

COUNTY OF ANOKA

Public Services Division

HIGHWAY DEPARTMENT

1440 BUNKER LAKE BLVD. NW, ANDOVER, MINNESOTA 55304

(763) 862-4200 FAX (763) 862-4201

July 15, 2011

Mr. Kevin Roggenbuck
Transportation Coordinator
Transportation Advisory Board
390 North Robert St.
Saint Paul, Minnesota 55101

RE: CSAH 116 (Bunker Lake Blvd) Reconstruction Project
Surface Transportation Program Funding Submittal

Dear Mr. Roggenbuck:

Anoka County is submitting this application for Federal Surface Transportation Program (STP) funding for the proposed CSAH 116 reconstruction project. The proposed project is being put forward to reconstruct CSAH 116 from just east of Crane Street through Jefferson Street in the Cities of Andover and Ham Lake to a four-lane divided roadway with turn lanes at all public streets. In addition, the project will include construction of a separate pedestrian/bicycle facility along the corridor as well as the reconstruction of the signals at Prairie Road and Jefferson Street. We believe that this project is an excellent candidate for STP funding in the "A" Minor Arterial Reliever Category. We look forward to its inclusion in the program.

Sincerely,

A handwritten signature in black ink, appearing to read "Douglas W. Fischer", is written over a large, stylized circular flourish.

Douglas W. Fischer, P.E.
Anoka County Engineer

Federal STP-UG Funding Application (Form 1)

INSTRUCTIONS: Complete and return completed application to Kevin Roggenbuck, Transportation Coordinator, Transportation Advisory Board, 390 North Robert St., St. Paul, Minnesota 55101. (651) 602-1728. Form 1 needs to be filled out electronically. Please go to Metropolitan Council's Regional Solicitation website for instructions. **Applications must be received by 5:00 PM at the Metropolitan Council FTP site or postmarked on July 18, 2011. *Be sure to complete and attach the Project Information form.**

Office Use Only

I. GENERAL INFORMATION

1. APPLICANT: Anoka County Highway Department

2. JURISDICTIONAL AGENCY (IF DIFFERENT): NA

3. MAILING ADDRESS: 1440 Bunker Lake Blvd

CITY: Andover

STATE: MN

ZIP CODE: 55304

4. COUNTY: Anoka

5. CONTACT PERSON: Jack Corkle

TITLE: Sr. Multimodal Trans. Planner

PHONE NO.
(763)862-4219

CONTACT E-MAIL ADDRESS: Jack.corkle@co.anoka.mn.us

II. PROJECT INFORMATION

6. PROJECT NAME: CSAH 116 – Crane through Jefferson Reconstruction

7. BRIEF PROJECT DESCRIPTION (Include location, road name, type of improvement, etc...): The project reconstructs CSAH 116 from a two-lane undivided facility to a four-lane divided roadway from just east of Crane Street through Jefferson Street in the Cities of Andover and Ham Lake. In addition, the project includes the construction of separate pedestrian/bicycle facility along the corridor. The project also includes reconstructing signalized intersections, reducing access and improving an at-grade rail crossing.

8. STP PROJECT CATEGORY - Check only one project grouping in which you wish your project to be scored.

"A" Minor Arterials:

 Reliever
 Connector

 Expander
 Augmenter

 Non-Fwy. Principal Arterial
 Bikeway/Walkway

III. PROJECT FUNDING

9. Are you applying or have you applied for funds from another source(s) to implement this project? Yes No

If yes, please identify the source(s):

10. FEDERAL AMOUNT: \$7,000,000

13. MATCH % OF PROJECT TOTAL: 32 percent

11. MATCH AMOUNT: \$3,248,000

14. SOURCE OF MATCH FUNDS: Anoka County

12.* PROJECT TOTAL: \$10,248,000

15. REQUESTED PROGRAM YEAR (CIRCLE): 2015 2016

16. SIGNATURE

17. TITLE: Sr. Multimodal Transportation Planner

*Figure should match the subtotal on the Project Elements and Construction Cost table

Form 2: PROJECT INFORMATION

(To be used to assign State Project Number after project is selected)

Please fill in the following information as it pertains to your proposed project. Items that do not apply to your project, please label N/A. **Do not send this form to the State Aid Office. For project solicitation package only.**

COUNTY, CITY, OR LEAD AGENCY **Anoka County**

FUNCTIONAL CLASS OF ROAD **A minor Arterial Reliever**

ROAD SYSTEM **CSAH** (TH, CSAH, MSAS, CO. RD., TWP. RD., CITY STREET)

NAME OF ROAD **CSAH 116 (Bunker Lake Blvd)** (Example; 1st ST., MAIN AVE)

ZIP CODE WHERE MAJORITY OF WORK IS BEING PERFORMED **55304**

APPROXIMATE BEGIN CONSTRUCTION DATE (MO/YR) **April 2016**

APPROXIMATE END CONSTRUCTION DATE (MO/YR) **September 2017**

LOCATION: From: **Just east of Crane Street in Andover**

To: **Just east of Jefferson Street in Ham Lake**

(DO NOT INCLUDE LEGAL DESCRIPTION)

TYPE OF WORK **Grade, Agg Base, Bit Surface, Curb and Gutter, Stormsewer, Signals, Bike Path, Ped Ramps**

Examples: GRADE, AGG BASE, BIT BASE, BIT SURF, SIDEWALK, CURB AND GUTTER, STORM SEWER, SIGNALS, LIGHTING, GUARDRAIL, BIKE PATH, PED RAMPS, BRIDGE, PARK AND RIDE, ETC.

BRIDGE/CULVERT PROJECTS

OLD BRIDGE /CULVERT NO. **NA** NEW BRIDGE/CULVERT NO. **NA**

STRUCTURE IS OVER **NA**

Project Elements and Estimate of Construction Costs

Fill out the scoping sheet below or attach the worksheet Appendix U and provide the cost estimate for each element. You may add additional eligible costs (construction costs) that are not accounted for in the blank spaces at the bottom of the table. Applicants may instead use the more exhaustive checklist of the Mn/DOT scoping sheet in lieu of this checklist. The total cost should match the total cost reported for the project. Please use 2011 cost estimates, the TAB may apply an inflation factor to awarded projects.

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES		
Check all that apply	ITEM	COST
<input checked="" type="checkbox"/>	Mobilization (approx. 5% of total cost)	\$450,000
<input checked="" type="checkbox"/>	Removals (approx. 5% of total cost)	\$450,000
<input checked="" type="checkbox"/>	Roadway (grading, borrow, etc.)	\$995,000
<input checked="" type="checkbox"/>	Roadway (aggregates and paving)	\$3,050,000
<input checked="" type="checkbox"/>	Subgrade Correction (muck)	\$32,500
<input checked="" type="checkbox"/>	Storm Sewer	\$1,625,000
<input type="checkbox"/>	Ponds	Included in storm sewer number
<input checked="" type="checkbox"/>	Concrete Items (curb & gutter, sidewalks, median barriers)	\$1,030,000
<input checked="" type="checkbox"/>	Pedestrian Curb Ramps (ADA)	Included in concrete items
<input checked="" type="checkbox"/>	Path/Trail Construction	\$300,000
<input checked="" type="checkbox"/>	Traffic Control	\$270,000
<input checked="" type="checkbox"/>	Striping	\$239,000
<input checked="" type="checkbox"/>	Signing	\$162,000
<input type="checkbox"/>	Lighting	\$
<input checked="" type="checkbox"/>	Turf - Erosion & Landscaping	\$270,400
<input type="checkbox"/>	Bridge	\$
<input checked="" type="checkbox"/>	Retaining Walls	\$50,000
<input checked="" type="checkbox"/>	Noise Wall	\$275,000
<input checked="" type="checkbox"/>	Traffic Signals	\$500,000
<input type="checkbox"/>	Wetland Mitigation	\$
<input type="checkbox"/>	Other Natural and Cultural Resource Protection	\$
<input type="checkbox"/>	RR Crossing	\$
<input checked="" type="checkbox"/>	Box Culverts	\$100,000
<input type="checkbox"/>		\$
<input type="checkbox"/>		\$
<input type="checkbox"/>		\$
<input type="checkbox"/>		\$
<input type="checkbox"/>		\$
<input type="checkbox"/>	Contingencies	\$450,000
	TOTAL CONSTRUCTION COST	\$10,248,000

SURFACE TRANSPORTATION PROGRAM – “A” MINOR ARTERIAL RELIEVER

PROJECT DESCRIPTION

CSAH 116 – Crane through Jefferson Streets Reconstruction

The proposed project is being submitted for federal funding in the “A” Minor Arterial Reliever category. County State Aid Highway (CSAH) 116 is one of the few continuous east-west routes in Anoka County. It originates in the City of Ramsey at CSAH 83 (Armstrong Blvd) and continues eastward through CSAH 17 (Lexington Avenue) in the City of Ham Lake. CSAH 116 relieves two principal arterials, US 10 in the western portion of the county and CSAH 14 in the central and eastern portions of the county. The proposed project is located in the Cities of Andover and Ham Lake, and extends from just east of Crane Street to Jefferson Street. The project and route are shown in Attachment A, Figures 2 and 3. Attachment A, Figure 4 shows aerials of the corridor as it exists today.

CSAH 116 in the project area is a two-lane roadway. A majority of the corridor is bordered by residential and regional park uses. There are a couple of commercial properties in the project area.

The current roadway is primarily a two-lane, undivided, rural roadway with channelization at the existing signalized intersection at Jefferson Street. There are a few dedicated left- and right-turn lanes, but most intersections do not have them. The rural design and lack of channelization has resulted in a number of angle and run off the road crashes.

The proposed project reconstructs CSAH 116 to a four-lane divided roadway with dedicated right- and left-turn lanes. The construction of a center median will improve safety and prevent deterioration of operations by limiting the number of full-access entrances onto CSAH 116. Raised medians can reduce crashes and provide extra protection for pedestrians and bicyclists crossing the corridor. In addition, restricting left turns at access points can improve level of service and lane capacity. The proposed project includes the reconstruction and channelization of the existing traffic signal at Prairie Road and Jefferson Street. Additionally, the project includes bus/truck pull-out lanes at the Burlington Northern Santa Fe Railroad. These pull-out lanes are used by buses and slower moving vehicles that stop at the railroad crossing. It pulls the vehicles out of the through lane, to ensure better mobility for the rest of the traffic.

The proposed project also includes the construction of a trail, including two crossings (one on each side of the corridor) of the Burlington Northern Santa Fe Railroad. The proposed project also includes a box culvert underpass to get residents on the north side of the corridor to the south side of the corridor (access to Bunker Hills Regional Park).

The proposed project will be an urban design, and will include outside shoulders which can be used by motorists as well as by experienced bicyclists.

The proposed project is approximately 2.3 miles long.

RESPONSES TO QUALIFYING CRITERIA

1. **The project must be consistent with the policies in the Metropolitan Council's officially adopted Metropolitan Development Guide, which includes the Transportation Policy Plan (TPP) (2010) and the Regional Development Framework (2004). Consistency with the TPP includes its appendix, which contains the regional functional classification criteria. The applicant must list the documents and corresponding policy numbers or portions of text that help illustrate the project's consistency.**
 - The project corridor is in Andover and Ham Lake. Andover is designated as a “Developing Area” (*Regional Development Framework*, page 8). Ham Lake is designated as “Rural Residential” (*Regional Development Framework*). The project is consistent with **“Developing Communities” Policy 1 “Work with communities to accommodate growth...”** Upgrading CSAH 116 shows investment in the regional system (minor arterial network) that will be in place to ensure that adequate services are in place as Andover continues to stage its development and growth.
 - The project is consistent with **Policy 2: “Plan and invest in multi-modal transportation choices...”** (*Regional Development Framework*, pages 10-11) CSAH 116 has been identified as a multi-use corridor. In addition to providing accommodations for motorized vehicles, pedestrian/bicycle trails are planned along the corridor to support multiple modes. Additionally, CSAH 116 is part of a fully-interconnected arterial and local street and trail network.
 - The project is consistent with **Policy 2 of the Transportation Policy Plan – Prioritizing Regional Transportation Investments, Strategy 2b – Highway System Investments.** The proposed project includes system management activities (center median, dedicated turn-lanes, etc.) and expansion that will optimize the performance of the county system.
 - The project is consistent with **Policy 2 of the Transportation Policy Plan – Prioritizing Regional Transportation Investments, Strategy 2d – Bicycle and Pedestrian Improvements.** The proposed project includes provisions for bicycles and pedestrians. The project includes a separate path that can be used by bicyclists and pedestrians. The project also includes shoulders that can accommodate expert/commuter bicyclists.
 - The project is consistent with **Policy 3 of the Transportation Policy Plan – Investments in Regional Mobility, Strategy 3g – Alleviate Highway Construction Impacts.** The Anoka County TMO’s emphasis is working with local businesses and residents to reduce congestion on roadways due to construction on the county network. If this project is selected, the TMO will undertake TDM actions to alleviate traffic delays for commuters during construction.
 - The project supports **Policy 4 of the Transportation Policy Plan – Coordination of Transportation Investments and Land Use, Strategy 4a – Accessibility.** The project is located on a corridor with a mix of housing and recreational nodes. The project will increase mobility and enhance the connections/accessibility between the land uses.

- The project supports **Policy 4 of the Transportation Policy Plan – Coordination of Transportation Investments and Land Use, Strategy 4b – Alternative Modes.** The project supports alternative modes of bicycling and walking by providing a separate path, a sidewalk and shoulders.
- The project supports **Policy 4 of the Transportation Policy Plan – Coordination of Transportation Investments and Land Use, Strategy 4e – Local Comprehensive Plans.** The project is located in the Cities of Andover and Ham Lake in Anoka County which all have comprehensive plans that conform to the Transportation Policy Plan.
- The project supports **Policy 4 of the Transportation Policy Plan – Coordination of Transportation Investments and Land Use, Strategy 4f – Local Transportation Planning.** Anoka County and its partners are planning for and are implementing a system of interconnected arterial and local streets, pathways and bikeways to meet local travel needs without using the regional highway system. The project is on a minor arterial roadway. This roadway is part of the Anoka County highway network that links residential, industrial, commercial, institutional and recreational nodes. The project will improve mobility and increase safety on the network by providing additional capacity and dedicated turn lanes. In addition, the project includes the construction of a separate pathway and wide shoulders that can be used by pedestrians and bicyclists. The trail provides connections to local and regional trails and parks near the project area.
- The project supports **Policy 4 of the Transportation Policy Plan – Coordination of Transportation Investments and Land Use, Strategy 4g – Metropolitan Urban Service Area.** The project is inside the MUSA and improvements to this route are needed to support the community’s infrastructure needs within the next 20 years.
- The project supports **Policy 8 of the Transportation Policy Plan – Energy and Environmental Considerations in Transportation Investments, Strategy 8b – Compliance with Federal Standards.** The project reduces congestion on a minor arterial roadway, which will help the Twin Cities meet compliance standards.
- The project supports **Policy 8 of the Transportation Policy Plan – Energy and Environmental Considerations in Transportation Investments, Strategy 8c – Preservation of Cultural and Natural Resources.** The project is consistent with regional plans and policies for parks and open space. The project includes a trail which ties into the regional trail network and enhances connections to local and regional parks.
- The project supports **Policy 9 of the Transportation Policy Plan – Highway Planning, Strategy 9e – Interconnected Roadway Network.** The project is on a minor arterial that is part of a planned system of multimodal interconnected arterials to serve short, medium and long trips.
- The project supports **Policy 9 of the Transportation Policy Plan – Highway Planning, Strategy 9f – Roadway Jurisdiction.** The project is on a minor arterial roadway under the jurisdiction of Anoka County. It is appropriate for Anoka County to be responsible for this route.

- The project supports **Policy 9 of the Transportation Policy Plan – Highway Planning, Strategy 9h – Context Sensitive Design.** The project will be planned and designed in a way that protects and enhances the environment and is sensitive to community attributes and objectives. Anoka County works with the local community to ensure that local needs are met as part of any project. Additionally, the Cities of Andover and Ham Lake and the Anoka County Parks Department support the project (Attachment C).
 - The project supports **Policy 11 of the Transportation Policy Plan – Highway System Management and Improvements, Strategy 11a – Investments in Managing the Highway System.** The project improves safety along CSAH 116. Safety is one of the regional priorities highlighted as part of this policy.
 - The project supports **Policy 11 of the Transportation Policy Plan – Highway System Management and Improvements, Strategy 11e – Access Management.** The project intends to reduce the amount of access on an important “A” minor arterial route which will improve both operations and safety.
 - The project supports **Policy 18 of the Transportation Policy Plan – Providing Pedestrian and Bicycle Travel Systems, Strategy 18b – Connectivity to Transit.** The project includes a separated pathway and wide shoulders which support pedestrian and bicycle connectivity to an existing bus stop at the south end of the project corridor.
 - The project supports **Policy 18 of the Transportation Policy Plan – Providing Pedestrian and Bicycle Travel Systems, Strategy 18d – Interjurisdictional Coordination.** The project supports connections to the regional and local trail system.
2. **The project must be included in, be part of, address a transportation problem or need identified in one of the following: 1) a local or county comprehensive plan found to be consistent with Metropolitan Council plans; 2) a locally approved capital improvement program; 3) an officially adopted corridor study; or 4) the official plan or program of the applicant agency. It also must not conflict with the goals and policies in adopted regional plans. The applicant must reference the appropriate comprehensive plan, CIP, corridor study document, or other plan or program and provide copies of the applicable pages.**

The project implements a solution to a transportation problem identified in the Anoka County Highway Department Five-Year Highway Improvement Plan (2011 – 2015) and the Andover Transportation Plan. The proposed project does not conflict with regional plans. Please refer to Attachment B for the relevant pages of the plans.

3. **The project must be identified as an “A” Minor Arterial Reliever shown on the TAB approved roadway functional classification map adopted on or before May 18, 2011. The vast majority of the project must be physically located on the “A” Minor Arterial Reliever roadway between logical termini. The applicant must provide a map or sketch of the project relative to the minor arterial system.**

The project is on the “A” minor arterial system adopted by the TAB on or before May 18, 2011. Please refer to Attachment A, Figures 3 and 5 for the map and sketch.

- 4. STP funds are available for roadway construction and reconstruction. The cost of constructing a new bridge deck or reconstructing an existing bridge deck is eligible but the remainder of the superstructure and all elements of the substructure are not. The applicant must describe the proposed project and state that the application includes only the eligible components.**

The application only includes eligible components. Please refer to the project description provided at the beginning of this application (page 4). No bridge superstructure or substructure will be included as a part of this project.

- 5. Studies, preliminary engineering, design, construction engineering, etc. are not eligible for STP funding. Right-of-way costs are not eligible for STP funding. The applicant must state that pre-construction work and ROW costs are not part of the total project cost in this application.**

The applicant understands that preconstruction work and right of way costs are not part of the total project costs included in this application.

- 6. An STP construction or reconstruction project must be a permanent improvement. The applicant must state that the proposed project is a permanent improvement and does not replace any regionally funded project that was opened to traffic within five years.**

The project is permanent and it does not replace any regionally funded project opened to traffic within the past five years.

- 7. Applicants can request up to \$7,000,000 in STP funds for a specific project. Other federal funds may be combined with the requested STP funds, but the source(s) must be identified in the application. The project's federal cost must exceed \$1,000,000. The applicant must show the requested federal amount and total project cost on the cover page.**

The project is requesting more than \$1,000,000 in federal funds and does not exceed the cap limit of \$7,000,000. The total project cost is \$10,248,000. Anoka County is requesting \$7,000,000 in STP funds. Please refer to the cover page for additional information.

- 8. STP funds awarded in the regional solicitation must be matched with non-federal funds. The non-federal match for any STP project must be at least 20% of the total cost. The applicant must state that it is responsible for the local (nonfederal) share. If the applicant expects any other agency to provide all or part of the local match, the applicant must include a letter or resolution from the other agency agreeing to participate financially in the project's construction.**

The local match for the proposed project exceeds the required 20 percent outlined in the application rules. Anoka County is committed to be responsible for the local share of the project. Anoka County will ask for a financial contribution from the Cities of Andover and Ham Lake, but it will not depend upon funding from the cities. (See Attachment C for letter).

- 9. The applicant must include a letter from the agency with jurisdiction over the road indicating that it is aware of and understands the project being submitted, and that it commits to operate and maintain the facility for its design life and not change the use of any right-of-way acquired without prior approval from MN/DOT and FHWA.**

Anoka County is the agency that has jurisdiction over CSAH 116. It is also the agency submitting this application. Anoka County is committed to operate and maintain CSAH 116 for its design life and will not change right of way use without approval from Mn/DOT and FHWA. Please see the Anoka County letter in Attachment C.

RESPONSES TO PRIORITIZING CRITERIA

A. Relative Importance of the Route as an “A” Minor Arterial Reliever

Attachment A, Figure 3 shows the reliever route and provides the spacing with parallel minor arterial facilities. Figure 3 also shows existing and future traffic volumes.

A.a Provide the length of the reliever route in miles.

The reliever route is approximately eight miles long and relieves CSAH 14. CSAH 116 extends beyond CR 18, but at that point the corridor relieves US 10 and not CSAH 14.

A.b Provide the current (2009) and the forecasted (2030) average daily traffic volume at two or more locations on the reliever route.

According to Mn/DOT’s 2009 “50 Series” AADT map, the current (2009) Average Annual Daily Traffic (AADT) on the reliever route (CSAH 116) in the project segment is 14,900 vehicles per day. West of the project segment, traffic volumes are 13,200 vehicles per day.

2030 forecasts were prepared using the Anoka County traffic model. Please refer to Attachment D for the methodology and process that was used to prepare future forecasts. Within the project area, future volumes are expected to be approximately 27,000 and 16,400 west of the project area.

A.c Is public transit currently provided on this reliever route and its corresponding sections of principal arterial? If yes, what is the average annual ridership?

The only transit that is provided on CSAH 116 is through the county, Anoka County Transit Link, which provides dial-a-ride services. Transit is not allowed on this corridor because Andover and Ham Lake are not included in the Transit Levy Communities.

Fixed-route transit is not provided on CSAH 14, the principal arterial route that is being relieved. The Anoka County Transit Link is the only transit service available on the corridor.

B. Deficiencies and Solutions on the Reliever and on the Principal Arterial Being Relieved

B.1 Crash Reduction.

B.1.a On the Principal Arterial being relieved: Provide data showing the frequency of traffic crashes expressed as crashes per million vehicle miles on the corresponding section of principal arterial. The applicant must request the crash rate for the principal arterial being relieved from Mn/DOT Metro Traffic Engineering.

The principal arterial route that is being relieved is CSAH 14. Because Mn/DOT does not manage this principal arterial (it is under Anoka County jurisdiction), it was unable to provide a crash rate. Instead, the county calculated the rate using the 2007 and 2009 “50 Series” traffic volume maps and the crash data for segment crashes between 2007 and 2009. Mn/DOT provided the crash data for the segment.

The crash rate is calculated using the following:

AADT: $17,600 + 19,200/2 = 18,400$ (average of 2007 and 2009 volumes)

No of Years: 3

No of Crashes: 114

Segment Length: 2.3 miles

Crash Rate: $114 * 1,000,000 / (365) (3) (18,400) (2.3) = 114,000,000/46,340,400 = 2.46$

The crash rate for CSAH 14 is **2.46**. Data showing the crashes is included in Attachment E.

B.1.b On the Reliever: Calculate the total number of crashes reduced due to the improvements on the “A” Minor Arterial Reliever made by the proposed project.

As indicated in the project description, the proposed improvements on CSAH 116 are intended to increase safety on the corridor. Presently, according to Mn/DOT’s TIS system data from January 1, 2007 through December 31, 2009, there are a total of 21 crashes on CSAH 116 within the project area (see Attachment E, TIS data listing and crash diagrams). Please note: crashes at Crane Street are shown on the crash diagram to provide context for the corridor. The project starts to the east of Crane Street; as a result, the crashes at Crane Street **are not** included in the analysis.

The 21 crashes included in the analysis have 11 personal injury crashes and 10 property crashes. According to the crash reduction factors shown in the calculations on the following pages, the proposed project will eliminate **18.08** crashes.

Crashes were divided into segment and full-intersection crashes to identify appropriate crash reduction factors. The first analysis was completed for the segment crashes (see crash records: 5, 7, 8, 9, 10, 11, 12, 15, 18, 19, 20, 22 and 23 in the crash data segment listing). There were 13 crashes in the segment; seven were property damage and six involved injuries.

Proposed improvements for the segment include: install center median, increase number of lanes and widen shoulder. The first improvement (install median) comes from Table 7 (pages 71 and 72) of the FHWA Desktop Reference for Crash Reduction. The reduction

for this improvement has two factors: 86 percent reduction for all crashes and 88 percent reduction for fatal/injury crashes. In the calculation below, the 86 percent is applied to the property damage crashes (7 crashes) and the 88 percent was applied to the injury crashes (6 crashes). This improvement was selected because it was a bold item in the handbook, it has the most impact, and it highlights how well a median can reduce vehicle conflicts. A center median is a significant component of the proposed project.

The second reduction factor for the segment crashes was increase number of lanes. This improvement comes from Table 6 (pages 61-62) of the FHWA Desktop Reference for Crash reduction. For this improvement we selected improvements based upon the type of crash and daily traffic volume (when available). Breaking the crashes out by type better reflected the types of crashes on the corridor and the improvement that would be made by adding a lane. We selected the >5,000/lane (when available) because that best represented traffic along the corridor. The proposed project includes adding a lane as a major component of the improvement.

The third reduction factor for the segment crashes was widening the shoulder (paved) factor. This improvement comes from the FHWA Desktop Reference for Crash Reduction. It is found in Table 6 on page 68. The factor selected by the county was a 32 percent reduction listed for all crash types and all severity types. This reduction factor was selected for a couple of reasons. First, there are no bold factors. Second, there were no specific crash type factors that fit the crashes on the corridor. Finally, 32 percent reduction is the average of reduction factors for all crash types and all crash severity.

The proposed reductions are shown in bold type. Please note, the median improvement factor was applied first and then the additional lane factor was applied to the already reduced crash value, and finally widening the shoulder was applied to the remaining crashes after the other two factors were taken into account. This eliminates getting rid of more crashes than what is in the segment area. For instance if one applied the 86 or 88 percent reduction rate and then did the same thing for the additional lane, you could eliminate more crashes than there are in the segment. Instead the second factor was applied to the remaining crash left after applying the median reduction factor. The same process was completed for the widening the shoulder factor. Care was taken to ensure that the factor was applied to the correct type of crash and severity of crash (property damage vs injury). Please refer to the project sketch (Figure 5 in Appendix A) to see the proposed improvements and the crash diagram in Appendix E to see the crashes).

Install Median – All Crash Types/Severity: FHWA Report (pgs 71-72)

0.86 reduction in all/property damage crashes

0.88 reduction in injury crashes

7 property damage

6 injury

0.86 (property crash factor) x 7 (number of property damage crashes) = 6.02 crashes reduced

0.88 (injury crash factor) \times 6 (number of injury crashes) = 5.28 crashes reduced

Median improvement: $6.02 + 5.28 = 11.3$ crashes reduced

Increase Number of Lanes – By Crash Type: FHWA Report (pgs 61-62)

0.44 reduction in run off the road crashes

0.52 reduction in rear end crashes

0.45 reduction in right-angle crashes

0.44 reduction in sideswipe crashes

0.31 reduction (all crashes) – for the three “other” crashes (illegal u-turn Crash Record 11, motorcycle/deer Crash Record 18 and illegal left-turn Crash Record 23)

0.44 (ror) \times 0.28 (2 property crash with a 0.86 median reduction) = 0.12 crashes

0.44 (ror) \times 0.36 (3 injury crash with a 0.88 median reduction) = 0.16 crashes

0.54 (rear end) \times 0.42 (3 property crash with a 0.86 median reduction) = 0.23 crashes

0.45 (right-angle) \times 0.12 (1 injury crash with a 0.88 median reduction) = 0.05 crashes

0.44 (sideswipe) \times 0.12 (1 injury crash with a 0.88 median reduction) = 0.05 crashes

0.31 (all crashes) \times 0.42 (3 property crash with a 0.86 median reduction) = 0.13 crashes

Increase Number of Lanes improvement: $0.12 + 0.16 + 0.23 + 0.05 + 0.05 + 0.13 = 0.74$ additional crashes reduced

Widen Shoulder (Paved) – All Crash Types: FHWA Report (pg 68)

0.32 reduction in all crashes

13 (total crashes) – 12.04 (crashes reduced from first and second improvement) = 0.96

$0.32 \times 0.96 = 0.31$ additional reduction

Total Segment Reduction: $11.3 + 0.74 + 0.31 = 12.35$ crashes

As indicated previously, crashes at the full access intersections were also evaluated. Two of the intersections are signalized and one is a side street stop. The analysis for the side street stop is presented first. At the unsignalized intersection (Butternut) there was one right-angle property damage crash. The following factors were used at this location: increase the number of lanes, install left-turn lane, and install right-turn lane.

The increase number of lanes was included as a reduction factor because there will be an additional through lane on CSAH 116 at the intersection, which will improve traffic flow

and safety. Presently the geometrics at the intersection is a single through lane. The proposed geometrics include two through lanes, a left-turn lane and a right-turn lane. The increase number of lanes factor used comes from Table 6 (pages 61-62) of the FHWA Desktop Reference for Crash reduction. For this factor we selected the improvement based upon the type of crash and daily traffic volume. Breaking the crash by type better reflected the type of crash that occurred on the corridor and the improvement that would be made by adding a lane. We selected the >5,000/lane because that best represented traffic at the existing intersection.

Install left-turn lane was the second factor applied because the project includes constructing a dedicated left-turn lane on CSAH 116 at the intersection. This factor comes from Table 2 (page 21) of the FHWA Desktop Reference for Crash reduction. The reduction used is 44. This improvement was selected because it was a bold item in the handbook, it shows an existing rural area, it is a 3-leg intersection, and has a stop control (on the side street). This factor, of the bolded alternatives, was the best fit.

Install right-turn lane was the third factor applied because the project includes constructing dedicated right-turn lanes on CSAH 11 at the intersections. This factor comes from Table 2 (pages 28 and 29) of the FHWA Desktop Reference for Crash reduction. The reduction used is 50. This factor was chosen because it best shows the crash that has happened. There are no bold factors for a 3-leg intersection, so a more generic factor had to be chosen. So, the type of crash was next looked at. The project area has a right-angle crash. Page 29 has a “right-angle” crash, for all severity types that has a 50 percent reduction. This was the only factor for right-angle crashes, so it was chosen.

The methodology for applying the crash reduction factors for this intersection was the same as that used for the segment. One factor was applied and then the second factor was applied to the remaining crashes and then a third factor was applied to the remaining crashes to get a total reduction. Crash reductions are shown below and on the following page. Please refer to the project sketch (Figure 5 in Appendix A) to see the proposed improvements and the crash diagram in Appendix E to see the crashes).

Increase Number of Lanes – By Crash Type: FHWA Report (pgs 61-62)

0.45 reduction in right-angle crashes

$$0.45 \text{ (right angle)} \times 1 \text{ (number of crashes)} = 0.45$$

Install Left-Turn Lane – Applies to All: FHWA Report (pg 21)

0.44 reduction in all crashes

$$1 \text{ (total crash)} - 0.45 \text{ (crashes reduced from first improvement)} = 0.55$$

$$0.55 \times 0.44 = 0.242 \text{ additional reduction}$$

Install Right-Turn Lane – Applies to Right-Angle Crashes: FHWA Report (pg 29)

0.50 reduction in all crashes

$$1 \text{ (total crashes)} - 0.7 \text{ (crashes reduced from first and second improvements)} = 0.30$$

$$0.30 \times 0.50 = 0.15 \text{ additional reduction}$$

Total crashes at unsignalized intersection: $0.45 + 0.25 + 0.15 = 0.85$

There are also two signalized intersections on the corridor for which crash reduction factors are applied. The signals are located at Prairie Road and at Jefferson Street/138th Avenue. Four of the crashes are located at the intersection of CSAH 116 and Prairie Road. Three are located at the intersection of CSAH 116 and Jefferson Street. Because the improvements at each of the intersections are the same, crash reduction factors were done jointly. The paragraphs on the following pages document the improvements selected for each location.

The first improvement that was applied to the intersection is the “increase number of lanes” factor. This improvement was chosen because the project will add a through lane in each direction at both intersections. The increase number of lanes factor comes from Table 6 (pages 61-62) of the FHWA Desktop Reference for Crash reduction. For this factor we selected improvements based upon the type of crash and daily traffic volume (when available). Breaking the crashes out by type better reflected the types of crashes on the corridor and the improvement that would be made by adding a lane. We selected the >5,000/lane (when available) because that best represented traffic at the existing intersection.

The second improvement at the intersection is to rebuild the traffic signal. This improvement was selected because the project will rebuild a signal at the intersection with the improved geometrics (additional through lane in each direction). The rebuild signal comes from the Mn/DOT % Change in Crashes table. Crashes factors were applied by type and severity in order to show the most reduction for the improvement.

Increase Number of Lanes – By Crash Type: FHWA Report (pgs 61-62)

0.71 reduction in left-turn crashes

0.44 reduction in run off the road crashes

0.44 reduction in sideswipe crashes

0.52 reduction in rear end crashes

0.45 reduction in right angle crashes

$$0.71 \text{ (left-turn)} \times 2 \text{ (number of crashes)} = 1.42 \text{ crashes}$$

$$0.44 \text{ (run off road)} \times 2 \text{ (number of crashes)} = 0.88 \text{ crashes}$$

0.44 (sideswipe) x 1 (number of crashes) = 0.44 crashes

0.52 (rear end) x 1 (number of crashes) = 0.52 crashes

0.45 (right angle) x 1 (number of crashes) = 0.45 crashes

Crashes reduced: 3.71

Signal Rebuild – By Crash Type and Severity: Mn/DOT Table

0.3 reduction in rear-end property damage crashes

0.25 reduction in left-turn injury crashes

0.20 reduction in left-turn property damage crashes

0.30 reduction in right-angle injury crashes

0.35 reduction in run off the road injury crashes

0.50 reduction in run off the road property damage crashes

0.45 reduction in sideswipe opposite direction injury crashes

0.3 (rear-end property) x 0.48 (1 rear-end with 0.52 increase lane reduction) = 0.14

0.25 (left-turn injury) x 0.29 (1 left-turn with 0.71 increase lane reduction) = 0.07

0.20 (left-turn property) x 0.29 (1 left-turn with 0.71 increase lane reduction) = 0.06

0.30 (right-angle injury) x 0.55 (1 right-angle with 0.45 increase lane reduction) = 0.17

0.35 (run off road injury) x 0.56 (1 run off with 0.44 increase lane reduction) = 0.20

0.50 (run off road property) x 0.56 (1 run off with 0.44 increase lane reduction) = 0.28

0.45 (sideswipe opposite injury) x 0.56 (1 sideswipe with 0.44 increase lane reduction) =
0.25

Crashes reduced: 1.17

Total crashes reduced at signalized intersections: $3.71 + 1.17 = 4.88$

Total crashes reduced – all improvements: 12.35 (segment) + 0.85 (unsignalized, full-access) + 4.88 (signalized) = 18.08

B.2 Air Quality.

The applicant must show that the project will reduce emissions and help the region to maintain its attainment of federal carbon monoxide standards. The applicant must include documentation of how the VMT reduction was determined and specify the speed used for the assumptions. Speed assumptions shall be based on the methodology found in Appendix F. The applicant must demonstrate through a

quantitative analysis that CO, NO_x and/or VOC emissions, in kilograms per day, will be reduced compared to the no-build alternative. The applicant must estimate emissions reductions using the MOBILE6 emissions factors and vehicle emissions reduction worksheet in Appendix G.

To determine the reduction of emissions, an analysis to determine the increase in peak hour speed on CSAH 116 (eastbound direction) due to the proposed project was conducted. Details of the analysis are shown below:

Segment Length = 2.3 miles
Posted Speed Limit = 55 mph

Existing Conditions

Free-flow travel time = (2.3 mile /55 mph) x 60 = 2.51 minutes

Signalized intersection delay: (1 location – Prairie Rd) = 75 seconds; (1 location – Jefferson St) = 50 seconds = 125 seconds = 2.1 minutes

Mid-block Delays due to left-turns at minor streets/drives (1 location)

Mid-block delay = 1 x 10 seconds = 10 seconds = 0.2 minutes

Arterial Speed = (2.3/(2.51 + 2.1+ 0.2 minutes)) x 60 = 28.7 mph

Proposed Conditions

Free-flow travel time = (2.3 mile /55 mph) x 60 = 2.51 minutes

Signalized intersection delay (1 location – Prairie Rd) = 30 seconds; (1 location – Jefferson St) = 30 seconds = 60 seconds = 1 minute

All mid block delays due to left-turns at minor streets/driveways will be reduced to zero due to the center median and left-turn lanes at full intersections.

Arterial Speed = (2.3/(2.51 + 1.0 minutes)) x 60 = 39.3 mph

VMT Calculations

Annual VMT (commute trips)/250 (number of work days in a year) = miles/day

Annual VMT: 15,900 (2011 counts)*2.3 (project length)* 365 (year) = 13,348,050
= 13,348,050/250 = 53,392 miles/day

Based on the analysis, the peak hour average speed will increase by approximately 11 mph on this segment after proposed project improvements. Using the MOBILE5B emission factors and Vehicle Emissions Reduction Worksheet, total emissions for baseline and build conditions were calculated. Total emissions reduction due to the

proposed improvements is **293.1** kilograms/day. Please refer to Attachment F for a copy of the worksheet and Attachment G for traffic volume counts.

B.3 Congestion Reduction.

B.3.a On the principal arterial being relieved. The applicant needs to show the hours per day the current volume exceeds the design capacity in either direction. To calculate existing conditions the applicant must obtain or collect the average hourly, directional traffic volumes on a weekday, the current lane configurations and the current signal timing schemes, if applicable. Design capacity calculations must be based on the definition found in Appendix A.

CSAH 14 is a two-lane roadway between Crane Street and Jefferson Street. Please refer to Appendix G for a copy of the traffic volume data.

CSAH 14 exceeds the design capacity 2 hours per day.

It should be noted that there is construction going on in this area, just west of the segment for which volumes were collected, as a result, traffic volumes are down.

B.3.b On the reliever. The applicant must show that the proposed project will reduce congestion at the most congested location on the reliever. The applicant must include the current volume to capacity ratios in the AM and PM peak hours and the improvement in the ratios resulting from the project. The applicant must use the methodology, worksheet and look-up tables found in Appendix H.

The volume to capacity (v/c) ratio analysis was conducted near the intersection of CSAH 116 and Goldenrod Street NW during the a.m. and p.m. peak hours. Traffic volumes were collected on April 28 and 29, 2011 and are in Attachment G. Details are shown below:

Existing Conditions

Westbound a.m. peak hour volume = 644

Vehicle capacity = 860 (1 through lane, right-turn lane & multiuse trail)

A.M. volume/capacity ratio = $644/860 = 0.75$

Eastbound p.m. peak hour volume = 767

Vehicle capacity = 660 (1 through lane & multiuse trail)

P.M. volume/capacity ratio = $767/660 = 1.16$

Proposed Conditions

Westbound a.m. peak hour volume = 644

Vehicle capacity = 1,760 (2 through lanes, left-turn lane, right-turn lane & multiuse trail)

A.M. volume/capacity ratio = $644/1,760 = 0.37$

Eastbound p.m. peak hour volume = 767

Vehicle capacity = 1,760 (2 through lanes, left-turn lane, right-turn lane & multiuse trail)
 P.M. volume/capacity ratio = $767/1,760 = 0.44$

A.M. Improvement in Volume/Capacity Ratio = $0.75 - 0.37 = 0.38$

P.M. Improvement in Volume/Capacity Ratio = $1.16 - 0.44 = 0.72$

Total Improvement in Volume/Capacity Ratio = $0.38 + 0.72 = 1.1$

C. Cost Effectiveness

C.1 Crash Reduction. The applicant must calculate the cost per crash reduced by the proposed project. The applicant must divide the total cost of the project by the answer from B.1.b.

The proposed improvements will be expected to eliminate a total of **18.08** crashes. The total project cost is \$10,248,000. The cost per crash reduced by the proposed project is **\$566,814**.

C.2 Congestion Reduction. The applicant must calculate the cost per increase in hourly person throughput provided by the proposed improvement. The applicant must use the worksheet in Appendix I.

The hourly throughput in the a.m. peak hour, in the peak direction of travel (westbound), at the most congested location (Goldenrod St) was calculated for existing and proposed conditions. Details of the analysis are shown below:

Existing Conditions

Vehicle capacity = 860 (1 through lane, right-turn lane & multiuse trail)

A.M. peak hour vehicle occupancy = 1.10

A.M. peak hour ridership = 0

Hourly person throughput = $(860 \times 1.10) + 0 = 946$ persons per hour

Proposed Conditions

Vehicle capacity = 1,760 (left-turn lane, 2 through lanes, right-turn lane & multiuse trail)

A.M. peak hour vehicle occupancy = 1.10

A.M. peak hour ridership = 0, assume no increase in ridership with this project

Hourly person throughput = $(1,760 \times 1.10) + 0 = 1,936$ persons per hour

Total increase in hourly person throughput = $1,936 - 946 = \mathbf{990}$ persons per hour

Cost per increase in hourly person throughput = $\$10,248,000/990 = \mathbf{\$10,351}$.

C.3 Air Quality. The applicant must calculate the cost per kilogram that will be reduced by the proposed project compared to the no-build alternative. The applicant must use the estimated emissions reductions calculated in question B2.

The proposed improvements will be expected to reduce total emissions by **293.1** kilograms per day. The total project cost is \$10,248,000. The cost per kilogram reduced by the proposed project is **\$34,964**.

D. Development Framework Implementation.

D.1 Development Framework Planning Area Objectives:

D.1.a. What are the 2030 land uses proposed in the community's adopted plan for the project area/corridor affected? Identify the TAZs that lie partially or wholly within the project limits.

Proposed 2030 Land Uses

There are a number of proposed land uses in the comprehensive plans for Andover and Ham Lake. Please refer to Attachment A, Figure 6 for a map that shows 2030 land use along both the minor arterial route and within the proposed project limits. Please note, because there are two communities along the corridor Figure 6 show the more generic (e.g., commercial, residential, park, etc) land uses. A copy of each community's land use map and associated descriptions is included in Attachment H.

Within the project area, the following 2030 land uses are identified:

- Urban residential (low)
- Public
- Open space
- ✓ Residential – single family
- ✓ Commercial
- ✓ Mixed use – C-1
- ✓ Park

Please note that Bunker Hills Regional Park is in the project area and overlaps both communities.

Land uses with a ▪ are located in Andover. Land uses with a ✓ are located in Ham Lake.

Within the minor arterial corridor, the following 2030 land uses are identified:

- *Urban residential (low)*
- *Public*
- *Open Space*

- ✓ *Residential – single family*
- ✓ *Commercial*
- ✓ *Mixed use – C-1*
- ✓ *Park*
- General commercial
- Neighborhood commercial
- Light industrial
- Commercial – neighborhood commercial
- Urban residential (medium)
- ✓ Golf course
- ✓ Residential townhome (medium)
- ✓ Residential multifamily (high)

Items in italic are uses previously identified as within the project location.

Items in plain text are land uses along the minor arterial corridor other than those previously listed.

TAZs

Please refer to Attachment A, Figure 6 for a map that shows the TAZs in the project area. TAZs identified: 22 and 28.

D.1.b. How does the project support this 2030 land use plan in the project area? Refer to the land use map and provide the land use categories and their description from the adopted local comprehensive plan.

How Project Supports 2030 Land Use Plans

The proposed project reconstructs the existing CSAH 116 corridor as a four-lane, divided, urban corridor with dedicated turn-lanes and intersection control. In addition, the proposed project includes the construction of a multi-use trail. The proposed project will better support existing and planned land uses within the corridor in a number of ways.

First, the proposed project widens the existing corridor from two lanes to four lanes. Existing traffic volumes on the corridor are approximately 15,000 vehicles a day. The existing volumes, in combination with the rail crossing result in congestion issues during the peak periods. Future traffic projections indicate that up to 27,000 cars a day will want to use this corridor.

Second, there are a limited number of continuous east-west arterial routes within Anoka County. CSAH 116 is one of three routes that provide a broader county-wide connection. As a result, traffic is attracted to this corridor regardless of adjacent land uses. Additionally, the widening of the corridor to four lanes is consistent with the segment of roadway east of the project area (CSAH 116 is a four-lane facility from CSAH 57 in Ramsey until Crane Street in Andover).

Third, the proposed project includes the construction of a pedestrian trail in areas where there are gaps in the regional trail system. The project will include a trail along the north side of the corridor to serve the existing and planned neighborhoods and commercial property along the corridor. The project also includes construction of a trail segment along the south side of the corridor between Crane Street and Bunker Hills Regional Park (just east of the Burlington Northern Santa Fe Railroad) in order to get users of the regional trail system on the south side of the corridor into Bunker Hills Regional Park and across the railroad.

As indicated above, CSAH 116 crosses the Burlington Northern Santa Fe (BNSF) railroad in the project. The present roadway crossing was modified a few years ago by the railroad in order to make the crossing whistle free (quiet zone). When the quiet zone was created it took away the roadway shoulders at the actual railroad crossing. As a result, pedestrians and bicyclists are forced into the traffic lane in order to cross the railroad. This is not a safe situation. The proposed project will include two trail crossings of the BNSF line with appropriate safety treatments so that pedestrians and bicyclists are not moving with traffic traveling at 55 mph.

Additionally, the proposed project includes a pedestrian underpass to bring bicyclists and pedestrians from the trail on the north side of the corridor to the park (which is located on the south side of the corridor). This will provide a much safer crossing for pedestrians and bicyclists that live on the north side of the corridor to get to the park. Presently they cross the roadway (on a curve – so it is hard to see) at grade and without signal control.

Bunker Hills Regional Park is very busy. The *Annual Use Estimate of the Metropolitan Regional Parks System for 2010* estimated that almost 824,000 visits were made to the park. A number of those visits come from residents located on the project corridor.

Fourth, the proposed project includes construction of a bus and/or truck pullout lanes at the BNSF railroad crossing. The proposed pullouts will enable the busses that are required to stop to be in their own lane and allow through traffic to continue. They are also used by the heavier commercial vehicles that take longer to start up and get up to speed when a train does come through. This improvement allows local users of the roadway to get to their destinations (home, parks, etc.) more quickly.

Fifth, the proposed project includes construction of a center median. This not only improves the safety of the corridor, but also supports the orderly development that exists and is planned for the future. The roadways that feed into the CSAH 116 corridor get prioritized (full access vs. partial access vs. access closure) based upon the amount of development that is served. Areas with lesser uses have more restricted access. Areas with more concentrated uses are given full access, consistent with the county's guidelines.

Sixth, the proposed project improves the geometrics at the CSAH 116 and Jefferson Street intersection. This intersection is quite busy due to the fact that Blaine High School is located off of Jefferson Street between CSAH 116 and CSAH 14. A lot of traffic

destined to and from the high school feeds through this intersection. The proposed improvements will improve traffic flow and make it easier for the students living along CSAH 116 to get to the high school.

Provide Land Use Categories and Descriptions

A copy of the land use descriptions from the respective comprehensive plans is included in Attachment H. Land uses with a ▪ are located in Andover. Land uses with a ✓ are located in Ham Lake.

- Urban residential (low): This district is established to create cohesive neighborhoods of single-family detached housing within the MUSA and with access to municipal sewer and water. Residential lots within this district are sized to allow efficient utilization of municipal infrastructure as well as to provide an area large enough to accommodate housing market demands. These neighborhoods must be protected from higher intensity uses with appropriate transitions. These transitions include natural features such as trees, wetlands, streams or major changes in topography. Man-made elements such as streets, parks or earth berms in combination with landscaping are also appropriate. When adjacent to arterial roadways, additional setback distance, landscaping and berming are required. Facilities that generate noise, traffic and/or glare also require major separation from these neighborhoods.

Minimum Lot Size: 11,400 square feet
 Density: 1.5 to 3.6 units per acre
 Max. PUD Density: 4 units per acre
 City Utilities: Required
 Zoning District: R-4 Single Family Urban Residential
 Development Type: Single family detached housing

- Public: District identifies areas for present and future civic, government, school or other publicly owned and operated facilities.
- Open Space: District identifies areas that are protected from development through public ownership or agreement with private property owners. This designation is used for public parks and other areas designated for preservation of natural areas, water and air quality and wildlife habitat.
- ✓ Residential – single family: Single family residential provides areas for neighborhoods of primarily single family housing. Single family housing can be described as a building intended to serve as a dwelling for one person or family unit. The traditional freestanding (detached) home provides the most common example of single family housing.

This designation applies to both older and developing neighborhoods in the city including shoreland and season recreational lots. This category also includes land

in active farming, but over time will convert to this land use category. Density for new growth in this class should not exceed one unit per acre. This land use category is currently implemented by the following zoning districts.

R-1 Single Family Residential
 R-A Rural Single Family Residential
 RS-1 General Shoreland Residential
 RS-2 Recreational Shoreland Residential
 PUD Planned Unit Development

- ✓ Commercial: The intent of this designation is to provide for convenient commercial services that serve the needs of the surrounding neighborhood with minimal traffic impact. Commercial uses are located on major collector roads to take advantage of the regional network and to minimize impacts on neighborhoods. It is implemented by the CD-3 Commercial Development Tier 3 District.
- ✓ Mixed Use – C-1: Land uses in this category span a wide range of commercial and light industrial services. Commercial areas include those that serve the highway traveling public as well as serve the needs of the people who live or work in and around the city. Industrial uses may include light manufacturing and warehousing with no outdoor storage. Most land in this class is adjacent to Highway 65 to take advantage of the regional transportation network. Lot sizes are large enough to accommodate typical highway commercial uses which include retail stores. This land use category is currently implemented by the following zoning districts:

CD-1 Commercial Development Tier 1
 CD-2 Commercial Development Tier 2
 CD-4 Commercial Development Tier 4

The mixed commercial-industrial areas shown on the Land Use Plan are all to be served with private sewer systems. Where appropriate, the city encourages private property owners to utilize shared systems that will allow for expanded commercial-industrial development without the need for public financing. Any common sanitary sewer collection and treatment is expected to be privately installed.

- ✓ Park and Open Space: A designation for publicly owned lands to be used for active and passive recreational opportunities.

D.1.c. How does the project support 2030 forecasts for the project area? [Council staff will evaluate this criterion and will provide the following information to assist in the evaluation of this criterion: TAZ Project Area demographic population, household, employment and retail employment]

Information to be provided by Metropolitan Council staff.

D.2 Progress Towards Affordable Housing Goals

Information and analysis to be provided by Metropolitan Council staff.

D.3 Land Use and Access Management Planning

D.3.a. Reference and describe the local access management plan used to develop the proposed project and describe the corresponding county or state access management plan which supports the regional road network.

The proposed project was developed based on the Anoka County Highway Department Access Management Guidelines. The county's policy on access management complements the guidelines developed by Mn/DOT for the trunk highway system. The proposed project is on a corridor with posted speed limits of 55 miles per hour. The county guidelines allow for full access spacing at half a mile and a quarter of a mile for secondary access on minor arterial routes with speeds over 45 mph. Traffic signals can be installed at the full access locations. Private access (driveway) is allowed by exception or deviation. Essentially, the exception and deviation provisions allow for driveways onto the arterial route if they cannot be served by an adjacent roadway or a combined access. Figure 7 in Attachment A shows the guidelines that were used to develop access for the proposed project. Attachment I has a copy of the Anoka County access guidelines.

D.3.b. Provide and identify intersection spacing and signal spacing guidelines and driveway allowance criteria used for the proposed project and the corresponding county or state access management guidelines.

The proposed project was developed based on the Anoka County access management guidelines. As indicated above, with a 55 mile per hour speed limit, traffic signals are allowed to be spaced a half a mile apart, full access is allowed at a half mile, secondary access is allowed at a quarter of a mile and driveways are allowed by exception and deviation. See Attachment I for a copy of the guidelines and allowances.

D.3.c. Having the necessary regulatory framework is essential for protecting the efficient functioning of the regional roadway network. Reference (adoption date) and describe the local zoning and subdivision ordinance regulations that are in place to maintain the access plan as adjacent properties are developed and/or redeveloped.

The City of Ham Lake acknowledges Anoka County's access spacing guidelines in its comprehensive plan and indicates that the city defers to the county for access to the county roadway system.

In addition to the comprehensive plan, the city's subdivision ordinance addresses the fact that some items required for the preliminary plat require the review and approval of agencies outside of the City of Ham Lake. The ordinance states that the city will submit

the preliminary plat drawing and other documents to all other agencies or entities necessary to review and comment on the plat.

In terms of access management, the City of Ham Lake submits the preliminary plat to the Anoka County Highway Department for review and comment.

The Ham Lake City Code was adopted on June 8, 1990 and has had several updates since. The Ham Lake comprehensive plan was adopted in 2008. Please see Attachment I for the comprehensive plan and ordinance language.

The City of Andover acknowledges Anoka County's access spacing guidelines in its comprehensive plan. The plan states that Anoka County has the permitting process for its roadways.

In addition to the comprehensive plan, the city's subdivision ordinance states that no preliminary plat will be approved where lots front the right-of-way of state, county or city arterials or major collector streets. It also states that such lots may front on service roads with entrances to the above (state, county, or city arterial roadways) at intervals as determined by the county or city.

The Andover comprehensive plan was adopted in May of 2009. The subdivision regulations were updated in September 2007. Please see Attachment I for the comprehensive plan and ordinance language.

D.4 Corridor Access Management Improvements

Identify the access locations and access management that currently exists and that will be allowed once the project is completed. Indicate by the following classifications the existing access locations inconsistent with the proposed access management approach and any access locations that will be modified.

Figure 7 in Attachment A shows the access that is allowed on the corridor based on the county spacing guidelines.

Figure 8 in Attachment A is a sketch that shows existing access along the corridor. In addition, Figure 4 in Attachment A includes the aerials of the project corridor – many of the access points can be seen in these figures.

Figure 9 in Attachment A shows the proposed future access for along the corridor and Figure 5 shows the proposed layout which includes access locations.

Much of the development that has taken place along CSAH 116 in the project area was completed before Anoka County and the Cities of Andover and Ham Lake adopted formal access management guidelines. It should be noted that the corridor is fairly consistent with the county's current guidelines.

D.4.a Private residential driveway/field entrances:

Private residential driveways in the project area are allowed by exception or deviation. Anoka County's access guidelines were developed based on the Mn/DOT guidelines initially established as part of Technical Memorandum 02-10-IM-01. Essentially, private driveway access is not permitted unless there is no alternate access (off a side street, shared driveway with another parcel, county has not purchased access control, etc.). If access cannot be avoided, the guidelines further explain that driveways should be modified to right-in/right out access if a center median is provided, that only one entrance per parcel should be provided, that the entrance should not be within the functional area of a public intersection or within a turn lane, that access should be interim if it is determined alternative access will be provided in the future, and that private entrances on opposing sides of undivided roadways should be aligned.

There are no private residential driveways or field entrances on the corridor. Access is consistent with the Anoka County guidelines.

D.4.b. Low-volume private driveways:

Like residential driveways, commercial driveways in the project area are allowed by exception or deviation. As explained previously, driveway access is not permitted unless there is no alternate access (off a side street, shared driveway with another parcel, county has not purchased access control, etc.). If access cannot be avoided, the guidelines further explain that driveways should be modified to right-in/right out access if a center median is provided, that only one entrance per parcel should be provided, that the entrance should not be within the functional area of a public intersection or within a turn lane, that access should be interim if it is determined alternative access will be provided in the future, and that private entrances on opposing sides of undivided roadways should be aligned.

There are presently three low-volume private driveways on the corridor. The proposed project converts these driveways to right-in/out entrances. There are no opportunities to switch these driveways to a local street.

In terms of spacing, working from west to east, the first private driveway is located on the south side of the corridor, approximately 800 feet east of Crane Street/Highway Department entrance (where the project begins). This is the access for the Metropolitan Mosquito Control District. This facility is only used during the spring and summer months and has very limited traffic into and out of the site. The proposed project converts this access into a right-in/out location. There are no other roadways that this access can connect into. Linking it to the full access at the Crane Street/Highway Department access would impact Section 4(f) and 6(f) property as well as wetlands.

The second private driveway is located on the north side of the corridor and is spaced approximately 1,100 feet from a public street (Butternut Street). The third driveway is approximately 1,100 feet east of the second private driveway and approximately 1,300 feet west of Jefferson Street, thus making both of the private driveway accesses generally

consistent with the Anoka County guidelines allowing right-in/out access at a quarter of a mile.

In addition to the existing access, a future three-quarter access is proposed between the two right-in/out access locations (between Butternut and Jefferson Streets). This access is being proposed to serve future development in the area. This access is not consistent with the distances established in the guidelines, but there are no other alternate locations at this time.

D.4.c. High-volume private driveways:

There are two high-volume private driveways located on the corridor. Working from west to east, the first private driveway is County Parkway A. This access is located on the south side of the corridor directly across from Sycamore Street. This private driveway actually is a street that connects between CSAH 116 and CSAH 14 (principal arterial being relieved). However, a pass is required to use this roadway during the summer months because it serves Bunker Hills Regional Park, so it is not considered a public street even though it is open to the public approximately nine months out of the year. The second private driveway is located at County Parkway D. This access is located on the south side of the corridor, just west of Goldenrod Street. This driveway serves the Bunker Hills Regional Park activities center.

County Parkway A is proposed to remain as it is, open directly across from Sycamore Street. This location is a little over a half a mile east of the first full access on the corridor, Crane Street. The access (at a half-mile and aligned with Sycamore Street) is consistent with the county's spacing guidelines. The county explored moving County Parkway A even farther to the east and lining it up with the existing signalized access at Prairie Street, but that would require impacts to Section 4(f) and Section 6(f) property as well as impacts to high-quality wetlands and trails located within the regional park.

The second access, County Parkway D is proposed to be closed at its present location. The county is proposing to realign the entrance to this facility with Goldenrod Street (which is proposed to be a full-access and meets the half-mile full access spacing guidelines). The new access will be located over a half of a mile east of Prairie Street and over a half of mile west of Jefferson Street, the next full access locations on either side of the combined Goldenrod Street/County Parkway D intersection.

D.4.d. Public Streets:

The Anoka County access guidelines allow full access at public streets along corridors with 55 mph speeds at half-mile intervals. Right-in/out access is allowed at quarter-mile intervals.

The following public streets are located along the corridor (from west to east): Wintergreen Street, Sycamore Street, Prairie Road, Goldenrod Street, Butternut Street,

Terrace Road, and 138th Avenue NE/Jefferson Street. All of the streets are full access at this time.

The proposed project will convert Wintergreen Street to a right-in/out location. This will make Wintergreen Street consistent with the Anoka County access guidelines. Wintergreen will be at least 1,300 feet (quarter of a mile) from the proposed full access locations.

The proposed project will close Terrace Road. This will make access in the area consistent with the guidelines.

The proposed project will convert Butternut Street to a right-in/out access. This will make access in the area consistent with the guidelines.

Full access will remain at Sycamore Street, Prairie Road, Goldenrod Street and 138th Avenue NE/Jefferson Street. The existing signals at Prairie Road and 138th Avenue NE/Jefferson Street are proposed to remain in place. There is one public street access that is inconsistent with Anoka County guidelines if the project moves forward. That access is the traffic signal at Prairie Road.

Prairie Road is closer than a half a mile to the Sycamore Street/County Parkway A intersection, but it is farther than a half a mile from the Goldenrod Street/County Parkway D intersection. The county looked at alternatives for converting Sycamore Street to a right-in/out access and realigning County Parkway A to Prairie Road. That would have made the intersections spaced over a half of a mile in either direction and the public street access locations would have been consistent with the guidelines. However, this was not feasible. County Parkway A cannot be relocated to Prairie Road due to impacts to Section 4(f), 6(f), wetland and lake impacts.

Overall, there are just three access points that do not meet the complete spacing requirements of the access guidelines, the Metropolitan Mosquito Control District entrance, Prairie Road and the three-quarter access between Butternut Street and Jefferson Street. The proposed project is able to close two access locations along the corridor and convert most of the remaining access locations into right-in/out locations consistent with the guidelines.

D.5 Integration of Modes

D.5.a Pedestrians – Include a map that shows all new or reconstructed walkways or multiuse paths that will be constructed as part of this project as well as all pathways that these walkways will connect to and any potential pedestrian destinations such as schools, residences, transit stops, parks and businesses within a quarter mile of the project area.

Please refer to Figure 5 in Attachment A to see the proposed project layout.

Please refer to Figure 10 in Attachment A to see trails and sidewalks.

Please refer to Figure 6 in Attachment A to see land uses.

Walkway Construction and Connection to an Existing Network

There are some components of a trail along the project corridor but there are a number of gaps as well. The paragraphs below describe existing conditions and proposed improvements.

CSAH 116 has been identified as a regional trail corridor. A portion of the regional trail has been constructed between CSAH 78 (just west of the project limits) and the Anoka County Highway Department/Crane Street intersection on the south side of the corridor. In addition to the trail along CSAH 116 there are also trails internal to Bunker Hills Regional Park. The proposed project constructs a trail on the south side of CSAH 116 from the Anoka County Highway Department/Crane Street intersection to the east side of the BNSF railroad, where it will tie into the trails already located in the park. The trail will cross the railroad at grade. Pedestrians will be able to access Bunker Hills Park, Bunker Hills Beach and the Bunker Hills Activity Center. They will also be able to cross CSAH 116 at the signalized location at Prairie Road and at an underpass (part of the proposed project) on the more eastern side of the corridor just west of the existing County Parkway D access.

On the north side of the corridor, there is a city trail between CSAH 78 and the Crane Street/Anoka County Highway Department intersection. There is also a city trail on the north side of the corridor from the east side of the BNSF railroad track to Butternut Street. This trail will remain in place and/or be reconstructed as necessary. [In some areas the trail will need to be rebuilt, in other areas it is far enough back that it will not be impacted.] The proposed project will construct a trail on the north side of CSAH 116 between Crane Street/Anoka County Highway Department intersection to the existing trail on the east side of the railroad. The proposed project will also extend the trail from Butternut Street through the 138th Street NE/Jefferson Street intersection. With the project, there will be a complete trail on the north side of the CSAH 116 corridor. The proposed project also proposes to construct a pedestrian underpass just west of the existing County Parkway D access. This will enable residents on the north side of the corridor to cross into Bunker Hills Regional Park. They can also enter the park at the traffic signal on Prairie Road.

The regional trail that will be constructed as part of this project extends well beyond the project limits to the west. After having completed several roadway projects along CSAH 116, there will be a regional trail all the way along the corridor through the Cities of Andover, Anoka and all the way to CSAH 57 in the City of Ramsey. The trail on the north side ties into trails located within the City of Andover that access several park and neighborhood areas. In addition, the trails tie through Bunker Hills Regional Park and onto the regional trails (Coon Creek Regional Trail and Bunker/Chain of Lakes Regional Trail) located along and/or just south of CSAH 14. In addition, there are a number of local trails and sidewalks that feed into the proposed regional trail located along CSAH 116, as well as to the trails located on the south side of Bunker Hills Regional Park in the Cities of Blaine and Coon Rapids. Please refer to Figure 10. The proposed project eliminates a significant gap in the regional and local trail network.

The project will also include crosswalks with countdown timers at signalized intersections so that pedestrians can safely cross CSAH 116 to get from the residential areas to the park areas.

The proposed project will be designed to be ADA compliant.

Destinations Connected by Walkway Network

As noted above, there is an extensive existing trail network in and around the project area that provide a number of links. The proposed project fills part of a gap that exists and will better serve the residents in the project area. Areas that will be better connected include:

- Residential neighborhoods on the north side of the corridor. Presently there are gaps in the trail network that limit the connectivity between individual neighborhoods. In addition, the BNSF railroad is a barrier that pedestrians and bicyclists cannot cross (there are no shoulders in the crossing area and pedestrians and bicyclists are forced to get into the through traffic lane – with vehicles travelling at 55 mph). The proposed project will construct a trail along the entire north side of the project.
- Connections to parks on both the north and south sides of the corridor. The existing gaps in the trail system prevent some residents from accessing the three city parks (Coon Creek, Shadowbrook West and Shadowbrook East) located on the north side of the corridor. Additionally, the gaps prevent residents on the north side from getting to Bunker Hills Regional Park and its many amenities (Bunker Beach, Bunker Hills Golf Course, Bunker Hills Activity Center, Bunker Hills Campgrounds, Bunker Hills Stable and many trails).
- Connections to Majestic Oaks Golf Course. The existing gaps in the trail system make it impossible to walk or bike to Majestic Oaks Golf Course. The proposed project will provide a connection to this location.
- Connections to commercial nodes along CSAH 78 (north of CSAH 116) and along CSAH 116 west of CSAH 78. The City of Andover has a sizeable concentration of commercial activities along both CSAH 78 and CSAH 116 near the project limits. With the regional trail in place west of Crane Street (western project limits) and with a local trail on CSAH 78, it is very easy to connect to these commercial nodes. Amenities in the commercial nodes include: restaurants, movie theater, bowling alley, bars, Target, grocery store, coffee shop, banks, drug store, clinic, multiple gas stations and a number of smaller shops.
- Connections to institutional uses. The Anoka County Highway Department and the Metropolitan Mosquito Control District are located along the corridor. Additionally the headquarters for the Anoka County Park Department is also located in the project area at the Bunker Hills Activity Center. It is also possible for students to use the trail along CSAH 116 and to use the trails through Bunker Hills Regional Park to get to the Blaine High School (school is located north of

CSAH 14 between University Avenue and Jefferson Street). The Anoka County Sheriff's Office is also within a short distance of the project area. It is located south of CSAH 116 on CSAH 78.

D.5.b. Bicyclists – Include a map that shows all new or reconstructed bikeways that will be constructed with this project, and show how they connect to an existing or planned bikeway network. Also show potential destinations along the roadway segment and within a quarter of a mile of the project area that will be accessible with this bikeway network such as schools, parks, residences, transit stops and businesses.

Please refer to Figure 5 in Attachment A to see the proposed project.

Please refer to Figure 10 in Attachment A to see existing and proposed trails.

Please refer to Figure 6 in Attachment A to see land uses.

Please refer to Figure 11 in Attachment A to see transit service.

Bikeway Construction and Connection to an Existing or Planned Network

As described in the previous section on pedestrians, the project includes the construction and reconstruction of a multiuse path along segments of both sides of CSAH 116. Bicyclists, like pedestrians can use the path. In addition, the proposed project includes the construction of eight-foot shoulders which can be used by the more experienced cyclists for commuting purposes.

Please refer to the previous section on pedestrians for a description of the existing and proposed conditions for multiuse paths as well as the connections to other local and regional trails in the area. Figure 10 shows the trail network that the cyclists can use and Figure 5 shows the proposed trail and shoulders.

Destinations Connected by Bikeway Network

As shown in Figure 6, there are a number of different land uses that are connected by the proposed project trail. Within the project area, most of the land use is residential on the north side of the corridor with park land on the south side of the corridor. There is some limited commercial uses and a golf course as well. Beyond the project limit there are additional commercial, industrial and institutional uses. Areas that will be better connected include:

- Residential neighborhoods on the north side of the corridor. Presently there are gaps in the trail network that limit the connectivity between individual neighborhoods. In addition, the BNSF railroad is a barrier that pedestrians and bicyclists cannot cross (there are no shoulders in the crossing area and pedestrians and bicyclists are forced to get into the through traffic lane – with vehicles travelling at 55 mph). The proposed project will construct a trail along the entire north side of the project.
- Connections to parks on both the north and south sides of the corridor. The existing gaps in the trail system prevent some residents from accessing the three city parks (Coon Creek, Shadowbrook West and Shadowbrook East) located on

the north side of the corridor. Additionally, the gaps prevent residents on the north side from getting to Bunker Hills Regional Park and its many amenities (Bunker Beach, Bunker Hills Golf Course, Bunker Hills Activity Center, Bunker Hills Campgrounds, Bunker Hills Stable and many trails).

- Connections to Majestic Oaks Golf Course. The existing gaps in the trail system make it impossible to walk or bike to Majestic Oaks Golf Course. The proposed project will provide a connection to this location.
- Connections to commercial nodes along CSAH 78 (north of CSAH 116) and along CSAH 116 west of CSAH 78. The City of Andover has a sizeable concentration of commercial activities along both CSAH 78 and CSAH 116 near the project limits. With the regional trail in place west of Crane Street (western project limits) and with a local trail on CSAH 78, it is very easy to connect to these commercial nodes. Amenities in the commercial nodes include: restaurants, movie theater, bowling alley, bars, Target, grocery store, coffee shop, banks, drug store, clinic, multiple gas stations and a number of smaller shops.
- Connections to institutional uses. The Anoka County Highway Department and Mosquito Control are located along the corridor. Additionally the headquarters for the Anoka County Park Department is also located in the project area at the Bunker Hills Activity Center. It is also possible for students to use the trail along CSAH 116 and to use the trails through Bunker Hills Regional Park to get to the Blaine High School (school is located north of CSAH 14 between University Avenue and Jefferson Street). The Anoka County Sheriff's Office is also within a short distance of the project area. It is located south of CSAH 116 on CSAH 78.
- Connections to transit stops. While transit is not provided on CSAH 116, there are transit stops that are located just south of CSAH 14 on the south side of Bunker Hills Regional Park. Figure 11 shows transit stops for Route 59, which would be a manageable for someone living along CSAH 116 to get to (use trail through the park – Figure 10).

D.5.c. Transit – Is there transit service on the roadway? If so, what elements of this project will enhance the mobility of transit vehicles, if any? What elements of this project will improve passenger access to transit stops?

Transit Service on the Roadway

Please refer to Figure 11 in Attachment A for transit stops and routes.

The proposed project is located in the Cities of Andover and Ham Lake. Both of these communities are outside of the Transit Levy Communities District. As a result, fixed-route transit cannot be provided on these routes. However, the Anoka County Traveler dial-a-ride buses do use this corridor.

Transit will be provided on TH 65 in the near future (before this project would be constructed). CSAH 116 connects into TH 65 a little over a mile from the eastern project limits.

Project Elements that Enhance Mobility for Transit Vehicles

If any transit vehicles would need to use CSAH 116 to get to their routes or to provide dial a ride services, the improvements along the corridor will enhance their mobility. The additional through lane and dedicated left- and right-turn lanes and school bus/truck pull-over lanes at the railroad crossing will make it faster for all vehicles, including busses, to get through the corridor. Please refer to Figure 5 in Attachment A to see the proposed project improvements.

Improved Passenger Access to Transit Stops

Please refer to Figure 5 in Attachment A to see the proposed project improvements. Please refer to Figure 11 in Attachment A to see transit stops and routes.

Please refer to Figure 10 in Attachment A for existing and proposed trails and sidewalks. Although transit will not be provided on the project corridor, there is transit service nearby – along TH 65 (Route 885) and south of the project area on Route 59.

The proposed project will complete a trail that links into Bunker Hills Regional Park. The park also has a number of trails that connect to all parts of the park and to local roadways. Bicyclists could use the trail along CSAH 116 to go through the park and connect to local city trails on CSAH 51 and Foley Blvd to get to Route 59.

D.5.d. Freight – What is the current daily heavy commercial traffic along the project segment? Is the roadway used to access any of the regional intermodal freight terminals in Appendix J and does the road connect any of these terminals to a freeway?

HCADT

There are presently 445 heavy commercial vehicles a day using CSAH 116 in the project segment.

Intermodal Freight Terminals

CSAH 116 does not have any of the regional intermodal freight terminals listed in Appendix J. However, there are some freight facilities found in Mn/DOT's freight facilities database that are located in or near the project area. Please refer to Figure 12 in Attachment A for facilities near the project area.

It should also be noted that the arterial route connects to TH 65 where there are a number of facilities found from Mn/DOT's database.

Connection to Freeway

CSAH 116 has access to US 10 via CSAH 78. CSAH 78 has been upgraded to a four-lane divided facility and its interchange with US 10 has also recently been reconstructed to provide better mobility.

E. Maturity of Project Concept.

Applications involving construction must complete the project implementation schedule found in Appendix K.

The following project implementation schedule has been prepared for the CSAH 116 improvements.

Activity	Completion Date
Preliminary Design & EA/EAW	7/1/2014
Final Design	1/1/2015
Acquisition of right-of-way parcels	1/1/2016
Advertise for Bids	3/1/2016

This schedule is achievable and allows enough time to acquire the right-of-way necessary for the realignment. Please see Attachment J for the project implementation schedule.

LIST OF ATTACHMENTS

A. Figures

- Project Location Map Anoka County (1)
- Project Limits (2)
- Traffic Volumes/Minor Arterial Route Map (3)
- Existing Corridor Aerials (4)
- Project Sketch/Concept (5)
- TAZs and Land Use (6)
- Access Guidelines (7)
- Existing Access Locations (8)
- Proposed Access Locations (9)
- Trails and Sidewalks (10)
- Transit (11)
- Freight (12)

B. Supporting Plans

- Anoka County Highway Improvement Plan
- Andover Comprehensive Plan

C. Support Letters/Resolutions

- City of Andover
- City of Ham Lake
- Anoka County

D. Travel Forecasts

E. Crash Information

- TIS Data for CSAH 14 and CSAH 116
- Crash Diagrams for CSAH 116

F. Pollution Worksheet

- Vehicle Emissions Reduction Worksheet

G. Existing Traffic Volumes

- CSAH 14
- CSAH 116

H. 2030 Land Use Maps and Descriptions from Comp Plans

- Andover
- Ham Lake

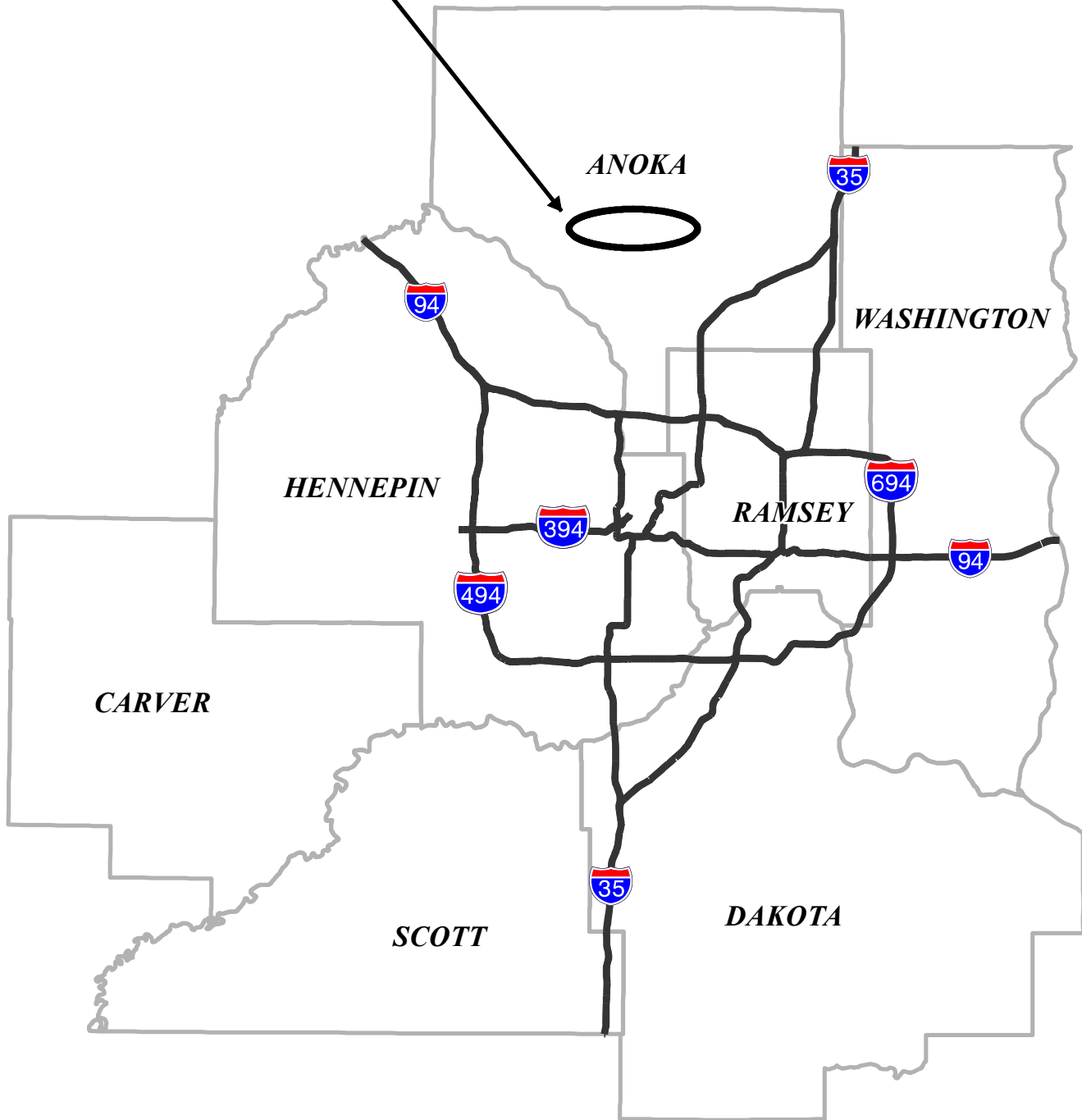
I. Access Information

- Anoka County Access Guidelines
- City of Andover Comp Plan and Subdivision Ordinance
- City of Ham Lake Comp Plan and Subdivision Ordinance

J. Project Implementation Schedule

Attachment A: Figures

PROJECT LOCATION
Anoka County



Project Location Map

Figure 1

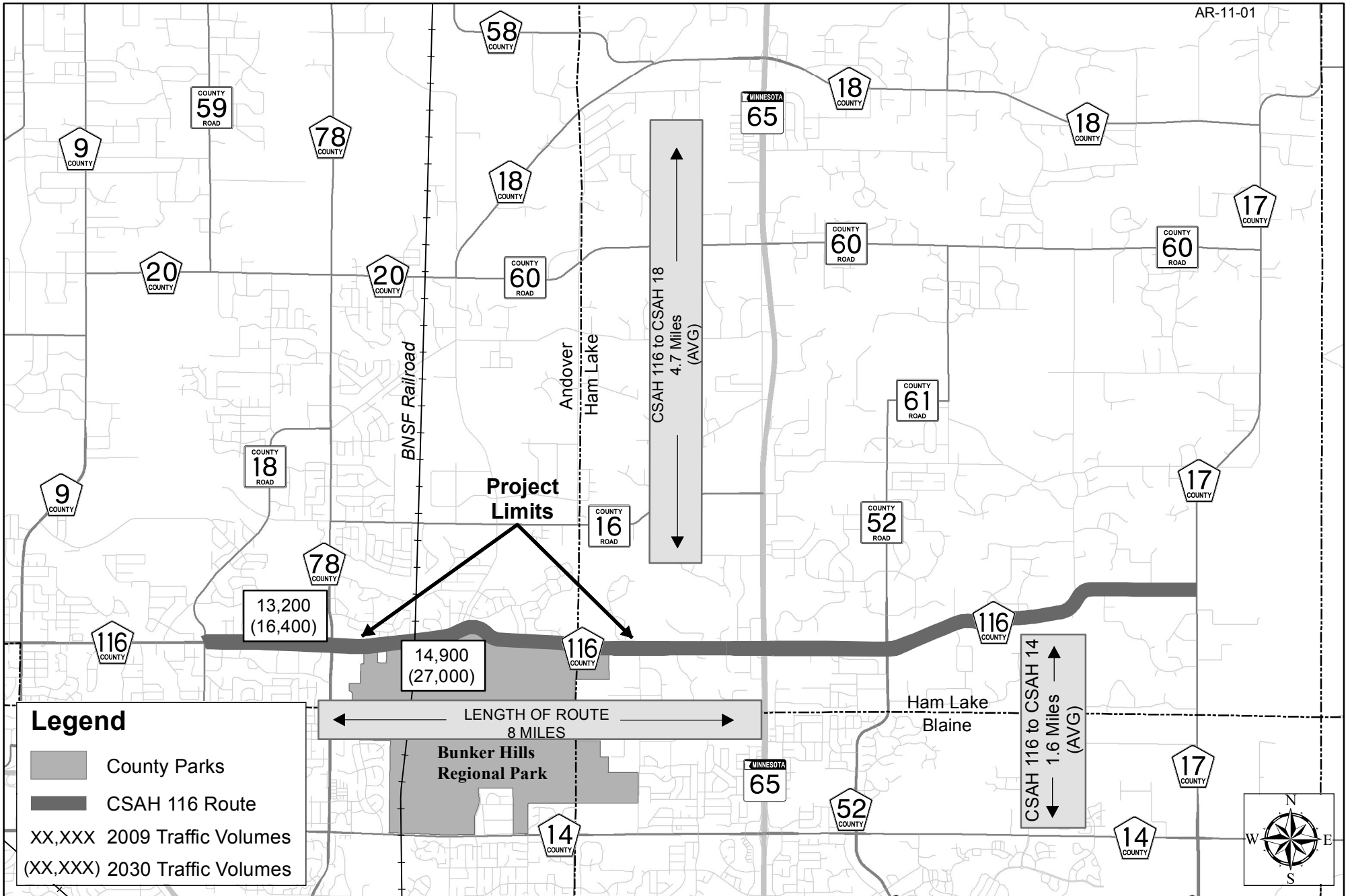
CSAH 116 Reconstruction Project
STP "A" Reliever



Project Limits

CSAH 116 Reconstruction Project
STP "A" Reliever

Figure 2



Traffic Volumes

CSAH 116 Reconstruction Project
STP "A" Reliever

Figure 3



Project Context

CSAH 116 Reconstruction Project
STP "A" Reliever

Figure 4A



Project Context

CSAH 116 Reconstruction Project
STP "A" Reliever

Figure 4B



Project Context

CSAH 116 Reconstruction Project
STP "A" Reliever

Figure 4C



Project Context

CSAH 116 Reconstruction Project
STP "A" Reliever

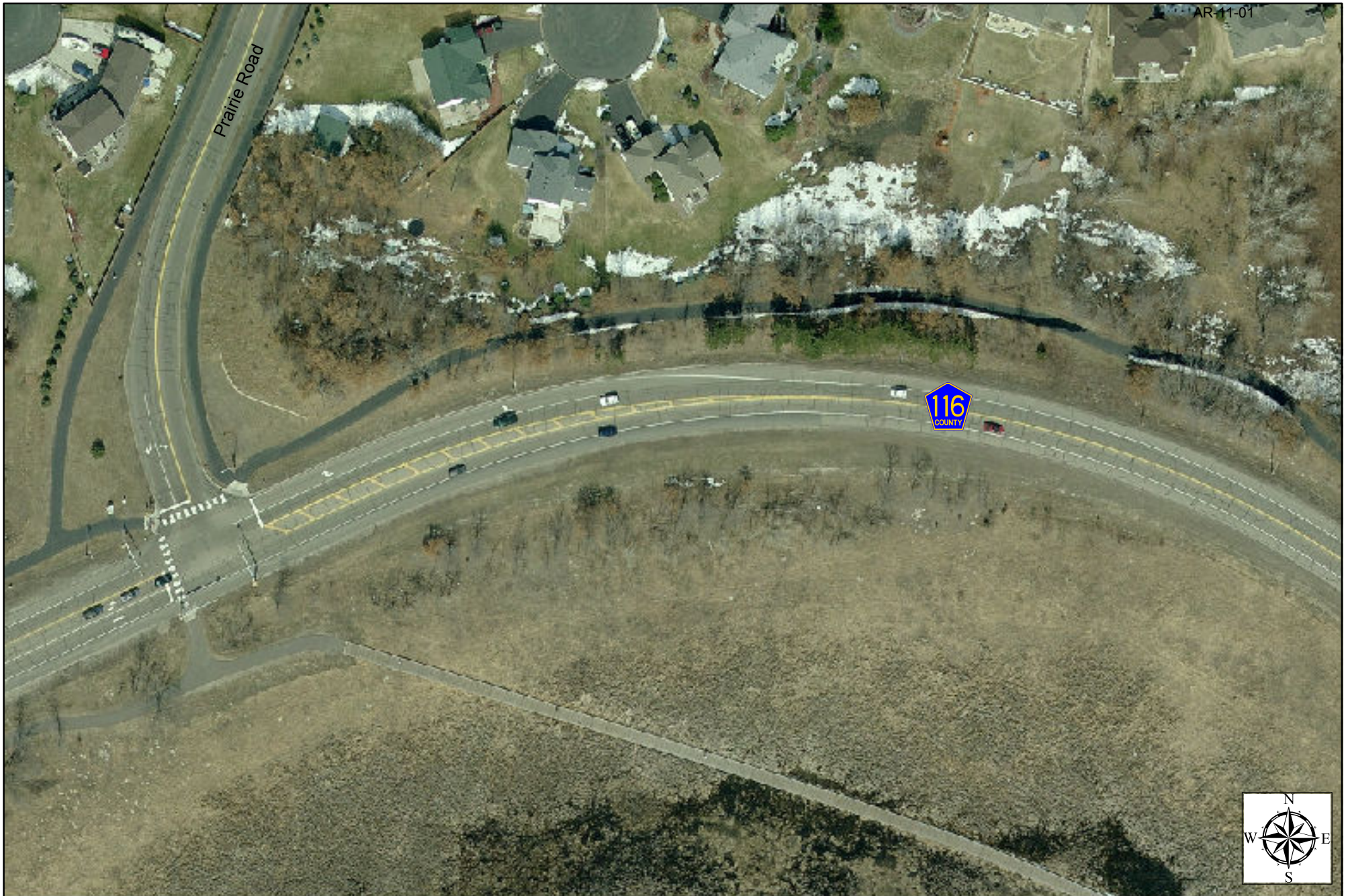
Figure 4D



Project Context

CSAH 116 Reconstruction Project
STP "A" Reliever

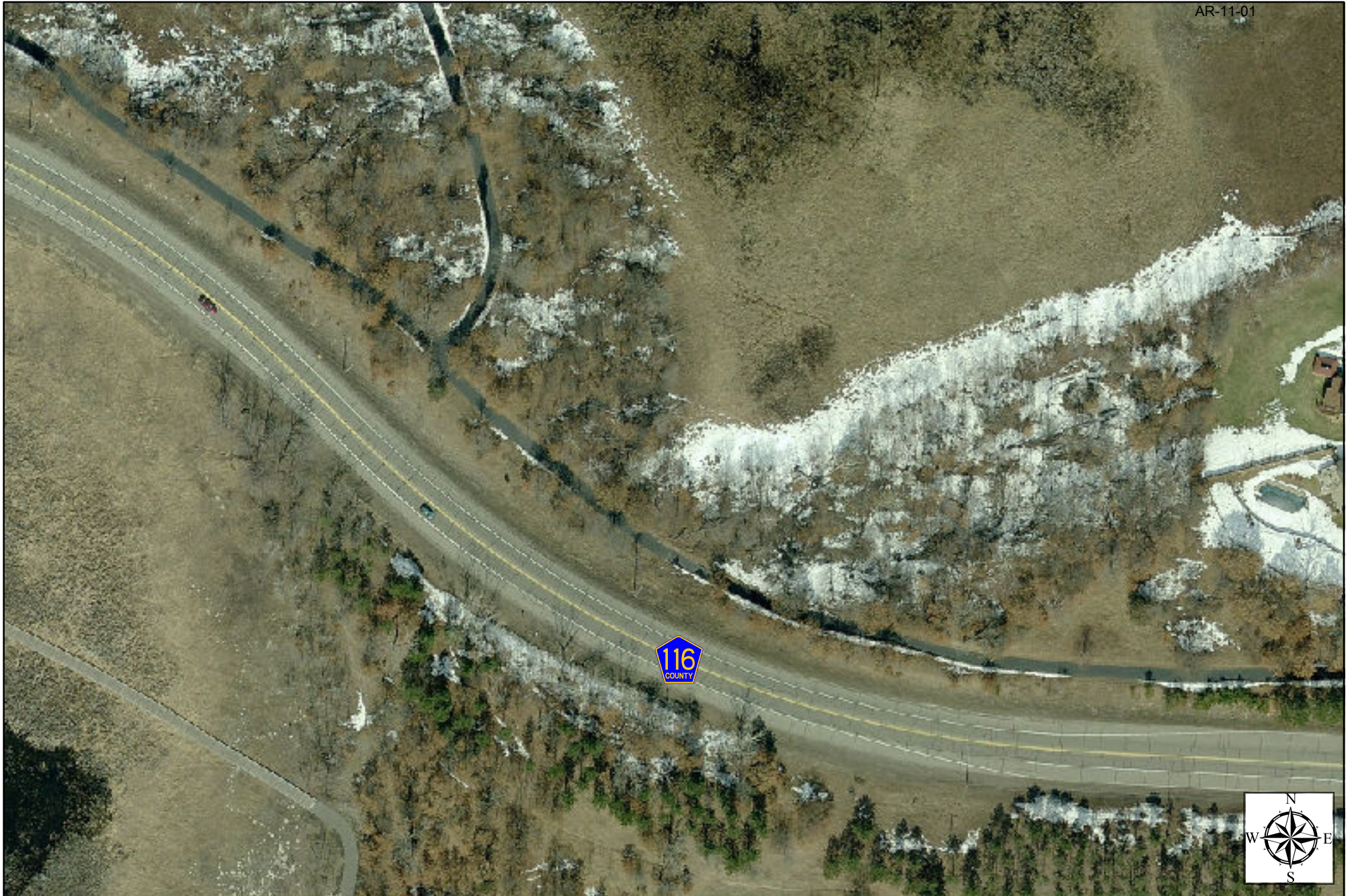
Figure 4E



Project Context

CSAH 116 Reconstruction Project
STP "A" Reliever

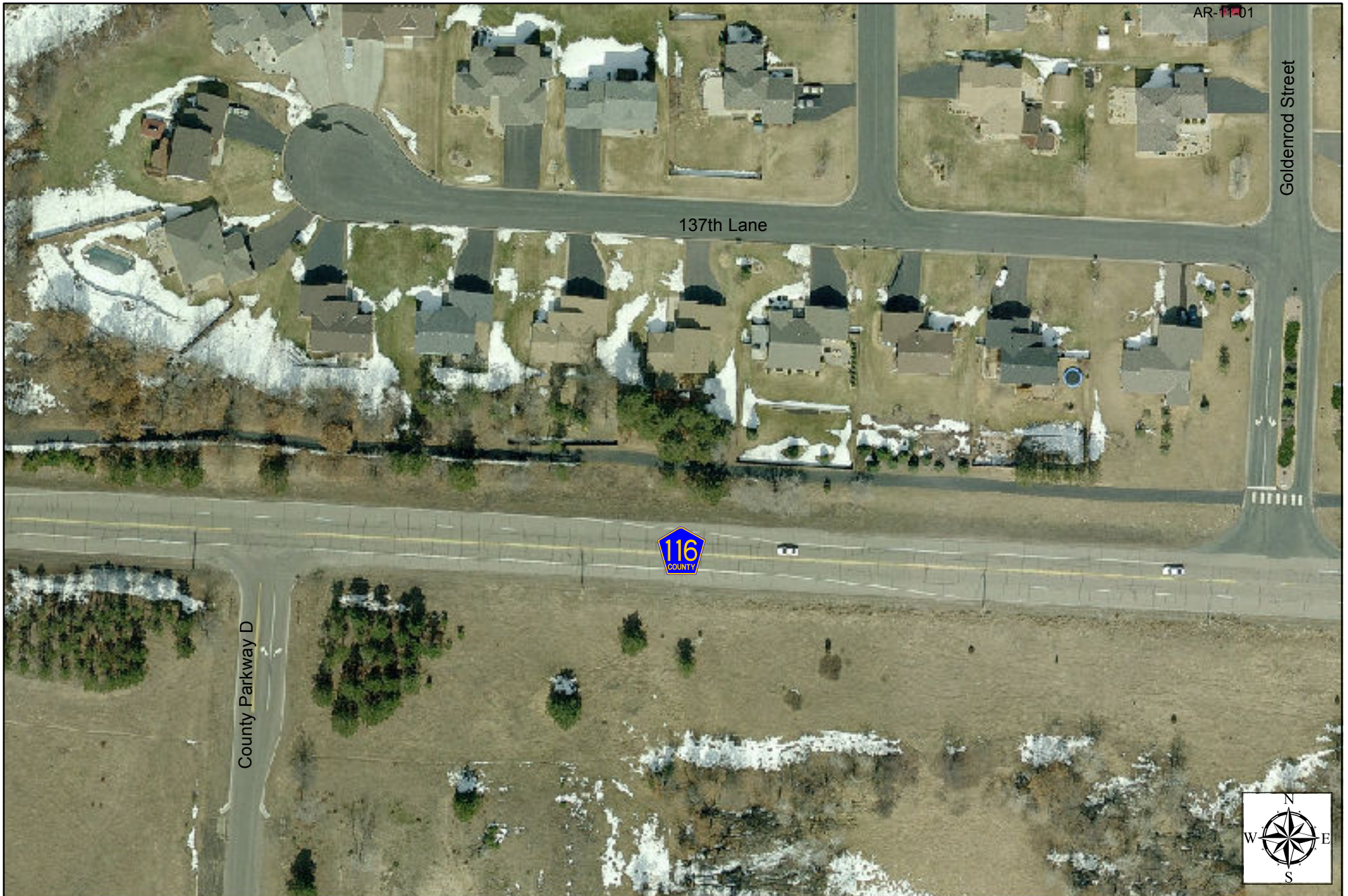
Figure 4F



Project Context

CSAH 116 Reconstruction Project
STP "A" Reliever

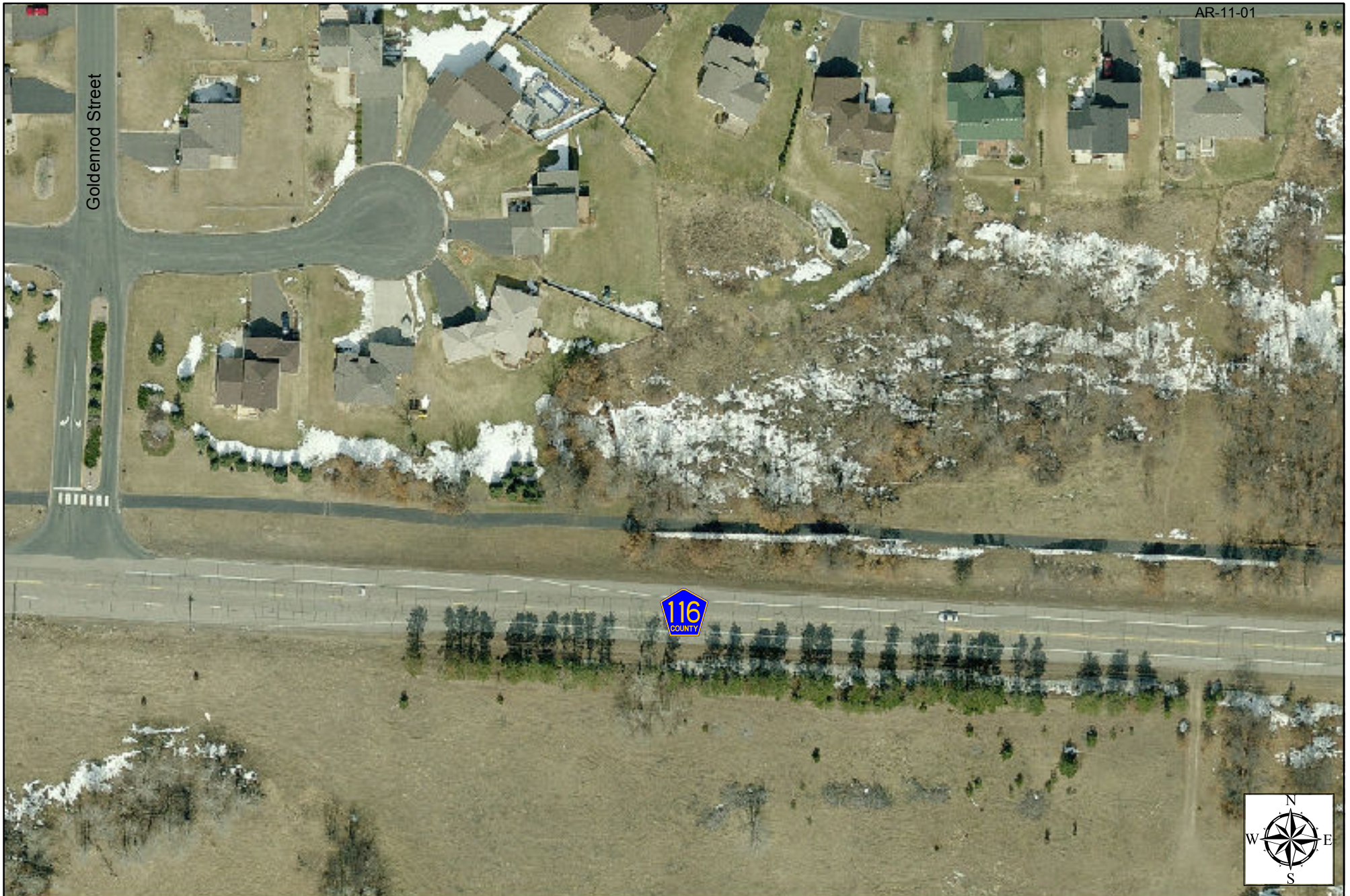
Figure 4G



Project Context

CSAH 116 Reconstruction Project
STP "A" Reliever

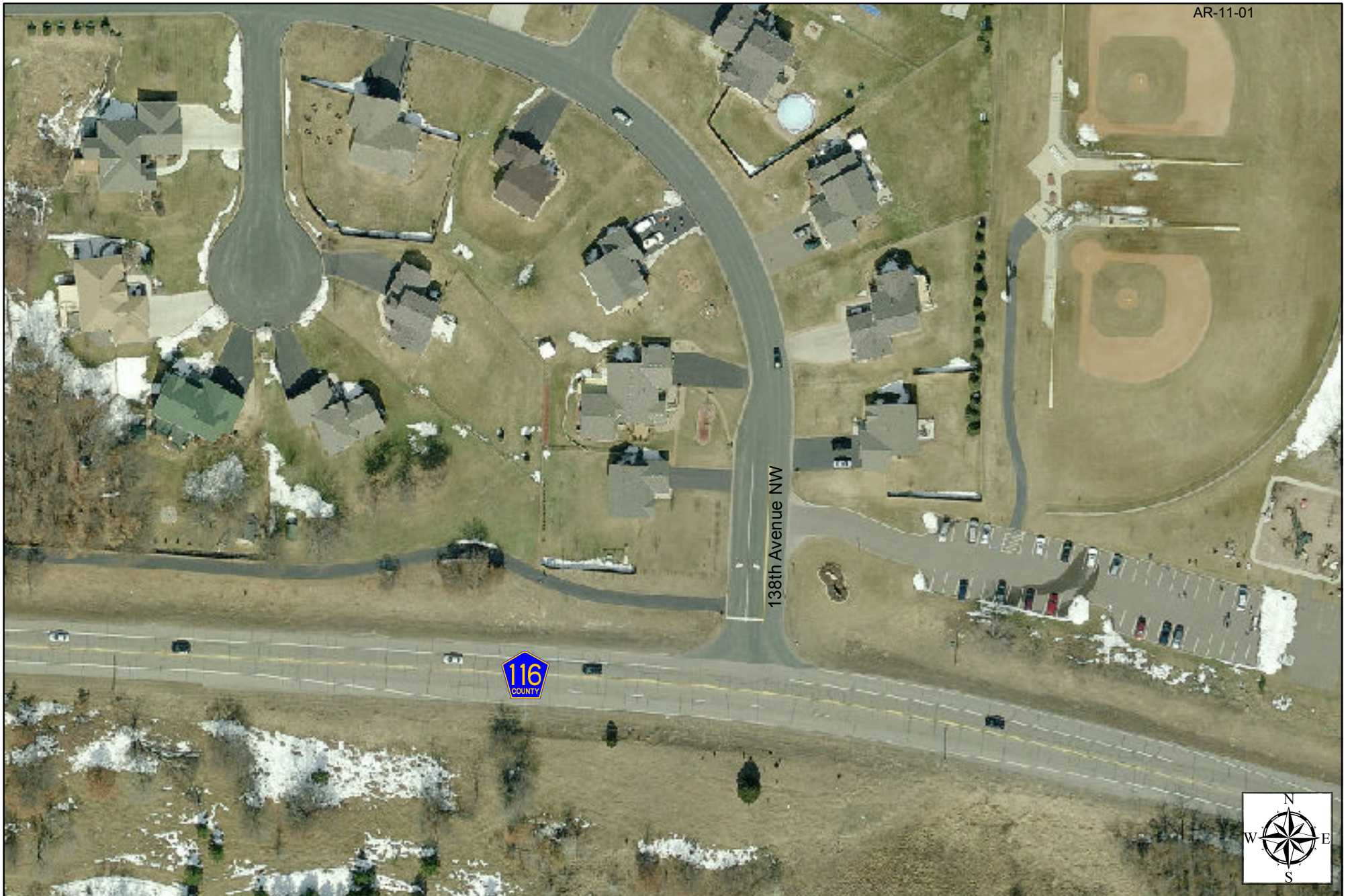
Figure 4H



Project Context

CSAH 116 Reconstruction Project
STP "A" Reliever

Figure 4I



Project Context

CSAH 116 Reconstruction Project
STP "A" Reliever

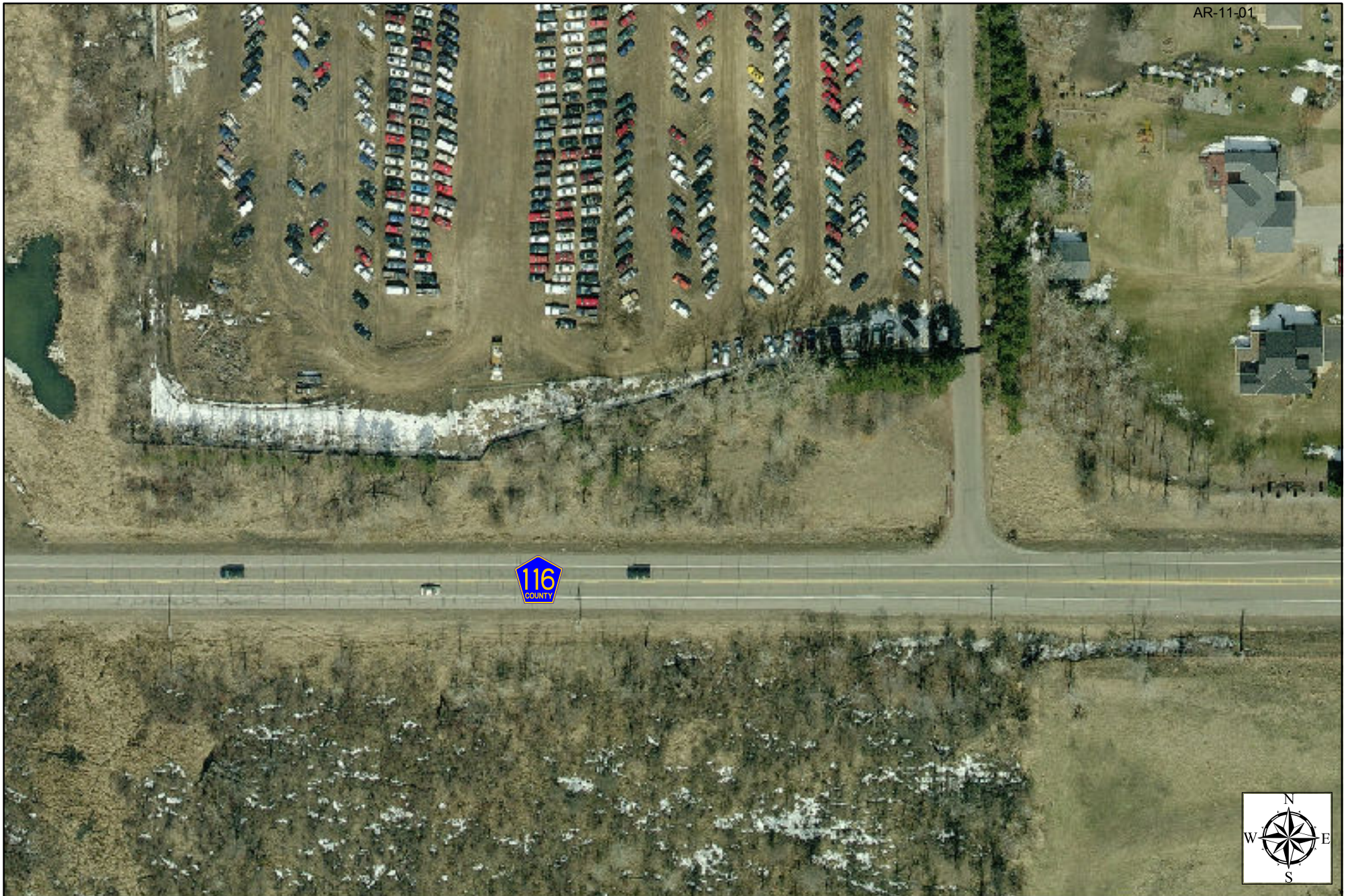
Figure 4J



Project Context

CSAH 116 Reconstruction Project
STP "A" Reliever

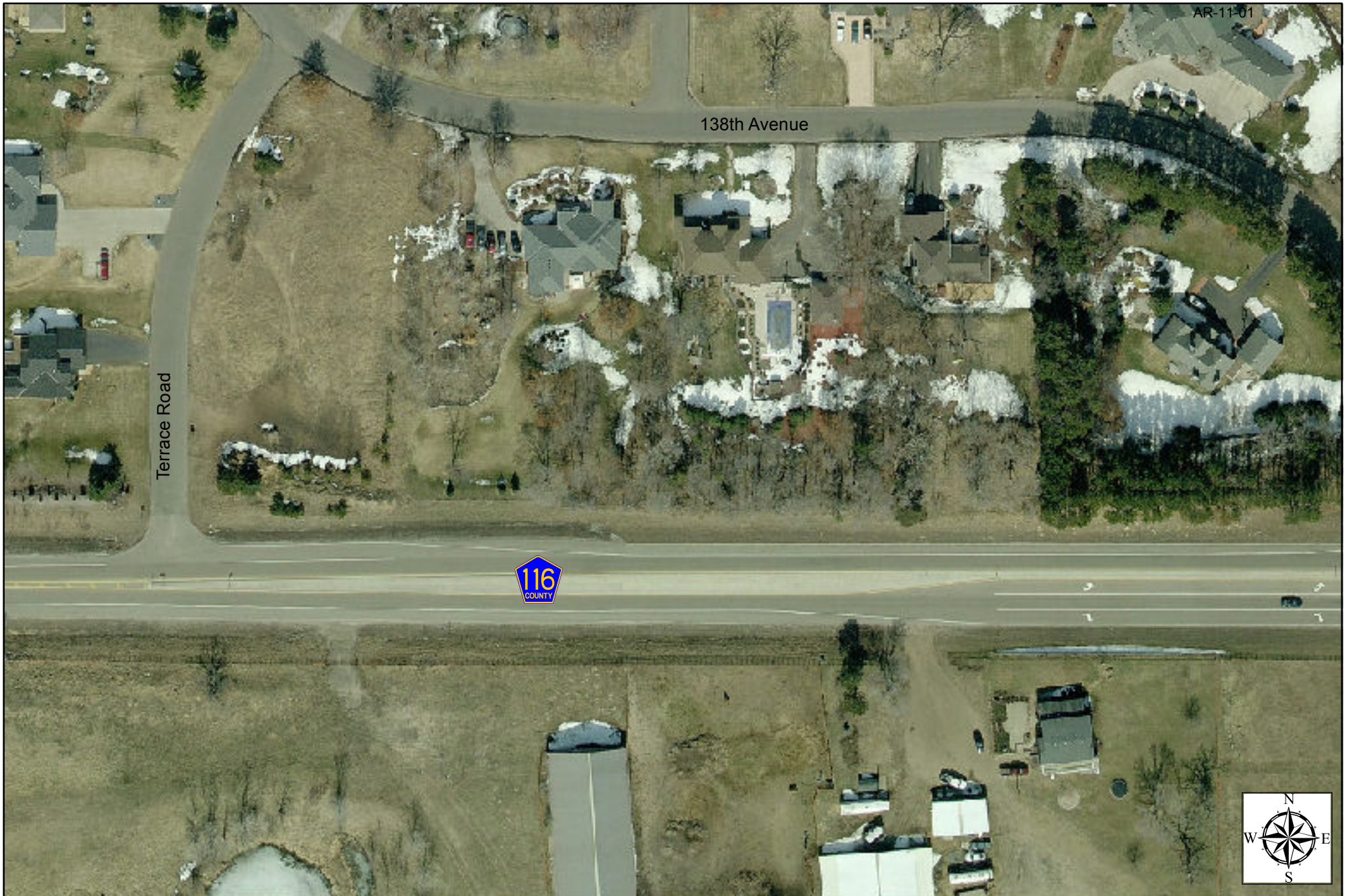
Figure 4K



Project Context

CSAH 116 Reconstruction Project
STP "A" Reliever

Figure 4L



Project Context

CSAH 116 Reconstruction Project
STP "A" Reliever

Figure 4M



Project Context

CSAH 116 Reconstruction Project
STP "A" Reliever

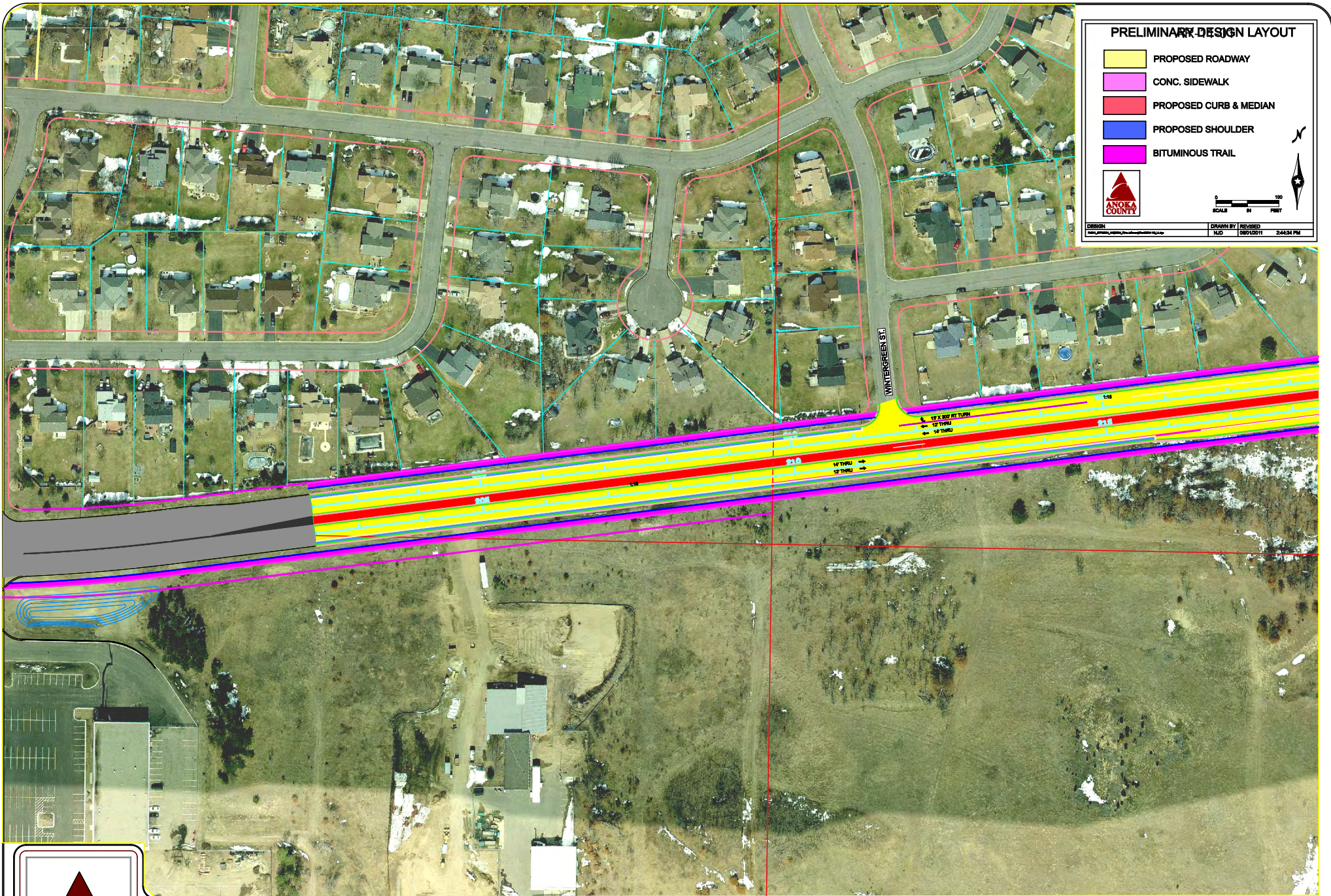
Figure 4N



Project Context

CSAH 116 Reconstruction Project
STP "A" Reliever

Figure 40



PRELIMINARY DESIGN LAYOUT

- PROPOSED ROADWAY
- CONC. SIDEWALK
- PROPOSED CURB & MEDIAN
- PROPOSED SHOULDER
- BITUMINOUS TRAIL

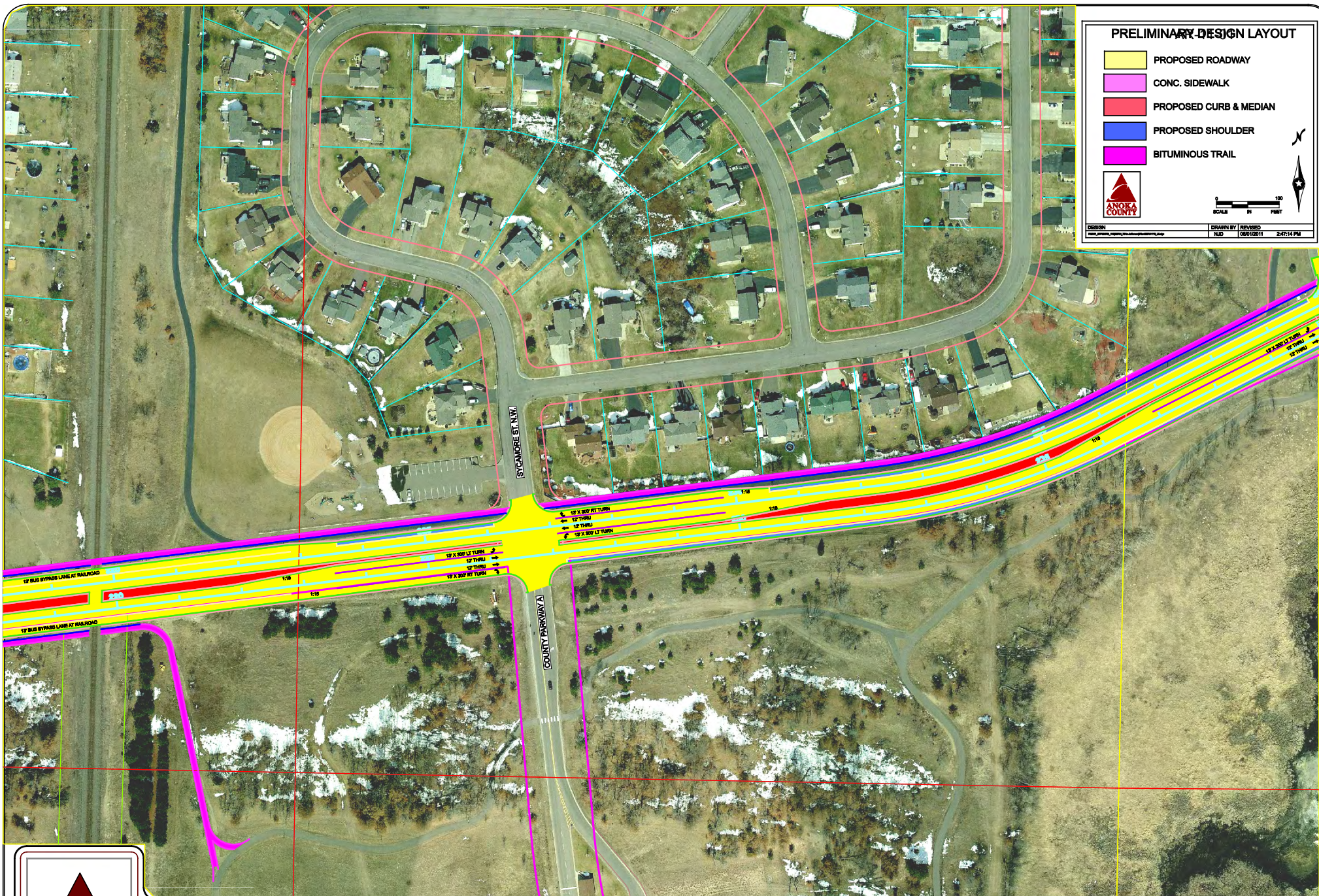


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GENERAL LAYOUT

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STP - "A" Reliever



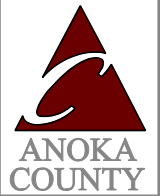


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- CONC. SIDEWALK
- PROPOSED CURB & MEDIAN
- PROPOSED SHOULDER
- BITUMINOUS TRAIL

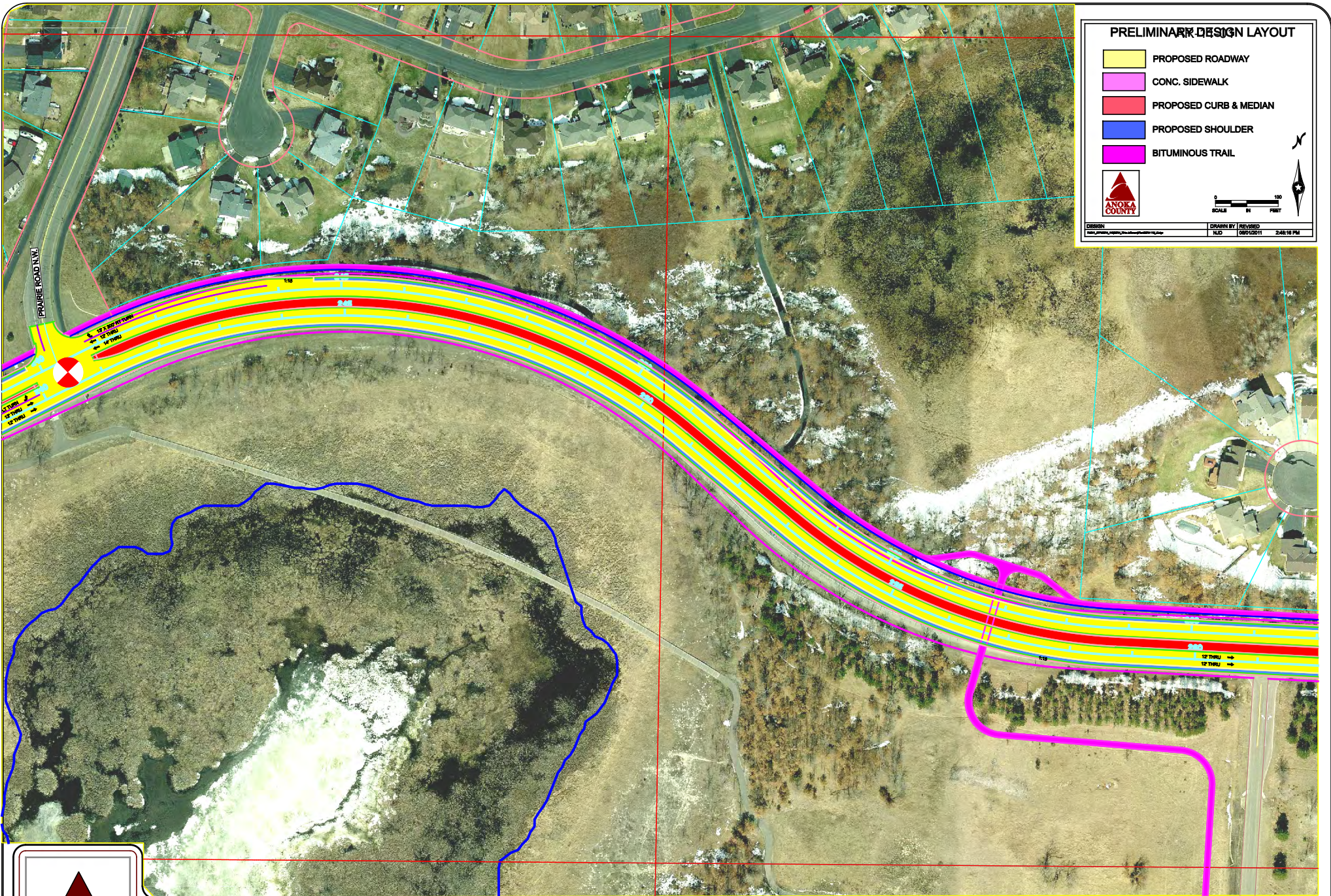


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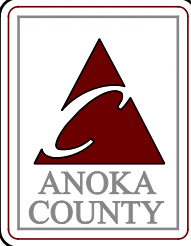


PRELIMINARY DESIGN LAYOUT

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- CONC. SIDEWALK
- PROPOSED CURB & MEDIAN
- PROPOSED SHOULDER
- BITUMINOUS TRAIL

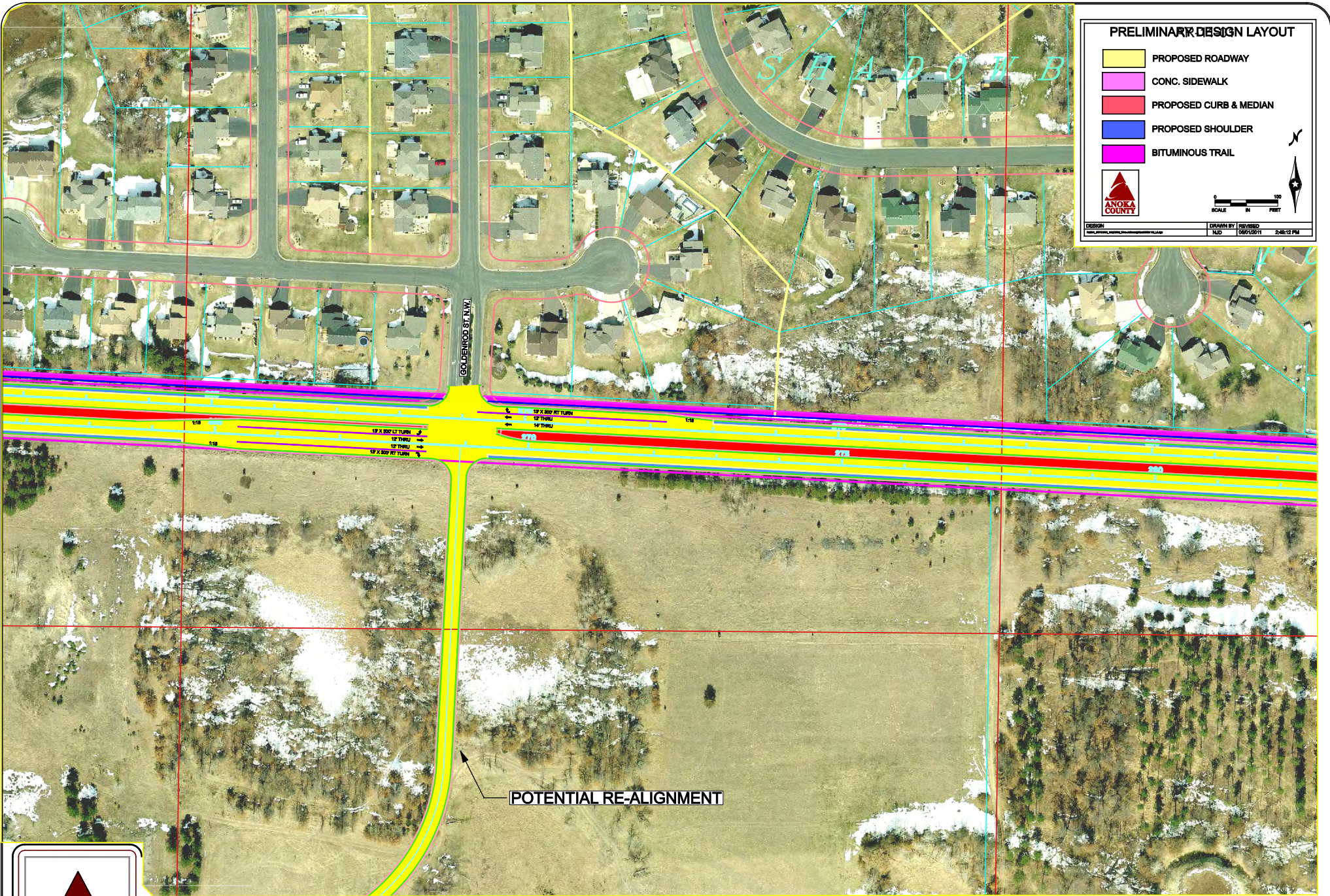
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GENERAL LAYOUT

CSAH 116 - Reconstruction Project
STP - "A" Reliever



PRELIMINARY DESIGN LAYOUT

- PROPOSED ROADWAY
- CONC. SIDEWALK
- PROPOSED CURB & MEDIAN
- PROPOSED SHOULDER
- BITUMINOUS TRAIL

ANOKA COUNTY

SCALE 1" = 100 FEET

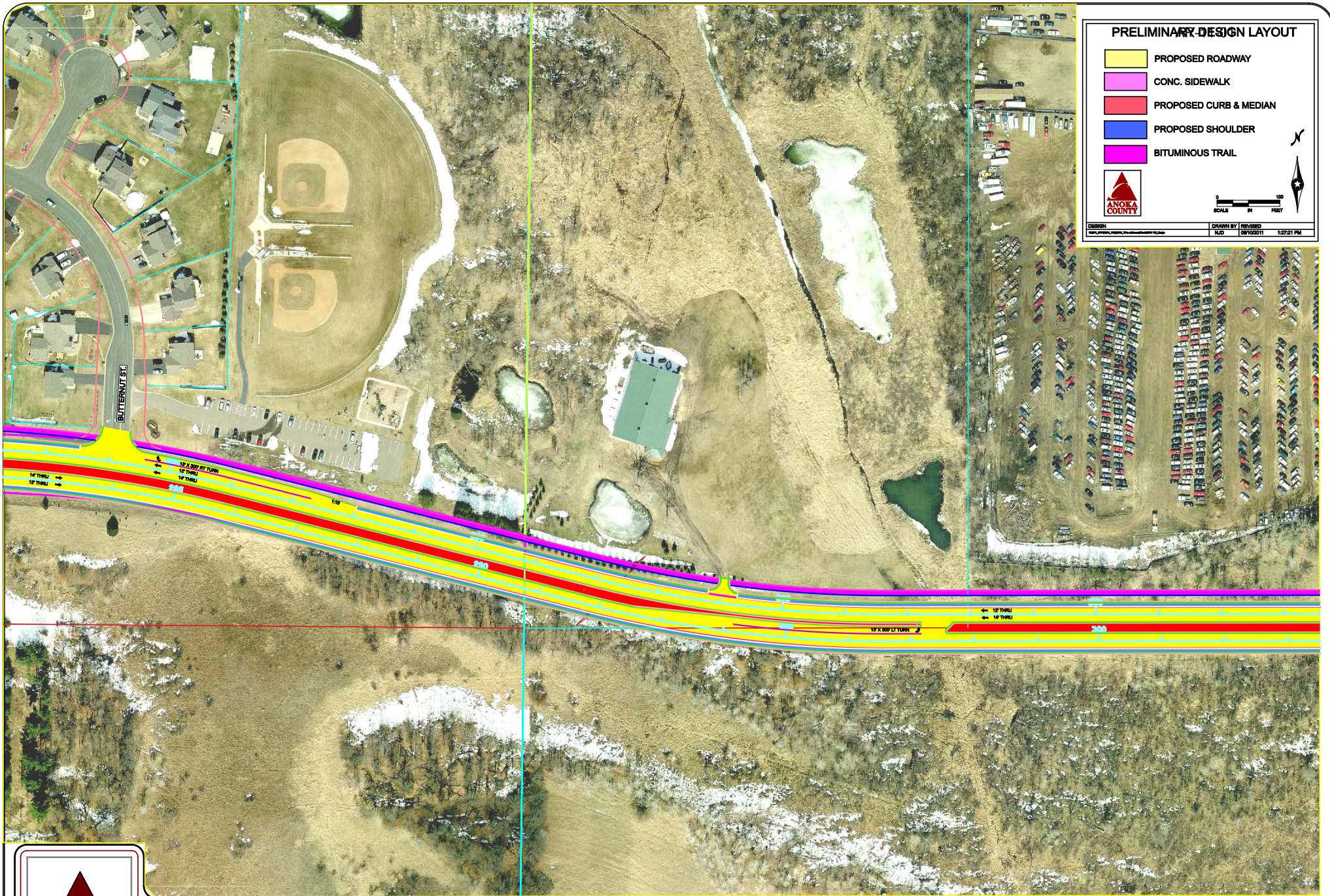
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POTENTIAL RE-ALIGNMENT

GENERAL LAYOUT

CSAH 116 - Reconstruction Project
STP - "A" Reliever





PRELIMINARY DESIGN LAYOUT

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- CONC. SIDEWALK
- PROPOSED CURB & MEDIAN
- PROPOSED SHOULDER
- BITUMINOUS TRAIL

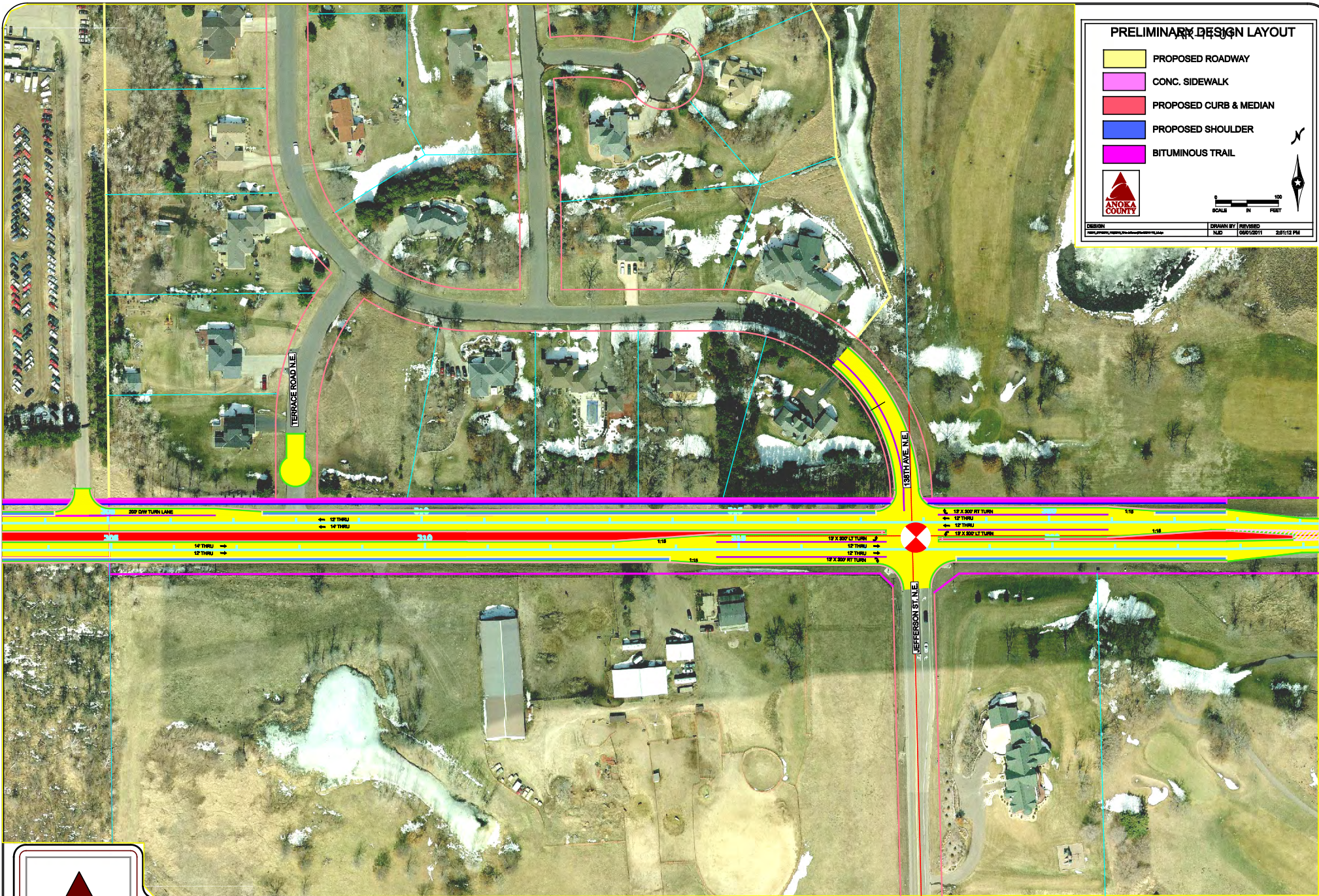


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GENERAL LAYOUT

CSAH 116 - Reconstruction Project
STP - "A" Reliever



PRELIMINARY DESIGN LAYOUT

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- CONC. SIDEWALK
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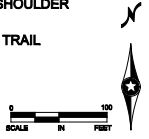
GENERAL LAYOUT

CSAH 116 - Reconstruction Project
STP - "A" Reliever



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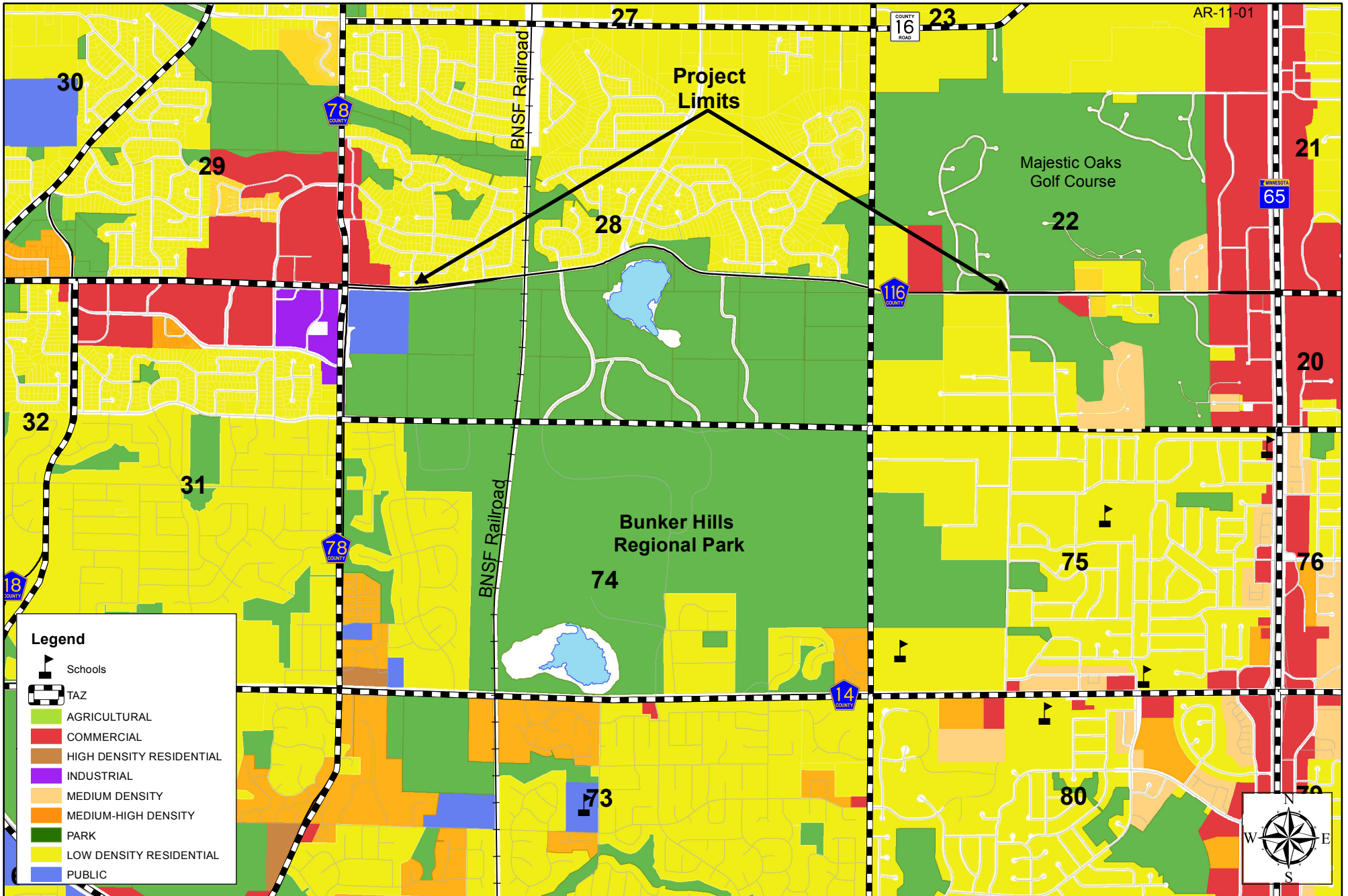
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GENERAL LAYOUT

CSAH 116 - Reconstruction Project
STP - "A" Reliever

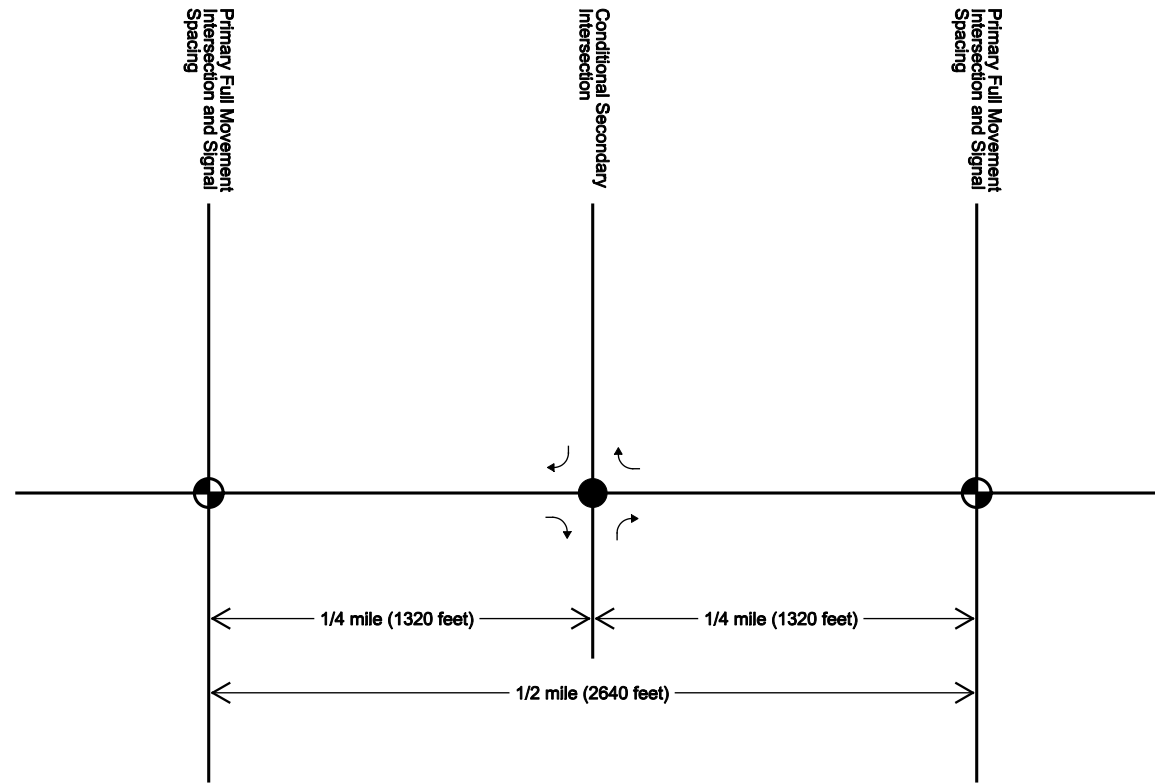
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5G



Future Land Use and TAZ

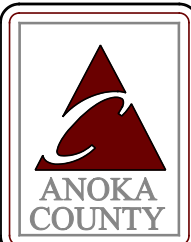
CSAH 116 Reconstruction Project
STP "A" Reliever

Figure 6



- ⊕ Full-Access Intersection
- Conditional Secondary Intersection

- Notes:
1. Signal spacing allowed every 1/2 mile.
 2. Private access allowed subject to conditions

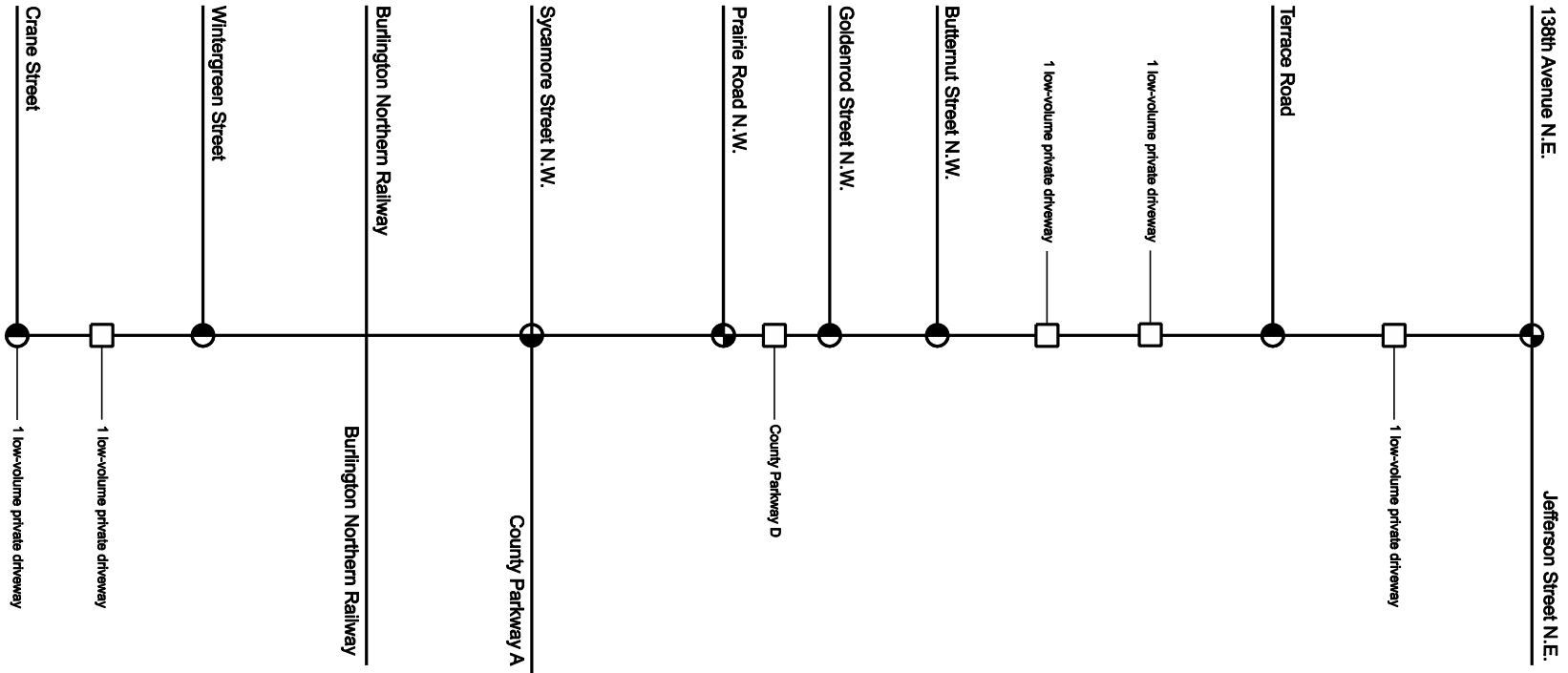


ANOKA COUNTY ACCESS SPACING GUIDELINES - 55 mph "A" MINOR ARTERIALS

CSAH 116 - Reconstruction Project Hanson Boulevard - Jefferson Street
STP "A" Minor Reliever

Figure

7



LEGEND

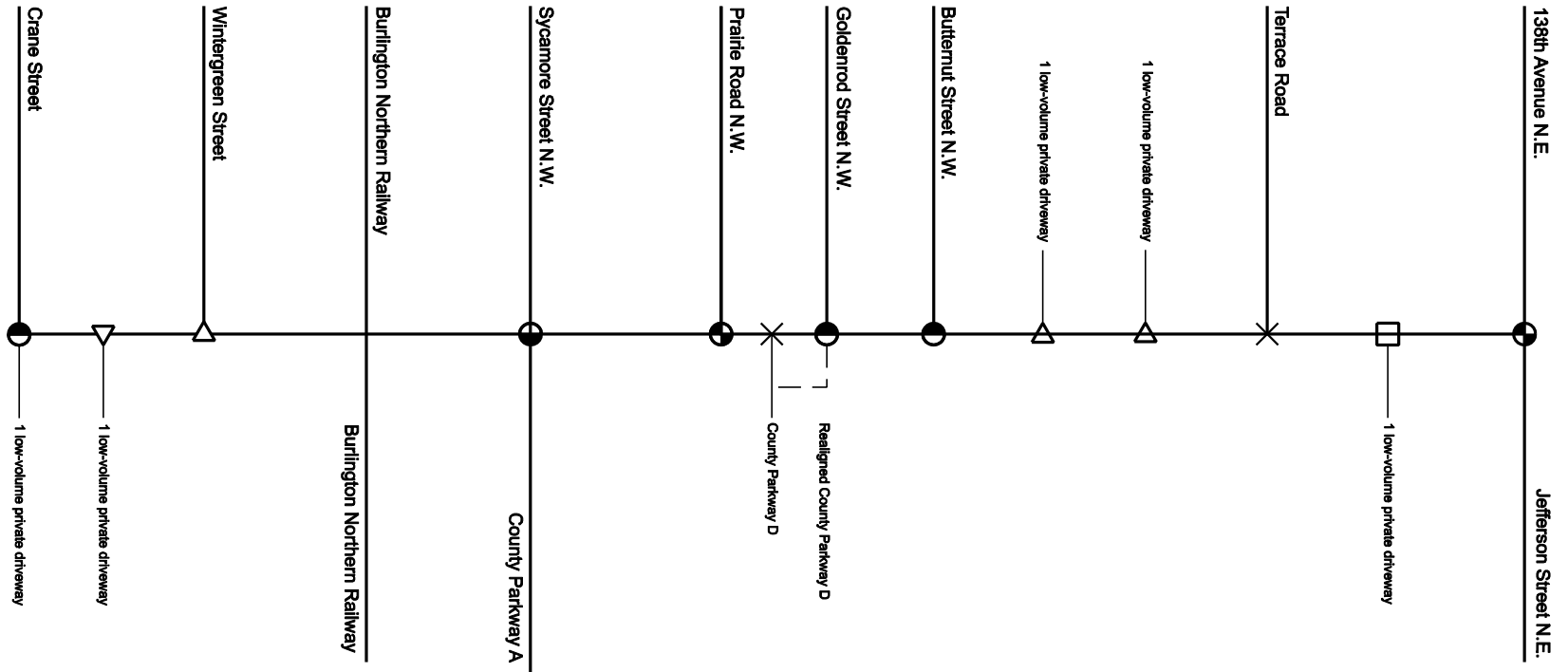
- = Traffic Signal
- = Public Street with Side Street Stop Control
- = Right-in/Right-out access
- = Full-Access Driveway

EXISTING ACCESS LOCATIONS






CSAH 116 Reconstruction Project
STP "A" Minor Reliever

Figure
8





LEGEND

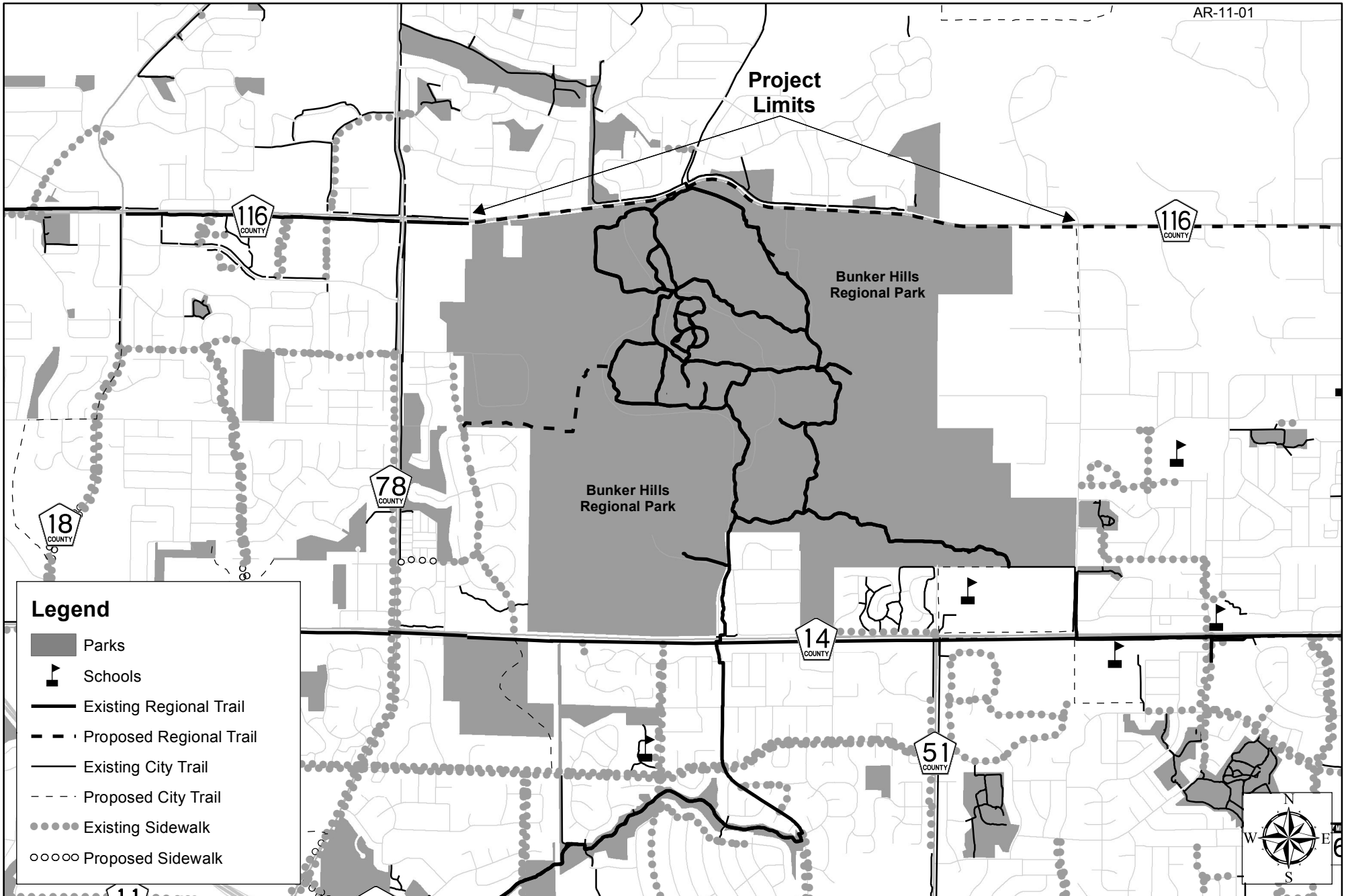
-  = Traffic Signal
-  = Public Street with Side Street Stop Control
-  = Right-in/Right-out access
-  = Full-Access Driveway
-  = Closure

PROPOSED ACCESS LOCATIONS

CSAH 116 Reconstruction Project
STP "A" Minor Reliever

Figure
9





Trails and Sidewalks

CSAH 116 Reconstruction Project
STP "A" Reliever

Figure 10

116
COUNTY

78
COUNTY

14
COUNTY

51
COUNTY

Future Route 865

Future Route 865

Project Limits







Bunker Hills Regional Park

Route 59

Route 854

Route 831

Legend

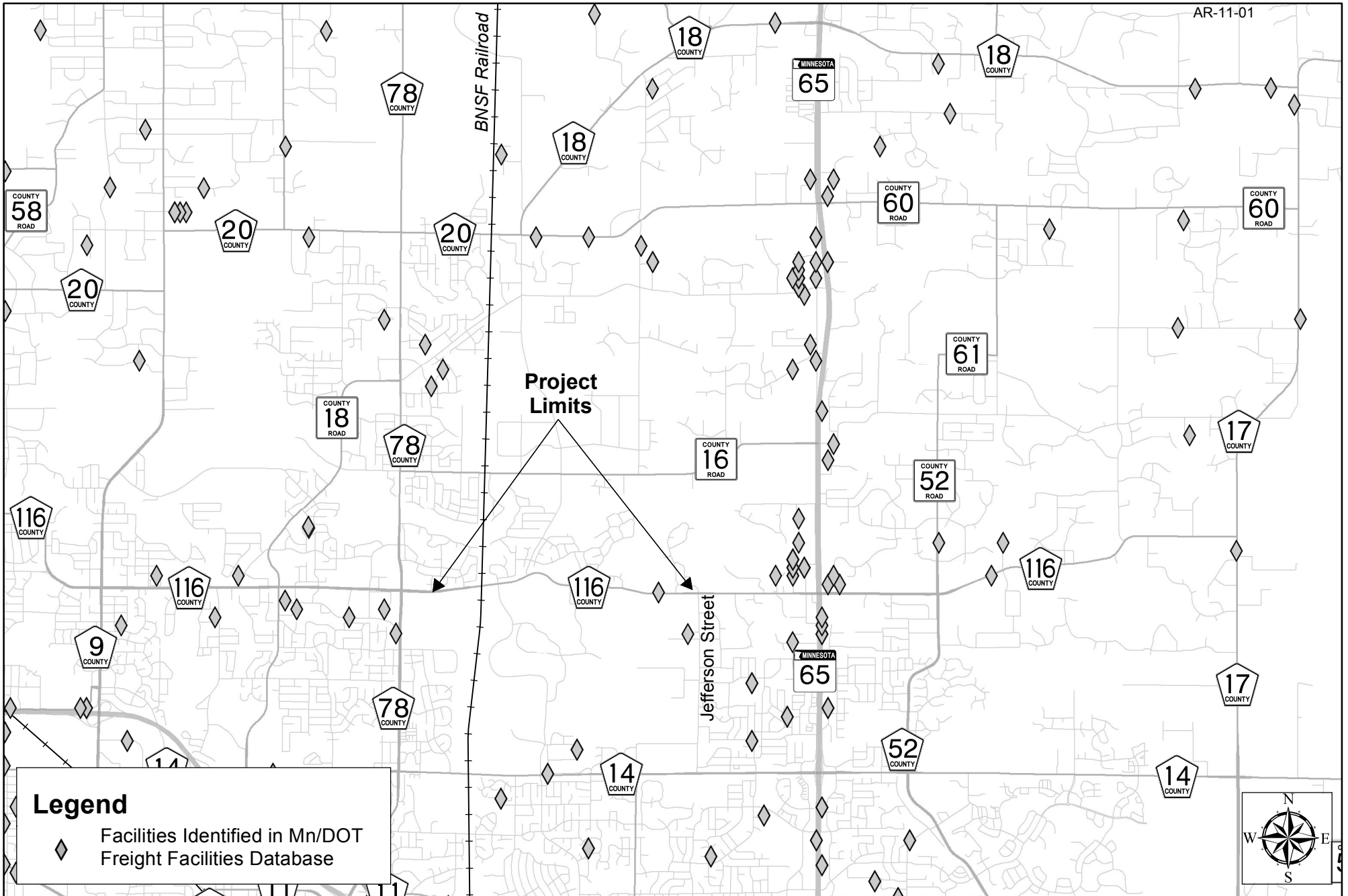
-  City/County Parks
-  Schools
-  Bus Stops
-  Existing Park and Ride
-  Existing Transit Service
-  Planned Transit Service



Transit

CSAH 116 RECONSTRUCTION PROJECT
STP "A" Reliever

Figure 11



Freight

CSAH 116 Reconstruction Project
STP "A" Reliever

Figure 12

Attachment B: Supporting Plans

Anoka County Highway Department



Five-Year Highway Improvement Plan 2011 - 2015



Our passion is your safe way home

ANOKA COUNTY HIGHWAY DEPARTMENT

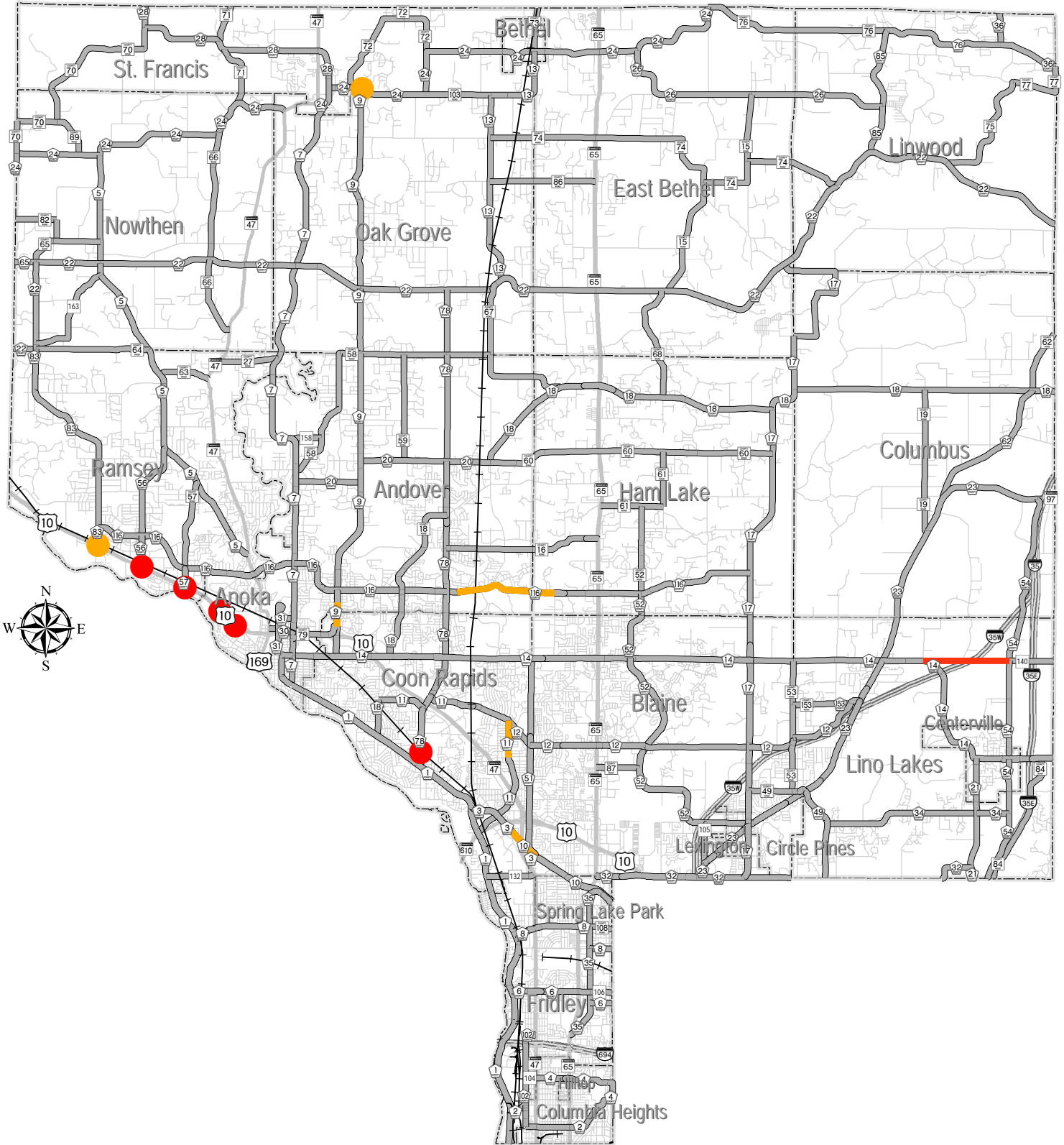
Five - Year Highway Improvement Plan 2011 – 2015

ANOKA COUNTY BOARD OF COMMISSIONERS




**Dennis Berg, Chair
Dan Erhart
Jim Kordiak
Dick Lang
Carol LeDoux
Rhonda Sivarajah
Robyn West**

**Approved by PWC: Dec. 6, 2010
Approved by County Board: Dec. 14, 2010**

**Prepared by
Anoka County Highway Department
Douglas W. Fischer, P.E. - County Engineer**




— CIP PROJECTS
— STP PROJECTS

-  COUNTY ROAD
-  CSAH
-  STATE HIGHWAY
-  US HIGHWAY
-  INTERSTATE

ANOKA COUNTY 2015

Prepared by Anoka County Highway Department



This is a compilation of records as they appear in the Anoka County offices affecting the area shown. This drawing is to be used only for reference purposes and the County is not responsible for any inaccuracies herein contained.

ANOKA COUNTY HIGHWAY DEPARTMENT
 2015 Unfunded Highway Improvement Plan

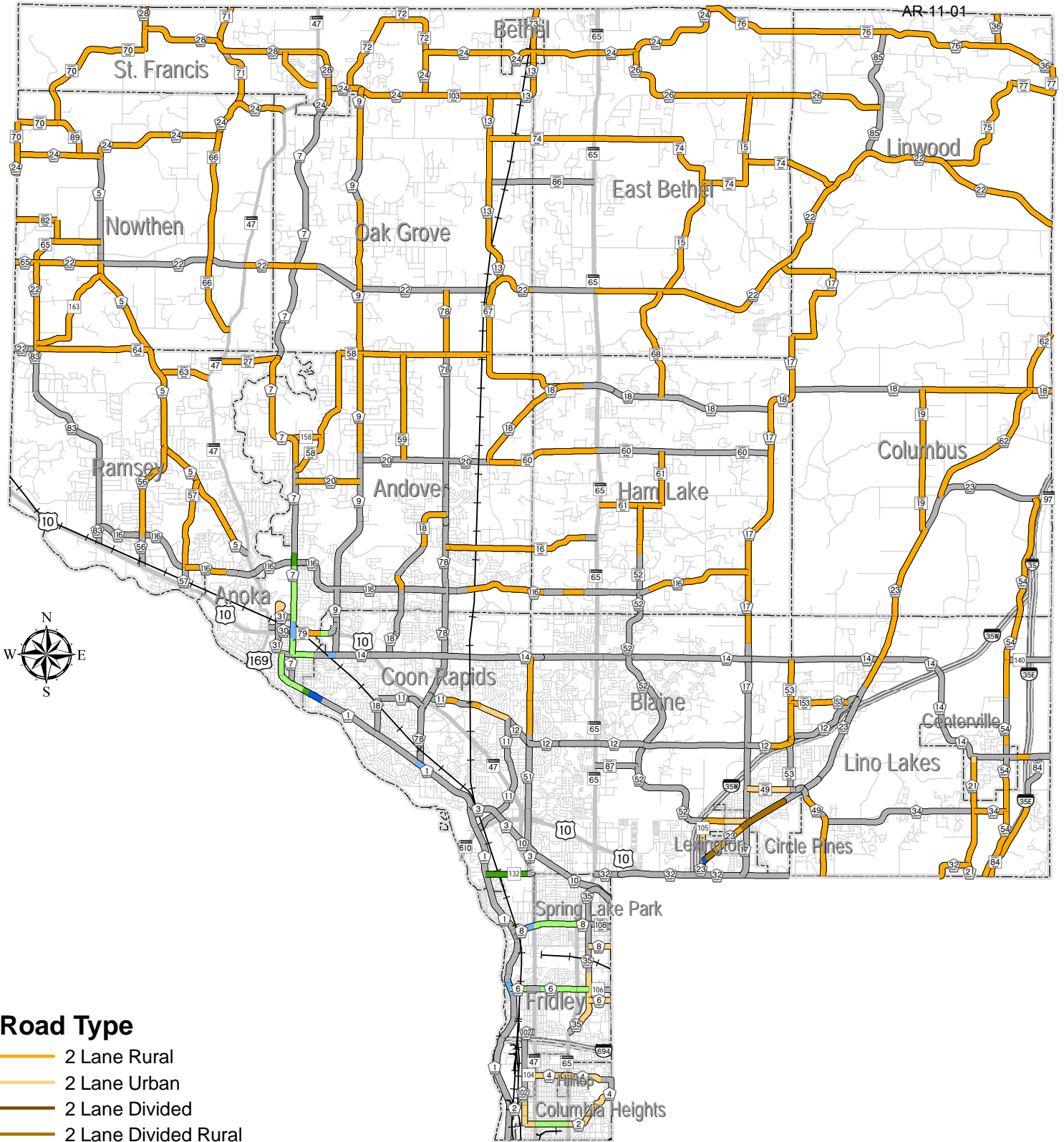
12/01/2010

Project #	Description	FUNDING					Total	Notes
		County	Federal	State	City/Town	Other		
2015								
<u>Turnback Projects</u>		\$0	\$0	\$0	\$0	\$0	\$0	
<u>CIP Projects</u>		\$4,925,000	\$32,730,000	\$26,950,000	\$5,125,000	\$2,000,000	\$71,730,000	
2003-10	CSAH 14 Northerly Bypass	\$120,000	\$480,000			\$2,000,000	\$2,600,000	CIP, R/W(RALF)
2005-07	TH10 Interchanges in Ramsey (56, 57)	\$2,325,000	\$15,750,000	\$12,600,000	\$2,325,000		\$33,000,000	CIP, R/W(RALF), Prelim. Design
2007-35	TH10 Interchanges in Anoka (Thurston and Fair oak.)	\$1,650,000	\$16,500,000	\$13,200,000	\$1,650,000		\$33,000,000	CIP, R/W(RALF), Prelim. Design
Unassigned	CSAH 78 Railroad Grade Separation	\$830,000		\$1,150,000	\$1,150,000		\$3,130,000	CIP, North of CSAH 1
<u>STIP Projects</u>		\$0	\$0	\$0	\$0	\$0	\$0	
2005-07	TH10 Interchange at CSAH 83							CIP, R/W(RALF), Prelim. Design
Unassigned	CSAH 24 at CSAH 9							Project Costs Unknown
Unassigned	CSAH 11 from Egret Blvd thru CSAH 12							
Unassigned	CR 3 from CSAH 51 to 93rd Ave.							
Unassigned	CSAH 9 from Northdale Blvd. to 135th Ave.							
Unassigned	CSAH 116 from Crane St. to Jefferson St.							
<u>HSIP Projects</u>		\$0	\$0	\$0	\$0	\$0	\$0	
2015 HIGHWAY PROGRAM TOTALS		\$4,925,000	\$32,730,000	\$26,950,000	\$5,125,000	\$2,000,000	\$71,730,000	



Part 3

Unmet Needs



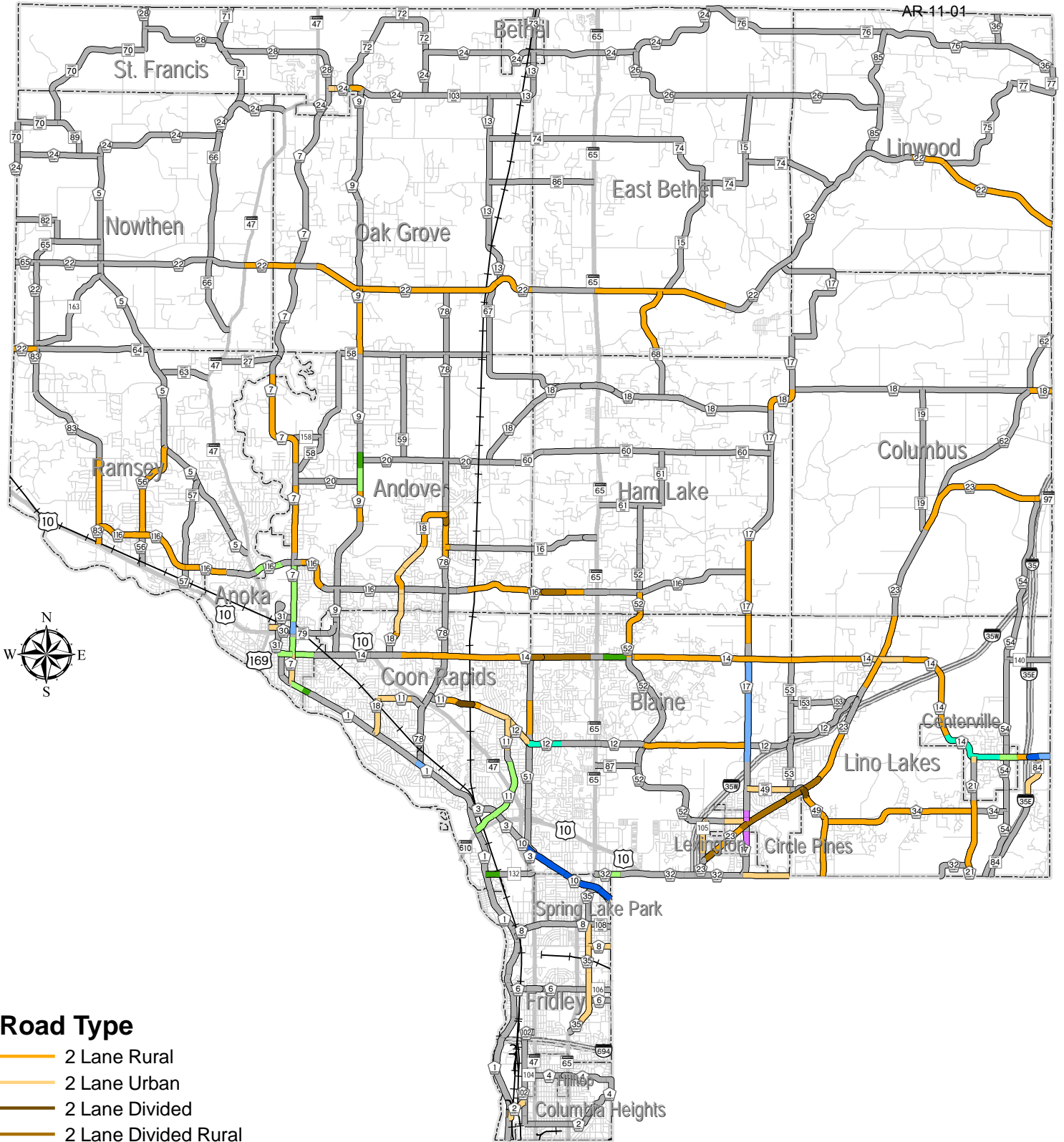
Road Type

- 2 Lane Rural
- 2 Lane Urban
- 2 Lane Divided
- 2 Lane Divided Rural
- 3 Lane Urban
- 4 Lane Rural
- 4 Lane Urban
- 4 Lane Divided
- 4 Lane Divided Rural
- 5 Lane Urban
- 6 Lane Divided

- COUNTY ROAD
- CSAH
- STATE HIGHWAY
- US HIGHWAY
- INTERSTATE

2011 ROAD SEGMENTS DEFICIENT IN GEOMETRY

CR 73	673020	243RD AVE NE	NORTH COUNTY LINE	0.249	726	\$317,517.61
CR 74	674010	CEDAR DR	UNIVERSITY AVE	0.999	2615	\$1,629,030.57
CR 74	674020	UNIVERSITY AVE	TH 65	1.41	3051	\$2,139,778.60
CR 74	674030	TH 65	213TH AVE	3.341	1248	\$4,265,293.08
CR 74	674040	EAST BETHEL BLVD	217TH AVE	1.507	840	\$1,923,771.93
CR 74	674050	DURANT ST	EAST BETHEL CL	1.016	356	\$1,512,661.17
CR 74	674060	EAST BETHEL CL	VIKING BLVD	1.215	519	\$1,809,638.86
CR 75	675010	VIKING BLVD	RYAN LAKE DR	2.936	420	\$4,373,039.54
CR 76	676010	CSAH 24	EAST BETHEL CL	2.159	691	\$2,755,472.65
CR 76	676020	EAST BETHEL CL	TYPO CREEK DR	2.116	982	\$3,114,392.47
CSAH 76	676030	TYPO CREEK DR	2220' W OF FAWN RD W	1.846	1337	\$2,356,460.20
CSAH 76	676040	2220' W OF FAWN RD W	RUTGERS RD	0.945	2370	\$1,507,916.53
CR 77	677010	SUNRISE RD	FAWN LAKE DR	1.602	366	\$2,167,662.13
CSAH 78	678060	181ST AVE	VIKING BLVD	1.497	3890	\$2,459,079.23
CR 79	679020	560' E OF CSAH 7	120' W OF 9TH AVE	0.153	7620	\$260,209.31
CR 79	679030	120' W OF 9TH AVE	ANOKA CL	0.398	7620	\$708,209.34
CR 79	679040	ANOKA CL	980' E OF ANOKA CL	0.185	7620	\$473,375.24
CR 82	682010	WEST COUNTY LINE	TIGER ST	0.944	342	\$1,204,985.39
CR 82	682020	205TH AVE	201ST AVE	0.494	292	\$631,227.43
CR 84	684010	SOUTH COUNTY LINE	530' S OF CEDAR S	2.135	5861	\$2,725,614.72
CR 89	689010	NORRIS LAKE RD	223RD AVE	1.026	369	\$1,637,049.09
CR 103	703010	NIGHTINGALE ST	CEDAR DR	1.496	3797	\$2,267,269.18
CR 105	705030	RESTWOOD RD	LOVELL RD	0.524	3284	\$1,059,040.11
CSAH 116	716030	SUNFISH LAKE BLVD	RAMSEY CL	0.455	7610	\$760,712.57 +
CSAH 116	716040	RAMSEY CL	200' E OF IODINE	0.515	11027	\$821,607.05 +
CSAH 116	716150	WINTERGREEN ST	ANDOVER CL	1.581	10170	\$3,689,369.32
CSAH 116	716155	ANDOVER CL	160' W OF TERRACE RD	0.295	10515	\$628,225.52
CSAH 116	716160	370' W OF VAN BUREN ST	45' W OF BUCHANAN ST	0.471	10515	\$1,106,315.18
CSAH 116	716180	1150' E OF RADDISON RD	LEXINGTON AVE	2.419	2707	\$3,087,868.87
CSAH 131	731010	GRANT ST	1550' N OF GRANT S	0.505	1081	\$536,838.47
CR 132	732010	EAST RIVER RD	RR TRACKS	0.308	7196	\$879,691.01
CR 132	732020	RR TRACKS	SPRINGBROOK DR	0.653	8133	\$1,760,681.51
CR 132	732030	SPRINGBROOK DR	TH 47	0.125	9070	\$413,518.34
CR 153	753010	SUNSET RD	4TH AVE	0.972	1694	\$1,475,953.23
CSAH 153	753020	4TH AVE	APOLLO DR	0.349	1694	\$592,837.22
CR 158	758010	7TH AVE	VALLEY DR	0.66	347	\$889,744.39
CR 163	763010	BAUGH ST	NOWTHEN BLVD	2.523	471	\$3,221,131.58
					Total:	\$421,710,233.18



Road Type

- 2 Lane Rural
- 2 Lane Urban
- 2 Lane Divided
- 2 Lane Divided Rural
- 3 Lane Urban
- 4 Lane Rural
- 4 Lane Urban
- 4 Lane Divided
- 4 Lane Divided Rural
- 5 Lane Urban
- 6 Lane Divided

- COUNTY ROAD
- CSAH
- STATE HIGHWAY
- US HIGHWAY
- INTERSTATE

2011 ROAD SEGMENTS DEFICIENT IN CAPACITY

(With Projected Traffic Volumes)

Route	Segment ID	From	To	Length	2030 AADT	Cost to Reconstruct
CSAH 116	716030	SUNFISH LAKE BLVD	RAMSEY CL	0.455	22600	\$760,712.57 +
CSAH 116	716040	RAMSEY CL	200' E OF IODINE	0.515	22600	\$821,607.05 +
CSAH 116	716070	270' E OF TH-47	RUM RIVER BRIDGE	0.376	29700	\$1,278,773.98
CSAH 116	716080	RUM RIVER BRIDGE	1640' W OF 7TH AVE	0.263	29700	\$893,632.77
CSAH 116	716110	800' E OF 7TH AVE	550' S OF 38TH AVE	0.879	23300	\$2,384,817.18 +
CSAH 116	716150	WINTERGREEN ST	ANDOVER CL	1.581	21200	\$3,689,369.32
CSAH 116	716155	ANDOVER CL	160' W OF TERRACE RD	0.295	13100	\$628,225.52
CSAH 116	716158	160' W OF TERRACE RD	370' W OF VAN BUREN ST	0.452	13100	\$1,102,608.12
CSAH 116	716160	370' W OF VAN BUREN ST	45' W OF BUCHANAN ST	0.471	13100	\$1,106,315.18
CR 132	732010	EAST RIVER RD	RR TRACKS	0.308	22200	\$879,691.01
					Total:	\$265,659,412.27



May 2009

Andover Transportation Plan

improvements will be needed to access the Rural Reserve once entrance/egress locations have been identified.

Review of the volume projections indicates that the expansion of existing transportation routes to provide four lane roadways would be appropriate for the following facilities in Andover.

- Hanson Boulevard NW from 139th Avenue NW to 161st Avenue NW (Divided)
- Round Lake Boulevard NW from 150th Lane NW to North City Boundary (Divided) – Through the entire City
- 7th Avenue NW from South City Boundary to 157th Avenue NW (Divided)
- 7th Avenue NW from 157th Avenue NW to North City Boundary (Undivided)
- 161st Avenue NW from Round Lake Boulevard NW to Crosstown Boulevard NW (Undivided)
- Bunker Lake Boulevard NW from Hanson Boulevard NW to East City Boundary (Divided)

Transportation Analysis Zones

The following tables provide existing and projected Population and Employment Densities by Traffic Analysis Zones (TAZ) in Andover. Table 1 represents the City's zones and Table 2 is broken down into Anoka County's TAZ's. This information was prepared using the growth projections of the Comprehensive Plan.

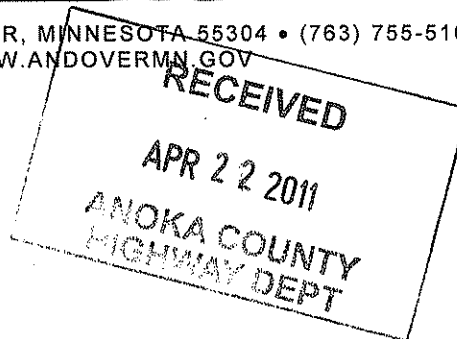
The most significant population growth by the year 2030 is projected in the Rural Reserve Area of the City (TAZ 30), while most commercial growth will be concentrated in the south-central portions of the City (TAZs 29 and 31). *Figures A* illustrates the TAZ boundaries.

The interrelationship between land use and transit cannot be overemphasized. Transit supportive land use patterns, which include directed planning of integrated roadway systems, careful developing concentrations of rider origins and destinations while preserving open space and community character, and developing a mix of activities and uses, is essential to the long-term viability of providing transit as a mobility option for the residents of Andover.

Attachment C: Support Letters/Resolutions



1685 CROSSTOWN BOULEVARD N.W. • ANDOVER, MINNESOTA 55304 • (763) 755-5100
FAX (763) 755-8923 • WWW.ANDOVERMN.GOV



April 19, 2011

Douglas W. Fischer, P.E.
County Engineer
Anoka County Highway Department
1440 Bunker lake Blvd NW
Andover, MN 5304

RE: REGIONAL FUNDING SOLICITATION – CSAH 116

Dear Mr. Fischer,

The City of Andover is writing this letter in regards to this year's federal funding solicitation. We understand that Anoka County would like to submit an application for the expansion and reconstruction of CSAH 116 in our community.

This letter is in support of the project and for Anoka County to pursue federal funding. The City of Andover and Anoka County continue to coordinate their efforts in improving the area's transportation issues. We feel this project will help address safety and mobility issues occurring in the area.

If you have any further questions in regard to the project on the city's end, please feel free to contact us.

Sincerely,

City of Andover
Mayor

CITY OF ANDOVER
COUNTY OF ANOKA
STATE OF MINNESOTA

AR-11-01

RES. NO. R029-11

**SUPPORTING ANOKA COUNTY FEDERAL FUNDING APPLICATION FOR
CSAH 116**

WHEREAS, CSAH 116 is an "A" minor arterial reliever route that provides an important east-west transportation connection in Anoka County, and,

WHEREAS, traffic volumes on CSAH 116 have been increasing over the past decade and are expected to continue to increase in the future as the cities in and around the roadway continue to grow, and,

WHEREAS, existing and future traffic volumes are such that safety is a concern at intersections and along some segments of the corridor, and,

WHEREAS, existing and future traffic volumes are such that congestion is and will continue to negatively impact the ability of the corridor to move traffic, and

WHEREAS, Anoka County has identified this corridor as needing safety and capacity improvements, and,

WHEREAS, Anoka County and the City of Andover have worked together in the past to make capacity and safety improvements to other segments of CSAH 116 to serve long-term growth and development along the corridor, and,


WHEREAS, Anoka County would like to submit an application to the Transportation Advisory Board to the Metropolitan Council for 2015 and 2016 to receive federal transportation funds to make capacity and safety improvements on CSAH 116.

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

That the City of Andover supports Anoka County in preparing and submitting an application for CSAH 116 in the "A" minor arterial reliever category based upon the preliminary layout presented at the March 29, 2011 council workshop.

Adopted by the Andover City Council this 19th day of April, 2011.

CITY OF ANDOVER

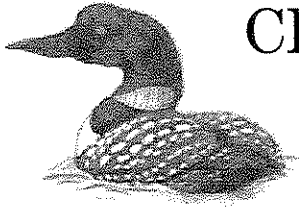


Michael R. Gamache - Mayor

ATTEST:

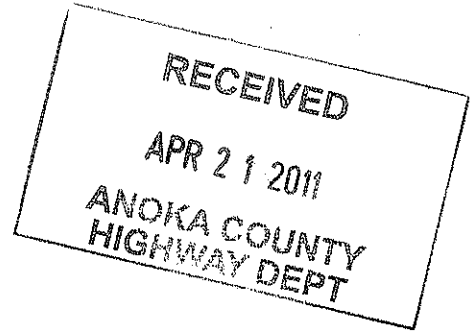


Michelle Hartner - Deputy City Clerk



CITY OF HAM LAKE

15544 Central Avenue NE
Ham Lake, Minnesota 55304
(763) 434-9555
Fax: (763) 434-9599



April 19, 2011

Douglas W. Fischer, P.E.
County Engineer
Anoka County Highway Department
1440 Bunker Lake Blvd. NW
Andover, MN 55304

RE: Regional Funding Solicitation – CSAH 116

Dear Doug:

Enclosed please find a copy of Resolution No. 11-16 supporting Anoka County's federal funding application for CSAH 116. This resolution is in support of the project, and we encourage Anoka County to pursue federal funding.

If we can be of any further assistance in your efforts to secure this funding, please let me know.

Sincerely,

Doris A. Nivala
Administrator

Enc.

RESOLUTION NO. 11-16**SUPPORTING ANOKA COUNTY FEDERAL FUNDING APPLICATION FOR
CSAH 116**

WHEREAS, CSAH 116 is an "A" minor arterial reliever route that provides an important east-west transportation connection in Anoka County, and,

WHEREAS, traffic volumes on CSAH 116 have been increasing over the past decade and are expected to continue to increase in the future as the cities in and around the roadway continue to grow, and,

WHEREAS, existing and future traffic volumes are such that safety is a concern at intersections and along some segments of the corridor, and,

WHEREAS, existing and future traffic volumes are such that congestion is and will continue to negatively impact the ability of the corridor to move traffic, and

WHEREAS, Anoka County has identified this corridor as needing safety and capacity improvements, and,


WHEREAS, Anoka County and the City of Ham Lake have worked together in the past to make capacity and safety improvements to other segments of CSAH 116 to serve long-term growth and development along the corridor, and,

WHEREAS, Anoka County would like to submit an application to the Transportation Advisory Board to the Metropolitan Council for 2015 and 2016 to receive federal transportation funds to make capacity and safety improvements on CSAH 116.

NOW THEREFORE BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF HAM LAKE, MINNESOTA:

That the City of Ham Lake supports Anoka County in preparing and submitting an application for CSAH 116 in the "A" minor arterial reliever category based upon the preliminary layout presented at the Transportation Committee meeting on April 12, 2011.

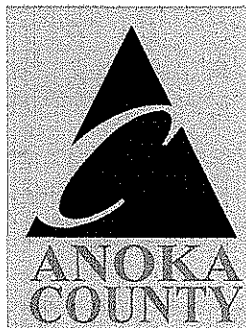
Adopted by a unanimous vote of the Ham Lake City Council this 18th day of April, 2011.



Mike Van Kirk, Mayor



Doris Nivala, City Administrator



COUNTY OF ANOKA

Public Services Division

HIGHWAY DEPARTMENT

1440 BUNKER LAKE BLVD. NW, ANDOVER, MINNESOTA 55304

(763) 862-4200 FAX (763) 862-4201

July 15, 2011

Mr. Kevin Roggenbuck
Transportation Coordinator
Transportation Advisory Board
390 North Robert St.
Saint Paul, Minnesota 55101

RE: CSAH 116 (Bunker Lake Blvd) Reconstruction Project
Surface Transportation Program Funding Submittal

Dear Mr. Roggenbuck:

Anoka County is submitting this application for Federal Surface Transportation Program (STP) funding for the proposed CSAH 116 reconstruction project. As the agency with jurisdiction over this roadway, Anoka County acknowledges that it will be responsible for operating and maintaining the facility for its remaining useful life. Anoka County also accepts responsibility for providing the local match to the project.

Sincerely,

A handwritten signature in black ink, appearing to read 'Douglas W. Fischer'.

Douglas W. Fischer, P.E.
Anoka County Engineer

Attachment D: Travel Forecasting Methodology



Engineering ■ Planning ■ Environmental ■ Construction

701 Xenia Avenue South
Suite 300
Minneapolis, MN 55416
Tel: 763-541-4800
Fax: 763-541-1700

Memorandum

To: Jack Corkle, PTP, AICP

From: Ross Jentink, PE

Date: March 21, 2011

Re: 2030 Projected Daily Traffic Volumes for STP Application - 2011

The purpose of this memorandum is to provide information on the projected 2030 traffic levels on three County State-Aid Highways (CSAH) roadways in Anoka County with the assumption that the roadways will be widened. The two roadways, general project limits, and assumed improvements include:

1. CSAH 116 (Bunker Lake Blvd NW) - from Crane St NW to Jefferson St NE in the City of Ham Lake.
Improvement: Expansion to a four-lane, divided roadway
2. CSAH 11 (Foley Boulevard) - from Egret Boulevard to CSAH 12 (Northland Boulevard) in the City of Coon Rapids.
Improvement: Expansion to a four-lane, divided roadway

The Anoka County Travel Demand Model was used to determine year 2030 forecast volumes. Following is a description of the modeling process:

Traffic Modeling Overview

The purpose of a travel demand forecasting model is to provide an indication of future travel patterns given a set of assumptions regarding future growth. The model allows numerous transportation improvements and land-use/development assumptions to be evaluated to determine how effective a particular roadway improvement is at addressing transportation deficiencies (i.e., over-capacity conditions). The modeling results are important because transportation investments can be identified based on what the travel model indicates is successful or not successful. Travel demand model results can identify the need for new roadways, additional capacity, and/or changes in land-use policies and patterns.

Travel demand forecasting involves a series of mathematical equations that attempt to simulate human travel behavior. The models follow a sequence of steps that answer a series of questions about traveler decisions. The goal is to simulate all choices that travelers make in response to a given system of highways and policies. Many assumptions need to be made about how people make decisions, the factors they consider, and how they may react to a particular transportation

alternative. The travel simulation process follows trips as they begin at a trip-production zone (e.g., Home), move through a network of links and nodes (roads and intersections), and end at a trip-attracting zone (e.g., Workplace).

Travel simulations require that an urban area be represented as a series of small geographic areas called transportation analysis zones (TAZs). TAZs contain data regarding population, employment, and other factors, and are the places where trips begin (trip producers) or end (trip attractions). TAZs can be as small as a single-city block but typically are 1/4 to 1-mile square in area. Zones tend to be small in areas of high population and larger in rural areas.

The highway system is represented as a network for computer analysis. The networks consist of links to represent highway segments and nodes to represent intersections. Data for links include travel times on the link, average speeds, capacity, and direction of travel. Node data include information about intersections and the locations of the nodes (coordinates).

Anoka County Travel Demand Model

The Anoka County Travel Demand Model is a refinement of the Regional Travel Demand Model, which was developed and is maintained by the Twin Cities Metropolitan Council. It covers the greater Twin Cities area. The Anoka County Model differs from the Regional Model in that it includes much greater detail on the transportation network and land-use patterns within Anoka County. The purpose of this enhanced detail is to provide more accurate traffic volume projections within the specific study area (the county), particularly on lower roadway classifications.

The Anoka County Travel Demand Model follows a standard four-step process, in which the major model components are:

- trip generation
- trip distribution
- mode choice, and
- traffic assignment

Trip Generation

The first step in forecasting travel is trip generation. Information from land-use, population, and economic forecasts is used to estimate how many person-trips will be made to and from each zone. Trip generation is estimated by applying trip generation equations to socioeconomic information. Trip production zones are based on household characteristics such as the number of people in the household and the number of vehicles available. Trip attractions are based primarily on the number and type of jobs (retail or non-retail) in a zone.

Trip Distribution

In the trip distribution stage, trip ends are linked together to form an origin-destination pattern of trips. The number of trips between two points is dependent upon their attractiveness for a given trip purpose and the separation (distance or travel time) between the points. A zone with a large number of trip attractions will receive a greater number of trips than one with a small number of trip attractions. The other primary factor in trip distribution is distance. The

number of trips from an origin zone to a given destination zone decreases with increasing travel time between the origin zone and the destination zone.

Mode Choice

Here, trips between a given origin and destination are split into trips using different modes of travel including public transit and personal vehicles. Calculations are conducted that compare the attractiveness of travel by different modes to determine their relative usage. The Metropolitan Council's Regional Travel Demand Model includes a sophisticated mode choice model. This project maintains consistency with all of the coefficients, networks, and processes.

Traffic Assignment

The fourth step in the modeling process assigns trips to specific routes. These routes are first determined based on the shortest travel times between origins and destinations. The assigned trip volumes are then compared to the capacity of each link to determine which links, if any, are congested. If a link is congested, the speed on the link slows, resulting in longer travel time assigned to that link. Trips on congested links will be shifted to less congested links until there is a system-wide balance between travel demand and travel supply.

2030 Anoka County Travel Demand Model

The traffic projections for the three CSAH roadways addressed in this memorandum were made assuming year 2030 land-use and transportation conditions. Estimates for Anoka County indicate that the population will increase by approximately 40 percent (119,000) between the year 2000 and 2030, while the employment will increase by approximately 38 percent (41,000). This growth is projected to put additional strain on the county's transportation infrastructure.

For the projections, the transportation projects in the Metropolitan Council's 2030 Transportation Plan are assumed. Additionally, improvements funded in the Anoka County Highway Department Five-Year Highway Improvement Plan have been included in the base 2030 model. Listed below are the roadways that were added to the Met Council 2030 base transportation network on the basis of these considerations:

- CSAH 14 – divided 4-lane from Crane Street east to Ulysses Street
- CSAH 14 – 3-lane through downtown Centerville
- CSAH 14 – divided 4 lane from Centerville to I-35W
- CSAH 14 – divided 4-lane from CSAH 52 to CSAH 17
- CSAH 14 – divided 4-lane from Thrush Street NW to Crane Street NW
- CSAH 17 – divided 4-lane from CSAH 14 to CSAH 116
- CSAH 51 – divided 4-lane from TH 10 to 92nd Avenue NE
- CSAH 52 – divided 4-lane from CSAH 14 to CSAH 116
- CSAH 57 – divided 4-lane from TH 10 to 1,000' N. BNSF Railroad tracks
- CSAH 78 – divided 4-lane from CSAH 14 to CSAH 116
- CSAH 83 – divided 4-lane from TH 10 to Alpine Drive
- CSAH 116 – divided 4-lane from CSAH 7 to CSAH 9
- CSAH 116 – divided 4-lane from CSAH 83 to CSAH 56
- CSAH 116 – divided 4-lane between CSAH 57 & Germanium Street NW
- CSAH 116 – divided 4-lane between TH 65 & CSAH 52

- TH 10 – 6-lane freeway from CSAH 11 to CSAH 78
- TH 65 – grade separated interchange at CSAH 14, overpasses at 129th and 121st Avenues NE

2030 Roadway Improvement Traffic Projections

Using the 2030 Model and its associated land-use (population and employment levels) and assumed roadway improvements, daily volume traffic projections were made assuming the improvements previously identified. In addition to posting the traffic level on the improved segment, daily traffic volumes were also posted for adjacent sections of the roadway not slated for improvement. This information allows for the identification of any potential traffic bottlenecks leading up to the improved section of roadway.

1. CSAH 116 (Bunker Lake Blvd NW)

In 2009, the daily traffic volume on CSAH 116, within the planned improvement section, was 14,900. In 2030, with the segment being improved to a four-lane, divided roadway, the projected daily traffic volume is 27,000. The general location of this reported volume is west of Prairie Road NW and east of CSAH 78 (Hanson Boulevard NW).

Outside of the improvement area, the daily traffic volume on CSAH 116 is projected to increase from 13,200 in 2009 to 16,400 in 2030. The general location of this reported volume is west of CSAH 78 (Hanson Boulevard NW) and east of Jay Street NW.

The existing and projected traffic levels for these sections of CSAH 116 are shown on **Figure 1**.

2. CSAH 11 (Foley Boulevard)

In 2009, the daily traffic volume on CSAH 11 (Foley Boulevard) within the planned improvement section was 13,000. In 2030, with the segment being improved to a four-lane, divided roadway, the projected daily traffic volume is 25,000. The general location of this reported volume is north of Egret Avenue NE and south of 109th Avenue NW

Outside of the improvement area, the daily traffic volume on CSAH 11 is projected to increase from 19,200 in 2009 to 28,000 in 2030. The general location of this reported volume is south of Egret Avenue NE and north of 104th Avenue NW.

The existing and projected traffic levels for these sections of CSAH 11 are shown on **Figure 2**.

ATTACHED FIGURES:

Figure 1. Anoka CSAH 116 Improvements

Figure 2. Anoka CSAH 11 Improvements

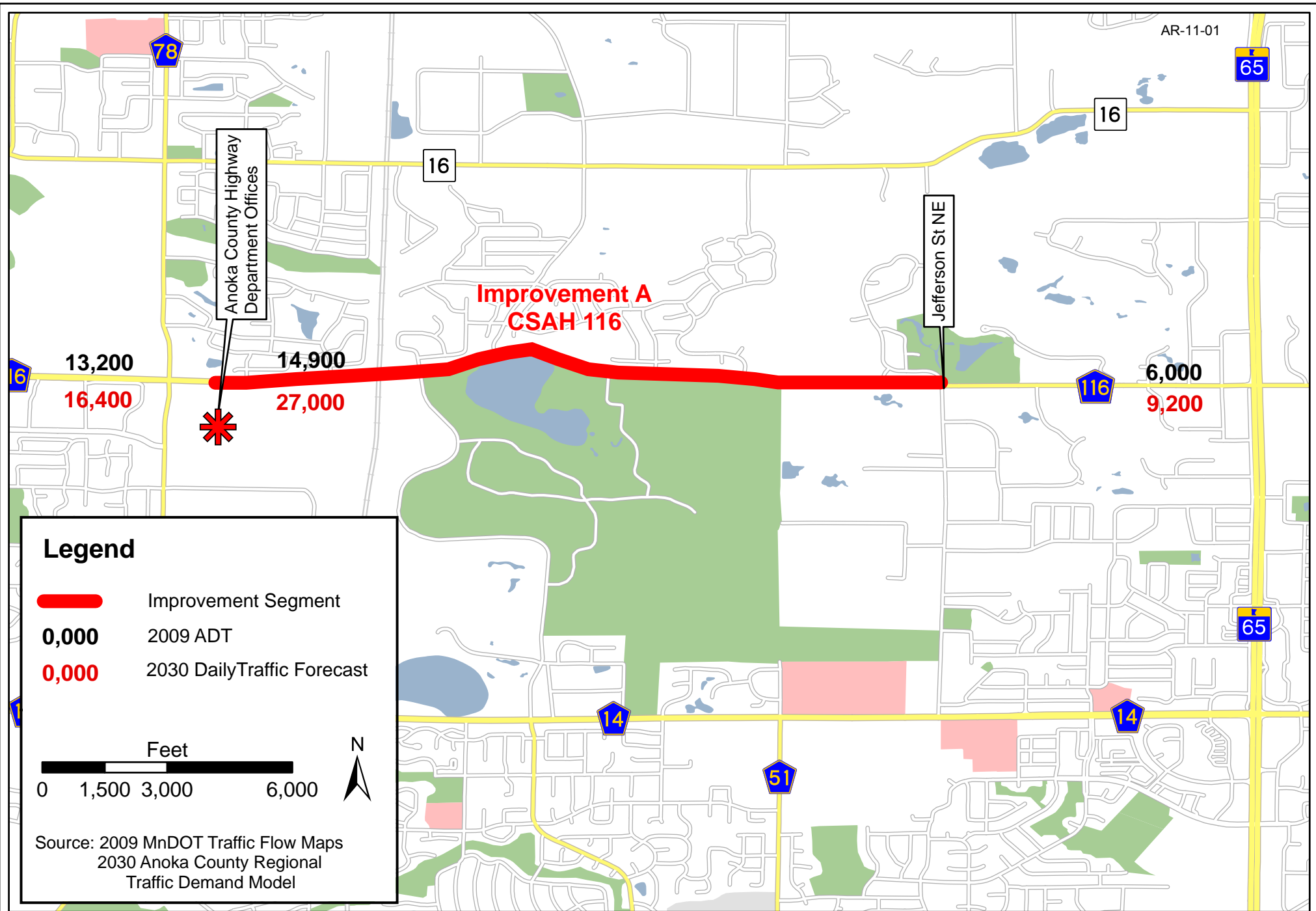


Figure 1
Existing and Projected 2030 Daily Traffic Volumes
Improvement Segment A - CSAH 116 Four-Lane Section

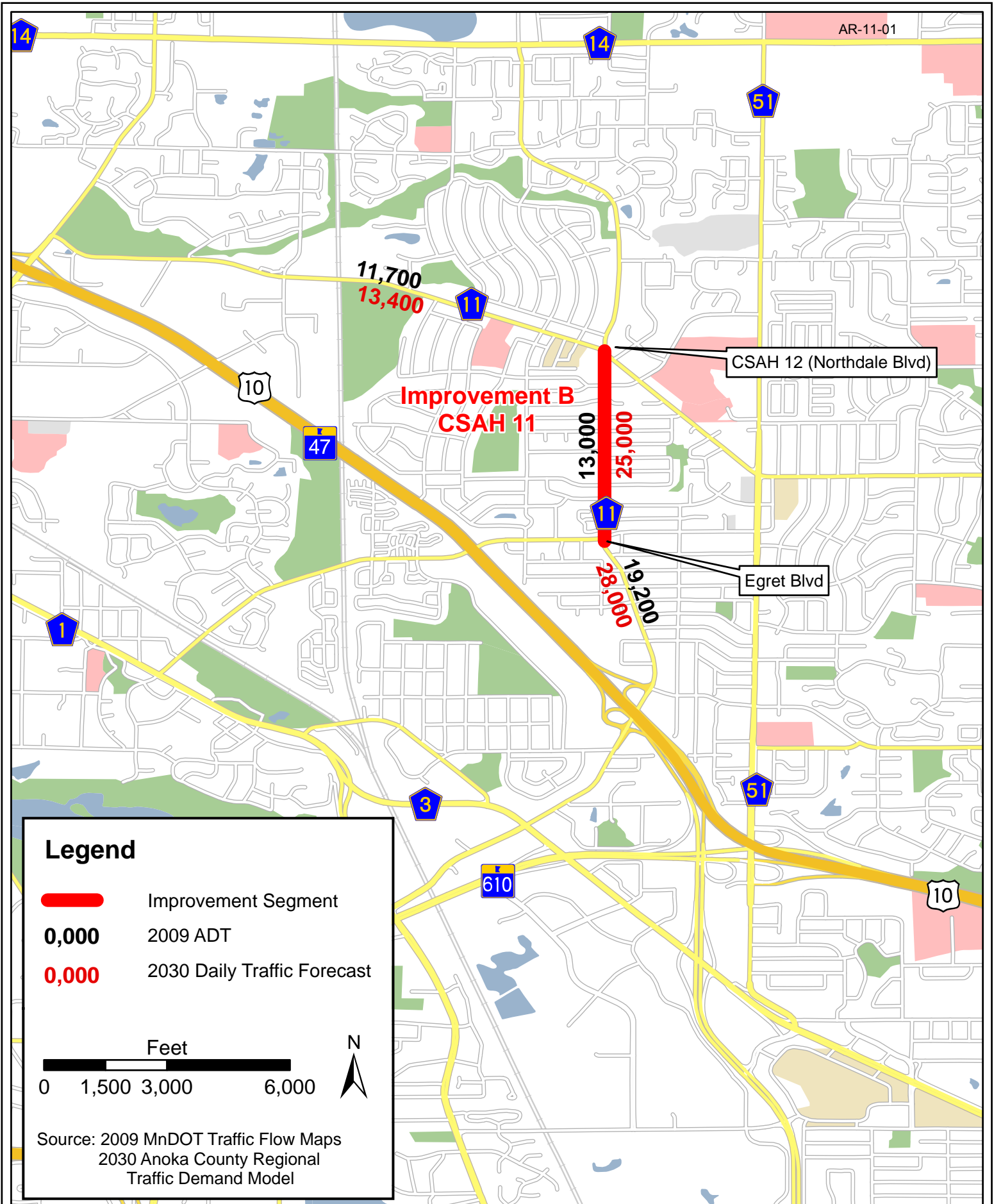


Figure 2
Existing and Projected 2030 Daily Traffic Volumes
Improvement Segment B - CSAH 11 Four-Lane Section

Attachment E: Crash Data/Diagrams

CSAH 14 Segment Crash Data

Crash data is managed by the Mn/DOT Office of Traffic, Safety, and Operations.

Record #	NUM	REF_POINT	GIS_ROUTE	GIS_TM	DOW	MONTH	DAY	YEAR	TIME	SEV	JUNC	SL	TYPE	DIAG	LOC1	TCD	LIT	WTHR1	SURF	CHAR	DESIGN	ACC_NUM	PERSON1														PERSON2
																							VTYPE	DIR	ACT	FAC1	FAC2	POSN	INJ	EQP	PHYS	AGE	SEX	VTYPE2			
1	02000014	003+00.936	0402000014	3.936	5-Thu	12	3	2009	1754	N	2	55	1	1	1	98	4	2	1	1	8	093370239	1	7	11	90	0	1	N	4	1	19	F	4			
2	02000014	003+00.937	0402000014	3.937	7-Sat	3	3	2007	1703	N	7	55	1	1	1	98	1	1	2	1	8	070930055	1	7	1	4	0	1	N	4	1	43	M	1			
3	02000014	003+00.940	0402000014	3.940	5-Thu	8	27	2009	1824	N	1	55	1	1	1	1	1	1	1	3	092400119	3	3	9	1	0	1	N	4	1	35	F	1				
4	02000014	003+00.946	0402000014	3.946	1-Sun	5	13	2007	1528	C	2	55	1	1	1	4	1	1	1	3	071320067	4	7	11	1	0	1	C	4	1	26	F	1				
5	02000014	003+00.946	0402000014	3.946	2-Mon	6	18	2007	1117	N	2	50	1	1	1	1	1	3	2	1	3	071690225	4	3	1	61	46	1	N	4	1	53	M	1			
6	02000014	003+00.946	0402000014	3.946	4-Wed	6	11	2008	1753	C	1	55	1	1	1	1	1	3	2	1	3	081630223	3	7	11	1	0	1	N	4	1	27	M	1			
7	02000014	003+00.946	0402000014	3.946	5-Thu	4	30	2009	1941	C	2	55	8	8	1	1	1	1	1	8	091210009	3	3	1	1	0	1	C	4	1	43	F					
8	02000014	003+00.946	0402000014	3.946	4-Wed	9	30	2009	1817	C	2	55	1	1	1	4	1	1	1	1	6	092730211	4	7	1	15	0	1	C	4	1	16	F	3			
9	02000014	003+00.955	0402000014	3.955	6-Fri	4	17	2009	1721	N	1	55	1	1	1	98	1	1	1	1	8	091110001	1	7	1	4	0	1	N	99	99	897	Z	4			
10	02000014	003+00.965	0402000014	3.965	6-Fri	6	29	2007	1821	C	2	55	1	3	1	98	1	1	1	1	90	071820059	1	7	6	2	2	1	C	4	1	48	M	1			
11	02000014	004+00.001	0402000014	4.001	5-Thu	9	11	2008	0645	C	1	55	1	1	1	98	2	2	2	1	3	082550128	1	7	11	1	0	1	C	4	1	63	F	1			
12	02000014	004+00.001	0402000014	4.001	5-Thu	6	4	2009	1728	N	1	55	1	1	1	98	1	1	1	2	3	091550258	3	7	11	1	0	1	N	4	1	29	F	1			
13	02000014	004+00.001	0402000014	4.001	3-Tue	10	13	2009	0800	N	7	55	1	1	1	1	1	1	1	3	092860074	1	7	1	4	0	1	N	4	1	17	M	4				
14	02000014	004+00.096	0402000014	4.096	2-Mon	4	13	2009	0046	C	1	55	8	90	1	98	6	2	1	1	8	091030018	1	3	1	1	0	1	C	4	1	20	F				
15	02000014	004+00.096	0402000014	4.096	4-Wed	7	8	2009	1727	C	1	50	1	1	1	98	1	1	1	1	8	091890134	2	7	1	15	0	1	N	4	1	21	M	1			
16	02000014	004+00.134	0402000014	4.134	7-Sat	2	10	2007	1240	N	1	55	1	1	1	98	1	1	1	1	8	070650191	1	7	10	1	0	1	N	4	1	41	F	2			
17	02000014	004+00.134	0402000014	4.134	2-Mon	6	9	2008	1717	N	7	55	1	1	1	1	1	1	1	8	081610170	1	3	10	1	0	1	N	4	1	21	M	2				
18	02000014	004+00.134	0402000014	4.134	5-Thu	6	18	2009	0549	C	0	55	1	1	0	98	1	1	1	0	0	091700089	1	7	11	0	0	1	C	4	0	43	F	3			
19	02000014	004+00.153	0402000014	4.153	7-Sat	6	30	2007	1409	C	1	55	1	1	1	98	1	1	1	1	8	071820019	2	7	11	1	0	1	N	4	1	20	M	1			
20	02000014	004+00.153	0402000014	4.153	4-Wed	7	22	2009	1725	C	1	55	1	1	1	9	1	1	1	1	8	092040194	1	7	57	4	0	1	N	4	1	28	F	1			
21	02000014	004+00.191	0402000014	4.191	4-Wed	5	9	2007	0700	C	2	55	1	3	1	4	1	1	1	1	8	071500062	2	7	1	1	0	1	N	4	1	39	M	1			
22	02000014	004+00.191	0402000014	4.191	1-Sun	10	5	2008	1729	C	7	55	1	1	1	1	1	1	1	1	8	082790122	3	3	1	15	0	1	N	4	1	16	F	1			
23	02000014	004+00.191	0402000014	4.191	4-Wed	11	26	2008	1602	N	2	55	1	1	1	1	1	1	1	1	8	083310296	1	7	1	1	0	1	N	4	1	58	F	1			
24	02000014	004+00.191	0402000014	4.191	6-Fri	3	20	2009	1742	C	2	55	1	1	1	1	1	3	2	1	8	090790182	1	7	1	4	0	1	N	4	1	35	M	1			
25	02000014	004+00.191	0402000014	4.191	6-Fri	5	15	2009	1750	C	1	55	1	1	1	98	1	3	2	1	8	091350163	3	7	1	4	15	1	N	4	1	16	M	1			
26	02000014	004+00.191	0402000014	4.191	1-Sun	5	17	2009	1154	N	2	55	1	1	1	1	1	1	1	1	8	091370047	1	7	11	1	0	1	N	4	1	20	M	4			
27	02000014	004+00.191	0402000014	4.191	6-Fri	5	15	2009	0630	N	0	0	1	1	0	1	1	3	1	0	0	091680091	1	0	11	0	0	1	N	4	0	46	F	1			
28	02000014	004+00.191	0402000014	4.191	5-Thu	6	18	2009	1746	B	2	55	1	1	1	1	1	1	1	1	8	091690207	1	7	1	4	0	1	N	4	1	28	F	2			
29	02000014	004+00.191	0402000014	4.191	7-Sat	8	8	2009	1748	C	2	55	1	1	1	10	1	2	1	1	8	092200190	1	3	1	15	0	1	N	0	1	18	M	1			
30	02000014	004+00.191	0402000014	4.191	5-Thu	8	27	2009	1849	N	2	55	1	1	1	1	1	1	1	1	8	092400122	3	3	1	15	1	1	N	4	1	38	M	1			
31	02000014	004+00.191	0402000014	4.191	4-Wed	9	30	2009	1936	C	1	55	8	5	1	1	4	1	1	1	6	092730208	1	7	1	1	0	1	N	4	1	78	F				
32	02000014	004+00.196	0402000014	4.196	3-Tue	6	10	2008	1442	N	4	55	1	1	1	1	1	1	1	1	5	081620180	3	7	1	1	0	1	N	4	1	18	M	8			
33	02000014	004+00.200	0402000014	4.200	6-Fri	6	27	2008	1752	N	7	55	1	1	1	1	1	3	2	1	8	081790208	3	7	0	15	0	1	N	4	1	23	M	1			
34	02000014	004+00.209	0402000014	4.209	5-Thu	4	9	2009	1719	N	1	55	1	90	1	1	1	1	1	1	8	090990197	1	7	11	1	0	1	N	4	1	50	F	1			
35	02000014	004+00.228	0402000014	4.228	7-Sat	4	4	2009	0914	N	1	55	1	1	1	98	1	2	1	1	8	090940027	2	7	1	15	4	1	N	4	1	39	M	1			
36	02000014	004+00.266	0402000014	4.266	6-Fri	9	12	2008	1816	N	1	50	1	1	1	1	1	1	1	1	8	082570039	1	7	11	1	0	1	N	4	1	64	F	1			
37	02000014	004+00.285	0402000014	4.285	6-Fri	6	13	2008	1750	C	1	55	1	1	1	98	1	1	1	1	8	081660009	1	7	11	1	0	1	C	4	1	38	F	1			
38	02000014	004+00.285	0402000014	4.285	6-Fri	9	12	2008	1800	N	1	55	1	1	1	98	1	1	1	1	8	082580002	3	7	1	4	0	1	N	4	1	42	M	4			
39	02000014	004+00.285	0402000014	4.285	7-Sat	9	27	2008	1620	C	1	55	1	1	1	98	1	1	1	1	8	082720102	2	7	10	1	0	1	N	4	1	40	M	1			
40	02000014	004+00.286	0402000014	4.286	6-Fri	2	23	2007	1755	C	1	55	8	5	1	98	1	1	1	1	8	070650204	1	7	1	1	0	1	C	99	1	42	F				
41	02000014	004+00.292	0402000014	4.292	7-Sat	4	14	2007	1657	N	1	55	1	1	1	98	1	1	1	1	8	071350164	1	7	1	15	4	1	N	4	1	18	F	1			
42	02000014	004+00.300	0402000014	4.300	3-Tue	4	17	2007	2108	N	1	50	27	7	2	98	4	1	1	1	8	071070193	3	3	1	21	0	1	N	4	1	21	M				
43	02000014	004+00.339	0402000014	4.339	7-Sat	2	23	2008	1845	N	1	55	8	8	1	98	6	1	1	1	5	080540131	3	3	1	1	0	1	N	4	1	64	M				
44	02000014	004+00.339	0402000014	4.339	4-Wed	2	27	2008	1339	C	1	55	1	1	1	98	1	1	1	1	8	080580361	2	7	10	1	0	1	N	4	1	55	M	1			
45	02000014	004+00.349	0402000014	4.349	4-Wed	2	7	2007	0800	N	10	55	23	90	4	10	1	1	5	1	8	070470289	3	3	1	61	3	1	N	4	1	53	M				
46	02000014	004+00.349	0402000014	4.349	1-Sun	4	5																														

Record#	NUM	REF_POINT	GIS_ROUTE	GIS_TM	DOW	MONTH	DAY	YEAR	TIME	SEV	JUNC	SL	TYPE	DIAG	LOC1	TCD	LIT	WTHR1	SURF	CHAR	DESGN	ACC_NUM	VTYPE	DIR	ACT	FAC1	FAC2	POSN	INJ	EQP	PHYS	AGE	SEX	VTYPE2
77	02000014	005+00.060	0402000014	5.060	3-Tue	1	1	2008	0152	N	1	30	51	90	4	98	4	2	3	1	8	080010028	1	1	0	0	0	1	N	0	0	896	Z	
78	02000014	005+00.199	0402000014	5.199	6-Fri	5	29	2009	1445	N	1	50	1	1	1	98	1	1	1	1	8	091500033	1	7	1	46	15	1	N	4	1	18	M	1
79	02000014	005+00.371	0402000014	5.371	3-Tue	7	22	2008	2209	N	1	55	8	90	1	98	4	1	1	1	8	082060004	3	3	1	1	0	1	N	4	1	18	F	
80	02000014	005+00.371	0402000014	5.371	6-Fri	10	2	2009	1249	N	1	55	8	98	1	98	1	3	2	1	3	092750168	4	7	1	1	0	1	N	4	1	23	M	
81	02000014	005+00.655	0402000014	5.655	6-Fri	9	25	2009	1309	N	4	55	1	1	1	98	1	3	2	1	8	092680098	1	3	10	1	0	1	N	4	1	71	M	1
82	02000014	005+00.717	0402000014	5.717	4-Wed	5	23	2007	1438	N	1	55	1	2	1	98	1	3	2	1	3	071440206	1	7	11	9	61	1	N	4	1	45	M	1
83	02000014	005+00.736	0402000014	5.736	2-Mon	8	10	2009	1244	N	4	50	1	1	1	1	1	1	1	1	3	092220185	1	3	1	15	0	1	N	4	1	20	F	2
84	02000014	005+00.736	0402000014	5.736	4-Wed	12	2	2009	1912	N	1	55	1	1	1	98	4	1	1	1	8	093380259	1	3	11	1	1	1	N	4	1	17	M	1
85	02000014	005+00.755	0402000014	5.755	7-Sat	6	2	2007	0846	N	4	55	1	1	1	1	1	1	1	1	5	071540024	1	3	1	15	0	1	N	4	1	18	F	2
86	02000014	005+00.755	0402000014	5.755	6-Fri	10	5	2007	0850	N	4	55	1	5	1	1	1	3	2	1	3	072780093	1	7	1	15	0	1	N	4	1	34	M	1
87	02000014	005+00.755	0402000014	5.755	3-Tue	9	11	2007	0716	C	4	55	1	5	1	1	1	1	1	1	3	073040078	3	7	1	5	0	1	C	4	1	57	F	4
88	02000014	005+00.755	0402000014	5.755	1-Sun	9	30	2007	2227	A	4	55	6	5	1	1	4	3	2	1	8	073240256	53	5	90	2	5	22	A	98	99	47	M	3
89	02000014	005+00.755	0402000014	5.755	7-Sat	5	3	2008	2130	N	1	55	8	90	1	98	4	1	1	1	8	081240125	4	7	1	1	0	1	N	4	1	44	F	
90	02000014	005+00.755	0402000014	5.755	7-Sat	6	28	2008	0857	C	4	50	1	5	1	1	1	1	1	1	3	081800037	1	1	1	1	0	1	C	4	1	35	M	1
91	02000014	005+00.755	0402000014	5.755	2-Mon	9	29	2008	1036	B	4	50	64	90	1	1	1	1	1	1	8	082730152	1	3	3	2	15	1	N	99	1	18	F	11
92	02000014	005+00.755	0402000014	5.755	5-Thu	10	23	2008	2138	C	5	55	1	1	1	1	4	3	2	1	5	082970280	4	3	10	41	0	1	N	4	1	19	M	1
93	02000014	005+00.755	0402000014	5.755	5-Thu	10	30	2008	1933	N	4	55	1	1	1	1	4	1	1	1	8	083040120	1	3	8	1	0	1	N	4	1	17	F	1
94	02000014	005+00.755	0402000014	5.755	5-Thu	9	17	2009	1650	N	4	50	1	1	1	1	1	1	1	1	3	092600109	1	3	1	16	15	1	N	4	1	16	M	3
95	02000014	005+00.773	0402000014	5.773	6-Fri	9	18	2009	0738	C	1	50	64	90	1	98	1	1	1	1	8	092610034	11	3	1	15	16	1	C	12	1	16	M	
96	02000014	005+00.780	0402000014	5.780	2-Mon	9	24	2007	1602	N	1	55	1	1	1	98	1	2	1	1	8	072710228	2	3	1	4	0	1	N	4	1	19	M	1
97	02000014	005+00.849	0402000014	5.849	4-Wed	11	5	2008	1723	C	1	55	1	1	1	98	1	1	1	1	8	083100217	1	3	1	1	0	1	N	4	1	17	F	1
98	02000014	006+00.008	0402000014	6.008	6-Fri	9	26	2008	1804	N	4	50	1	1	1	1	1	2	1	1	8	082710080	1	3	1	1	0	1	N	99	1	29	M	1
99	02000014	006+00.078	0402000014	6.078	3-Tue	1	13	2009	0641	B	1	45	1	8	1	98	2	4	5	1	8	090130322	2	7	1	46	0	1	N	99	1	44	M	1
100	02000014	006+00.247	0402000014	6.247	6-Fri	10	2	2009	1505	C	1	55	1	1	1	1	1	3	2	1	3	092760122	1	3	1	41	0	1	N	4	1	21	M	1
101	02000014	006+00.258	0402000014	6.258	3-Tue	1	16	2007	1823	N	7	55	1	1	1	1	4	1	1	1	3	070160434	4	7	10	1	0	1	N	4	1	64	F	1
102	02000014	006+00.258	0402000014	6.258	5-Thu	2	8	2007	1046	C	4	50	1	1	1	1	1	4	3	2	3	070390349	1	7	1	2	21	1	N	99	1	34	F	1
103	02000014	006+00.258	0402000014	6.258	1-Sun	10	7	2007	2034	N	4	50	1	90	1	1	4	2	2	1	3	072800105	2	7	1	1	0	1	N	4	1	35	M	4
104	02000014	006+00.258	0402000014	6.258	7-Sat	7	5	2008	0846	N	1	55	51	4	1	98	1	1	1	1	8	081870085	32	7	1	90	0	1	N	4	1	37	M	
105	02000014	006+00.258	0402000014	6.258	4-Wed	11	12	2008	0053	N	4	55	26	90	3	98	4	4	3	1	8	083170073	1	3	1	1	0	1	N	4	1	42	M	
106	02000014	006+00.258	0402000014	6.258	3-Tue	11	4	2008	0733	B	1	50	1	1	1	98	1	1	1	1	3	083180109	1	7	1	41	0	1	B	4	1	17	F	1
107	02000014	006+00.258	0402000014	6.258	7-Sat	3	14	2009	2147	N	4	50	34	7	4	1	4	1	1	1	8	090740114	1	3	1	1	0	1	N	4	1	16	F	
108	02000014	006+00.258	0402000014	6.258	7-Sat	4	4	2009	2209	C	4	50	1	1	1	1	4	3	2	1	3	090940146	1	3	0	15	0	1	C	4	1	17	M	1
109	02000014	006+00.258	0402000014	6.258	2-Mon	4	20	2009	1443	C	1	50	1	1	1	1	1	1	1	1	8	091100155	2	3	1	4	4	1	N	4	1	19	M	3
110	02000014	006+00.258	0402000014	6.258	6-Fri	5	29	2009	1450	N	7	40	1	1	1	1	1	1	1	1	3	091500094	1	3	1	15	16	1	N	99	1	16	F	1
111	02000014	006+00.258	0402000014	6.258	4-Wed	9	2	2009	1617	C	4	55	1	1	1	1	1	1	1	1	3	092450180	3	3	1	15	0	1	N	4	1	22	M	1
112	02000014	006+00.258	0402000014	6.258	6-Fri	10	16	2009	0959	N	4	45	1	1	1	1	1	2	1	1	3	092890049	3	7	1	1	0	1	N	99	1	70	M	3
113	02000014	006+00.258	0402000014	6.258	7-Sat	10	17	2009	0953	C	4	50	1	1	1	1	1	1	1	1	8	092900078	1	3	1	1	0	1	C	4	1	30	F	1
114	02000014	006+00.277	0402000014	6.277	3-Tue	5	29	2007	1521	C	1	55	1	1	1	1	1	2	1	1	3	071490213	1	7	1	4	0	1	N	4	1	22	M	3

CSAH 116 Notes

Removals

-----: Outside the project area. Removed from analysis.

xxxxxxx: Duplicate; remove from analysis

Other Changes – Segment Records

Crash Record #	Accident Report #	Change from Data
11	082210090	Crash is an illegal u-turn, not right angle. Car did not want to wait for train and turned around and pulled out in front of the oncoming car.
15	091840051	Crash is a run off the road right side, not left.
16	093220131	Crash is a left-turn, not a right angle.
17	080650215	Crash is a sideswipe - opposite direction, not a right angle.
28	092720205	Crash is a left-turn, not a head on

Other Changes – Additional Crash

Add a crash at the intersection of CSAH 116 and Jefferson Street.

Crash date: 7/12/2008.

Local case #: 08164056

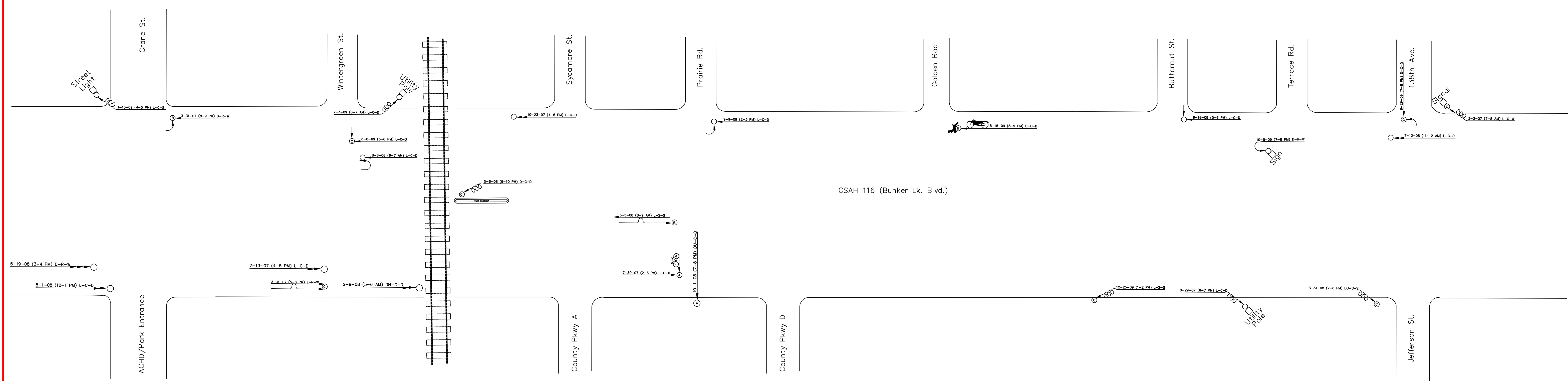
Crash type: Rear end

Crash severity: Property damage

Please see attached crash reports for additional information.

ANOKA COUNTY HIGHWAY DEPARTMENT COLLISION DIAGRAM

Location: CSAH 116 (Bunker Lk. Blvd.) From Crane St. To Jefferson St.
January 1, 2007 Thru December 31, 2009



	OVERTURN		MOTORCYCLE
	MOVING VEHICLE		DEER
	REAR END		PEDESTRIAN
	BACKING VEHICLE		BICYCLE
	COLLISION WITH FIXED OBJECT		VEHICLE OUT OF CONTROL
	SIDE SWIPE SAME DIRECTION		LEFT TURN INTO ON COMING TRAFFIC
	SIDE SWIPE OPPOSITE DIRECTION		RIGHT ANGLE
	PARKED VEHICLE		COLLISION WITH FALLING OBJECT

Date, Time, Light, Weather, Surface			SEVERITY CODE
LIGHT	WEATHER	SURFACE	
L= Light	C= Cloudy	D= Dry	○ Property Damage
Dn= Dawn	R= Rain	W= Wet	○ Possible Injury
Du= Dusk	S= Snow/Sleet	S= Snow/Ice	○ Non-Incapacitating Injury
D= Dark	X= Other/Unknown	X= Other/ Unknown	○ Incapacitating Injury
X= Unknown			● Fatality

CSAH 116 Segment Crash Data																		PERSON1								
Crash data is managed by the Mn/DOT Office of Traffic, Safety, and Operations.																										
Record #	REF_POINT	GIS_TM	DOW	MONTH	DAY	YEAR	TIME	SEV	JUNC	TYPE	DIAG	LOC1	TCD	LIT	WTHR1	SURF	DESGN	ACC_NUM	VTYPE	DIR	ACT	FAC1	FAC2	POSN	INJ	EQP
1	009+00.194	9.194	7-Sat	3	31	2007	2012	B	2	1	8	1	98	4	2	2	8	070910006	2	3	6	2	18	1	N	4
2	009+00.194	9.194	6-Fri	8	1	2008	0002	N	0	1	1	0	98	1	1	1	0	082750128	1	3	6	0	0	1	N	4
3	009+00.194	9.194	3-Tue	1	13	2009	1630	N	4	41	7	4	4	1	2	5	3	090140543	3	7	1	61	16	1	N	4
4	009+00.196	9.196	2-Mon	5	19	2008	1537	N	1	1	1	1	98	7	3	2	8	081400125	4	7	10	1	1	1	N	99
5	009+00.469	9.469	7-Sat	3	31	2007	1735	C	2	1	3	1	98	1	2	2	8	070900111	1	3	6	10	0	1	N	4
6	009+00.469	9.469	6-Fri	7	13	2007	1645	C	0	1	1	0	98	1	1	1	0	072700119	3	1	1	0	0	1	N	4
7	009+00.469	9.469	6-Fri	7	13	2007	1643	N	2	1	1	1	4	1	2	1	6	072890164	4	3	11	1	0	1	N	4
8	009+00.469	9.469	2-Mon	6	8	2009	1726	C	2	1	3	1	4	1	1	1	8	091630115	1	5	6	2	0	1	N	4
9	009+00.487	9.487	5-Thu	5	8	2008	2128	C	1	51	7	7	98	4	1	1	3	081300009	1	7	1	18	15	1	C	99
10	009+00.498	9.498	3-Tue	10	23	2007	1628	N	1	1	1	1	98	1	1	1	8	072960273	3	7	1	15	0	1	N	4
11	009+00.617	9.617	6-Fri	8	8	2008	0635	N	10	1	90	1	10	2	1	1	8	082210090	4	7	1	1	0	1	N	4
12	009+00.636	9.636	7-Sat	2	9	2008	0542	N	1	1	1	1	10	2	1	1	8	080420023	1	3	1	15	0	1	N	4
13	009+00.996	9.996	2-Mon	7	30	2007	1442	A	3	6	5	1	1	1	1	1	6	073020053	1	3	1	1	0	1	N	4
14	009+00.996	9.996	4-Wed	10	1	2008	1910	A	2	30	90	8	98	3	1	1	8	082750293	1	5	1	21	0	1	A	99
15	009+00.996	9.996	6-Fri	7	3	2009	0618	N	1	24	7A	90	10	1	1	1	8	091840051	3	3	2	15	18	1	N	99
16	009+00.996	9.996	4-Wed	9	9	2009	1424	N	2	1	3	1	1	1	2	1	8	093220131	1	7	1	5	0	1	N	4
17	010+00.033	10.033	4-Wed	3	5	2008	0825	B	1	1	859	1	9	1	4	3	8	080650215	1	7	1	1	0	1	N	4
18	010+00.568	10.568	3-Tue	8	18	2009	2054	B	1	8	90	1	98	6	1	1	8	092310019	11	7	1	90	0	1	B	12
19	010+00.690	10.690	6-Fri	12	25	2009	1300	C	1	25	4	1	98	1	4	4	8	100120075	3	7	1	3	61	1	N	4
20	010+00.837	10.837	2-Mon	3	31	2008	1921	C	99	37	7	99	98	3	5	5	8	080920007	4	3	1	61	0	1	N	4
21	011+00.111	11.111	1-Sun	12	2	2007	0607	N	2	1	2	1	4	2	2	3	3	080170060	14	3	1	0	0	1	N	4
22	011+00.133	11.133	4-Wed	8	29	2007	1839	N	1	25	7	8	98	1	1	1	8	072480240	2	3	1	7	15	1	N	4
23	011+00.152	11.152	2-Mon	10	5	2009	1935	N	1	41	98	1	98	6	2	2	8	092780180	3	7	7	10	10	1	N	4
24	011+00.285	11.285	7-Sat	11	17	2007	1038	B	1	1	2	1	98	1	2	1	8	080110119	90	5	1	0	0	1	N	4
25	011+00.337	11.337	6-Fri	2	2	2007	0734	C	4	22	90	4	1	1	2	2	8	070330157	2	7	1	4	1	1	C	4
26	011+00.337	11.337	4-Wed	2	7	2007	0710	C	2	1	9	1	98	2	2	5	3	070420033	1	7	1	1	0	1	C	4
27	011+00.337	11.337	6-Fri	9	18	2009	1743	N	7	1	3	1	98	1	1	1	8	092610179	1	5	6	2	0	1	N	4
28	011+00.337	11.337	3-Tue	9	29	2009	1937	C	4	1	3	1	1	4	1	1	8	092720205	4	5	1	1	1	1	C	4

CSAH 116 Intersection Crash Data

Crash data is managed by the Mn/DOT Office of Traffic, Safety, and Operations.

PERSON1

SYS	REF_POINT	GIS_ROUTE	GIS_TM	DOW	MONTH	DAY	YEAR	TIME	SEV	JUNC	TYPE	DIAG	LOC1	TCD	LIT	WTHR1	SURF	CHAR	DESGN	ACC_NUM	VTYPE	DIR	ACT	FAC1	FAC2	POSN	INJ	EQP	PHYS	AGE	SEX
<u>Crane Street</u>																															
<u>Wintergreen Street</u>																															
<u>Sycamore Street/Cnty Pkwy A</u>																															
<u>Prairie Road</u>																															
<u>138th Ave/Butternut Street</u>																															
<u>Terrace Road</u>																															
<u>Jefferson Street/138th Avenue</u>																															
05	000+00.493	0516330107	0.493	7-Sat	4	25	2009	2236	N	1	25	7	4	98	4	1	1	1	8	091160134	1	5	1	90	0	1	N	4	1	18	M

STATE OF MINNESOTA - DEPARTMENT OF PUBLIC SAFETY										PAGE 1 OF 1		FOR DPS USE ONLY																							
LOCAL CASE NO.		AMENDED		ACCIDENT REPORT				MILITARY TIME																											
08164056		N		LAW ENFORCEMENT ONLY				1119																											
HIT-AND-RUN		PUB PROP		VEHICLES		KILLED		INJURED		\$ MIN			MONTH		DATE		YEAR		DAY		MILITARY TIME														
N		N		02		00		00		0		7		12		2008		Sat		1119															
ROUTE SYSTEM				ROUTE NUMBER OR STREET NAME				ROADWAY DIRECTION				AT INTERSECTION WITH				OR				1000000				MI FT				N S E W				OF			
ON 07				BUNKER LAKE BLVD NE				N S E W				OR				1000000				MI FT				N S E W				OF							
COUNTY NO		CITY TWP		INT ELEM		REFERENCE POINT		ROUTE SYS		ROUTE #, STREET, CORP LIMIT, OR FEATURE		10		JEFFERSON ST NE																					
02		HAM LAKE				+																													
DRIVER 1										DRIVER 2																									
FACTOR 1		POSITION		DRIVER LICENSE NUMBER - 1		STATE		CLASS		DL STATUS		01		01		Q467147565317		MN		CLASS		DL STATUS		FACTOR 1											
01		01		p716146746814		MN		D		01		01		01		15																			
NAME (FIRST, MIDDLE, LAST)										NAME (FIRST, MIDDLE, LAST)																									
KATHLEEN JUNKER										TAYLOR WILLIAM HALL																									
DATE OF BIRTH										DATE OF BIRTH																									
07/28/46										06/09/90																									
MIN/AVR										MIN/AVR																									
01										01																									
ADDRESS										ADDRESS																									
13503 CROOKED LAKE BLVD NW										2839 ASPEN LAKE DR NE																									
DR VOLTS/ RESTRICT										DR VOLTS/ RESTRICT																									
N2 01										N2 01																									
CITY, STATE, ZIP										CITY, STATE, ZIP																									
ANDOVER 55304										BLAINE 55449																									
7637575462										7632087479																									
PHYSCL										PHYSCL																									
01										01																									
RCOMND										RCOMND																									
01										01																									
ADDRESS CORRECT										ADDRESS CORRECT																									
Y2										Y2																									
SEX										SEX																									
F										M																									
SAFE EOPT TYPE										SAFE EOPT TYPE																									
04										04																									
SAFE EOPT USE										SAFE EOPT USE																									
04										04																									
AIRBAG										AIRBAG																									
04										01																									
EJECT										EJECT																									
05										05																									
INJ SEV										INJ SEV																									
N										N																									
ALCHL TEST										ALCHL TEST																									
N										N																									
TYPE										TYPE																									
98										98																									
DRUG TEST										DRUG TEST																									
N										N																									
TYPE										TYPE																									
98										98																									
TO HOSP										TO HOSP																									
N2										N2																									
TRANSPORT										TRANSPORT																									
AMB										AMB																									
OTHER										OTHER																									
AMB SERVICE										AMB SERVICE																									
RUN NUMBER										RUN NUMBER																									
OCCUP										OCCUP																									
02										01																									
OWNER NAME										OWNER NAME																									
JUNKER KATHLEEN										HALL THOMAS JAMES																									
FIRE										FIRE																									
N										N																									
VEH TYP										VEH TYP																									
03										01																									
ADDRESS										ADDRESS																									
13503 CROOKED LAKE BLVD NW										2839 ASPEN LAKE DR																									
TOWED										TOWED																									
N2										Y																									
CITY, STATE, ZIP										CITY, STATE, ZIP																									
ANDOVER MN 55304										BLAINE MN 55449																									
PULLING UNIT										PULLING UNIT																									
N2										N2																									
DIRECT										DIRECT																									
07										07																									
VEH USE										VEH USE																									
01										01																									
DMG LOC										DMG LOC																									
05										01																									
MAKE										MAKE																									
GMC										HOND																									
MODEL										MODEL																									
YUK										UEX																									
YEAR										YEAR																									
1997										2006																									
COLOR										COLOR																									
BLU										GRY																									
DMG SEV										DMG SEV																									
02										04																									
PLATE #										PLATE #																									
KE923										RYL845																									
ST REG										ST REG																									
MN										MN																									
YEAR REG										YEAR REG																									
09										09																									
FIRST										FIRST																									
09										01																									
SEQUENCE OF EVENTS										SEQUENCE OF EVENTS																									
SECOND										SECOND																									
THIRD										THIRD																									
FOURTH										FOURTH																									
MOST HARM EVENT										MOST HARM EVENT																									
09										01																									
INSURANCE										INSURANCE (UNIT 2)																									
WEST BEND MUTUAL										AMERICAN FAMILY																									
POLICY NUMBER										POLICY NUMBER																									
HHN546270403										065397970816FPPAMN																									
CARGO BODY TYPE										CARGO BODY TYPE																									
HAZ MAT PLAC										HAZ MAT PLAC																									
WAIVED										WAIVED																									
INSPECTION #										INSPECTION #																									
INSP BADGE #										INSP BADGE #																									
IF ACCIDENT INVOLVED A COMMERCIAL MOTOR VEHICLE, SCHOOL BUS, OR HEAD START BUS										REMEMBER TO NOTIFY THE STATE PATROL (required under MS 169.783 and 169.4511).																									
COMMERCIAL VEHICLE NUMBER 1 - MOTOR CARRIER NAME										COMMERCIAL VEHICLE NUMBER 2 - MOTOR CARRIER NAME																									
DOT NUMBER										DOT NUMBER																									
PASSENGERS / WITNESSES										PASSENGERS / WITNESSES																									
JEAN MARIE SCHONTHALER										JEAN MARIE SCHONTHALER																									
UNIT										UNIT																									
01										01																									
POSTN										POSTN																									
03										03																									
DATE OF BIRTH										DATE OF BIRTH																									
6/13/1961										6/13/1961																									
SEX										SEX																									
F										F																									
TYPE										TYPE																									
04										04																									
USE										USE																									
04										04																									
AIRBAG										AIRBAG																									
04										05																									
EJECT										EJECT																									
N										N																									
INJ SEV										INJ SEV																									
N2										N2																									
TO HOSP										TO HOSP																									
N2										N2																									
TRANSPORT										TRANSPORT																									
AMB										AMB																									
OTHER										OTHER																									
AMB SERVICE										AMB SERVICE																									
RUN NUMBER										RUN NUMBER																									
OWNER OF OTHER DAMAGED PROPERTY AND DESCRIPTION OF DAMAGED PROPERTY AND/OR YELLOW TAG NUMBER(S)										DAMAGED PROPERTY / YELLOW TAG NUMBER																									
ACC TYP										NARRATIVE:										DEVICE															
01										DRIVER IN VEHICLE 1 SLOWED DOWN FOR SOME DUCKS CROSSING THE ROAD. DRIVER NUMBER 2 APPLIED THE BREAKS. BUT WAS UNABLE TO AVOID STRIKING DRIVER NUMBER 1 IN THE REAR END.										98															
SCHL BUS																																			
03																																			
LOCATN																				WORKING															
01																				98															
ON BRIDGE																				INT REL															
N2																				01															
TYPE OF WZ																				SPEED LIMIT															
98																				55															
LOC OF CRASH/WZ																				WEATHER 1															
98																				01															
WORKERS PRESENT																				WEATHER 2															
I2																				LIGHT															
RDESON																				01															
08																				PHOTOS TAKEN															
RD SURF																				N															
01																				DIAGRAM															
RD CHAR																				01															
01																																			
OFFICER RANK, NAME AND BADGE #										AGENCY										PATROL STATION															
DEPUTY Joshua Hatton 207										Anoka Co Sheriff										STATE PATROL LOCAL															
																				SHERIFF OTHER															

Attachment F: Pollution Worksheet

VEHICLE EMISSIONS REDUCTION WORKSHEET (APPENDIX G) System Management					
BASELINE EMISSIONS WITHOUT PROJECT					
Average Weekday Travel Speed Before Installation:				29	mph
	Emissions Factor (grams/mile)*	Daily VMT (miles)	Emissions (kg/day)		
CO Emissions	15.55	53,392	830.2	kg/day	
NO _x Emissions	1.68	53,392	89.7	kg/day	
VOC Emissions	1.43	53,392	76.4	kg/day	
Total Emissions			996.3	kg/day	
EMISSIONS AFTER PROJECT					
Average Weekday Travel Speed After Installation:				39	mph
	Emissions Factor (grams/mile)*	Daily VMT (miles)	Emissions (kg/day)		
CO Emissions	10.36	53,392	553.143192	kg/day	
NO _x Emissions	1.72	53,392	91.834584	kg/day	
VOC Emissions	1.09	53,392	58.197498	kg/day	
Total Emissions			703.2	kg/day	
Net Emissions Reductions due to Project			293.1	kg/day	
COST EFFECTIVENESS					
Total Cost of the Project:				\$10,300,000	
Cost Effectiveness:				35138.8112	

*Use auto emissions factors in Appendix for speeds in F4 and F5

Attachment G: Existing Traffic Volumes

Anoka County Highway Department

Location: CSAH 14 (Main St.)
 Cross Street: 4000 ft east of CSAH 78 (Hanson Blvd.)
 Weather: Rainy and Warm/70 F

Site: 1405111101
 Date: 05/12/2011
 Thursday

24 Hour Vehicle Classification
 Channel: EB

Time	Total	Bike	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	7 Axle Multi
12:00 AM	22	0	19	3	0	0	0	0	0	0	0	0	0	0
1:00 AM	35	0	31	4	0	0	0	0	0	0	0	0	0	0
2:00 AM	18	0	17	1	0	0	0	0	0	0	0	0	0	0
3:00 AM	11	0	7	3	0	0	0	0	0	1	0	0	0	0
4:00 AM	34	0	24	10	0	0	0	0	0	0	0	0	0	0
5:00 AM	102	1	75	24	0	2	0	0	0	0	0	0	0	0
6:00 AM	299	1	186	86	21	3	0	1	0	0	1	0	0	0
7:00 AM	512	0	388	97	13	7	0	4	1	1	1	0	0	0
8:00 AM	379	0	269	83	15	7	0	2	1	2	0	0	0	0
9:00 AM	300	1	212	70	4	9	0	0	1	1	2	0	0	0
10:00 AM	260	0	180	65	7	6	0	0	0	2	0	0	0	0
11:00 AM	293	0	207	61	9	11	0	1	1	2	1	0	0	0
12:00 PM	285	1	202	68	6	5	0	0	1	1	1	0	0	0
1:00 PM	288	0	210	58	8	10	0	0	1	0	1	0	0	0
2:00 PM	395	0	257	95	35	8	0	0	0	0	0	0	0	0
3:00 PM	443	1	348	87	4	2	0	0	0	1	0	0	0	0
4:00 PM	449	0	370	73	1	5	0	0	0	0	0	0	0	0
5:00 PM	451	0	365	74	8	3	0	0	1	0	0	0	0	0
6:00 PM	366	1	299	62	0	4	0	0	0	0	0	0	0	0
7:00 PM	296	0	233	61	0	1	0	0	1	0	0	0	0	0
8:00 PM	266	0	226	38	1	1	0	0	0	0	0	0	0	0
9:00 PM	207	0	169	38	0	0	0	0	0	0	0	0	0	0
10:00 PM	102	0	86	15	1	0	0	0	0	0	0	0	0	0
11:00 PM	67	0	56	8	3	0	0	0	0	0	0	0	0	0
Total	5880	6	4436	1184	136	84	0	8	8	11	7	0	0	0
%		0.1	75.4	20.1	2.3	1.4	0.0	0.1	0.1	0.2	0.1	0.0	0.0	0.0

Anoka County Highway Department

Location: CSAH 14 (Main St.)
 Cross Street: 1500 ft east of CSAH 78 (Hanson Blvd.)
 Weather: Rainy and Warm/70 F

Site: 1405091102
 Date: 05/12/2011
 Thursday

24 Hour Vehicle Classification
 Channel: WB

Time	Total	Bike	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	7 Axle Multi
12:00 AM	35	0	29	6	0	0	0	0	0	0	0	0	0	0
1:00 AM	16	0	13	2	0	1	0	0	0	0	0	0	0	0
2:00 AM	11	0	10	1	0	0	0	0	0	0	0	0	0	0
3:00 AM	18	0	16	2	0	0	0	0	0	0	0	0	0	0
4:00 AM	53	0	46	5	0	1	0	0	0	1	0	0	0	0
5:00 AM	110	1	73	35	0	0	0	0	0	1	0	0	0	0
6:00 AM	299	1	232	58	1	4	0	0	0	3	0	0	0	0
7:00 AM	467	1	357	84	16	8	0	0	0	1	0	0	0	0
8:00 AM	346	2	273	51	7	10	0	0	0	2	1	0	0	0
9:00 AM	378	1	268	72	19	8	0	2	2	5	1	0	0	0
10:00 AM	320	0	209	94	2	6	0	1	2	4	2	0	0	0
11:00 AM	344	1	234	86	6	9	0	2	2	4	0	0	0	0
12:00 PM	331	0	231	80	4	12	0	0	0	4	0	0	0	0
1:00 PM	335	0	228	82	9	13	0	0	1	1	1	0	0	0
2:00 PM	398	0	292	88	9	5	0	2	0	1	1	0	0	0
3:00 PM	486	0	338	128	5	12	0	1	2	0	0	0	0	0
4:00 PM	767	3	570	163	17	12	0	2	0	0	0	0	0	0
5:00 PM	696	0	530	151	5	10	0	0	0	0	0	0	0	0
6:00 PM	562	0	465	90	2	5	0	0	0	0	0	0	0	0
7:00 PM	318	0	249	64	3	1	0	0	0	1	0	0	0	0
8:00 PM	217	0	173	44	0	0	0	0	0	0	0	0	0	0
9:00 PM	162	0	133	28	0	0	0	0	1	0	0	0	0	0
10:00 PM	119	0	100	16	0	1	0	0	0	2	0	0	0	0
11:00 PM	57	0	49	7	0	0	0	0	0	1	0	0	0	0
Total	6845	10	5118	1437	105	118	0	10	10	31	6	0	0	0
%		0.1	74.8	21.0	1.5	1.7	0.0	0.1	0.1	0.5	0.1	0.0	0.0	0.0

Anoka County Highway Department

Location:: WB CSAH 116 (Bunker Lk Blvd)
 Cross Street:: 375 ft west of Crane St
 Weather:: Cool and Cloudy/40 F

Site: 11604271101
 Date: 04/27/2011
 Wednesday

24 Hour Vehicle Classification
 Combined Channels

Time	Total	Bike	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	7 Axle Multi	Tailgating
12:00 PM	376	1	218	133	7	16	0	1	0	0	0	0	0	0	0
1:00 PM	398	0	245	135	2	14	0	0	2	0	0	0	0	0	0
2:00 PM	405	1	236	139	8	19	0	1	1	0	0	0	0	0	0
3:00 PM	477	1	287	165	5	17	0	1	1	0	0	0	0	0	0
4:00 PM	642	0	395	200	26	19	0	0	2	0	0	0	0	0	0
5:00 PM	594	0	395	184	7	8	0	0	0	0	0	0	0	0	0
6:00 PM	502	0	332	154	3	12	0	0	1	0	0	0	0	0	0
7:00 PM	297	0	211	81	0	5	0	0	0	0	0	0	0	0	0
8:00 PM	303	0	228	70	0	5	0	0	0	0	0	0	0	0	0
9:00 PM	171	0	126	41	1	3	0	0	0	0	0	0	0	0	0
10:00 PM	100	0	73	25	0	2	0	0	0	0	0	0	0	0	0
11:00 PM	36	0	27	6	0	2	0	0	0	1	0	0	0	0	0
* 04/28/2011															
12:00 AM	20	0	18	2	0	0	0	0	0	0	0	0	0	0	0
1:00 AM	14	0	9	5	0	0	0	0	0	0	0	0	0	0	0
2:00 AM	6	0	5	0	0	0	0	0	1	0	0	0	0	0	0
3:00 AM	12	0	9	3	0	0	0	0	0	0	0	0	0	0	0
4:00 AM	64	0	35	25	0	4	0	0	0	0	0	0	0	0	0
5:00 AM	174	0	100	68	0	5	0	0	1	0	0	0	0	0	0
6:00 AM	393	0	257	125	1	10	0	0	0	0	0	0	0	0	0
7:00 AM	697	0	456	214	8	16	0	1	0	2	0	0	0	0	0
8:00 AM	493	2	329	137	6	16	0	2	1	0	0	0	0	0	0
9:00 AM	386	1	238	120	7	15	0	1	2	2	0	0	0	0	0
10:00 AM	355	1	221	116	2	12	0	0	3	0	0	0	0	0	0
11:00 AM	345	0	219	111	1	12	0	0	1	1	0	0	0	0	0
Total	7260	7	4669	2259	84	212	0	7	15	7	0	0	0	0	0
%		0.1	64.3	31.1	1.2	2.9	0.0	0.1	0.2	0.1	0.0	0.0	0.0	0.0	0.0

*
 Starting
 @ 3:00
 pm

Anoka County Highway Department

Location:: WB CSAH 116 (Bunker Lk Blvd)
 Cross Street:: 375 ft west of Crane St.
 Weather:: Cool and Cloudy/40 F

Site: 11604281101
 Date: 04/28/2011
 Thursday

24 Hour Vehicle Classification
 Combined Channels

Time	Total	Motorcycle Bike	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	7 Axle Multi
→ 3:00 PM	485	1	311	150	5	16	0	0	2	0	0	0	0	0
4:00 PM	634	1	388	194	29	20	0	1	0	1	0	0	0	0
5:00 PM	670	0	448	200	8	13	0	0	1	0	0	0	0	0
6:00 PM	491	2	309	163	5	12	0	0	0	0	0	0	0	0
7:00 PM	370	4	256	104	0	5	0	1	0	0	0	0	0	0
8:00 PM	331	2	239	84	2	4	0	0	0	0	0	0	0	0
9:00 PM	232	3	174	50	1	4	0	0	0	0	0	0	0	0
10:00 PM	112	0	86	26	0	0	0	0	0	0	0	0	0	0
11:00 PM	44	0	33	10	0	1	0	0	0	0	0	0	0	0
04/29/2011														
12:00 AM	31	0	26	3	0	0	0	0	0	2	0	0	0	0
1:00 AM	23	0	14	9	0	0	0	0	0	0	0	0	0	0
2:00 AM	17	0	11	6	0	0	0	0	0	0	0	0	0	0
3:00 AM	15	0	13	2	0	0	0	0	0	0	0	0	0	0
4:00 AM	60	0	38	19	0	3	0	0	0	0	0	0	0	0
5:00 AM	162	1	88	67	0	5	0	0	1	0	0	0	0	0
6:00 AM	365	5	245	104	2	9	0	0	0	0	0	0	0	0
7:00 AM	644	3	430	187	7	12	0	1	2	2	0	0	0	0
8:00 AM	440	2	266	153	8	10	0	0	1	0	0	0	0	0
9:00 AM	454	2	276	152	11	10	0	2	0	0	1	0	0	0
10:00 AM	408	2	236	146	3	14	0	1	5	1	0	0	0	0
11:00 AM	426	2	255	149	3	12	0	1	1	3	0	0	0	0
12:00 PM	456	2	288	141	4	16	0	1	2	2	0	0	0	0
→ 1:00 PM	468	3	277	166	5	11	0	2	4	0	0	0	0	0
2:00 PM	504	10	321	145	7	19	0	1	1	0	0	0	0	0
Total	7842	45	5028	2430	100	196	0	11	20	11	1	0	0	0
%		0.6	64.1	31.0	1.3	2.5	0.0	0.1	0.3	0.1	0.0	0.0	0.0	0.0

1
239

TOTAL EB & WB
 ADT = 15,919
 HCADT = 445

Anoka County Highway Department

Location: EB CSAH 116 (Bunker Lk Blvd)
 Cross Street: 500 ft east of CSAH 78 (Hanson Blvd)
 Weather: Cool and Cloudy/40 F

Site: 11604281102
 Date: 04/28/2011
 Thursday

Daily Vehicle Classification Combined Channels

Time	Total	Bike	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	7 Axle Multi
12:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
3:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 AM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
12:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
* 3:00 PM	572	0	400	159	2	7	0	1	0	3	0	0	0	0
4:00 PM	752	0	532	207	2	6	0	4	0	1	0	0	0	0
5:00 PM	767	1	542	211	3	9	0	1	0	0	0	0	0	0
6:00 PM	638	2	459	155	2	12	0	2	5	1	0	0	0	0
7:00 PM	432	2	317	109	0	2	0	1	1	0	0	0	0	0
8:00 PM	447	0	333	110	0	3	0	1	0	0	0	0	0	0
9:00 PM	289	0	226	58	0	5	0	0	0	0	0	0	0	0
10:00 PM	177	0	137	38	0	2	0	0	0	0	0	0	0	0
11:00 PM	100	0	79	20	0	1	0	0	0	0	0	0	0	0
Total	4174	5	3025	1067	9	47	0	10	6	5	0	0	0	0
%		0.1	72.5	25.6	0.2	1.1	0.0	0.2	0.1	0.1	0.0	0.0	0.0	0.0

↓
68

Anoka County Highway Department

Location: EB CSAH 116 (Bunker Lk Blvd)
 Cross Street: 500 ft east of CSAH 78 (Hanson Blvd)
 Weather: Cool and Cloudy/40 F

Site: 11604281102
 Date: 04/29/2011
 Friday

Daily Vehicle Classification Combined Channels

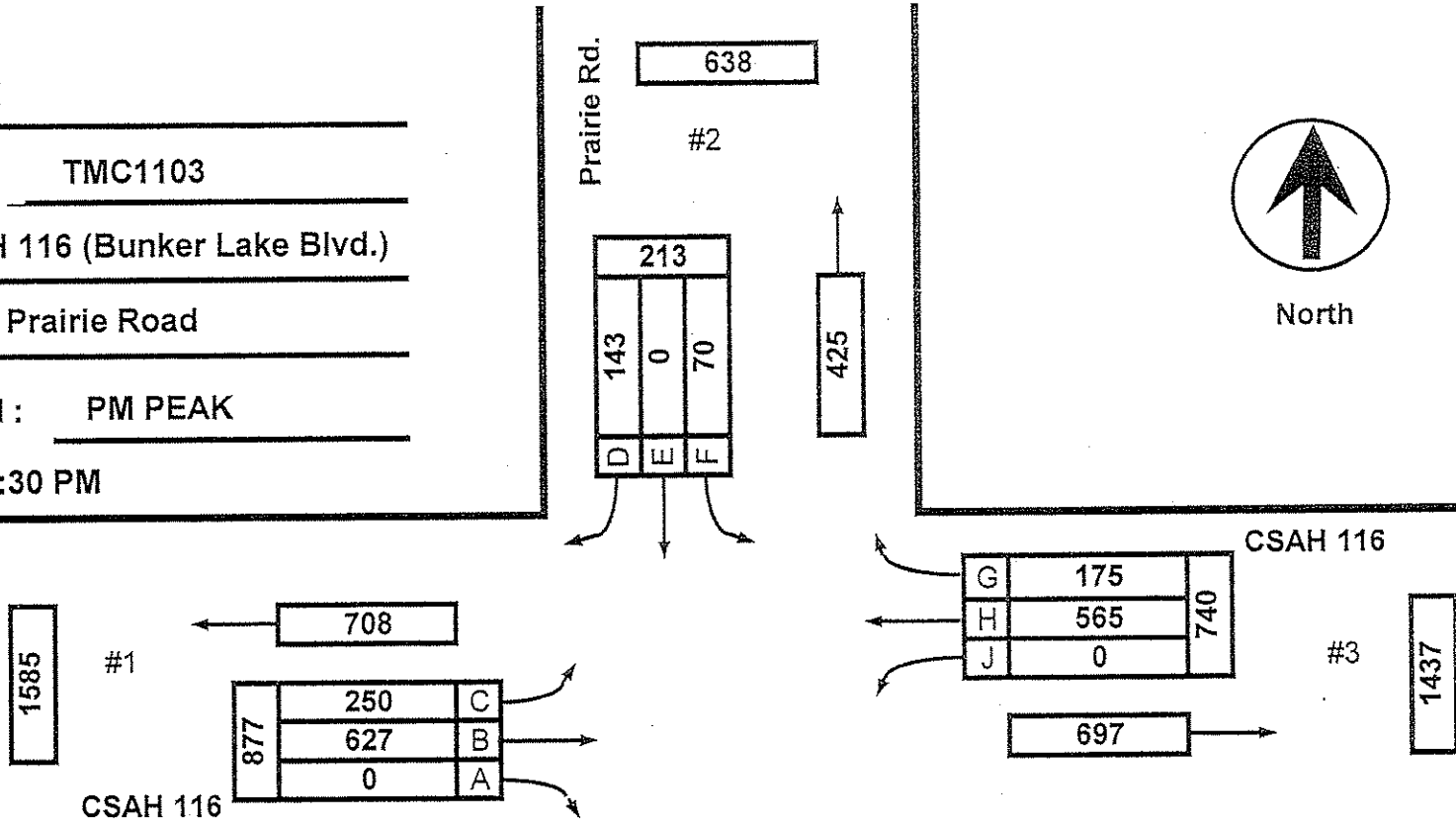
Time	Total	Bike	Cars & Trailer	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	7 Axle Multi
12:00 AM	51	0	39	12	0	0	0	0	0	0	0	0	0	0
1:00 AM	30	0	28	2	0	0	0	0	0	0	0	0	0	0
2:00 AM	25	0	23	1	0	1	0	0	0	0	0	0	0	0
3:00 AM	15	0	12	3	0	0	0	0	0	0	0	0	0	0
4:00 AM	17	0	13	4	0	0	0	0	0	0	0	0	0	0
5:00 AM	67	0	50	17	0	0	0	0	0	0	0	0	0	0
6:00 AM	279	2	161	75	26	11	0	1	3	0	0	0	0	0
7:00 AM	405	4	268	110	8	11	0	3	1	0	0	0	0	0
8:00 AM	321	0	204	97	10	8	0	0	0	1	1	0	0	0
9:00 AM	316	2	192	97	5	14	0	0	2	3	1	0	0	0
10:00 AM	374	0	236	124	3	8	0	0	1	2	0	0	0	0
11:00 AM	410	4	254	132	6	11	0	2	1	0	0	0	0	0
12:00 PM	477	8	319	131	6	7	0	1	3	2	0	0	0	0
1:00 PM	482	3	337	123	3	14	0	1	0	1	0	0	0	0
2:00 PM	634	5	410	174	22	16	0	1	1	5	0	0	0	0
3:00 PM	135	4	81	45	0	4	0	0	0	1	0	0	0	0
4:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
7:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
9:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
11:00 PM	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	4038	32	2627	1147	89	105	0	9	12	15	2	0	0	0
%	3903	0.8	65.1	28.4	2.2	2.6	0.0	0.2	0.3	0.4	0.0	0.0	0.0	0.0

8077

206

101 9 12 14 2 0 0 0

Date : 05/25/11
 Count Number : TMC1103
 Location : CSAH 116 (Bunker Lake Blvd.)
@ Prairie Road
 Collection Period : PM PEAK
 Hour : 4:30 PM-5:30 PM



EXISTING LANES OF APPROACH				
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	0	1	1	2
#2	1	1	0	2
#3	1	0	1	2

Anoka County Highway Department
 Traffic Volume and Turning
 Movement Study

Date : 05/18/11

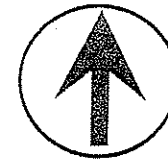
Count Number : TMC1104

Location : CSAH 116 (Bunker Lake Blvd.)

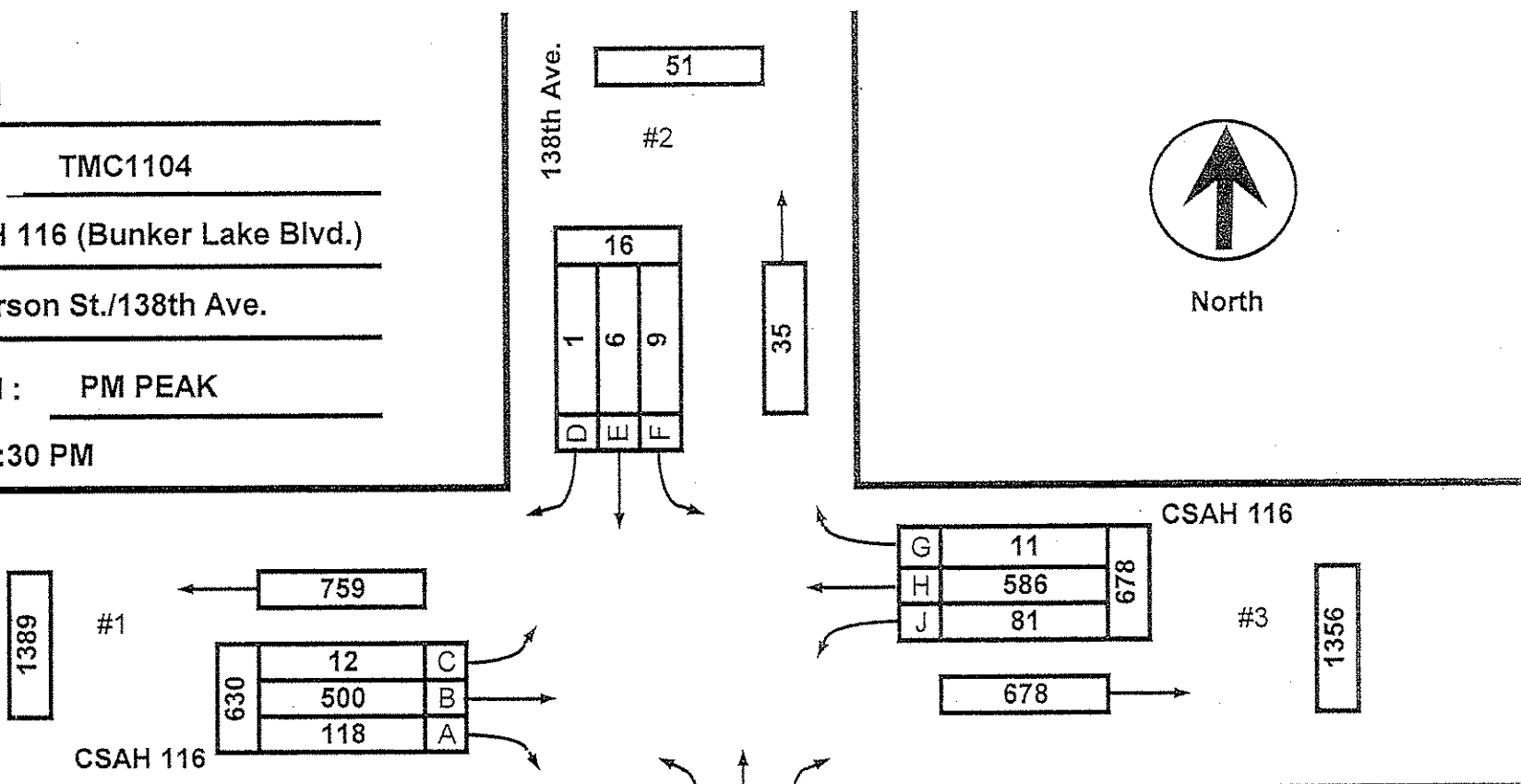
@ Jefferson St./138th Ave.

Collection Period : PM PEAK

Hour : 4:30 PM-5:30 PM



North



EXISTING LANES OF APPROACH				
	RIGHT TURN LANE	LEFT TURN LANE	THRU LANES	TOTAL
#1	1	1	1	3
#2	0	0	1	1
#3	1	1	1	3
#4	1	0	1	2

Anoka County Highway Department

Traffic Volume and Turning

Movement Study

Attachment H: 2030 Land Use



Chapter Two: Land Use Plan

LEMENTS

INDIAN TRIBES

FLOWERS

BIRDS

TREES

- FLORINVEST NW
- BRIGGS ST NW
- DISPOSITION ST NW
- COBALT ST NW
- BARBON ST NW
- ARGON ST NW
- ZIN ST NW
- YACHTA ST NW
- ARMON ST NW
- WICO ST NW
- WENTWELL ST NW
- TONTON ST NW
- SILVIA ST NW
- ROANOK ST NW
- QUILBOP ST NW
- POTTERHOLE ST NW
- ONEIDA ST NW
- NIAGARA ST NW
- MAKATI ST NW
- LIPIANE ST NW
- KOHA ST NW
- JIARO ST NW
- ANCI ST NW
- GUARAN ST NW
- FOX ST NW
- EL DORADO ST NW
- DAKOTA ST NW
- CREEST NW
- RE-KENWOOD ST NW
- AZTEC ST NW
- ZEA ST NW
- YUCCA ST NW
- VENA ST NW
- HOORNBEST NW
- VINTAGE ST NW
- UNDERCLIFF ST NW
- TULIP ST NW
- SILVERDUST NW
- ROSE ST NW
- CLAY ST NW
- POPPY ST NW
- ORCHARD ST NW
- MARCEUS ST NW
- MARGOLD ST NW
- LE ST NW
- KERRY ST NW
- ADONIS ST NW
- PIPHOOD ST NW
- HEATHER ST NW
- GLADOL ST NW
- FLORA ST NW
- EDWARDS ST NW
- DALLA ST NW
- CROCUS ST NW
- RITTSBRET ST NW
- ARROWHEAD ST NW
- ZION ST NW
- YUKON ST NW
- AVIATE ST NW
- IRISA ST NW
- VERON ST NW
- UPLANDER ST NW
- THORNTON ST NW
- SHALOW ST NW
- RAVEN ST NW
- QUINN ST NW
- PARTRIDGE ST NW
- OSAGE ST NW
- NIGHTINGALE ST NW
- MARTIN ST NW
- LINNET ST NW
- KILLDEER ST NW
- JAY ST NW
- IBIS ST NW
- HUMMINGBIRD ST NW
- GRANITE ST NW
- FLORING ST NW
- EAGLE ST NW
- DRAKE ST NW
- CRANE ST NW
- BLUBIRD ST NW
- AVOCET ST NW
- ZELLA ST NW
- YELLOW PINE ST NW
- XEON ST NW
- HINTERGREEN ST NW
- HALE ST NW
- UNITY ST NW
- TAMARACK ST NW
- SICAMORE ST NW
- REDWOOD ST NW
- QUINCE ST NW
- PLAIST ST NW
- GLUE ST NW
- NORBIT ST NW
- MAGNOLIA ST NW
- LARCH ST NW
- KUMQUIT ST NW
- JUNIPER ST NW
- REX ST NW
- HOLLY ST NW
- GOLDENROD ST NW
- PLANTWOOD ST NW
- BEARGREEN ST NW
- DOGWOOD ST NW
- COTTONWOOD ST NW
- BUTTERNUT ST NW
- ALDER ST NW
- UNIVERSITY AVE SW

AR-11-01



Comprehensive Plan Figure 2.4 FUTURE LAND USE MAP

The information represented on this map displays the contents of the City of Andover Proposed Land Use Map. This map will replace Figure 2.4 Existing Land Use Map when the 2008 Comprehensive Plan is adopted. This map is a graphical depiction. The Planning Office should be referenced for specific question concerning the content of the map. Land use designations are subject to change. For questions or comments please contact the City of Andover

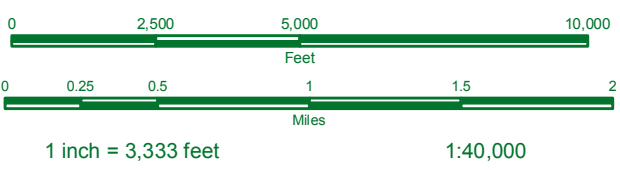
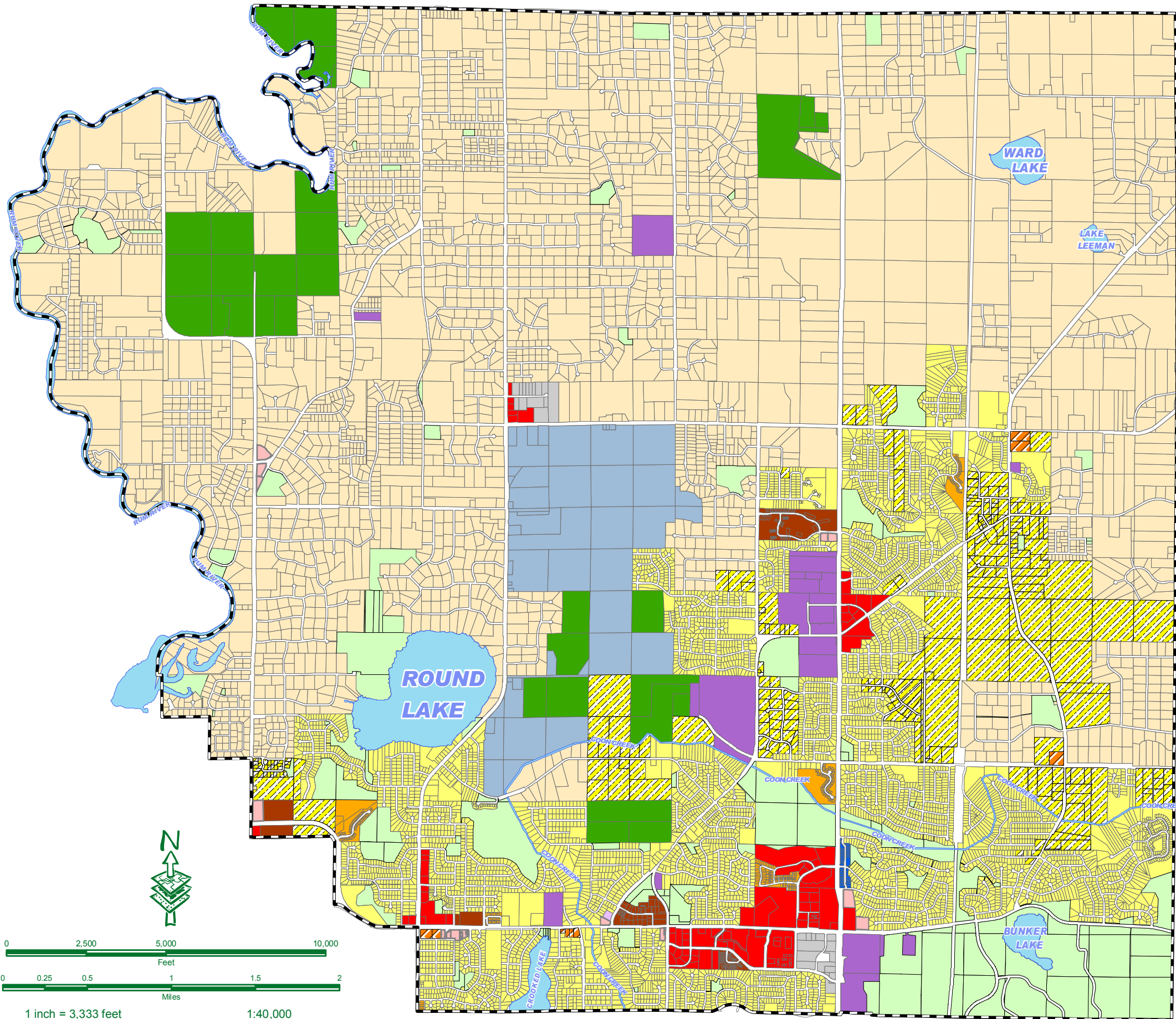
City of Andover - Planning Department 1685 Crosstown Blvd. NW Andover, MN 55304 (763) 755-5100
Map Date: January 2009

LEGEND

Land Use	Acres	% of Total
RR - Rural Residential	10,927.22	48.97%
URL - Urban Residential Low	2,989.79	13.39%
URM - Urban Residential Medium	68.869	.31%
URH - Urban Residential High	111.869	.50%
TR - Transitional Residential	1437.2	6.44%
LC - Limited Commercial	1,461	.007%
LC/MD - Limited Commercial/Medium Density	7,942	.04%
NC - Neighborhood Commercial	27,467	.12%
GC - General Commercial	306,917	1.33%
TC - Transitional Commercial	16,591	.07%
LI - Light Industrial	75,516	.44%
P - Public	468.54	2.1%
RRR - Rural Reserve	970,404	4.35%
OS - Open Space	1,357.6	6.09%
AG - Agricultural	914.2	4.09%
Water	468.93	2.1%
Right of Way	2,162.29	9.69%
MUSA Boundary		
City Limits	22,312.39	100%

Gross Residential Density Range by Land Use

Land Use	Density Range
RR - Rural Residential	0.0 to 0.4 units per acre
URL - Urban Residential Low	1.5 to 3.6 units per acre PUD maximum density is 4 units per acre
URM - Urban Residential Medium	1.5 to 5 units per acre PUD maximum density is 6 units per acre
URH - Urban Residential High	6 to 12 units per acre PUD maximum density is 14.4 units per acre



City of Andover Land Use Districts

Land use districts are established to ensure compatible development and to protect natural resources and amenities. The district definitions provided below are intended to state their purpose, provide location criteria and describe the relationship of each district with other land uses.

RESIDENTIAL LAND USE DISTRICTS

Rural Residential (RR) district provides an area for low intensity residential development in areas outside of the Municipal Urban Service Area (MUSA) that will not be served by municipal sewer and water. The minimum lot size is 2.5 acres to provide sufficient space for on site sewer and water facilities and to prevent dense development that would create an adverse impact on municipal and regional infrastructure. However, smaller acreage lots exist in areas subdivided prior to 1978 and in the two previously approved rural planned unit developments: Nightingale Preserve and Timber River Estates. This district must be protected from higher intensity land uses, including the Urban Residential Low Density Land Use District, with appropriate transitions. This district also accommodates agricultural land uses.

Minimum Lot Size	2.50 acres
Density	0.4 units per acre
City Utilities	None
Corresponding Zoning Districts	R-1 - Single Family Rural Residential R-2 - Single Family Estate R-3 - Single Family Suburban AP – Agricultural Preserve
Type of Development	Single Family Detached Housing, Agriculture

Urban Residential Low Density (URL) district is established to create cohesive neighborhoods of single-family detached housing within the MUSA and with access to municipal sewer and water. Residential lots within this district are sized to allow efficient utilization of municipal infrastructure as well as to provide an area large enough to accommodate housing market demands. These neighborhoods must be protected from higher intensity uses with appropriate transitions. These transitions include natural features such as trees, wetlands, streams or major changes in topography. Man-made elements such as streets, parks or earth berms in combination with landscaping are also appropriate. When adjacent to arterial roadways, additional setback distance, landscaping and berming are required. Facilities that generate noise, traffic, and/or glare also require major separation from these neighborhoods.

Minimum Lot Size	11,400 square feet
Density	1.5 to 3.6 units per acre
Maximum PUD Density	4 units per acre
City Utilities	Required
Corresponding Zoning Districts	R-4 Single Family Urban Residential
Type of Development	Single Family Detached Housing

Urban Residential-Medium Density (URM) district provides areas suitable for a variety of attached and detached dwelling units. The URM district helps to address the need for life cycle housing with increased density and smaller lot sizes. This district, with appropriate transitions, can serve as a buffer between lower density residential and commercial districts and may also be appropriate along higher volume transportation corridors, such as collector and arterial streets. These neighborhoods are created as part of a planned unit development that ensures efficient distribution of density and to achieve appropriate transitions between uses of different intensity and transportation corridors. These transitions are achieved with a combination of landscaping, berming, physical separation and preservation of natural features.

Minimum Lot Size	Variable
Density	1.5 to 5 units per acre
Maximum PUD Density	6 units per acre
City Utilities	Required
Corresponding Zoning Districts	R-4 Single Family Urban Residential M-1 Multiple Dwelling Medium Density
Type of Development	Single Family Detached, Two Family Residences Town homes and Condominiums with private entrances

Urban Residential - High Density (URH) district provides additional affordable housing choices for all stages of the life cycle. Owner occupied as well as rental housing is permitted. Planned unit development review is used to establish standards that are specifically designed for each development. Potential sites for this district must be evaluated to ensure sufficient capacity of municipal infrastructure can be provided. Location near higher volume transportation corridors, such as collector and arterial streets is necessary to accommodate the increased level of traffic generated by this land use. Location near shopping, service, transit and park facilities is also desirable. Appropriate transitions between this district and other districts or transportation corridors are necessary. These transitions are achieved with a combination of landscaping, berming, physical separation and preservation of natural features.

Minimum Lot Size	Variable
Density	6 to 12 units per acre
Maximum PUD Density	Up to 14.4 units per acre
City Utilities	Required
Corresponding Zoning Districts	M- 2 Multiple Dwelling High Density
Type of Development	Single Family Dwelling Two Family Dwelling Multiple Dwellings
Location Criteria	Must abut collector or arterial street Best located near shopping, service, transit and parks

COMMERCIAL LAND USE DISTRICTS

Limited Commercial (LC) land use district is designated for locations in the community that should be limited to primarily office uses due to their location in proximity to residential neighborhoods. This district can be used to transition from residential neighborhoods to more intense commercial uses or transportation corridors. Site design and building architecture are required to complement adjacent residential neighborhoods when so located. A combination of landscaping, berming, physical separation and preservation of natural features is necessary to provide an appropriate transition to residential neighborhoods.

Area Requirements	1-5 acres
City Utilities	Required within MUSA
Corresponding Zoning Districts	LB - Limited Business
Type of Development	Professional office and similar uses; not including retail sales
Location Criteria	Adjacent to collector or arterial street or within a larger commercial development
Development Criteria	Design to complement surrounding land uses. Special care for transitions to residential.

Neighborhood Commercial (NC) land use district is designated for businesses that provide services and retail goods to meet local neighborhood needs. The trade area and size of these businesses are smaller than those found in General Commercial areas. Site design and architecture is carefully reviewed to create a cohesive center that complements adjacent land uses. Linear design with storefronts and blank walls is prohibited. Special care is taken to provide appropriate transitions to residential neighborhoods with landscaping, berming, physical separation and preservation of natural features. This district requires location along a collector or arterial street and convenient pedestrian access. Neighborhood commercial locations are separated from more intense commercial land uses to avoid pressure to expand intensity beyond a neighborhood scale.

Area Requirements	1-5 acres
City Utilities	Required within MUSA
Corresponding Zoning Districts	NB Neighborhood Business
Type of Development	Retail trade and services serving immediate area
Location Criteria	Must abut intersection of collector or arterial streets
Development Criteria	Design to complement surrounding land uses. Limit to development nodes. Strip development prohibited. Special care for transitions to residential. Convenient pedestrian access.

General Commercial (GC) is intended to be the focal point of commercial activity in the city on a larger scale than the Neighborhood Commercial District and may serve a trade area that extends beyond the City limits. This district provides a complementary mix of uses, including retail, service, office, entertainment and civic facilities. Site design must provide convenient access for both pedestrian and vehicular traffic. The architecture of structures must complement an overall architectural theme for that district. General Commercial districts that are located adjacent to residential properties must provide extensive berming, landscaping and physical separation to ensure an appropriate transition is created.

Area Requirements	5 acres or more
City Utilities	Required
Corresponding Zoning Districts	SC Shopping Center GB General Business
Type of Development	Variety of commercial uses with large market area
Location Criteria	Must abut intersection of collector or arterial streets Must be located within the MUSA
Development Criteria	Design to complement surrounding land uses. Limit to development nodes. Strip development prohibited. Special care for transitions to residential. Convenient pedestrian access.

INDUSTRIAL LAND USE DISTRICT

Light Industrial (LI) District is intended to provide a location for a variety of work processes such as manufacturing, warehousing, wholesaling and distributing. These uses typically involve intensive use of properties and necessitate separation from residential zoning districts. Where existing Light Industrial Districts are located adjacent to residential neighborhoods, extensive berming, landscaping and screening are necessary to mitigate potential adverse impacts. This district requires convenient access to collector and arterial streets.

Area Requirements	5 acres or more
City Utilities	Required within MUSA
Corresponding Zoning Districts	I Industrial
Type of Development	Manufacturing, warehousing, wholesaling, Distributing
Location Criteria	Must abut collector or arterial streets Must be located within the MUSA ¹
Development Criteria	Separation from residential land uses necessary.

¹ Except the Hughs/Westview Industrial Park that presently exists outside the MUSA

TRANSITIONAL LAND USE DISTRICTS

Transitional land use districts encompass areas where future land use may differ from that of the designated zoning district. Transitional districts recognize the possibility for land use to change in the future with the arrival of municipal sewer and water.

Transitional Commercial (TC) District contains properties within the MUSA that are currently zoned for residential development, but may potentially become commercial because of their proximity to existing commercial development or location at the intersection of major transportation corridors. When municipal sewer and water are available, properties in this district may develop as either residential or commercial under the requirements of the Zoning Ordinance and Comprehensive Plan. A Rezoning requires a contract as specified in the City Code.

Transitional Residential (TR) District contains properties within the MUSA that are currently zoned for rural residential uses (R-1, R-2, and R-3). These properties are guided for urban development in 5 year stages as shown in Figure 2.5. Property designated Transitional Residential may only be platted under urban residential guidelines and served by municipal utilities. Lot splits may only occur without municipal services under the requirements of the City Code. Any subdivision of property that results in lots less than 2.5 acres in size must be served with municipal sewer and water.

OTHER LAND USE DISTRICTS

Limited Commercial/Medium Density (LC/MD) District contains properties within the MUSA that have site characteristics conducive to either low intensity commercial or medium density residential development. This designation is used to provide a carefully planned transition from a major transportation corridor to residential neighborhoods. Site design and building architecture are required to complement adjacent residential neighborhoods. A combination of landscaping, berming, physical separation and preservation of natural features is necessary to provide an appropriate transition.

Public (P) District identifies areas for present and future civic, government, school or other publicly owned and operated facilities.

Open Space (OS) District identifies areas that are protected from development through public ownership or agreement with private property owners. This designation is used for public parks and other areas designated for preservation of natural areas, water and air quality and wildlife habitat.

Agricultural (AG) District identifies areas that are cultivated for raising crops and farming as well as feeding, breeding, and raising of livestock. These areas are typically enrolled in the Agricultural Preserve or Green Acres programs as defined by the State of Minnesota.

Rural Reserve (RR) District was designated as an area of approximately one thousand acres in size to accommodate future urban growth beyond the previously planned Municipal Urban Service Area. This area is restricted from development until a master plan has been approved and municipal sewer and water can be constructed to serve the area. The city prohibits lot splits of less than one parcel per twenty acres and subdivisions of less than one parcel per 40 acres to prevent this area from rural residential development that would preclude orderly MUSA expansion. In the future, a new trunk sewer line will connect to the Coon Rapids Interceptor, a regional trunk sewer line located near the intersection of Crooked and Bunker Lake Boulevards. The city has reached agreement with the Metropolitan Council that areas designated for residential development in the Rural Reserve will be developed at three units per net acre (subtracting parks, wetlands, floodplain, water bodies, arterial roads, and other areas restricted from development).

SEWER STAGING PLAN

Undeveloped land within the Municipal Urban Service Area is divided into five year growth stages based primarily on the proximity of municipal sewer and water. The growth stages are intended to provide a reasonable estimate of urban growth to the year 2030. Property owners may choose not to develop even if their property is shown within the current growth stage. Property owners seeking to develop sooner than shown on the Staging Plan may petition the city to change the growth stage designation. These changes are at the discretion of the City Council. The Staging Plan Map is represented on Figure 2.5. Figure 2.6 summarizes the map by providing the amount of acreage within each land use district in each of the five year stages. The Metropolitan Council also requests information that summarizes the density of future development in each residential land use district. This information is provided in Figure 2.7.

URBAN AND RURAL GROWTH FORECAST

Figure 2.8 describes historical and projected growth within both sewered and unsewered areas of the city. The city forecasts were generated using information from transportation analysis zones, a comparison of net buildable acreage to the city's subdivision ordinance and the Sewer Staging Plan. The Metropolitan Council forecast was submitted to the City as part of the System Statement in September 2005. The city's forecast is considered to be a more accurate representation of future growth because it is based on verified building permit activity, parcel level analysis and the application of local land use regulations.



City of Ham Lake 2008 Comprehensive Plan Update



Prepared by
Northwest Associated Consultants

Land Use 5

Contents

- A. Overview
- B. Goal
- C. Key Findings & Themes
- D. Existing Land Use
- E. Objectives and Strategies
- F. Future Land Use Plan

Purpose

The purpose of the Land Use Chapter is to address how to maintain the rural large lot pattern of residential development, protect environmental resources, and integrate new and redeveloped



commercial and industrial land uses that respect and enhance the rural character, existing pattern of development, and environmental resources while diversifying and developing the tax base.

A. Overview

Ham Lake occupies 36 square miles in north-central Anoka County. Ham Lake was incorporated in 1973, and operates as a home-rule charter city. The City Charter was adopted in 1982. The population of over 15,000 is spread throughout the city on large lots and dispersed among the many wetlands and lakes. There is no municipal sewer system in the city and homes and businesses are served by individual or community septic systems. Highway 65 is a major north south arterial that provides the major transportation connection to the metro area and is a significant economic catalyst for most of the City's businesses.

The City of Ham Lake saw substantial growth in new housing units and population during the 1970's, 1990's and through 2005. Much of this growth was driven by the City's relatively convenient location for large housing sites. The city has finite borders and its growth potential is limited by both its borders and land suitable for development. With limited amounts of land available for new development, the city is entering a more mature stage where the rate of growth will decline.

Approximately six square miles of developable land remain in the City. This represents about 17 percent of the City's 36 square miles. This remaining land is expected to be developed by 2030, the planning horizon for this plan. How new growth and development occurs on this remaining land will affect the long term tax base and financial position of the city. The remaining new growth will also affect the overall character of the city and its continued attractiveness as a place to live, work and play. Residents have made it clear that protecting the existing character and development pattern is important. This was the predominant theme emerging from the community involvement process. The community is at a critical juncture today to make informed and balanced decisions. Land use



F. Future Land Use Plan

This section of the Plan identifies specific land use types and designations for managing future growth and development in Ham Lake. These land use categories are the foundations upon which the City's regulatory controls such as zoning and subdivision ordinances are based. This portion of the plan describes new concepts for residential growth and environmental protection as well as all categories of land use.

Inconsistencies between existing land uses and the future land use maps do not imply that every land use will eventually conform to these designations or that all land will be developed. However, the City will tailor regulations to implement this plan as much as is practical, balancing the needs and interests of both individuals and the community as a whole.

The City intends to build upon and preserve the existing character of the community. The Future Land Use Map identifies the location of specific land uses that will guide the development of the City through the year 2030 (Figure 5.4). This land use map is generally consistent with the future land use map prepared for the last Comprehensive plan in 2005 for 2020 (Figure 5.3). Note that Land use categories set the stage for implementation strategies including amendments to the zoning and subdivision ordinances. The majority of the land is designated as residential single family with a density of one unit per acre, while appropriate portions of the community are designated for commercial and industrial opportunities. The City may choose to amend the Future Land Use Map or the description of these designations if community needs or goals change prior to the year 2030.

Widespread wetland areas as well as peat soils in the City complicate land division and render the provision of central wastewater services infeasible for most of the city. As a result, the City intends to maintain its past policy of one acre lots served by individual sewage treatment systems (ISTS) and believes that regional wastewater service would not be appropriate in the City.

2020 Future Land Use

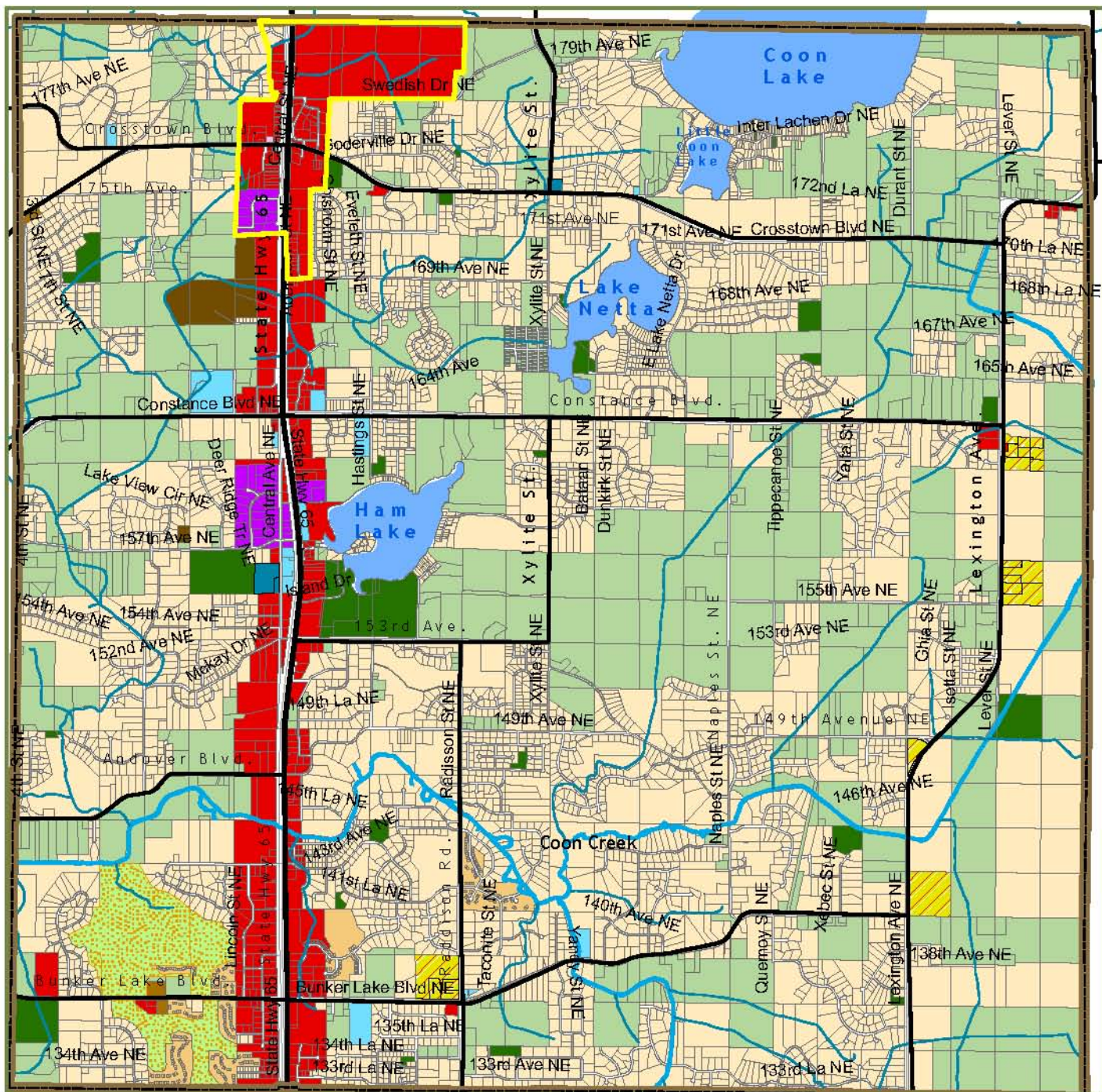
In 2005, the City submitted its 2020 Future Land Use Plan to the Metropolitan Council for approval. This plan used the City's existing zoning districts to categorize land uses. This plan was revised to classify land with generalized land use categories used by the Metropolitan Council for purposes of the current plan update. In doing so, zoning districts were "interpreted" as generalized land use categories and are shown as Figure 5.3. Distribution of land in each category is listed in Table 5.2. In interpreting the 2020 land use map, most PUDs and Shoreland designations were reclassified as Single Family Residential.

Table 5.2















2020 Land Use	Acres	Percent
Rural Residential	7,002	30.5%
Residential Single-Family	10,723	46.7%
Manufactured Housing Parks	95	.4%
Residential Multi-Family	11	.0%
Residential Townhome	196	.9%
Commercial	1,271	5.5%
Multiple Use Option	148	.6%
Industrial-Utility	121	.5%
Park, Recreation & Open Space	734	3.2%
Institutional & Government	129	.6%
Lakes	792	3.5%
Right of Way	1,724	7.5%
Total	22,946	100%

The "sewered" commercial – industrial area shown in the 2020 Land Use Plan is clarified in the 2030 Plan as being a private sewer system. The City will not provide public sanitary sewer service to this area, but will encourage private property owners to work together in developing a common private system that facilitates further commercial-industrial development and/or redevelopment.





Land Use

- | | |
|---|---|
|  Rural Residential |  Multiple Use Option |
|  Residential Single-Family |  Industrial |
|  Residential Townhome |  Utility |
|  Residential Multi-Family |  Government |
|  Manufactured Housing Parks |  Institutional |
|  Commercial |  Park-Open Space |
|  Sewered Commercial-Industrial |  Golf Course |

**Ham Lake Comprehensive Plan
 2008 Update**



Sources:
 Northwest Associated Consultants, Inc.
 Anoka County, City of Ham Lake
 Minnesota Department of Natural Resources



2030 Future Land Use Plan

The purpose of a future land use map is to guide the decision-making process for the City on development proposals and rezoning requests. It is broad in nature and represents the general intended use of the land in 2030. The zoning map should be consistent with the future land use map. Inconsistencies between existing land uses and the future land use map do not imply that every land use will eventually conform to these designations or that all land will be developed. However, the purpose of land use planning is that the City will develop regulations to implement this future land use plan as much as is practical, balancing the needs and interests of both individuals and the community as a whole.

Figure 5.4 and Table 5.3 describes the future land uses for Ham Lake during the time horizon of this plan. The City is projected to continue its development pattern dominated by low density single family uses with a minimum lot size of one-acre. In looking to the future, it is anticipated that residential growth pressure will result in further reductions in active farm lands. The future land use map does not show any agricultural land. Based on growth projections, it is likely that most agricultural land will convert to other uses by 2030. Given this assumption, most existing agricultural land was guided for single family residential or commercial. While this changing land use trend will be accommodated, the City will protect active farms from the premature encroachment of residential development through appropriate zoning districts and subdivision regulations. The City's R-A zoning district would continue to be an appropriate zoning district.

Land Use Categories

The Land Use Plan Map uses a set of specific categories to guide land use in Ham Lake. These categories meet the Metropolitan Council's definitional needs for planning consistently throughout the metro area. The ability to use the Comprehensive Plan as an effective land use management tool requires a definition of each land

use. These definitions provide a common understanding of the basic characteristics of each category used in the Plan. The following sections describe the characteristics for each category.

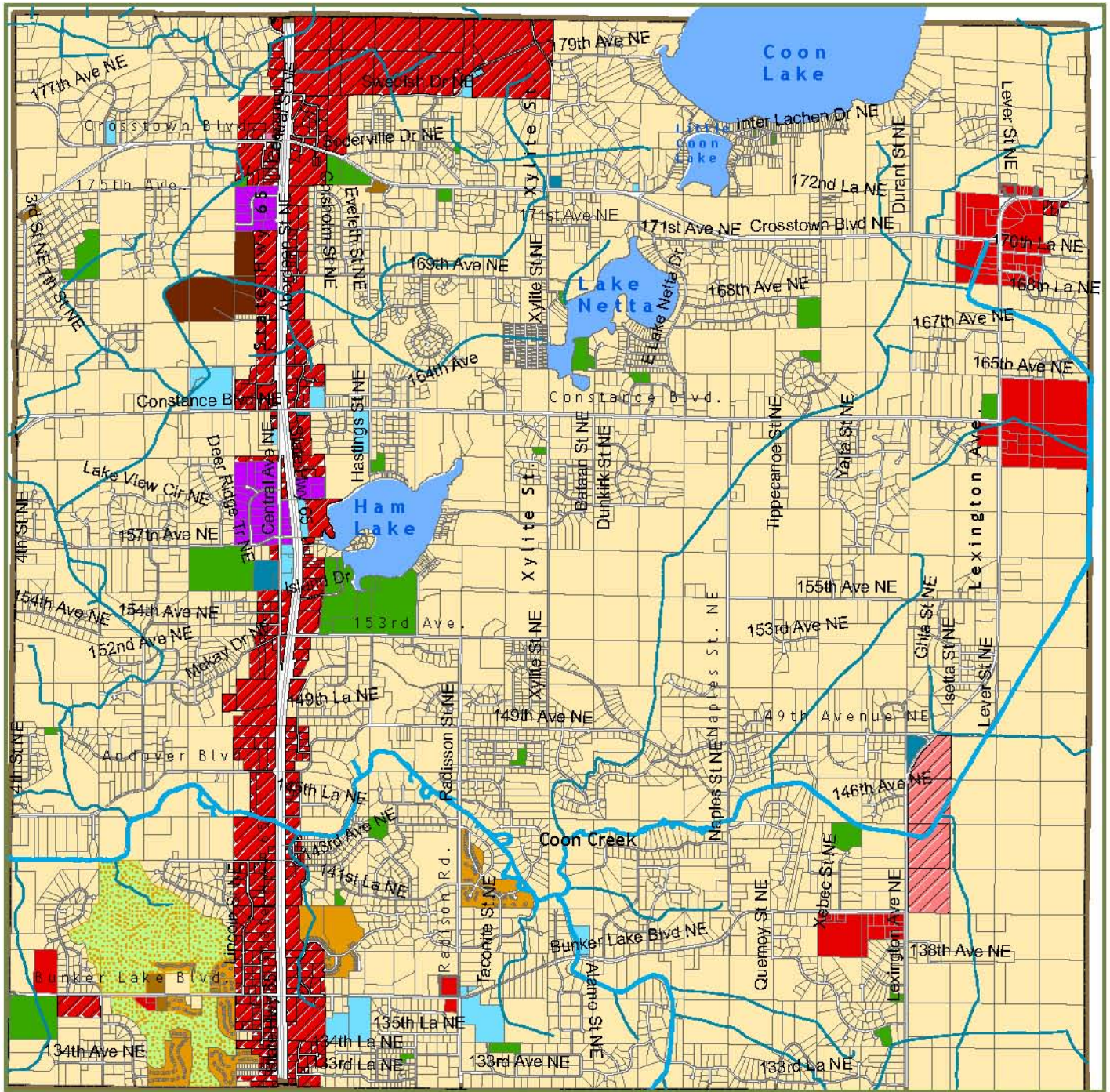
Table 5.3

2030 Land Use	Acres	Percent
Residential Single-Family	17,194	75%
Manufactured Housing Parks	91	.4%
Residential Multi-Family	17	0%
Residential Townhome	214	.9%
Commercial	400	1.7%
Mixed Use C-I	1,355	5.9%
Mixed Use Office	141	.6%
Industrial-Utility	121	.5%
Park, Recreation & Open Space	712	3.1%
Institutional & Government	185	.8%
Lakes	792	3.4%
Right of Way	1,724	7.5%
Total	22,946	100%

Single-Family Residential – Single family residential provides areas for neighborhoods of primarily single family housing. Single family housing can be described as a building intended to serve as a dwelling for one person or family unit. The traditional freestanding (detached) home provides the most common example of single family housing.



Figure 5.4 Proposed 2030 Future Land Use AR-11-01



Future Land Use

- | | |
|--|-----------------|
| Residential Single-Family (1 unit/acre) | Industrial |
| Residential Townhome (1 unit/acre) | Utility |
| Residential Multi-Family (8-10 units/acre) | Government |
| Manufactured Housing Parks (3 units/acre) | Institutional |
| Mixed Use C-I | Park-Open Space |
| Commercial | Golf Course |
| Mixed Use-Office | |

- Creeks & Drainageways
- Lakes

**Ham Lake Comprehensive Plan
2008 Update**

Sources:
Northwest Associated Consultants, Inc.
Anoka County, City of Ham Lake
Minnesota Department of Natural Resources



This designation applies to both older and developing neighborhoods in the City including Shoreland and season recreational lots. This category also includes land in active farming, but over time will convert to this land use category. Density for new growth in this class should not exceed one unit per acre. This land use category is currently implemented by the following zoning districts:

- R-1 Single Family Residential
- R-A Rural Single Family Residential
- RS-1 General Shoreland Residential
- RS-2 Recreational Shoreland Residential
- PUD Planned Unit Development

Residential Townhome - This use provides areas for single family housing units that are attached to one another. Examples include townhomes, twin homes, and row houses. This land use could also include a mixture of attached housing and detached housing units in an integrated neighborhood. Buildings should not be more than two stories in height. Density should not exceed more than one unit per acre. This land use is currently implemented with the PUD – Planned Unit Development District.

Residential Multi-Family – This category is intended to provide a place for multi-story apartment and condominium buildings for occupancy by persons aged 55 or older or persons having low or moderate incomes. Density is typically 8 – 10 dwelling units per acre. This use is currently implemented with the R-AH – Residential-Affordable Housing District and the R-2 - Multiple Family Residential District.

Manufactured Housing Park – This land use class designates areas for manufactured housing units that are not permanently fixed to a foundation. These areas do not consist of individually owned lots, but of single lots with “pads” rented for each housing unit. Each unit is intended for occupancy for occupancy by a single housekeeping unit. Presently, there are 256 mobile homes (within manufactured home parks) in the City which occupy 86 acres of land. This results in a density of approximately three units per acre. This density will be maintained

via the provisions of the City’s R-M, Residential/Manufactured Mobile Home District.

Commercial - The intent of this designation is to provide for convenient commercial services that serve the needs of the surrounding neighborhood with minimal traffic impact. Commercial uses are located on major collector roads to take advantage of the regional network and to minimize impacts on neighborhoods. It is implemented by the CD-3 Commercial Development Tier 3 District.

Mixed Use C-I – Land uses in this category span a wide range of commercial and light industrial services. Commercial areas include those that serve the highway traveling public as well as serve the needs of the people who live or work in and around the City. Industrial uses may include light manufacturing and warehousing with no outdoor storage. Most land in this class is adjacent to Highway 65 to take advantage of the regional transportation network. Lot sizes are large enough to accommodate typical highway commercial uses which include retail stores. This land use category is currently implemented by the following zoning districts:

- CD-1 Commercial Development Tier 1
- CD-2 Commercial Development Tier 2
- CD-4 Commercial Development Tier 4

The mixed commercial-industrial areas shown on the Land Use Plan are all to be served with private sewer systems. Where appropriate, the City encourages private property owners to utilize shared systems that will allow for expanded commercial-industrial development without the need for public financing. Any common sanitary sewer collection and treatment is expected to be privately initiated.

Mixed Use Office – This new land use class is located on South Lexington and provides land for office or business campus style development. A high amenity built environment that is well integrated with the landscape is expected. The Mixed-Use Office use is located on Lexington Avenue, a major collector, with direct access to interstate 35W. A zoning designation and



appropriate performance standards will be needed to implement this land use.

Industrial – The industrial land use refers to a wide range of businesses primarily oriented to the creation or processing of goods and for the limited manufacturing purposes involving frequent truck traffic for the pick-up and delivery of materials and goods. Industrial land uses should be located on collector or arterial streets to accommodate traffic from employees and shipping. They should be separated or buffered from residential areas. This use is implemented through the I-P Industrial Park District and the I-1 – Light Industry District.

Government – Land used by all levels of government for all uses other than parks.

Institutional – Land intended for public and private uses including churches and educational facilities.

Park and Open Space – A designation for publicly owned lands to be used for active and passive recreational activities.

Golf Course – Lands used for public or privately operated golf courses.

Utility - These areas are used by public and private utilities for the operations and maintenance facilities.

Projected Growth and Density

Forecasts for household and population growth estimate that there will be 7,100 households and 19,600 residents in the City by 2030, at which time the City is likely to be nearly built-out (see chapter 2-Social and Economic Profile). With these growth estimates, the projected net density (total area less surface waters and steep slopes) is anticipated to be 2.2 acres per dwelling unit or .45 units per acre by 2030.

Net Density Calculation

Total Acres	22,946
Less surface waters	<u>7,261</u>
Net land area	15,685

15,685 acres / 7100 projected households = 2.2 acres per dwelling unit or .45 units per acre.

As a rural residential community, as defined by the Metropolitan Council, net densities are expected to be 2.5 acres per dwelling unit or less. Projected development in Ham Lake may slightly exceed this density definition for Rural Residential at full build out.

Estimates for land uses are projected in five year increments (Table 5.4). Note that acreage estimates for actual land uses in 2030 are not always the same as those mapped on the 2030 land use map. For example, the 2030 land use map contains 1,755 acres for commercial and mixed use commercial and industrial land uses. This large inventory of commercial land is expected to provide growth opportunities well beyond 2030. By 2030, only 427 acres are estimated to be in actual use for commercial purposes. Estimates of actual land needed for commercial and industrial uses employ assumptions based on historical job growth rates and the number of jobs per acre. Over the past seven years, the average annual growth rate for jobs in Ham Lake has been 0.9%. The number of jobs per acre ranges between 6 and 6.5 jobs per commercial and industrial acre.

Estimates of actual land needed for residential growth are based on Metropolitan Council estimates for household growth.



Attachment I: Access

**Anoka County Highway Department
Access Spacing Guidelines**

Roadway Type	Route Speed (MPH)	Intersection Spacing (Nominal ⁽⁴⁾)		Signal Spacing	Private Access ⁽¹⁾	
		Full Movement Intersection	Conditional Secondary Intersection ⁽²⁾			
Principal Arterial	50 - 55	1 mi.	1/2 mi.	1 mi.	Subject to conditions for all roadway types and speeds	
	40 - 45	1/2 mi.	1/4 mi.	1/2 mi.		
	< 40	1/8 mi.	300 - 660 feet ⁽³⁾	1/4 mi.		
Arterial Expressway	50 - 55	1 mi.	1/2 mi.	1 mi.		
	50 - 55	1/2 mi.	1/4 mi.	1/2 mi.		
	40 - 45	1/4 mi.	1/8 mi.	1/4 mi.		
Minor Arterial	<40	1/8 mi.	300 - 660 feet ⁽³⁾	1/4 mi.		
	50 - 55	1/2 mi.	1/4 mi.	1/2 mi.		
	40 - 45	1/8 mi.	N/A	1/4 mi.		
Collector and Local	<40	1/8 mi.	300 - 660 feet ⁽³⁾	1/8 mi.		
	50 - 55	1/2 mi.	1/4 mi.	1/2 mi.		
	40 - 45	1/8 mi.	N/A	1/4 mi.		
Specific Access Plan		By adopted plan/agreement/covenant on land				

(1) Private access refers to residential, commercial, industrial and institutional driveways. Reference Anoka County's Development Review Manual for specifics on private access.

(2) Conditional secondary access is defined as right-in/out.

(3) Access spacing may be determined by planning documents approved by the county (e.g., Lino Lakes I-35E AUAR)

(4) Any spacing deviations shall have a detailed study completed by the requesting agency, AND approved by the County Engineer.



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Highway Level of Service

Level of Service	Multilane v/c Ratio	Two-Lane Average Travel Speed (mph)
A	<0.28	>55
B	>0.28-0.45	>50-55
C	>0.45- 0.65	>45-50
D	>0.65-0.86	>40-45
E	>0.86- 1.00	≤40
F	> 1.00	v/c >1.00

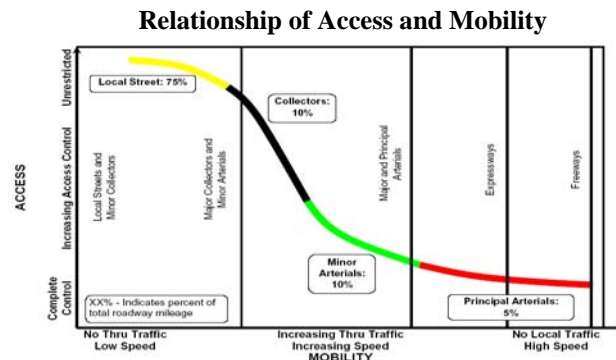
Generally, the City of Ham Lake will consider capacity improvements on roadways with a LOS D or worse and volume-to-capacity ratios over 0.75 during the peak hours.

Streetlights

The City desires to keep its rural quality and limit the number of streetlights; however, the City has recently revised lighting regulations to reduce lighting impacts in new developments. The City requires that all new subdivisions include the installation of one street light at the end of each cul-de-sac, on sharp curves, and at periodic intervals. A street light is also required at a “T” intersection of a municipal state aid street with either a county road or another municipal aid street. All lights must use at least a semi-cutoff design to help limit the amount of light pollution.

Access Management Guidelines

Access management guidelines are developed to maintain traffic flow on the network so each roadway can provide its functional duties, while providing adequate access for private properties to the transportation network. This harmonization of access and mobility is the keystone to effective access management and illustrated below.



Mobility is the ability to move people, goods, and services via a transportation system component from one place to another. The degree of mobility depends on a number of factors, including the ability of the roadway system to perform its functional duty, the capacity of the roadway, and the operation level of service on the roadway system.

Access is the relationship between local land use and the transportation system. There is an inverse relationship between the amount of access provided and the ability to move through-traffic on a roadway. As higher levels of access are provided, the ability to move traffic reduced.

Each access location (i.e. driveway and/or intersection) creates a potential point of conflict between vehicles moving through an area and vehicles entering and exiting the roadway. These conflicts can result from the slowing effects of merging and weaving that takes place as vehicles accelerate from a stop turning onto the roadway, or deceleration to make a turn to leave the roadway. At signalized intersections, the potential for conflicts between vehicles is increased due to the greater likelihood that the through movement vehicles may be required to stop at the signals. If the amount of traffic moving through an area on the roadway is high and/or the speed of traffic on the roadway is high, the number and nature of vehicle conflicts are also increased.



Accordingly, the safe speed of a road, the ability to move traffic on that road, and safe access to cross streets and properties adjacent to the roadway all diminish as the number of access points increase along a specific segment of roadway. Because of these effects, there must be a balance between the level of access provided and the desired function of the roadway.

In Ham Lake, access standards and spacing guidelines are established in City Code to effectively manage existing ingress/egress onto City streets and to provide access controls for new development and redevelopment. The proposed access standards (driveway dimensions) are based on Minnesota Department of Transportation (Mn/DOT) State-Aid design standards. It should be noted that the City of Ham Lake has access authority for those roadways under their jurisdiction. Likewise, Anoka County has access authority for roadways under their jurisdiction. To further the relationship of access and mobility throughout Ham Lake, the City supports managing access consistent with the roadway mobility and access relationship figure above and supports the access spacing guidelines of the County and State. The City also supports Anoka County's and Mn/DOT's access spacing guidelines for roads under their respective jurisdiction.

Geometric Design Standards

Geometric design standards are directly related to a roadway's functional classification and the amount of traffic that the roadway is designed to carry. For the City of Ham Lake, geometric design standards for Major and Minor Collectors are based on Mn/DOT State-Aid standards.

Roadway Width

Roadway and travel lane widths are directly associated with a roadway's ability to carry vehicular traffic. On Major Collector roadways and Minor Collector streets, a 12' lane is recommended for each direction of travel. The 24' total travel width is recommended to accommodate anticipated two-way traffic volumes. In addition to the travel width, a minimum 6' shoulder lane width is

promoted on designated bike routes to accommodate pedestrian and bicycle traffic.

Design Speed

The design speed of a roadway is directly related to the roadway's function in the roadway system. The focus of Minor Arterial roadways is mobility; therefore these roadways should be designed to accommodate higher travel speeds. Likewise, Minor Collector roadways are more focused on accessibility and should be designed to accommodate lower travel speeds. The function of Major Collectors is balanced between mobility and accessibility; therefore these roadways should be designed accordingly. The table below presents the recommended design speed for the Ham Lake roadway network.

Roadway Design Speed Guidelines

Functional Classification	Design Speed ⁽¹⁾
Minor Collector Street	30 mph
Major Collector Roadway	35 – 40 mph

⁽¹⁾ At the discretion of the City Engineer for City roadways, with approval by the City Council

Right-of-Way Width

Right-of-way width is directly related to the roadway's width and its ability to carry vehicular and pedestrian traffic in a safe and efficient manner. The roadway right-of-way widths identified in geometric design standards are the minimum required for Major and Minor Collector streets, respectively. For Minor Collector streets in residential areas, a minimum right-of-way width of 66' is necessary for the added roadway width, as well as to provide added setback distance between the roadway and homes along the roadway. Right-of-way widths greater than 66' may be required on Major Collector roadways within commercial areas to accommodate the potential for higher traffic volumes and the need for additional through or



ARTICLE – 10 SUBDIVISION REGULATIONS

10-100 Subdivision by means other than traditional platting

10-101 Lot Divisions

10-102 Minor Plats

10-103 Other Requirements

10-200 Subdivision by traditional platting

10-201 Sequence of Platting

10-202 Conditions of Accepting Plat Application

10-203 Sketch Plan

10-204 Preliminary Plat

10-205 Final Plat

10-300 Livability

10-301 Definitions

10-302 Livability Standards

10-400 Administration and General Conditions

10-410 General Conditions

10-420 General Plat Standards

10-430 Lot Standards

10-500 Commercial Condominium Plats

Table 10-1: Lot Standards

CITY OF HAM LAKE
ARTICLE 10 - SUBDIVISION REGULATIONS

The following regulations apply to the subdivision of lands, whether by the platting process, by individual lot splits or by the creation of commercial condominiums through a condominium plat. Article 10-500 of this Code relates exclusively to commercial condominium plat development requirements. No lands shall be subdivided unless in conformance with this ordinance, *provided*, that upon a showing of a physical hardship to the land which was not a product of the applicant's deliberate conduct, the City Council may grant reasonable variances to the strict application of this code, particularly in the various pre-World War II subdivisions abutting lakes and wetlands.

The regulations are intended to cover the sequencing of events, general procedures and general rules. The City Council shall, by resolution, adopt specific procedures, submittal requirements and policies from time to time as deemed necessary. Actions by the City Council which constitute a denial of an application or request shall be in the form of written findings of fact stating the reasons for denial.

For the purpose of computing the 120 day review time as contemplated by Minnesota Statutes Chapter 462.358, Subd. 3b, the Sketch Plan phase shall not be deemed to be a part of the plat application process, and the 120-day review period shall not begin to run until the applicant shall have submitted all items necessary for the City to be able to make a decision on Preliminary Plat approval, including all other agency reviews and comments.

10-100 Subdivision by means other than traditional platting**10-101 Lot Divisions**

Land parcels which were not created by platting may be further divided into no more than two additional parcels of record, upon review by the Planning Commission and approval of the City Council, which may attach conditions to such lot splits, including, without limitation, the acquisition of drainage, utility and road easements as needed, parkland dedication, and drainage fund contributions. Platting of such lots shall be required in the discretion of the City Council. Land parcels which were created by platting may not be further subdivided, except as follows:

- a) The parcel was originally platted as an outlot, and there is documentation that the purpose of the creation of the outlot was to permit subsequent replatting; or
- b) All new lots meet the frontage, setback and lot size standards that were in effect for the lots contained in the original plat of the subdivision.

If the original subdivision was a PUD or other subdivision category that did not have specific lot sizes, frontages or setback requirements at the time of original platting, then all new lots must be configured and dimensioned in a manner that is not materially different from the lots contained in the original subdivision, and the overall density per acre which existed at the time of original platting may not be exceeded for the area encompassed by the original plat.¹

Notwithstanding the foregoing, lot splits of any type which are intended merely to adjust existing lot lines, and for combination with adjoining parcels, and which do not create any new buildable parcels, may be approved by the City Council.

¹ For the legislative history (Findings of Fact) which preceded this Code section, see the text of original Ordinance Number 2002-27 (effective 1/5/03).

10-102 Minor Plats Where a plat will contain one or two lots, the City Council may waive any of the requirements of the code and expedite the plat approval process.

10-103 Other Requirements Lots subdivided under this section shall be subject to all of the requirements of lots which are subdivided by the traditional platting process in terms of physical characteristics, park dedication fees, and the dedication of easements for road, drainage or utility purposes.

10-200 Subdivision by Traditional Platting

10-201 Sequence of Platting Process The following sequence shall be observed in the traditional platting process: Sketch Plan, Preliminary Plat, Final Plat. Each stage shall be reviewed by the Planning Commission and acted upon by the City Council. As used in this code, the acronym "ISTS" refers to "Individual Sewage Treatment System(s)", both in the singular and in the plural.

10-202 Conditions Precedent to Accepting Plat Application At the time of plat application, the applicant shall furnish the following:

- a)** A signed consent form executed by an owner of the property to be platted, consenting to the platting and rezoning (if necessary) of the property, and further consenting to be co-liable with the developer for the repayment of any municipal expenses incurred in the plat review process;

¹ For the legislative history (Findings of Fact) which preceded this Code section, see the text of original Ordinance Number 2002-_____.

Ham Lake City Code
Article 10

- b)** A cash deposit or Letter of Credit from a State or Federally Chartered banking institution satisfactory to the City Administrator, in the amount to be set by Resolution of the City Council, for each lot or each unit in the case of a condominium plat.

- c)** A signed City form in which the applicant agrees to accept continuing responsibility for reimbursement of municipal expenditures incurred in the plat review process, and further agrees to deposit such additional funds as are required by the City Administrator if the initial deposit is exhausted.

Further, if the deposit account shall at any time be exhausted, and the Developer shall fail to remit funds as required by the City Administrator within 10 days after the request is made, such delinquency shall be deemed grounds for the City Council to summarily disapprove of the plat, at any regular or special meeting, and any subsequent request to plat the land shall be required to start from the sketch plan stage.

10-203 Sketch Plan A sketch plan shall require no technical data, but shall be a scaled drawing, prepared by a registered land surveyor, showing the outer perimeter of the property proposed to be platted, estimated dimensions, the street configuration, and the lot lines. At the time of Sketch Plan review, the proponent shall identify the need for any variances. At the time of application for Sketch Plan Review, the proponent shall, as a condition to having the matter placed upon the Planning Commission agenda for review, acknowledge in writing having received the following notification:

Notice to Developers

The Ham Lake City Code prohibits the use of “non-standard” ISTS as that term is defined from time to time by the Minnesota Department of Health. In addition, the City does not accept performance or surety bonds for financial guarantees, but will accept only cash deposits or letters of credit issued under strict guidelines, and only from FDIC-insured banking institutions. The undersigned has been notified of the City’s regulations on ISTS and performance security.

For Commercial Condominiums, no occupancy shall be permitted in any condominium unit unless that particular use is a permitted use in the zoning district in which the condominium is located, or which is a conditional use in that district, and has obtained a conditional use permit.

10-204 Preliminary Plat The Preliminary Plat shall be a final subdivision design, containing accurate dimensions of all elements. Preliminary Plat review shall include the conducting of a public hearing by the Planning Commission, after written notice as provided by statute or policy. Prior to conducting the public hearing, the following shall have occurred:

A. The City Staff shall have submitted the Preliminary Plat drawing and other related documents to all other agencies or entities necessary to review and comment on the plat, and shall either have received replies from each, or, if thirty days have elapsed since submission, the failure to have replied shall be deemed to be an approval by the entity;

B. The City's engineer shall have issued written recommendations regarding the plat, after review of the technical data required under this code, including, without limitation, the following:

i) A Lot Usage Map which displays the locations of the ISTS Area, the proposed location for a well, the Eligible Building Area, and the Yard Area, as those terms are outlined in **Article 10-302**.

ii) A table accompanying the Lot Usage Map which describes the square footage within each of the areas noted in (B(i)) above;

iii) A soils report by a qualified soils analyst which demonstrates that the Livability standards found in **Article 10-302** can be met for each lot, together with a report by a qualified ISTS designer that the ISTS Area can support two separate Standard ISTS. At a minimum, there shall be five soil borings analyzed on each lot. One boring shall come from the approximate center of the Eligible Building Area, and four borings shall come from the ISTS area, at least one coming from the lowest elevation of the ISTS area.

iv) Such other information as may be required by the City's engineer. In the event that piezometer readings are intended for usage in demonstrating the existing water table conditions, the proponent shall follow the recommendations of the City's engineer in creating test holes and in the timing of piezometer readings.

v) A drawing (the "Tree Preservation Plan") identifying the trees to be preserved during lot grading and infrastructure construction. This drawing may be a display of the lots and rights-of-way, with a delineation thereon of the areas that will not be disturbed by construction equipment, and within which trees will not be affected by the severing of root structures outside of the delineated area. No Tree Preservation Plan shall be required for lots identified at this stage as lots to be custom-graded by eventual lot purchasers. After submission of the Tree Preservation Plan, the City may require modification thereof if the City's engineer and/or Park and Tree Commission identify individual trees having the following characteristics:



May 2009

Andover Transportation Plan

J. Access Management

The management of access along roadway systems, particularly arterial and collector roadways is a very important component of maximizing the capacity of a roadway and decreasing the accident potential along those facilities. Arterial roadways have a function of accommodating larger volumes of traffic and often at higher speeds. Therefore, access to such facilities must be limited in order to protect the integrity of the arterial function. Collector roadways provide a link from local streets to arterial roadways and are designed to provide more access to local land uses since the volumes and speeds are often lesser than arterial roadways.

The Minnesota Department of Transportation (MnDOT) reports that studies have shown that as the density of accesses increase, whether public or private, the traffic carrying capacity of the roadway decreases and the vehicular crash rate increases¹. Businesses suffer financially on roadways with poorly designed access. Well-designed access to commercial properties supports long-term economic vitality.

As with many transportation related decisions, land use activity and planning is an integral part of creation of a safe and efficient roadway system. Land use decisions have a major impact on the access conditions along the roadway system. Every land use plan amendment, subdivision, rezoning, conditional use permit, or site plan involves access and creates potential impact to the efficiency of the transportation system. Properties have access rights and good design will minimize the deleterious effect upon the roadway system. Access management is a combination of good land use planning and effective design of access to property.

The granting of access in the City of Andover is shared by the City and by Anoka County, with each having the permitting process responsibility over roadways under their jurisdiction. The City, working with the county produces access spacing quality that does provide benefits to the traveling public. In order to strengthen the goal of good access management, a set of access spacing guidelines has been prepared which is intended for use in the access permitting process.

The guidelines are presented for functionally classified arterial and collector roadways without reference to the jurisdiction over these roadways. The basic references for the spacing guidelines is that document previously referenced in this report segment¹ and Anoka County guidelines. The access guidelines are presented in Table 5, which follows. The stated values are meant to be “minimum” values. It is also recognized that some existing connections, both public and private, may not meet these guidelines. It is also recognized that, due to various circumstances, access may need to be granted that cannot adhere to these guidelines. The following table does not provide guidelines regarding access along Principal Arterials – this is due to the fact that there are not any roadways functionally classified as Principal Arterials in the City of Andover.

¹ "Toward An Access Classification System and Spacing Guidelines", Technical Study No. 4, MnDOT, February 1999.

TABLE 5
ACCESS SPACING GUIDELINES
CITY OF ANDOVER

Functional Class	Median Treatment	Existing & Proposed Land Use	Typical Posted Speed (MPH)	Full Median Opening Spacing (Miles)	Minimum Signal Spacing (Miles)	Spacing Between Connections (Feet) (1)
Minor Arterial	Divided	Rural	55	1/2	1/2	1320
		Urban	≥ 40	1/2	1/2	660
		Urban Core	< 40	1/4	1/4	660
	Undivided	Rural	55	NA	1/2	1320
		Urban	≥ 40	NA	1/2	660
		Urban Core	< 40	NA	1/4	660
Collector	Divided	Urban	≥ 40	1/4	1/4	330
		Urban Core	< 40	1/8	1/8	330
	Undivided	Rural	55	NA	1/2	330
		Urban	≥ 40	NA	1/4	330
		Urban Core	< 40	NA	1/8	330

NA – Not Applicable

- (1) Distances are based upon spacing between connections (major roads, local public streets, and private driveways).
- (1) Distances are minimum and greater spacing is beneficial.

K. Traffic Calming

During the past few years, traffic calming in residential areas has been a hot topic. In the very near future, it is expected that calming may be a technique that could spread to collectors and arterials and in some areas of the country, traffic calming of collectors is being pursued.

Traffic calming is a popular way of addressing various traffic aspects on residential streets. It allows interested citizens to voice their opinions on what they don't like, and to suggest improvements. Traffic calming can be a viable approach to decreasing volume and speed problems on residential streets. Residential traffic calming and traditional neighborhood designs are tools that can be used to help address the complex demands for more livable communities. The goal of moving traffic efficiently and safely and, at the same time, providing more "comfort" in our communities is bringing together the many various elements used when analyzing roadways. This concept of bringing together various transportation planning and design features is called harmonization.

TITLE 11

SUBDIVISION REGULATIONS

Subject	Chapter
General Subdivision Provisions.....	1
Subdivision Plats And Procedures.....	2
Design Standards.....	3
Required Improvements	4

CHAPTER 3

DESIGN STANDARDS

SECTION:

- 11-3-1: General Requirements
- 11-3-2: Street Plan
- 11-3-3: Streets
- 11-3-4: Easements
- 11-3-5: Blocks
- 11-3-6: Lots
- 11-3-7: Parks, Playgrounds, Open Space And Public Uses
- 11-3-8: Trails (Amended 9/18/07, Ord. 355)

11-3-1: **GENERAL REQUIREMENTS:**

- A. The Planning Commission, in its review of a preliminary plat, shall determine whether the proposed subdivision is in conformity with the Comprehensive Plan and shall take into consideration the requirements of the City and the best use of the land. Particular attention shall be given to the arrangement, location and widths of streets, drainage and lot sizes and arrangements. (Amended 9/18/07, Ord. 355)
- B. The preliminary plat shall cover all of the owner's contiguous land or any other property of the owner as deemed necessary by the Planning Commission in consideration of rural and urban differences, the zoning ordinance and the Comprehensive Plan. (Amended 9/18/07, Ord. 355)
- C. Where the parcel of land is subdivided into tracts larger than required for building lots, such tracts shall be divided so as to allow for the opening of streets and ultimate extension of adjacent streets.
- D. Unplatted portions of land (outlots) or private easements controlling access to public ways shall not be approved within the plat. (Amended Ord. 10, 2-15-1972)
- E. Minnesota Statutes 462.358, Subdivision 2A, authorizes the City to condition approval of the subdivision of property on the construction and installation of certain utilities. The intent of this section is to specifically set out the required improvements that promote and protect the public health, safety and general welfare. The City reserves the right to require additional improvements if deemed necessary by circumstances and conditions unique to these particular lands. No subdivision of land is allowed in the area designated on the Comprehensive Plan as "Rural

Reserve" unless storm sewer, sanitary sewer and a municipal water supply are constructed to serve the area being divided. (Ord. 274, 9-2-2003)

- F. Required Buffer Area From Rural Areas or Neighborhoods: All residential developments constructed with municipal sewer and water may be required to provide buffering from rural neighborhoods outside of the City's Municipal Urban Service Area (MUSA) except when adjacent to areas outside of the existing MUSA that are planned for future urban development. (Amended 9/18/07, Ord. 355)
1. Buffer Area Location: Buffer areas shall be located as close to property lines between proposed urban and existing rural properties as practicable.
 2. Buffer Area Requirements: Buffer areas shall provide a consistent level of physical separation and/or visual screening to provide a transition between urban and rural developments. The extent of the requirements shall be determined by the City Council at the time that the preliminary plat is reviewed. These requirements shall be based on the existing and proposed topography and vegetation within and surrounding the proposed development and may include one or more of the following:
 - a. Additional lot width or depth to provide physical separation
 - b. Tree save areas to provide visual screening
 - c. Tree planting areas to provide visual screening
 - d. Relocation of drainage areas to preserve existing trees and/or area for new trees to be planted.
 - e. A combination of the above or others as needed to provide a significant and consistent buffer area.
 3. Exemption: In the event that a significant and consistent buffer is provided by existing trees, wetlands, floodplain or other topographic or hydrologic features, the Council may determine that no additional requirements are necessary. (Amended Ord. 331, 6-6-2006)

11-3-2: **STREET PLAN:**

- A. Compliance With Comprehensive Plan: The arrangement, character, extent, width, grade and location of all streets shall conform to the Comprehensive Plan, the approved standard street specifications, and all applicable ordinances; and all streets shall be considered in their relation to existing and planned streets, to reasonable circulation of traffic, to topographical convenience and safety, and in their appropriate relation to

the proposed uses of the area to be served.

- B. Continuation of Existing and Future Streets: The arrangement of streets in new subdivisions shall make provision for the continuation of existing and future streets in adjoining areas. (Amended 9/18/07, Ord. 355)

- * C. Frontage Restrictions: No preliminary plat shall be approved wherein lots front on the right-of-way of state, county, or city arterial or major collector streets. Such lots may front on service roads with entrances to the above or at intervals as determined by the County or City. (Amended Ord. 10, 2-15-1972; Amended 9/18/07, Ord. 355))

11-3-3: **STREETS:**

- A. Widths:

1. All right of way and street widths shall conform to the following minimum dimensions: (Amended 9/18/07, Ord. 355)

<u>Classification</u>	<u>Right of Way Width</u>	Typical Street Width Back of Curb to Back of Curb
Arterial	120 feet	Variable
Collector - major	80-120 feet, as determined by the City Engineer	Variable
Collector - minor	66-100 feet, as determined by the City Engineer	
Local urban city street	60 feet	33 feet
Local rural city street	60 feet	31 feet
Cul-de-sac	120 feet	93 foot diameter
Service	60 feet	33 feet

2. Additional right-of-way and street widths may be required depending upon anticipated traffic volume, planned function of street and character of abutting land use, and fire code requirements. (Amended 9/18/07, Ord. 355)

- B. Horizontal Curve Radius: The minimum horizontal curve radius on minor streets shall be fifty feet (50') or as required by the City Engineer.

- A. Utility Easements: Easements at least twenty feet (20') wide or as determined by the City Engineer, centered on rear and side lot lines, shall be provided for utilities where required by the platting authority. Utility easements shall have continuity of alignment from block to block and lot to lot. Lots served by municipal services shall have a minimum 5-foot drainage and utility easements along the side lot lines and a minimum 10-foot drainage and utility easements along the front and rear lot lines. Lots without municipal services shall have a minimum 10-foot drainage and utility easements along all property lines. (Amended 9/18/07, Ord. 355)
- B. Drainage Easements: Where a subdivision is traversed by a wetland, watercourse, drainageway or stream, a drainage easement conforming substantially with the lines of such watercourse shall be provided, with further width as shall be adequate for storm water drainage of the areas. (Amended Ord. 10, 2-15-1972; Amended 9/18/07, Ord. 355)

11-3-5: **BLOCKS:**

- A. Lengths: The maximum length of blocks shall be one thousand three hundred twenty feet (1,320'). Trail easements at least twenty feet (20') wide may be required at the approximate center of blocks over six hundred sixty feet (660') in length. Provisions for additional accessways to schools, parks, and other public grounds may be required. (Amended 9/18/07, Ord. 355)
- B. Off Street Areas: Blocks intended for commercial, industrial, or uses other than single-family dwellings shall be so designed to provide adequate off street areas for parking, loading, and such other facilities as shall be required by the City Code. (Amended 9/18/07, Ord. 355)
- C. Width: All blocks shall be so designed to provide for two (2) tiers of lots unless conditions exist to render this requirement undesirable. (Amended Ord. 10, 2-15-1972)

11-3-6: **LOTS:**

- A. Minimum Lot Size: The minimum lot area and dimensions shall be as specified in the respective zoning districts of the City Code. (Amended 9/18/07, Ord. 355)
- B. Buildability Requirements: All lots shall have the lowest floor a minimum of three feet (3') above the seasonal high water mark or two feet (2') above the designated or designed 100-year flood elevation, whichever is higher unless evidence is submitted and certified by a geotechnical

engineer that shall be reviewed and certified by an independent geotechnical engineer hired by the city at the expense of the developer and approved by the City Council that a separation of less than three feet (3') can be achieved and is warranted. (Amended 9/18/07, Ord. 355)

1. Residential Lots Served By Municipal Sanitary Sewer: Lots served by municipal sanitary sewer shall remove all organic material and replace with granular material with no more than five percent (5%) organic material by volume for the front one hundred ten feet (110') of depth of the lot at a minimum width of the lot as required for that zoning district by the City Code. (Amended 9/18/07, Ord. 355)

2. Residential Lots Lacking Municipal Sanitary Sewer: No plats within the Metropolitan Urban Service Area (MUSA) shall be approved unless municipal sanitary sewer, municipal water and storm sewer are constructed to serve the proposed development. All lots lacking municipal sanitary sewer shall adhere to the following:

a. A building pad shall be created for each lot with a minimum size of three thousand six hundred (3,600) contiguous square feet. The building official shall determine that the dimensions of the building pad are adequate to locate a house in compliance with all applicable requirements.

b. The building pad shall be required to have a finished grade of at least six feet (6') above the seasonal high water mark.

c. All organic material shall be removed from the designated building pad area and replaced with granular material with no more than five percent (5%) organic material by volume.

d. There shall be two (2) 5,000-square foot areas designated and staked for the primary and secondary on site septic drainfield based on design criteria for a four (4) bedroom home. The designated drainfield locations as stated above shall comply with City Code Title 10-4 "Individual Sewage Disposal Systems" as amended. (Amended 9/18/07, Ord. 355)

e. The location of the primary and secondary sites shall be indicated on the preliminary grading plan and the design specifications for the drainfields shall be submitted at the time of the submittal of the preliminary plat for proposed developments and at the time of building permit application for new homes.

C. Location: All lots shall have at least 50 (fifty) feet of frontage on a publicly dedicated and constructed street. Lot widths are a separate

requirement that is measured at the front yard setback.

- D. **Corner Lots:** Corner lots shall be platted at least ten feet (10') wider than interior lots on all lots of less than three hundred feet (300') in width at the building setback line. Corner lots shall be a minimum of one hundred feet (100') wide as measured at the building setback line or ninety feet (90') wide for back to back lots.
- E. **Cul-De-Sac Lots:** The minimum lot width at the front setback line for cul-de-sac lots lacking municipal sanitary sewer is one hundred sixty feet (160'). Two (2) lots per cul-de-sac are allowed to utilize the reduced lot width. (Amended 9/18/07, Ord. 355; Amended 11/6/07, Ord. 358)
- F. **Butt Lots:** The use of butt lots shall be avoided wherever possible.
- G. **Watercourses:** Lots abutting upon a watercourse, drainageway, or stream shall have such additional depth or width as may be required to protect house sites from flooding and shall be subject to restrictions of the Department of Natural Resources, U.S. Army Corps of Engineers, the Coon Creek Watershed District, the Lower Rum River Watershed Management Organization, or any other regulatory agency. (Amended 9/18/07, Ord. 355)
- H. **Double Frontage Lots:** Lots with frontage on two (2) parallel streets shall not be permitted except where lots back on major collectors, arterial streets or highways. Double frontage lots shall have an additional depth for screen planting along the rear lot line of ten feet (10') as regulated by City Code Title 12-13-5. (Amended 9/18/07, Ord. 355)
- * I. **Access To Arterials or Major Collectors:** In those instances where a plat is adjacent to a limited access arterial or major collector, no direct vehicular access shall be permitted from individual lots to such streets unless no access can be provided by other means. (Amended 9/18/07, Ord. 355)
- J. **Natural Features:** In the subdividing of land, regard shall be shown for all natural features, including tree growth, watercourses, historic places and similar amenities of the area which, if preserved, will add attractiveness and stability to the area.
- K. **Lot Remnants:** Lot remnants which are below the minimum lot area or dimension must be added to adjacent or surrounding lots rather than be allowed to remain as an unusable outlot or parcel.
- L. **Resubdivision:** The preliminary plat shall show a feasible plan for future resubdivision by which lots may be resubdivided to meet the size and

Attachment J: Project Implementation Schedule

APPENDIX K

Project Implementation Schedule

Please check those that apply and fill in anticipated completion dates

1) Project Scope

- Stake Holders have been identified
 Meetings or contacts with Stake Holders have occurred

2) Layout or Preliminary Plan

- Identified Alternates
 Selected Alternates
 Layout or Preliminary Plan started
 Layout or Preliminary Plan completed

Anticipated date or date of completion: July 2014

3) Environmental Documentation

- EIS EA PM

Document Status

- Document not started
 Document in progress; environmental impacts identified
 Document submitted to State Aid for review (date submitted: _____)
 Document approved (need copy of signed cover sheet)

Anticipated date or date of completion/approval: July 2014

4) R/W

- No R/W required
 R/W required, parcels not identified
 R/W required, parcels identified
 R/W has been acquired

Anticipated date or date of acquisition January 2016

5) Railroad Involvement

- No railroad involvement on project
 Railroad R/W Agreement required; negotiations not begun
 Railroad R/W Agreement required; negotiations have begun
 Railroad R/W Agreement is complete

6) Construction Documents/Plan

- Construction plans have not been started
 Construction plans in progress

Anticipated date or date of completion: January 2015

- Construction plans completed/approved

7) Letting

Anticipated Letting Date: February 2016