	7	156	3.7	A	2.9	A	1.9	A	2.9	A		
	SB	1	372	44	417	0.0	A	7.2	A	5.0	A	7.0	A		
	EB	16	6	2	24	4.5	A	8.3	A	0.0	A	6.3	A	5.9	A
	WB	7	3	2	12	1.7	A	13.7	B	1.0	A	4.4	A		
247th St @ CR-17	NB	10	143	7	160	1.5	A	1.8	A	2.1	A	1.8	A		
	SB	0	293	21	314	0.0	A	4.5	A	4.3	A	4.5	A		
	EB	2	5	10	17	7.5	A	6.4	A	2.5	A	4.8	A	3.6	A
	WB	4	2	2	8	6.8	A	5.7	A	2.3	A	4.2	A		
CR-2 @ CR-17	NB	60	100	35	195	2.7	A	7.0	A	2.2	A	5.1	A		
	SB	80	225	90	395	6.4	A	10.9	B	6.5	A	8.7	A		
	EB	45	25	60	130	2.8	A	6.0	A	2.1	A	3.2	A	6.2	A
	WB	80	40	50	170	3.0	A	6.8	A	3.6	A	4.0	A		
TH-19 @ CR-17	NB	60	0	196	256	15.2	C	0.7	A	7.1	A	6.6	A		
	EB	131	216	0	347	5.6	A	4.3	A	0.0	A	4.8	A	5.1	A
	WB	0	267	24	291	0.0	A	3.6	A	6.2	A	3.8	A		

**Table 7**  
**2030 AM Peak Hour No Build MOE's**  
**SimTraffic Analysis**  
**CH 17/TH 13 Corridor Analysis**

Intersection	Approach	Demand Volumes (Veh/Hour)				Delay (s/veh)						LOS By Approach		LOS By Intersection	
		Left	Thru	Right	Total	Left		Thru		Right		Delay (S/Veh)	LOS	Delay (S/Veh)	LOS
						Delay	LOS	Delay	LOS	Delay	LOS				
1st Ave W @ Mn-101 Bridge (Signal)	SB	410	0	160	570	37.1	D	0.0	A	2.2	A	27.0	C		
	EB	720	240	0	960	2086.9	F	1220.0	F	0.0	A	1864.4	F	447.8	F
	WB	0	120	1290	1,410	0.0	A	21.9	C	15.3	B	16.1	B		
1st Ave E @ Mn-101 (Signal)	NB	190	0	20	210	25.0	C	0.0	A	15.5	B	24.5	C		
	EB	0	600	50	650	0.0	A	10.6	B	4.5	A	10.1	B	72.6	E
	WB	10	1220	0	1,230	22.2	C	120.1	F	0.0	A	119.0	F		
Spencer St @ Mn-101	NB	130	0	70	200	1651.4	F	0.0	A	1548.5	F	1602.7	F		
	EB	0	590	30	620	0.0	A	1.6	A	1.2	A	1.6	A	84.8	F
	WB	30	1100	0	1,130	5.1	A	18.4	C	0.0	A	18.1	C		
Market St @ Mn-101	NB	30	0	20	50	27.6	D	0.0	A	9.5	A	19.0	C		
	SB	10	0	10	20	20.1	C	0.0	A	12.2	B	14.8	B		
	EB	10	610	10	630	4.5	A	1.4	A	1.2	A	1.5	A	1.7	A
Minnesota St @ Mn-101	WB	10	1020	10	1,040	8.8	A	0.8	A	0.4	A	0.9	A		
	NB	30	10	10	50	24.6	C	24.0	C	7.4	A	21.9	C		
	SB	0	0	10	10	0.0	A	0.0	A	13.5	B	13.5	B		
CR-17 @ Mn-101 (Signal)	EB	10	590	20	620	5.1	A	0.7	A	0.4	A	0.8	A	2.0	A
	WB	20	1080	10	1,110	6.1	A	1.4	A	1.7	A	1.5	A		
	NB	620	20	260	900	41.3	D	26.3	C	17.8	B	34.7	C		
4th Ave @ CR-17 (Signal)	SB	20	20	10	50	12.1	B	9.1	A	4.4	A	9.2	A		
	EB	10	410	220	640	9.5	A	19.0	B	16.6	B	18.0	B	22.5	C
	WB	80	530	10	620	19.9	B	11.4	B	5.5	A	12.5	B		
CR-16 @ CR-17 (Signal)	NB	120	820	180	1,120	97.6	F	116.3	F	110.1	F	113.6	F		
	SB	30	250	40	320	47.5	D	9.1	A	5.9	A	12.8	B		
	EB	70	130	40	240	149.1	F	55.0	E	34.3	C	78.5	E	84.7	F
10th Ave @ CR-17 (Signal)	WB	50	100	90	240	76.8	E	79.9	E	69.1	E	75.3	E		
	NB	70	800	170	1,040	942.7	F	646.0	F	764.9	F	674.7	F		
	SB	90	190	10	290	64.1	E	12.8	B	3.7	A	26.5	C		
Vierling Dr @ CR-17 (Signal)	EB	10	90	30	130	124.3	F	92.4	F	66.1	E	88.4	F	298.9	F
	WB	210	130	350	690	77.4	E	72.7	E	116.6	F	96.0	F		
	NB	80	690	10	780	21.6	C	25.8	C	7.4	A	25.2	C		
South 169 Ramp @ CR-17 (Signal)	SB	10	350	40	400	15.3	B	6.5	A	2.7	A	6.3	A		
	EB	60	10	70	140	43.1	D	23.3	C	4.0	A	20.4	C	19.3	B
	WB	50	10	10	70	35.4	D	39.0	D	42.6	D	36.6	D		
North 169 Ramp @ CR-17 (Signal)	NB	330	1040	160	1,530	40.0	D	22.4	C	6.6	A	24.5	C		
	SB	60	510	130	700	244.4	F	199.2	F	59.3	E	176.9	F		
	EB	160	100	360	620	60.3	E	42.0	D	112.5	F	84.9	F	91.4	F
17th Ave @ CR-17 (Signal)	WB	130	100	90	320	407.0	F	220.4	F	14.7	B	242.1	F		
	NB	200	1170	0	1,370	52.0	D	17.7	B	0.0	A	22.4	C		
	SB	0	890	110	1,000	0.0	A	106.0	F	11.4	B	96.6	F	50.7	D
St Francis Ave @ CR-17	WB	340	0	360	700	56.1	E	0.0	A	32.5	C	44.3	D		
	NB	0	1070	1030	2,100	0.0	A	27.9	C	24.8	C	26.4	C		
	SB	550	680	0	1,230	106.0	F	16.2	B	0.0	A	54.0	D	48.6	D
New Road @ CR-17 (Signal)	EB	300	0	370	670	129.8	F	0.0	A	72.0	E	98.5	F		
	NB	260	950	120	1,330	152.4	F	167.1	F	113.8	F	159.8	F		
	SB	420	390	240	1,050	88.4	F	41.3	D	10.8	B	52.1	D		
17th Ave @ CR-17 (Signal)	EB	590	310	210	1,110	1657.6	F	1253.4	F	1308.6	F	1481.1	F	401.7	F
	WB	50	320	560	930	51.8	D	78.8	E	380.6	F	251.4	F		
	NB	0	1230	50	1,280	0.0	A	41.9	E	9.2	A	40.6	E		
St Francis Ave @ CR-17	SB	5	640	10	655	17.4	C	0.6	A	0.0	A	0.7	A		
	EB	0	0	10	10	0.0	A	0.0	A	0.8	A	0.8	A	31.6	D
	WB	0	0	100	100	0.0	A	0.0	A	101.7	F	101.7	F		
New Road @ CR-17 (Signal)	NB	50	1180	100	1,330	70.2	E	41.2	D	20.0	C	40.7	D		
	SB	230	370	50	650	31.8	C	3.0	A	0.6	A	12.5	B		
	EB	50	50	50	150	62.1	E	47.5	D	8.8	A	36.7	D	33.9	C
New Road @ CR-17 (Signal)	WB	80	50	110	240	63.4	E	46.5	D	36.4	D	48.8	D		

**Table 7 (continued)**  
**2030 AM Peak Hour No Build MOE's**  
**SimTraffic Analysis**  
**CH 17/TH 13 Corridor Analysis**

Intersection	Approach	Demand Volumes (Veh/Hour)				Delay (s/veh)						LOS By Approach		LOS By Intersection	
		Left	Thru	Right	Total	Left		Thru		Right		Delay (S/Veh)	LOS	Delay (S/Veh)	LOS
						Delay	LOS	Delay	LOS	Delay	LOS				
CR-78 @ CR-17 (Signal)	NB	580	1020	10	1,610	45.7	D	28.1	C	12.5	B	34.3	C		
	SB	10	300	250	560	48.3	D	24.1	C	6.7	A	16.6	B		
	EB	240	10	580	830	28.7	C	35.3	D	6.4	A	12.9	B	15.3	B
	WB	10	30	20	60	43.6	D	57.6	E	14.3	B	40.5	D		
CR-42 @ CR-17 (Signal)	NB	10	990	500	1,500	45.8	D	23.5	C	9.7	A	20.2	C		
	SB	370	240	10	620	48.1	D	11.4	B	9.4	A	24.6	C		
	EB	10	10	0	20	51.9	D	54.5	D	0.0	A	53.6	D	20.8	C
	WB	140	0	580	720	36.5	D	0.0	A	9.0	A	15.8	B		
CR-14 @ CR-17 (Signal)	NB	100	1140	0	1,240	164.0	F	144.8	F	0.0	A	146.5	F		
	SB	0	280	120	400	0.0	A	14.8	B	4.7	A	12.0	B	106.6	F
	EB	290	0	80	370	91.9	F	0.0	A	61.4	E	85.0	F		
CR-82 @ CR-17 (Signal)	NB	0	950	170	1,120	0.0	A	161.3	F	146.3	F	159.4	F		
	SB	180	150	0	330	109.4	F	31.5	C	0.0	A	69.0	E	114.7	F
	WB	80	0	220	300	41.0	D	0.0	A	9.9	A	17.3	B		
CR-12 @ CR-17	NB	0	1090	50	1,140	0.0	A	17.7	C	16.2	C	17.6	C		
	SB	20	220	10	250	17.6	C	3.3	A	0.0	A	4.3	A		
	EB	10	10	0	20	39.1	E	34.7	D	0.0	A	36.7	E	256.9	F
	WB	130	10	160	300	490.9	F	460.3	F	503.5	F	496.1	F		
TH-282/TH 13 @ CR-17 (Signal)	NB	30	870	0	900	68.8	E	30.2	C	0.0	A	31.2	C		
	SB	70	210	90	370	67.6	E	15.2	B	5.7	A	22.7	C		
	EB	180	170	10	360	5999.0	F	6190.4	F	5344.1	F	6078.5	F	523.8	F
	WB	0	190	150	340	0.0	A	48.3	D	37.6	D	43.4	D		
TH-282 @ CR-17 East leg	NB	0	0	310	310	0.0	A	0.0	A	4.0	A	4.0	A		
	EB	0	240	0	240	0.0	A	17.7	C	0.0	A	17.7	C	5.9	A
	WB	80	340	0	420	4.6	A	3.6	A	0.0	A	3.8	A		
TH-282 @ CR-17 South leg	NB	0	900	310	1,210	0.0	A	26.2	D	27.1	D	26.4	D		
	SB	0	220	0	220	0.0	A	20.4	C	0.0	A	20.4	C	25.0	D
	WB	80	0	0	80	15.3	C	0.0	A	0.0	A	15.3	C		

**Table 8**  
**2030 PM Peak Hour No Build MOE's**  
**SimTraffic Analysis**  
**CH 17/TH 13 Corridor Analysis**

Intersection	Approach	Demand Volumes (Veh/Hour)				Delay (s/veh)						LOS By Approach		LOS By Intersection	
		Left	Thru	Right	Total	Left		Thru		Right		Delay (S/Veh)	LOS	Delay (S/Veh)	LOS
						Delay	LOS	Delay	LOS	Delay	LOS				
1st Ave W @ Mn-101 Bridge (Signal)	SB	1440	0	660	2,100	138.4	F	0.0	A	33.2	C	106.3	F		
	EB	210	160	0	370	37.3	D	40.3	D	0.0	A	38.7	D	71.2	E
	WB	0	220	740	960	0.0	A	34.1	C	6.1	A	12.8	B		
1st Ave E @ Mn-101 (Signal)	NB	100	0	130	230	51.1	D	0.0	A	37.6	D	43.9	D		
	EB	0	1520	80	1,600	0.0	A	41.1	D	17.2	B	39.6	D	30.3	C
	WB	90	860	0	950	37.1	D	6.5	A	0.0	A	9.7	A		
Spencer St @ Mn-101	NB	40	0	60	100	94.8	F	0.0	A	71.2	F	81.4	F		
	EB	0	1390	260	1,650	0.0	A	11.4	B	15.3	C	12.0	B	12.2	B
	WB	70	910	0	980	18.5	C	3.2	A	0.0	A	4.3	A		
Market St @ Mn-101	NB	20	0	10	30	350.4	F	0.0	A	1187.1	F	498.1	F		
	SB	10	10	10	30	1025.0	F	1070.9	F	722.3	F	922.8	F		
	EB	10	1300	40	1,350	129.2	F	169.0	F	259.9	F	170.9	F	120.6	F
Minnesota St @ Mn-101	WB	20	890	20	930	15.6	C	0.8	A	0.6	A	1.1	A		
	NB	10	0	20	30	3292.3	F	0.0	A	2883.6	F	2951.7	F		
	SB	0	10	20	30	0.0	A	17.6	C	11.0	B	13.1	B		
CR-17 @ Mn-101 (Signal)	EB	20	1280	40	1,340	36.8	E	86.1	F	124.1	F	86.6	F	71.4	F
	WB	20	880	10	910	6.9	A	1.3	A	1.1	A	1.4	A		
	NB	430	30	180	640	96.6	F	67.4	E	38.6	D	79.9	E		
4th Ave @ CR-17 (Signal)	SB	30	30	10	70	38.0	D	94.9	F	63.9	E	64.6	E		
	EB	10	620	680	1,310	54.0	D	101.7	F	248.6	F	175.8	F	454.3	F
	WB	300	550	30	880	1566.3	F	927.3	F	1026.6	F	1137.8	F		
10th Ave @ CR-17 (Signal)	NB	130	500	60	690	443.3	F	298.8	F	286.7	F	318.7	F		
	SB	80	930	70	1,080	161.3	F	213.7	F	146.3	F	205.9	F		
	EB	110	110	180	400	742.0	F	497.0	F	509.4	F	560.2	F	361.3	F
CR-16 @ CR-17 (Signal)	WB	80	100	80	260	1056.8	F	574.9	F	684.1	F	741.9	F		
	NB	50	600	240	890	285.4	F	339.0	F	289.0	F	325.9	F		
	SB	300	880	30	1,210	253.0	F	164.8	F	98.0	F	185.9	F		
10th Ave @ CR-17 (Signal)	EB	10	140	90	240	289.0	F	189.4	F	163.3	F	185.9	F	212.4	F
	WB	250	60	200	510	164.3	F	178.1	F	151.8	F	160.9	F		
	NB	240	830	40	1,110	194.9	F	213.7	F	185.0	F	208.6	F		
Vierling Dr @ CR-17 (Signal)	SB	60	890	170	1,120	52.8	D	38.4	D	26.5	C	37.5	D		
	EB	140	20	260	420	1003.6	F	796.6	F	173.2	F	411.6	F	153.6	F
	WB	50	20	20	90	129.6	F	162.4	F	213.3	F	157.2	F		
North 169 Ramp @ CR-17 (Signal)	NB	660	1030	210	1,900	110.1	F	21.4	C	8.6	A	51.4	D		
	SB	130	970	280	1,380	235.4	F	198.3	F	122.2	F	184.6	F		
	EB	200	190	590	980	131.7	F	84.0	F	61.8	E	80.6	F	122.6	F
South 169 Ramp @ CR-17 (Signal)	WB	200	170	110	480	500.6	F	291.6	F	92.0	F	316.6	F		
	NB	320	1200	0	1,520	108.8	F	27.5	C	0.0	A	44.1	D		
	SB	0	1400	360	1,760	0.0	A	76.8	E	37.7	D	68.9	E	596.6	F
17th Ave @ CR-17 (Signal)	WB	800	0	700	1,500	2322.3	F	0.0	A	2425.1	F	2370.7	F		
	NB	0	1270	440	1,710	0.0	A	36.8	D	10.2	B	30.4	C		
	SB	310	1890	0	2,200	49.4	D	15.3	B	0.0	A	20.5	C	27.1	C
St Francis Ave @ CR-17	EB	250	0	270	520	47.0	D	0.0	A	29.2	C	38.2	D		
	NB	210	670	120	1,000	89.5	F	43.1	D	13.9	B	48.2	D		
	SB	800	870	490	2,160	43.2	D	28.3	C	13.0	B	30.8	C		
New Road @ CR-17 (Signal)	EB	290	410	130	830	1319.4	F	658.0	F	642.6	F	872.9	F	229.6	F
	WB	250	420	750	1,420	290.0	F	210.2	F	383.2	F	312.6	F		
	NB	0	890	50	940	0.0	A	3.2	A	1.2	A	3.1	A		
17th Ave @ CR-17 (Signal)	SB	5	1240	10	1,255	0.8	A	1.0	A	0.0	A	1.0	A		
	EB	0	0	10	10	0.0	A	0.0	A	0.8	A	0.8	A	2.0	A
	WB	0	0	100	100	0.0	A	0.0	A	1.1	A	1.1	A		
New Road @ CR-17 (Signal)	NB	50	800	50	900	59.7	E	16.5	B	5.8	A	17.9	B		
	SB	190	1035	50	1,275	57.3	E	7.1	A	1.1	A	15.1	B		
	EB	50	50	50	150	52.9	D	46.7	D	13.5	B	36.6	D	19.8	B
New Road @ CR-17 (Signal)	WB	80	50	100	230	61.3	E	45.1	D	12.6	B	36.4	D		

**Table 8 (continued)**  
**2030 PM Peak Hour No Build MOE's**  
**SimTraffic Analysis**  
**CH 17/TH 13 Corridor Analysis**

Intersection	Approach	Demand Volumes (Veh/Hour)				Delay (s/veh)						LOS By Approach		LOS By Intersection	
		Left	Thru	Right	Total	Left		Thru		Right		Delay (S/Veh)	LOS	Delay (S/Veh)	LOS
						Delay	LOS	Delay	LOS	Delay	LOS				
CR-78 @ CR-17 (Signal)	NB	530	570	0	1,100	44.2	D	19.3	B	0.0	A	30.8	C		
	SB	10	890	420	1,320	39.8	D	24.9	C	12.6	B	21.3	C		
	EB	320	10	620	950	31.4	C	34.5	C	9.1	A	17.1	B	19.6	B
	WB	0	0	10	10	0.0	A	0.0	A	10.5	B	10.5	B		
CR-42 @ CR-17 (Signal)	NB	10	490	130	630	34.6	C	42.0	D	6.9	A	37.0	D		
	SB	550	950	10	1,510	45.9	D	32.0	C	16.7	B	37.1	D		
	EB	10	10	10	30	39.4	D	37.6	D	2.4	A	28.1	C	33.5	C
	WB	430	10	610	1,050	39.2	D	35.8	D	13.4	B	24.4	C		
CR-14 @ CR-17 (Signal)	NB	110	390	0	500	82.7	F	14.8	B	0.0	A	27.1	C		
	SB	0	1100	180	1,280	0.0	A	143.5	F	139.0	F	142.8	F	99.2	F
	EB	150	0	170	320	61.6	E	0.0	A	38.0	D	48.9	D		
	WB	0	310	120	430	0.0	A	22.8	C	8.3	A	19.0	B		
CR-82 @ CR-17 (Signal)	NB	0	310	120	430	0.0	A	22.8	C	8.3	A	19.0	B		
	SB	240	930	0	1,170	134.6	F	86.4	F	0.0	A	96.5	F	65.8	E
	WB	240	0	220	460	49.3	D	0.0	A	9.0	A	30.1	C		
	EB	10	290	90	390	15.7	C	10.1	B	7.8	A	9.7	A		
CR-12 @ CR-17	NB	10	290	90	390	15.7	C	10.1	B	7.8	A	9.7	A		
	SB	170	910	40	1,120	232.9	F	243.7	F	192.9	F	240.6	F		
	EB	10	10	10	30	29.3	D	30.0	D	417.9	F	180.5	F	323.8	F
	WB	50	10	140	200	1524.3	F	1867.7	F	1279.2	F	1361.3	F		
TH-282/TH 13 @ CR-17 (Signal)	NB	10	270	0	280	47.2	D	14.5	B	0.0	A	15.9	B		
	SB	60	720	170	950	965.8	F	962.2	F	906.8	F	953.1	F		
	EB	60	160	50	270	221.3	F	216.1	F	197.9	F	212.3	F	466.7	F
	WB	0	250	50	300	0.0	A	30.2	C	18.3	B	28.1	C		
TH-282 @ CR-17 East leg	NB	0	0	180	180	0.0	A	0.0	A	2.9	A	2.9	A		
	EB	0	220	0	220	0.0	A	19.9	C	0.0	A	19.9	C	8.2	A
	WB	320	300	0	620	6.0	A	6.0	A	0.0	A	6.0	A		
	SB	0	280	180	460	0.0	A	14.3	B	14.4	B	14.3	B		
TH-282 @ CR-17 South leg	NB	0	770	0	770	0.0	A	113.0	F	0.0	A	113.0	F	55.2	F
	SB	320	0	0	320	5.6	A	0.0	A	0.0	A	5.6	A		
	WB	10	360	10	380	10.7	B	7.2	A	6.7	A	7.3	A		
	EB	50	990	50	1,090	23.4	C	23.2	C	19.2	C	23.0	C	18.2	C
CR-10 @ CR-17	NB	10	360	10	380	10.7	B	7.2	A	6.7	A	7.3	A		
	SB	50	990	50	1,090	23.4	C	23.2	C	19.2	C	23.0	C	18.2	C
	EB	10	20	40	70	9.3	A	23.9	C	11.8	B	15.3	C		
	WB	50	40	50	140	24.4	C	24.1	C	7.8	A	18.0	C		
CR-8 @ CR-17 (Signal)	NB	40	260	110	410	10.5	B	8.2	A	5.0	A	7.6	A		
	SB	80	800	150	1,030	15.6	B	16.1	B	13.5	B	15.7	B		
	EB	30	110	60	200	41.0	D	39.2	D	25.7	C	35.2	D	21.1	C
	WB	120	70	10	200	64.6	E	58.4	E	41.5	D	61.1	E		
CR-64 @ CR-17	NB	10	360	20	390	6.3	A	4.6	A	2.6	A	4.5	A		
	SB	10	870	110	990	11.8	B	9.1	A	8.2	A	9.0	A		
	EB	20	10	10	40	7.3	A	15.8	C	3.6	A	8.5	A	7.7	A
	WB	10	10	10	30	8.5	A	12.1	B	3.8	A	8.0	A		
247th St @ CR-17	NB	10	380	10	400	5.2	A	2.7	A	5.0	A	2.8	A		
	SB	0	740	60	800	0.0	A	5.8	A	5.1	A	5.8	A		
	EB	10	10	10	30	4.4	A	10.7	B	5.8	A	7.5	A	4.8	A
	WB	10	10	10	30	10.2	B	11.1	B	3.8	A	7.8	A		
CR-2 @ CR-17	NB	170	160	50	380	10.4	B	12.5	B	10.6	B	11.2	B		
	SB	180	360	390	930	518.5	F	561.6	F	674.4	F	599.9	F		
	EB	230	110	200	540	17.5	C	19.8	C	16.5	C	17.6	C	206.0	F
	WB	120	170	120	410	14.9	B	19.0	C	14.1	B	16.2	C		
TH-19 @ CR-17 (Signal)	NB	150	10	350	510	1053.4	F	1.0	A	84.7	F	220.0	F		
	EB	240	380	10	630	13.3	B	7.2	A	0.0	A	9.7	A	77.5	E
	WB	10	490	60	560	0.0	A	7.0	A	7.4	A	7.0	A		

**Table 9**  
**2030 AM Peak Hour Build MOE's**  
**SimTraffic Analysis**  
**CH 17/TH 13 Corridor Analysis**

Intersection	Approach	Demand Volumes (Veh/Hour)				Delay (s/veh)						LOS By Approach		LOS By Intersection	
		Left	Thru	Right	Total	Left		Thru		Right		Delay (S/Veh)	LOS	Delay (S/Veh)	LOS
						Delay	LOS	Delay	LOS	Delay	LOS				
1st Ave W @ Mn-101 Bridge (Signal)	SB	410	0	160	570	35.0	D	0.0	A	2.2	A	25.3	C		
	EB	720	240	0	960	320.0	F	93.3	F	0.0	A	264.6	F	129.8	F
	WB	0	120	1290	1,410	0.0	A	16.0	B	84.2	F	74.5	E		
1st Ave E @ Mn-101 (Signal)	NB	190	0	20	210	427.9	F	0.0	A	428.7	F	428.0	F		
	EB	0	600	50	650	0.0	A	5.5	A	4.0	A	5.4	A	166.5	F
	WB	10	1220	0	1,230	341.1	F	204.5	F	0.0	A	205.6	F		
Spencer St @ Mn-101	NB	130	0	70	200	17484.0	F	0.0	A	15521.5	F	16306.5	F		
	EB	0	590	30	620	0.0	A	0.9	A	0.7	A	0.9	A	194.4	F
	WB	30	1100	0	1,130	123.5	F	237.3	F	0.0	A	234.5	F		
Market St @ Mn-101	NB	30	0	20	50	1129.4	F	0.0	A	820.3	F	1011.6	F		
	SB	10	0	10	20	120.1	F	0.0	A	663.2	F	287.2	F		
	EB	10	610	10	630	76.8	F	1.2	A	1.8	A	2.3	A	31.3	D
Minnesota St @ Mn-101	WB	10	1020	10	1,040	20.2	C	45.0	E	55.6	F	44.9	E		
	NB	30	10	10	50	668.5	F	814.0	F	508.3	F	651.7	F		
	SB	0	0	10	10	0.0	A	0.0	A	738.0	F	738.0	F		
CR-17 @ Mn-101 (Signal)	EB	10	590	20	620	6.1	A	0.6	A	0.7	A	0.7	A	67.3	F
	WB	20	1080	10	1,110	71.4	F	81.5	F	71.5	F	81.2	F		
	NB	620	20	260	900	43.4	D	45.0	D	10.6	B	34.2	C		
4th Ave @ CR-17 (Signal)	SB	20	20	10	50	50.2	D	40.3	D	15.6	B	39.4	D		
	EB	10	410	220	640	71.7	E	37.2	D	3.5	A	26.2	C	28.6	C
	WB	80	530	10	620	38.0	D	19.8	B	6.7	A	22.0	C		
CR-16 @ CR-17 (Signal)	NB	120	820	180	1,120	11.4	B	12.8	B	13.1	B	12.7	B		
	SB	30	250	40	320	33.7	C	7.1	A	4.4	A	9.5	A		
	EB	70	130	40	240	45.8	D	44.5	D	9.2	A	38.9	D	17.9	B
10th Ave @ CR-17 (Signal)	WB	50	100	90	240	37.8	D	48.6	D	11.8	B	33.3	C		
	NB	70	800	170	1,040	17.8	B	14.9	B	5.6	A	13.5	B		
	SB	90	190	10	290	22.9	C	7.9	A	6.0	A	11.9	B		
Vierling Dr @ CR-17 (Signal)	EB	10	90	30	130	44.1	D	49.8	D	8.2	A	38.5	D	22.7	C
	WB	210	130	350	690	58.8	E	48.9	D	21.4	C	38.2	D		
	NB	80	690	10	780	7.2	A	4.6	A	2.4	A	4.8	A		
North 169 Ramp @ CR-17 (Signal)	SB	10	350	40	400	9.3	A	5.0	A	2.7	A	4.9	A		
	EB	60	10	70	140	17.8	B	15.3	B	7.5	A	12.3	B	6.5	A
	WB	50	10	10	70	26.4	C	18.3	B	7.7	A	22.5	C		
South 169 Ramp @ CR-17 (Signal)	NB	330	1040	160	1,530	35.2	D	19.2	B	8.1	A	21.3	C		
	SB	60	510	130	700	46.1	D	22.2	C	5.5	A	21.0	C		
	EB	160	100	360	620	50.4	D	36.8	D	3.8	A	21.7	C	25.5	C
17th Ave @ CR-17 (Signal)	WB	130	100	90	320	107.4	F	38.7	D	22.7	C	62.0	E		
	NB	200	1170	0	1,370	39.1	D	11.4	B	0.0	A	15.2	B		
	SB	0	890	110	1,000	0.0	A	15.5	B	6.4	A	14.5	B	16.9	B
St Francis Ave @ CR-17 (Signal)	WB	340	0	360	700	42.6	D	0.0	A	6.1	A	23.6	C		
	NB	0	1070	1030	2,100	0.0	A	56.3	E	14.5	B	35.9	D		
	SB	550	680	0	1,230	46.2	D	12.1	B	0.0	A	27.4	C	31.6	C
New Road @ CR-17 (Signal)	EB	300	0	370	670	40.1	D	0.0	A	13.8	B	25.5	C		
	NB	260	950	120	1,330	38.7	D	49.4	D	12.4	B	44.1	D		
	SB	420	390	240	1,050	63.8	E	45.5	D	5.1	A	43.7	D		
17th Ave @ CR-17 (Signal)	EB	590	310	210	1,110	96.1	F	44.5	D	22.1	C	67.3	E	47.2	D
	WB	50	320	560	930	74.0	E	52.6	D	15.9	B	31.9	C		
	NB	0	1230	50	1,280	0.0	A	4.3	A	2.6	A	4.2	A		
St Francis Ave @ CR-17 (Signal)	SB	5	640	10	655	7.2	A	1.0	A	0.4	A	1.0	A		
	EB	0	0	10	10	0.0	A	0.0	A	0.7	A	0.7	A	3.1	A
	WB	0	0	100	100	0.0	A	0.0	A	1.8	A	1.8	A		
New Road @ CR-17 (Signal)	NB	50	1180	100	1,330	75.1	E	26.6	C	13.1	B	27.5	C		
	SB	230	370	50	650	34.4	C	4.7	A	1.1	A	15.0	B		
	EB	50	50	50	150	69.8	E	52.2	D	8.6	A	43.8	D	27.5	C
New Road @ CR-17 (Signal)	WB	80	50	110	240	78.9	E	59.5	E	25.7	C	51.8	D		

**Table 9 (continued)**  
**2030 AM Peak Hour Build MOE's**  
**SimTraffic Analysis**  
**CH 17/TH 13 Corridor Analysis**

Intersection	Approach	Demand Volumes (Veh/Hour)				Delay (s/veh)						LOS By Approach		LOS By Intersection	
						Left		Thru		Right		Delay (S/Veh)	LOS	Delay (S/Veh)	LOS
		Left	Thru	Right	Total	Delay	LOS	Delay	LOS	Delay	LOS				
CR-78 @ CR-17 (Signal)	NB	580	1020	10	1,610	49.2	D	29.0	C	19.1	B	36.2	D		
	SB	10	300	250	560	41.8	D	24.7	C	7.1	A	17.1	B		
	EB	240	10	580	830	29.4	C	36.9	D	6.6	A	13.4	B	15.9	B
	WB	10	30	20	60	51.4	D	47.9	D	14.6	B	38.6	D		
CR-42 @ CR-17 (Signal)	NB	10	1120	370	1,500	47.1	D	31.3	C	12.4	B	26.9	C		
	SB	330	290	10	630	47.7	D	11.0	B	9.3	A	24.5	C		
	EB	10	10	0	20	36.8	D	47.4	D	0.0	A	42.4	D	24.3	C
	WB	120	0	430	550	40.7	D	0.0	A	9.7	A	16.2	B		
CR-14 @ CR-17 (Signal)	NB	100	1140	0	1,240	36.2	D	12.7	B	0.0	A	14.6	B		
	SB	0	280	120	400	0.0	A	15.7	B	2.9	A	12.1	B	17.3	B
	EB	290	0	80	370	39.8	D	0.0	A	5.4	A	32.1	C		
CR-82 @ CR-17 (Signal)	NB	0	950	170	1,120	0.0	A	24.5	C	8.4	A	22.2	C		
	SB	180	150	0	330	58.4	E	7.7	A	0.0	A	33.9	C	23.2	C
	WB	80	0	220	300	40.9	D	0.0	A	3.8	A	13.5	B		
CR-12 @ CR-17 (Signal)	NB	0	1090	50	1,140	0.0	A	18.3	B	15.7	B	18.2	B		
	SB	20	220	10	250	11.9	B	3.9	A	0.9	A	4.3	A		
	EB	10	10	0	20	14.3	B	13.8	B	0.0	A	14.1	B	12.1	B
	WB	130	10	160	300	23.6	C	19.3	B	13.3	B	18.2	B		
TH-282 @ CR-17 (Signal)	NB	30	870	310	1,210	45.0	D	25.5	C	11.6	B	22.4	C		
	SB	70	210	90	370	39.6	D	15.5	B	7.7	A	17.8	B		
	EB	180	170	10	360	37.5	D	31.3	C	7.6	A	33.7	C	24.0	C
	WB	80	190	150	420	36.0	D	37.8	D	6.1	A	25.7	C		

**Table 10**  
**2030 PM Peak Hour Build MOE's**  
**SimTraffic Analysis**  
**CH 17/TH 13 Corridor Analysis**

Intersection	Approach	Demand Volumes (Veh/Hour)				Delay (s/veh)						LOS By Approach		LOS By Intersection	
		Left	Thru	Right	Total	Left		Thru		Right		Delay (S/Veh)	LOS	Delay (S/Veh)	LOS
						Delay	LOS	Delay	LOS	Delay	LOS				
1st Ave W @ Mn-101 Bridge (Signal)	SB	1440	0	660	2,100	43.8	D	0.0	A	10.2	B	33.1	C		
	EB	210	160	0	370	41.0	D	20.6	C	0.0	A	32.2	C	27.9	C
	WB	0	220	740	960	0.0	A	49.8	D	4.3	A	14.6	B		
1st Ave E @ Mn-101 (Signal)	NB	100	0	130	230	51.8	D	0.0	A	31.2	C	40.2	D		
	EB	0	1520	80	1,600	0.0	A	5.0	A	5.6	A	5.0	A	9.0	A
	WB	90	860	0	950	54.2	D	3.5	A	0.0	A	8.4	A		
Spencer St @ Mn-101	NB	40	0	60	100	175.1	F	0.0	A	60.7	F	103.8	F		
	EB	0	1390	260	1,650	0.0	A	2.3	A	2.6	A	2.3	A	6.6	A
	WB	70	910	0	980	32.9	D	2.6	A	0.0	A	4.7	A		
Market St @ Mn-101	NB	20	0	10	30	67.6	F	0.0	A	15.8	C	52.3	F		
	SB	10	10	10	30	70.1	F	83.0	F	14.5	B	55.0	F		
	EB	10	1300	40	1,350	8.3	A	2.3	A	2.9	A	2.4	A	2.6	A
Minnesota St @ Mn-101	WB	20	890	20	930	15.2	C	0.8	A	0.9	A	1.1	A		
	NB	10	0	20	30	47.9	E	0.0	A	18.7	C	28.4	D		
	SB	0	10	20	30	0.0	A	51.0	F	12.8	B	24.3	C		
CR-17 @ Mn-101 (Signal)	EB	20	1280	40	1,340	7.0	A	1.3	A	1.1	A	1.4	A	2.2	A
	WB	20	880	10	910	17.9	C	1.5	A	1.3	A	1.8	A		
	NB	430	30	180	640	66.9	E	72.0	E	14.6	B	52.0	D		
4th Ave @ CR-17 (Signal)	SB	30	30	10	70	52.5	D	55.0	E	13.1	B	45.6	D		
	EB	10	620	680	1,310	59.7	E	57.5	E	21.5	C	39.1	D	40.4	D
	WB	300	550	30	880	68.7	E	15.4	B	7.7	A	33.6	C		
10th Ave @ CR-17 (Signal)	NB	130	500	60	690	38.1	D	6.3	A	6.6	A	11.6	B		
	SB	80	930	70	1,080	16.9	B	8.5	A	7.2	A	9.0	A		
	EB	110	110	180	400	53.8	D	55.1	E	19.1	B	38.8	D	17.7	B
CR-16 @ CR-17 (Signal)	WB	80	100	80	260	47.4	D	57.9	E	10.6	B	39.7	D		
	NB	50	600	240	890	53.3	D	33.4	C	12.2	B	29.2	C		
	SB	300	880	30	1,210	40.3	D	23.5	C	23.5	C	27.7	C		
Vierling Dr @ CR-17 (Signal)	EB	10	140	90	240	149.1	F	164.1	F	65.1	E	126.7	F	36.3	D
	WB	250	60	200	510	41.6	D	32.7	C	12.1	B	28.9	C		
	NB	240	830	40	1,110	19.8	B	9.3	A	6.5	A	11.4	B		
17th Ave @ CR-17 (Signal)	SB	60	890	170	1,120	26.2	C	16.8	B	5.1	A	15.6	B		
	EB	140	20	260	420	21.9	C	22.7	C	14.2	B	17.1	B	14.6	B
	WB	50	20	20	90	33.9	C	27.2	C	9.5	A	27.7	C		
North 169 Ramp @ CR-17 (Signal)	NB	660	1030	210	1,900	55.8	E	21.1	C	11.6	B	32.3	C		
	SB	130	970	280	1,380	87.5	F	71.8	E	37.0	D	66.3	E		
	EB	200	190	590	980	66.1	E	62.0	E	6.2	A	29.5	C	45.5	D
South 169 Ramp @ CR-17 (Signal)	WB	200	170	110	480	113.4	F	50.9	D	40.2	D	73.5	E		
	NB	320	1200	0	1,520	81.1	F	15.2	B	0.0	A	29.6	C		
	SB	0	1400	360	1,760	0.0	A	43.3	D	12.7	B	36.9	D	45.8	D
17th Ave @ CR-17 (Signal)	WB	800	0	700	1,500	86.6	F	0.0	A	56.8	E	72.8	E		
	NB	0	1270	440	1,710	0.0	A	62.5	E	9.1	A	48.4	D		
	SB	310	1890	0	2,200	36.2	D	12.6	B	0.0	A	16.0	B	31.9	C
St Francis Ave @ CR-17 (Signal)	EB	250	0	270	520	53.5	D	0.0	A	35.4	D	43.9	D		
	NB	210	670	120	1,000	36.4	D	32.2	C	12.1	B	30.6	C		
	SB	800	870	490	2,160	83.6	F	31.0	C	10.5	B	45.6	D		
New Road @ CR-17 (Signal)	EB	290	410	130	830	89.3	F	48.7	D	16.8	B	58.3	E	43.4	D
	WB	250	420	750	1,420	78.9	E	54.2	D	19.5	B	40.5	D		
	NB	0	890	50	940	0.0	A	3.5	A	2.0	A	3.4	A		
17th Ave @ CR-17 (Signal)	SB	5	1240	10	1,255	6.2	A	1.9	A	1.0	A	1.9	A		
	EB	0	0	10	10	0.0	A	0.0	A	0.7	A	0.7	A	2.5	A
	WB	0	0	100	100	0.0	A	0.0	A	1.2	A	1.2	A		
17th Ave @ CR-17 (Signal)	NB	50	800	50	900	63.2	E	21.8	C	8.4	A	23.1	C		
	SB	190	1035	50	1,275	23.9	C	7.3	A	2.6	A	9.6	A		
	EB	50	50	50	150	63.8	E	50.1	D	13.7	B	41.8	D	18.8	B
17th Ave @ CR-17 (Signal)	WB	80	50	100	230	66.7	E	49.2	D	13.7	B	38.9	D		

**Table 10 (continued)**  
**2030 PM Peak Hour Build MOE's**  
**SimTraffic Analysis**  
**CH 17/TH 13 Corridor Analysis**

Intersection	Approach	Demand Volumes (Veh/Hour)				Delay (s/veh)						LOS By Approach		LOS By Intersection	
		Left	Thru	Right	Total	Left		Thru		Right		Delay (S/Veh)	LOS	Delay (S/Veh)	LOS
						Delay	LOS	Delay	LOS	Delay	LOS				
CR-78 @ CR-17 (Signal)	NB	530	570	0	1,100	43.4	D	18.9	B	0.0	A	30.8	C		
	SB	10	890	420	1,320	39.9	D	24.5	C	11.9	B	20.6	C		
	EB	320	10	620	950	34.5	C	36.7	D	10.0	B	18.9	B	19.8	B
	WB	0	0	10	10	0.0	A	0.0	A	10.1	B	10.1	B		
CR-42 @ CR-17 (Signal)	NB	10	530	100	640	37.9	D	36.6	D	7.1	A	32.1	C		
	SB	550	950	10	1,510	43.5	D	28.8	C	17.4	B	34.1	C		
	EB	10	10	10	30	40.0	D	39.2	D	11.4	B	30.2	C	31.1	C
	WB	360	10	500	870	41.3	D	47.8	D	13.6	B	25.2	C		
CR-14 @ CR-17 (Signal)	NB	110	390	0	500	37.7	D	7.4	A	0.0	A	14.0	B		
	SB	0	1100	180	1,280	0.0	A	14.8	B	7.2	A	13.7	B	14.7	B
	EB	150	0	170	320	37.1	D	0.0	A	5.0	A	20.1	C		
CR-82 @ CR-17 (Signal)	NB	0	310	120	430	0.0	A	16.6	B	3.9	A	13.0	B		
	SB	240	930	0	1,170	45.1	D	13.1	B	0.0	A	19.2	B	18.0	B
	WB	240	0	220	460	34.6	C	0.0	A	3.2	A	19.5	B		
CR-12 @ CR-17 (Signal)	NB	10	290	90	390	26.4	C	15.7	B	9.9	A	14.6	B		
	SB	170	910	40	1,120	23.7	C	8.9	A	5.0	A	11.0	B		
	EB	10	10	10	30	16.2	B	18.9	B	5.5	A	13.3	B	10.9	B
	WB	50	10	140	200	21.5	C	23.0	C	5.7	A	10.1	B		
TH-282 @ CR-17 (Signal)	NB	10	270	180	460	41.6	D	21.8	C	7.0	A	16.5	B		
	SB	60	720	170	950	41.2	D	33.3	C	13.4	B	30.3	C		
	EB	60	160	50	270	35.0	D	31.7	C	6.8	A	27.9	C	26.1	C
	WB	320	250	50	620	31.0	C	23.2	C	6.6	A	25.5	C		
CR-10 @ CR-17	NB	10	360	10	380	19.4	C	9.4	A	7.6	A	9.6	A		
	SB	50	990	50	1,090	9.4	A	8.6	A	5.9	A	8.5	A		
	EB	10	20	40	70	21.0	C	22.9	C	14.0	B	17.7	C	9.9	A
	WB	50	40	50	140	26.2	D	25.7	D	4.8	A	18.7	C		
CR-8 @ CR-17 (Signal)	NB	40	260	110	410	42.6	D	15.2	B	8.4	A	16.2	B		
	SB	80	800	150	1,030	49.7	D	26.7	C	18.0	B	27.1	C		
	EB	30	110	60	200	28.5	C	25.1	C	13.4	B	21.6	C	24.8	C
	WB	120	70	10	200	40.6	D	25.1	C	4.0	A	33.2	C		
CR-64 @ CR-17	NB	10	360	20	390	8.9	A	4.0	A	2.4	A	4.0	A		
	SB	10	870	110	990	10.6	B	9.6	A	7.9	A	9.4	A		
	EB	20	10	10	40	17.6	C	16.8	C	5.6	A	13.9	B	8.0	A
	WB	10	10	10	30	14.6	B	17.4	C	3.5	A	11.6	B		
247th St @ CR-17	NB	10	380	10	400	6.1	A	2.7	A	2.4	A	2.8	A		
	SB	0	740	60	800	0.0	A	6.0	A	4.9	A	5.9	A		
	EB	10	10	10	30	14.6	B	15.2	C	10.4	B	13.2	B	5.1	A
	WB	10	10	10	30	15.6	C	16.0	C	7.1	A	13.0	B		
CR-2 @ CR-17	NB	170	160	50	380	11.3	B	15.0	C	11.2	B	12.8	B		
	SB	180	360	390	930	83.4	F	92.2	F	49.2	E	72.6	F		
	EB	230	110	200	540	14.6	B	18.9	C	7.0	A	12.7	B	37.9	E
	WB	120	170	120	410	15.4	C	18.6	C	15.0	C	16.6	C		
TH-19 @ CR-17 (Signal)	SB	150	0	350	500	25.8	C	1.2	A	8.7	A	10.5	B		
	EB	240	380	0	620	30.8	C	11.3	B	0.0	A	18.8	B	18.2	B
	WB	0	490	60	550	0.0	A	28.5	C	8.8	A	26.4	C		

## DRAFT Intersection Evaluation CH 17 at CH 42

CH 17 / CH 42 Intersection Alternatives		Performance									Safety						Impacts						Construction Cost			Summary						
		2030 AM/PM Peak Hour Level of Service (LOS)	2030 Daily Delay (hours)	Worst LOS by Movement	2030 Daily Vehicle Miles Traveled (VMT)	Cost of 2030 Daily Vehicle Miles Traveled (VMT)	2030 Daily Vehicle Hours Traveled (VHT)	Cost of 2030 Daily Vehicle Hours Traveled (VHT)	Total Performance Daily Cost (VMT + VHT)	Total Performance Yearly Cost (millions)	Alternatives Rank in Arterial Performance	CH 17 @ CH 42 Intersection Skew (Degrees)	2030 Daily Intersection Volumes (In Conflict)	Intersection Crash Rate (CH 17 @ CH 42)	Intersection Severity Rate (CH 17 @ CH 42)	Estimated Crashes per Year (2030)	Estimated Yearly Crash Cost (millions)	Safety Ranking	Unresolved Access Issues (number of parcels)	Local Street Access Impacts	Acres of Right-of-Way Needed South of Wood Duck Trail	Potential Full Property Acquisitions (Residences)	Accommodates Growth	Natural and Social Environmental Impacts	Construction Impacts (ie. Magnitude of project; traffic impacts)	Overall Impacts Ranking	Length of Construction South of CH 42 (miles)	Estimated Property Value Impact South of Wood Duck Trail (millions)	2013 Layout Construction Cost (millions)	Construction Cost Ranking	Sum of Overall Rankings	Preferred Alternative
Signalized Intersection	C/C	130	D (Lefts)	24,560	\$7,232	668	\$12,091	\$19,324	\$7.05	4	70	34,000	0.80	1.10	9.9	\$0.32	5	0	Minor	10.1	0	Yes	Minor	Mod.	1	0.27	\$0.38	\$20.70	1	11		
Roundabout	A/A	31	B (West Leg)	25,338	\$7,462	552	\$9,992	\$17,453	\$6.37	1	N/A	34,000	0.52	0.59	6.5	\$0.08	4	0	Minor	10.4	0	Yes	Minor	Mod.	1	0.28	\$0.39	\$20.70	1	7		
Interchange	Left Turn Stop Control	A/D	F (WB LT)	24,240	\$7,138	576	\$10,426	\$17,564	\$6.41	5	N/A	8,100	0.20	0.30	0.6	\$0.02	2	6	Major (Wood Duck Trail)	23.8	3	Yes	Major	Major	3	0.66	\$1.73	\$25.00	3	13	12	9
	Left Turn Signal	A/B	B (WB LT)	24,240	\$7,138	586	\$10,607	\$17,745	\$6.48	3	N/A	8,100	0.50	0.80	1.5	\$0.06	3															
	Left Turn Roundabout	A/A	24	A	24,360	\$7,174	582	\$10,535	\$17,708	\$6.46	2	N/A	8,100	0.08	0.09	0.2	\$0.00															

<sup>1</sup> This construction cost estimate does not include costs of supporting roadways that would be needed to implement this alternative. Such connections include access to the NE quadrant of CH 17 and CH 42 and also tying in the neighborhood on the west side of CH 17 that is served by Wood Duck Trail.

---

## **Appendix A**

Public Involvement

**County Highway 17 / Highway 13 Corridor Study**  
**June 26th, 2007**  
**Open House Comments and Responses**

Type of Concern	Comment	Response
Access	We were advised that Valley View Rd access to CH 17 would be closed at a meeting regarding the hospital expansion. It is now used as a short-cut.	Preliminary concept plans for the development of sites east and west of CH 17 include a new east-west street connection and intersection with CH 17 located between the existing Valley View Road intersection and the St Francis Avenue intersection. As part of this, direct access between Valley View Road and CH 17 would be eliminated.
	Hard to access CH 17 in rush hour traffic.	Access will be studied with this process with a goal of managing access to improve safety within the corridor. The study will include consideration of parallel or connecting roadways to serve local access and circulation needs.
	Limit access on CH 17 and ensure that it is protected as the corridor develops.	
Connections	Focus on the N-S needs and not the disconnect between 42 and 78 due to the cost and impacts of making that connection.	The predominant traffic movements in the corridor are oriented as north-south trips, many of which have origins or destinations across the river. East-west traffic demands, which conflict with north-south movements must also be served. Traffic demand on the complete roadway network including intersecting movements will be considered as part of this planning effort.
	Keep the future river crossing study in mind when planning in this area.	
Drainage	Concerned about drainage issues on Highway 17 to the west – particularly through park land on Blue Heron	This study will look at existing and future drainage patterns/needs in Segments A, B and C.
Improvements / Developments	Will you be making Hwy 13 a 4 lane road anytime soon? Or have a projected date?	This study will evaluate today's traffic demands as well as 2030 traffic demands to determine what capacity improvements will be needed and when. Reconstruction or expansion of TH 13 is not currently scheduled nor funded.
	The flyer in the mail said there will be upgrades all along TH 13. Will you be paving CR 64 to the east of 13?	The County has no plans to pave CR 64 at this time, or in the foreseeable future.
	Is there going to be a shopping center at the 17 / 282 / 13 intersection?	The 17/282/13 intersection falls within the orderly annexation area that is subject to an agreement between the City of Prior Lake and Spring Lake Township. The City of Prior Lakes's 2030 Comp Plan shows the area to be guided as "Community Retail Shopping". Development as a shopping center is not likely to happen until annexation is complete and City services (sanitary sewer and water) are available to the properties. The pipes will not be extended westerly to CH 17 until 2010 when our CH 12 project is constructed. A "shopping center" would therefore not occur until beyond that timeframe.
	How will these new / modified roads increase the development in the areas close to Hwy 13? From Prior Lake to New Prague?	Given the scarce resources for transportation improvements, most highway improvements are being driven by the development at this time, not vice versa. Improvements to CH 17 from CH 42 north to St. Francis Avenue have been identified in the County's Capital Improvement Program for 2013. Prior Lake's orderly annexation plan is expected to be implemented incrementally through 2014.
Noise	Concern about noise from a four lane road	A noise analysis is not planned as part of the current corridor study. Noise issues may be addressed as part of environmental documentation that could be required for a project that may evolve from this study.
	Concerns about noise due to widened CH 17	
Pedestrians	Is there still a plan to add bike paths to Cty Rd 17? We would love to not have to drive to a safe place to bike ride.	This study will identify pedestrian needs along this corridor and will acknowledge local planning efforts for trails. Outcomes of this study will likely include recommendations for a pedestrian
Property Impacts	Effects on my property value.	This study is currently in the issue-gathering and problem-identification stage. General right-of-way impacts will be considered as conceptual solutions are developed. Concepts considered will be available for review at an open house to be scheduled in early 2008. Exact right-of-way impacts will not be known until final plans are developed for projects recommended by this study. Such plans are not part of this study.
	I'd rather have my property purchased than have a major highway through my front yard.	
	The ditch bank is very steep - if the road is widened the bank will get to steep for me to maintain.	There are many options available to deal with a difference in elevation in the roadway design that could include sloping, retaining walls or modifications to the roadways verticle profile.
	Minimize impacts to landowners when planning for a larger road and supporting roadways.	The general approach that is taken when considering highway improvements is to first attempt to avoid impacts, then minimize impacts that cannot be avoided and lastly, to mitigate impacts. Impacts to many landowners should be expected along the corridor. Accesses may change and supporting roadways will be considered. CH 17 may also be expanded.
Safety	Safety of people living off Marschall Road south of CR 42.	Left turns onto CH 17 / TH 13 can be difficult along the corridor. Various solutions to be considered could include, traffic signals at high volume intersections to create gaps at low volume intersections, provide right turn access only coupled with U-turn opportunities, or local street connections to signalized access points. Collecting private access points and routing them to an improved intersection with turn lanes will be key to improving and maintaining safety. Right and or left turn lanes may be needed instead of bypass lanes that double as right turn lanes.
	Accessing CH 17 is very dangerous	
	Poor sight distance at Wood Duck Trail / CH 17	Sight distance will be evaluated. The study will result in alignment and profiles of the proposed roadway improvements which will be designed to meet the sight distance and other design guidelines such as correcting skewed intersections.
	Scott Co. needs this north - south road to be upgraded to meet the "SAFETY NEEDS" of every tax payer.	Historical crash data for the study area is being examined. Trends will be analyzed and methods to reduce crashes will be implemented with the construction of the alternative that will be identified in this study.
	The intersection of 29th Ave and CR 17 is extremely dangerous and badly aligned with CR 42.	
	The intersections at 42 & 17, and 82 & 17 are currently dangerous intersections.	
	Provide a safe crossing for ATV / Horseback at the current trail crossing.	
	I have seen many accidents at Hwy 13 and 17, Hwy 13 and CR 8, Hwy 13 and CR 64, Hwy 13 and CR 2.	
My main concern is how you are going to control traffic to help eliminate all the accidents.		
Speed	Speeds on CH 17 should be monitored more often between Co. Rd. 82 and Co. Rd. 78 as often times drivers are traveling at 60 and 70 mph.	By state statute, determination of posted speeds along County roads such as CH 17 / TH 13 is made by MnDOT. For more information on how MnDOT sets regulatory speed limits, see the following website: <a href="http://www.dot.state.mn.us/speed/SpeedFlyer2002.pdf">http://www.dot.state.mn.us/speed/SpeedFlyer2002.pdf</a> The development of design solutions for CH 17 / TH 13 will consider traffic safety as well as the character of the adjacent land uses. The design of the roadway will effect the speed at which drivers feel comfortable regardless of the posted speed. Roadway design factors that influence speed include lane width, number of lanes, presence of center median, the frequency of access points, roadway curves and grades, traffic congestion, and roadside development. Streetscape features (trees, plantings, lighting, etc) can add interest and give the roadway a character that may influence driver speed, but this must be weighed against potential safety problems created by such features. All of these design factors elements will be considered along CH 17 / TH 13.
	Could you please add some speed limit signs on Cty Rd 17 south of Cty Rd 78? The only sign is south of the hospital.	County policy for using speed limit signs includes: providing a sign when speed limits change, when several cross street opportunities have had opportunity to access the roadway or when drivers may require a reminder of the limit while driving long segments of roadway. County staff will examine the existing frequency of speed limit posting.
	The roundabout seems to me like it will become a huge bottle neck as traffic volumes increase.	This study will evaluate existing and 2030 projected traffic volumes. The capacity of the existing roundabout will be examined as part of this study
Traffic Control	A traffic light or 4 way stop is needed at 42 and 17.	Traffic control treatments of full access intersections will be considered as part of this planning process. The price and ops of traffic signals will be compared to other control alternatives such as roundabouts or all-way stops in this evaluation.
	Glad to see 29 <sup>th</sup> Ave and Co Rd. 42 will be looked at and possible future stoplight. It is a dangerous and scary intersection. Anything temporary?	
	I believe the existing signal at 17 & 78 has some issues because of the grading.	Verticle and horizontal sight distance (length of driver sight over a hill or around a curve) will be evaluated. The study will develop alignments and profiles for proposed roadway improvements which will be established to meet safe stopping sight distance and intersection sight distance requirements.
	Consider an interchange at 78 and 17.	Intersection treatments will be developed to serve 2030 forecast traffic demands. The impacts of an interchange would be large, so it would be only be seriously considered if future traffic
Traffic Volumes	With upgrading CR17 and other plans what is the projected traffic increase on Hwy 13 going to be?	The forecast is currently under development but will be available for review at the next open house.
Turning / Passing on the Right	Re: 42 & 17, have a difficult time making a right turn onto 29 <sup>th</sup> Ave when traveling south bound on 17. Suggest temp sign indicating vehicles make right turns to use caution. Most drivers think you are going around vehicles that are making left turns onto 42, therefore are at highway speeds.	Left turns and right turns from CH 17 / TH 13 can be difficult when made from the same lane that also serves through traffic which approaches from behind at a higher speed. Solutions that may be considered could include: exclusive left turn lanes and right turn lanes; Managing accesses by reducing number of access points that serve left turn movements and providing alternative routes on parallel and connecting roadways.
	We need a turn lane at 13 & 17 (282) for north bound traffic. Its bad making a turn off of 13 onto 17 when traffic tries to pass you on the right, on a curve and a narrow road.	
	When I make a left turn onto Marcia Ln from southbound 17, cars will always pass on the right. There is not enough room to pass and it's not legal, suggest you make a line for vehicles to pass on the right.	
	Turn lanes needed from NB 17 to WB 78.	

**Hwy 17 April 08, 2008 Public Meeting  
Written Comment Summary**

Number of written replies received from the meeting: 12

Comment	Number of Replies in Agreement
1. Concern about Mooers Ave. traffic	3
2. Cul-de-sac at Dominion is a good idea	1
3. Wood duck Trail is a dangerous intersection (no solution offered)	1
4. Timber Trails Park drainage is a problem. Don't compound.	1
5. RI/RO at my house (2021) is a problem – but don't see any other alternatives at this time.	1
6. Want "large" roundabout at CR 42 – not a signal.	1
7. This is important. Keep moving forward.	1
8. Do not want to lose crossover. (27421 Langford)	1

Also: Received comments on snowmobile trail crossings and from the fire department.

---

## **Appendix B**

Rice County Transportation Plan

**RICE COUNTY  
TRANSPORTATION PLAN  
COUNTYWIDE ROADWAY  
CONTINUITY CORRIDOR VISION**

FIGURE NO. 4.4-1

**Legend**

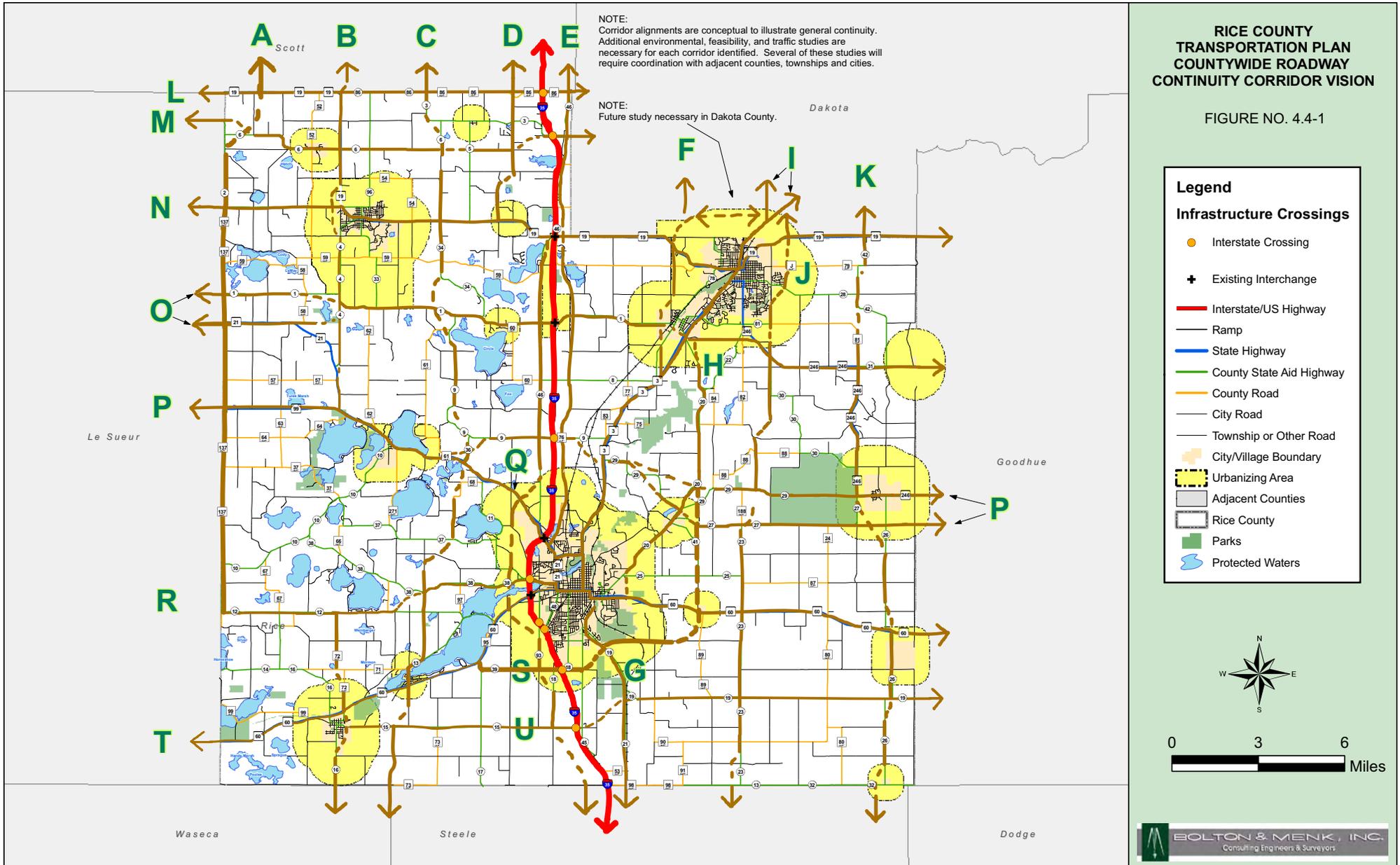
**Infrastructure Crossings**

- Interstate Crossing
- ⊕ Existing Interchange
- Interstate/US Highway
- Ramp
- State Highway
- County State Aid Highway
- County Road
- City Road
- Township or Other Road
- City/Village Boundary
- ▭ Urbanizing Area
- ▭ Adjacent Counties
- ▭ Rice County
- Parks
- Protected Waters



NOTE:  
Corridor alignments are conceptual to illustrate general continuity.  
Additional environmental, feasibility, and traffic studies are  
necessary for each corridor identified. Several of these studies will  
require coordination with adjacent counties, townships and cities.

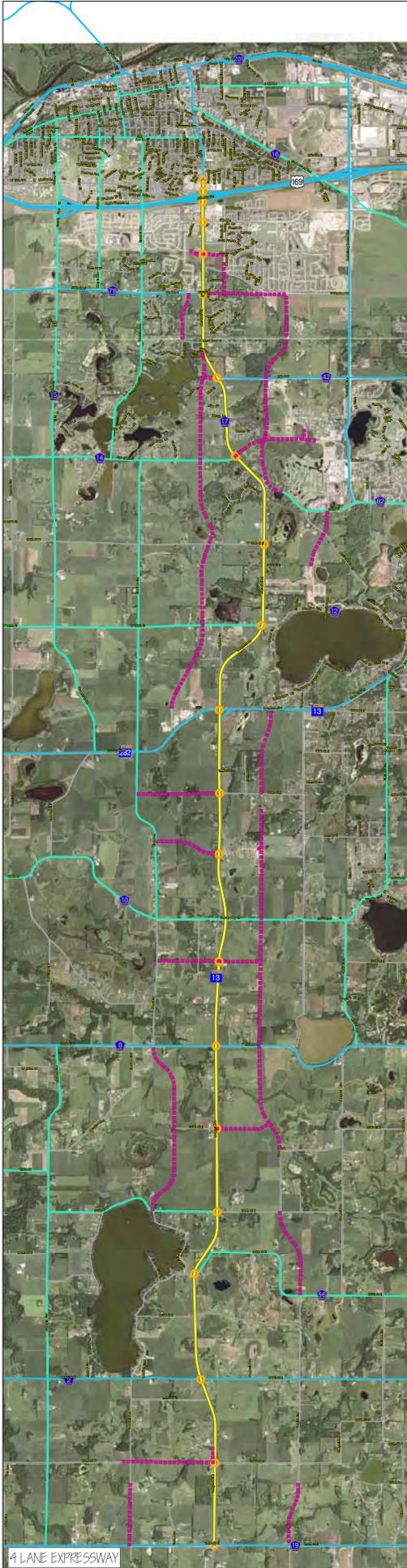
NOTE:  
Future study necessary in Dakota County.



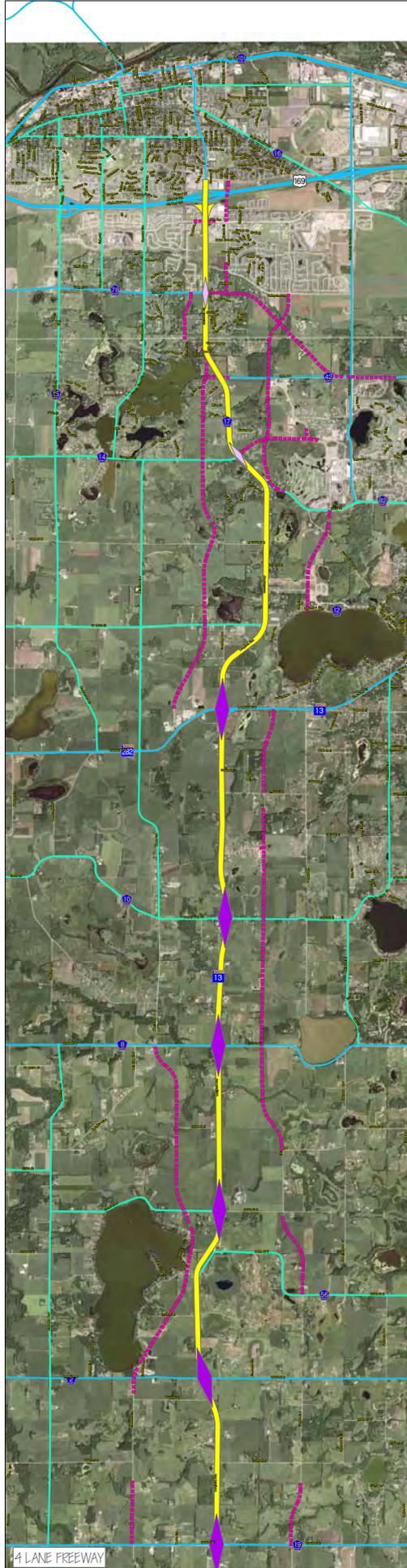
---

## **Appendix C**

Freeway Vision



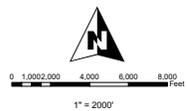
4 LANE EXPRESSWAY



4 LANE FREEWAY

- Legend**
- Proposed Supporting Roadways
  - Primary Access Location
  - Close Public Access
  - Expressway & Freeway Footprints
  - Urban Interchange
  - Rural Interchange
  - Functional Class
  - Arterials
  - Collectors

EXPRESSWAY VS. FREEWAY  
 CSAH 17 / TH 13 CORRIDOR STUDY  
 SCOTT COUNTY, MINNESOTA



---

## **Appendix D**

### Access Management Guidelines



# Mn/DOT Access Management Manual

**Figure 3.2 – Summary of Recommended Street Spacing for Non-IRCs**

Category	Area or Facility Type	Typical Functional Class	Public Street Spacing		Signal Spacing
			Primary Full-Movement Intersection	Secondary Intersection	
<b>4 Principal Arterials in the Twin Cities Metropolitan Area and Primary Regional Trade Centers (Non-IRCs)</b>					
<b>4AF</b>	Non-Interstate Freeway	Principal Arterials	Interchange Access Only (see Section 3.2.7 for interim spacing)		Interim
<b>4A</b>	Rural		1 mile	1/2 mile	See Section 3.2.5
<b>4B</b>	Urban/ Urbanizing		1/2 mile	1/4 mile	1/2 mile
<b>4C</b>	Urban Core		300-660 feet, dependent upon block length		1/4 mile
<b>5 Minor Arterials</b>					
<b>5A</b>	Rural	Minor Arterials	1/2 mile	1/4 mile	See Section 3.2.5
<b>5B</b>	Urban/ Urbanizing		1/4 mile	1/8 mile	1/4 mile
<b>5C</b>	Urban Core		300-660 feet, dependent upon block length		1/4 mile
<b>6 Collectors</b>					
<b>6A</b>	Rural	Collectors	1/2 mile	1/4 mile	See Section 3.2.5
<b>6B</b>	Urban/ Urbanizing		1/8 mile	Not Applicable	1/4 mile
<b>6C</b>	Urban Core		300-660 feet, dependent upon block length		1/8 mile
<b>7 Specific Area Access Management Plans</b>					
<b>7</b>	All	All	By adopted plan		

## MINIMUM ACCESS SPACING GUIDELINES

TYPE OF ACCESS BEING REQUESTED	TYPE OF COUNTY HIGHWAY AFFECTED BY ACCESS					
	PRINCIPAL ARTERIAL	DIVIDED 4 OR 6 LANE	UNDIVIDED 4-LANE		UNDIVIDED 2-LANE	
			> 15,000 ADT	< 15,000 ADT	> 3,000 ADT	< 3,000 ADT
<b>A. Private Residential or Individual Commercial</b>	Not Permitted	Not Permitted	Not Permitted	1/8 Mile Spacing	1/8 Mile Spacing	Determination based on other criteria
<b>B. Low Volume, Non-Continuous Streets</b>	1/8 Mile Spacing With No Median Opening	1/8 Mile Spacing With No Median Opening	1/4 Mile Spacing	1/4 Mile Spacing	1/4 Mile Spacing	Determination based on other criteria
<b>C. Med-High Volume, Non-Continuous Streets</b>	1/8 Mile Spacing - With No Median Opening 1/4 Mile Spacing - RIGHT TURNS AND LEFT-IN ONLY	1/4 Mile Spacing With Turn Lanes	1/4 Mile Spacing With Turn Lanes	1/4 Mile Spacing With Turn Lanes	1/4 Mile Spacing	1/4 Mile Spacing
<b>D. Low-Medium Volume, Thru Streets</b>	1/4 Mile Spacing - RIGHT TURNS AND LEFT-IN ONLY 1/2 Mile Spacing - FULL ACCESS	1/2 Mile Spacing With Turn Lanes	1/4 Mile Spacing With Turn Lanes	1/4 Mile Spacing With Turn Lanes	1/4 Mile Spacing	1/4 Mile Spacing
<b>E. Medium-High Volume, Thru Streets</b>	1/2 Mile Spacing With Turn Lanes	1/2 Mile Spacing With Turn Lanes	1/2 Mile Spacing With Turn Lanes	1/2 Mile Spacing With Turn Lanes	1/2 Mile Spacing With Turn Lanes	1/2 Mile Spacing
<b>F. High Volume, Arterials and Expressways</b>	1 Mile Spacing With Signals and Turn Lanes	1 Mile Spacing With Turn Lanes	1 Mile Spacing With Turn Lanes	1 Mile Spacing With Turn Lanes	1 Mile Spacing With Turn Lanes	1 Mile Spacing

**NOTES:**

1. All traffic volumes refer to 20-year forecasts.
2. Roadway types refer to anticipated cross-section.
3. Access volume classifications generally pertain to the following breakdowns:
  - "Low Volume": Under 3,000 ADT (Design Volumes)
  - "Medium Volume": 3,000 - 10,000 ADT (Design Volumes)
  - "High Volume": Over 10,000 ADT (Design Volumes)
4. "Non-Continuous Streets" refer to cul-de-sac or short-length local streets which do not necessarily cross the County Highway in question.
5. Fully developed urban areas will require individual evaluation on a case by case basis.
6. When there is opportunity for private access on more than one public roadway, access shall be taken on the lower-function or lower-volume roadway.
7. Turn lanes shall be required at access locations where conditions warrant, even if not specifically noted here.
8. Signals shall be installed only where warranted and justified, consistent with the MMUTCD. 1/2 mile spacing of signals will be preserved where possible.

---

## **Appendix E**

Cost Estimate





---

## **Appendix F**

Scott County 2030 Land Use Plan

# Scott County 2030 Comprehensive Plan Update



## 2030 Land Use Map

**DRAFT**

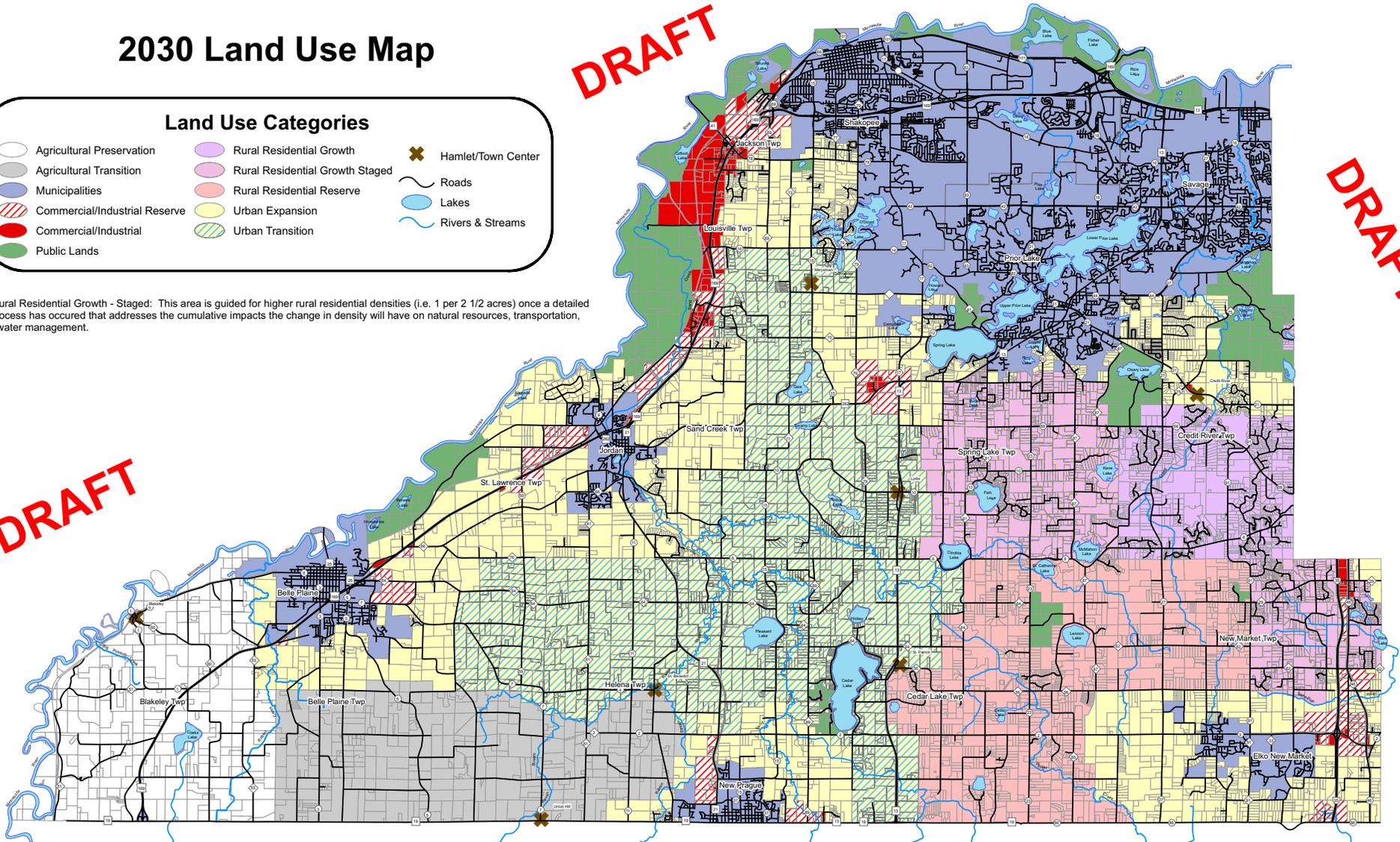
**DRAFT**

**Land Use Categories**

	Agricultural Preservation		Rural Residential Growth		Hamlet/Town Center
	Agricultural Transition		Rural Residential Growth Staged		Roads
	Municipalities		Rural Residential Reserve		Lakes
	Commercial/Industrial Reserve		Urban Expansion		Rivers & Streams
	Commercial/Industrial		Urban Transition		
	Public Lands				

\*Note for Rural Residential Growth - Staged: This area is guided for higher rural residential densities (i.e. 1 per 2 1/2 acres) once a detailed planning process has occurred that addresses the cumulative impacts the change in density will have on natural resources, transportation, and storm water management.

**DRAFT**



SCOTT COUNTY COMMUNITY DEVELOPMENT DIVISION  
 Planning Department  
 200 Fourth Avenue West, Shakopee, Minnesota 55379-1220  
 (952) 496-8475 - Fax (952) 496-8496 - Web: www.scott.mn.us

## March 27 Public Hearing Draft Map



This map is neither a legally recorded document nor a survey and is intended for planning purposes only. Delineations may not be exact.  
 Prepared by: Scott County Planning Department - March 27, 2008



Emergency →  
Main Entrance →



Multidisciplined. Single Source.  
Trusted Solutions.

[www.sehinc.com](http://www.sehinc.com)

