Pursuant to due call and notice thereof, a regular meeting of the North Mankato City Council was held in the Municipal Building Council Chambers on January 2, 2018. Mayor Dehen called the meeting to order at 7:00 p.m. asking that everyone join in the Pledge of Allegiance. The following were present for roll call: Mayor Dehen, Council Members Norland, Freyberg, Whitlock, and Steiner, City Administrator Harrenstein, Finance Director McCann, Community Development Director Fischer, Public Works Director Swanson and City Clerk Van Genderen. Absent: Attorney Kennedy.

Approval of Agenda

Council Member Norland moved, seconded by Council Member Steiner, to approve the agenda as presented. Vote on the motion: Norland, Freyberg, Whitlock, Steiner and Dehen aye; no nays. Motion carried.

Approval of Council Workshop Meeting Minutes

Council Member Freyberg moved, seconded by Council Member Norland, to approve the minutes of the Council Workshop meeting of December 18, 2017. Vote on the motion: Norland, Freyberg, Whitlock, Steiner and Dehen aye; no nays. Motion carried.

Approval of Council Meeting Minutes

Council Member Norland moved, seconded by Council Member Whitlock, to approve the minutes of the Council meeting of December 18, 2017. Vote on the motion: Norland, Freyberg, Whitlock, Steiner and Dehen aye; no nays. Motion carried.

Public Hearing-Consider Annexation of 25.55 Acres of Land Owned by Roy and Grace Toegel.

City Administrator Harrenstein reported the annexation was contingent upon approval of the plats and a development agreement. Community Development Director Fischer reported the land was in the process of being annexed into the City for single-family residential development which matches the Comprehensive Plan, which guides the area to low density single-family homes.

Phil Henry, 1300 Noretta Drive, appeared before Council and requested the City not to hold the Public Hearing because the developer has stated he would not complete the project if the extension of Marie Lane were assessed to the proposed 10-lots that would be developed. Mr. Henry did not believe the City should pay for the extension. Mayor Dehen reported the developer would pay for the road and utility work within the development. The City would only be responsible for completing one block that the City had purchased and not completed improvements on. Mr. Henry indicated he did not believe tax-payers should pay for the improvement and feared the City's bond rating would suffer.

Public Hearing-Consider Project No. 17-05 ABCDEF Jefferson Avenue Improvement Project.

City Engineer Sarff appeared before Council and presented information on Project No. 17-05 ABCDEF Jefferson Avenue Improvement Project. He reported the project began due to complaints about the condition of the sidewalks. The street and utilities are over 65 years old and have been on the capital improvement plan for several years. The City Council authorized the Preliminary Engineering Report on November 20, 2017, and it was presented to Council on December 4, 2017. A neighborhood meeting was held on December 18, 2017. Engineer Sarff reviewed the existing condition which included sanitary sewer and watermain over 65 years old and no existing storm sewer. The proposed improvement included replacing existing sanitary and watermain within the right-of-way and constructing a storm sewer system. Improvements also include reconstructing the existing street, new 5-foot wide sidewalk on both sides (same as existing), new concrete driveway aprons, perforated subsurface drains on both sides of the street and restoring all disturbed residential turf areas with seed.

There are 24 existing boulevard trees that the city inventoried and worked with the City Forester, Jason Lobitz, to determine if each tree could be saved or need to be removed.

Engineer Sarff reported the North Mankato City Council adopted a Complete Streets Policy on January 4, 2016, which requires the City to review pedestrian and bicycle accommodations during a reconstruction. It was determined that replacing the 5-foot width sidewalks on both sides meeting ADA standards would meet the guidelines for the Complete Streets Policy. Bicycle accommodations were reviewed, but it was determined the addition of on-street or off-street bicycle lanes was not feasible for the project.

City Engineer Sarff reviewed the assessment policy adopted by the City of North Mankato. Sanitary Sewer and Water Service are 100% assessable to the resident. The balance of project cost is 40% assessable to the resident with the remaining 60% covered by the City. Using the Assessment Policy, the calculated assessments would range between $10,400 to $19,700. In 2016 the City capped the Roe Crest Drive Reconstruction Project at $8,000. Adjusting the assessment cap to the project reduces the proposed cap for Project No. 17-05 ABCDEF Jefferson Avenue Improvement Project to $6,000.

A review of the project included opening bids on March 22, 2018, an assessment hearing on May 7, 2018, with construction beginning at the end of May 2018 and concluding at the end of August.

Phil Henry, 1300 Noretta Drive, appeared before Council and stated he approved of this project, noting the residents would be assessed for the project.

Consent Agenda

Council Member Steiner moved, seconded by Council Member Norland, to approve the Consent Agenda which included:

A. Bills and Appropriations.
B. Res. No. 1-18 Approving Donations/Contributions/Grants.
C. Approved Parade Permit for the National MS Society on May 12, 2018, from 10:00 a.m. to 12:30 p.m. at Spring Lake Park.
D. Res. No. 2-18 Setting Gas Mileage Reimbursement Rate.
E. Res. No. 3-18 Designating Official Newspaper.
F. Res. No. 4-18 Designating Depositories for the City of North Mankato.
G. Approved Appointments to Boards and Commissions.

Vote on the motion: Norland, Freyberg, Whitlock, Steiner and Dehen aye; no nays. Motion carried.

Public Comments Concerning Business Items on the Agenda

Barb Church, 102 Wheeler Avenue, appeared before Council to talk about the information presented on Radio-read water meters. She requested residents be provided the opportunity to purchase a meter rather than leasing a meter. Ms. Church stated this should reduce the amount that would need to be bonded. Ms. Church also expressed concern over installing City-owned property in a private residence.

Business Items

Res. No. 5-18 Ordering Improvement and Preparation of Plans for Project No. 17-05 ABCDEF Jefferson Avenue Improvement.

Mayor Dehen thanked City Engineer Dan Sarff and City staff for the educational process. **Council Member Norland moved, seconded by Council Member Steiner to adopt Res. No. 5-18 Ordering Improvement and Preparation of Plans for Project No. 17-05 ABCDEF Jefferson Avenue Improvement. Vote on the motion: Norland, Freyberg, Whitlock, Steiner and Dehen aye; no nays. Motion carried.**

Set Public Hearing for 7 p.m. on Tuesday, January 16, 2018, to Consider Amending North Mankato City Code, Chapter 110, Entitled "General Business Regulations." Tobacco 21. Council Member Freyberg moved, seconded by Council Member Norland to Set a Public Hearing for 7 p.m. on Tuesday, January 16, 2018, to Consider Amending North Mankato City Code, Chapter 110, Entitled "General Business Regulations." Tobacco 21. Vote on the motion: Norland, Freyberg, Whitlock, Steiner and Dehen aye; no nays. Motion carried.

Receive Information on Radio-Read Water Meters.

City Administrator Harrenstein reported citizens often complain that they have to read their water meters. While it is an economical method for obtaining water meter readings, there is interest in moving toward a different way to read meters. Administrator Harrenstein reported there were several different methods used to collect water meter readings; the City is considering radio-read water meters. The meter automatically sends the reading to the City. The City Council will need to determine if this is something they are interested in pursuing as it is a costly change. He indicated the projected monthly charge would be between $3.00 and $5.00 dollars for residential meters. If the Council decided to proceed with Radio-Read Water Meters a public hearing would need to be held.

Finance Director McCann reported the system would improve the collection rates for the City. The meters would help in conservation as they would provide accurate readings and could help to identify leaks quickly. Radio antennas would be used to pull up real-time readings at the desk. Finance Director McCann reported the estimated bond issuance was for 3.2 million and the City was proposing owning the meters and creating a separate fee to cover the cost.

City Administrator Harrenstein reported the change would help with efficiencies as it would reduce staff time on such things as shut-offs and entering meter readings, but the efficiencies would be realized as the City grows.

Mayor Dehen requested clarification on if the system could provide alerts if there were leaks. Finance Director McCann reported the system could provide alerts for leaks, reverse flow and meter tampering. Mayor Dehen also requested clarification on if rental units could be metered separately. Finance Director McCann reported it would be capable. Mayor Dehen stated grants might be available. Council Member Norland reviewed the proposed cost of $3.00 to $5.00 for residential and more for larger users. City Administrator Harrenstein reported there might be a prepayment option which would shorten the bond term. Mayor Dehen requested clarification from Council if they were interested in obtaining additional information. Council Members Norland, Whitlock and Steiner reported they were interested in learning more about the option.

Council Member Freyberg reported he had issues with the 3 million dollar investment and the fee charged to utility customers. He stated there were upsides including backflow, information on leaks and water conservation, but economically he did not know if it made sense.

Council Member Norland stated there are many meters that will need to be replaced soon. Mayor Dehen noted the project cost might increase if the City waits. Council Member Freyberg stated maybe this could be a code update requiring all new buildings to install radio-read meters and phase it in. Mayor Dehen stated the Council is in agreement that the staff should continue researching and provide more information.

Res. No. 6-18 Local Government Resolution Business Development Infrastructure Application.

City Administrator Harrenstein noted the resolution had been presented at a Council meeting in March and the application had been submitted. The application is in regards to funding utility infrastructure on property owned by the Port Authority. The Department of Employment and Economic Development needed verification on the local funds set aside for the project. The funds have been set aside in Water, Sewer and the Capital Outlay funds. **Council Member Norland moved, seconded by Council Member Whitlock to Adopt Res. No. 6-18 Local Government Resolution Business Development Infrastructure Application. Vote on the motion: Norland, Freyberg, Whitlock, Steiner and Dehen aye; no nays. Motion carried.**

City Administrator and Staff Comments

None.

Mayor and Council Comments

Mayor Dehen congratulated Water Superintendent Duane Rader on the City receiving the 2016 Water Fluoridation Quality Award.

Council Member Steiner stated a resident had requested the City look into a four-way stop at Carlson and LorRay Drive. Community Development Director Fischer reported that in conjunction with the MPO a study was being conducted on the intersection. The report would be presented to the Planning Commission in January and then to the Council.

Council Member Steiner stated Administrator Harrenstein would be on Talk of the Town at 1:00 p.m. on Wednesday, January 3rd.

Mayor Dehen reported the City received notification from the GFOAC that the CAFR qualifies for a certificate of achievement in financial reporting.

Mayor Dehen reported two North Mankato residents would receive their Eagle Scout awards. Noah Kroells and Vincent Dhuyvetter would be receiving the honor.

Mayor Dehen noted he met with the Cub Scouts and discussed City government.

Mayor Dehen invited North Mankato residents out the weekend of January 27-28, 2018, to the Anthony Ford Pond Hockey Tournament.

Mayor Dehen invited citizens to the open forum that would begin after adjournment and a five-minute break.

There being no further business, on a motion by Council Member Norland, seconded by Council Member Steiner, the meeting adjourned at 7:46 p.m.

____
Mayor

____
City Clerk

Pursuant to due call and notice thereof, a Council Open Forum of the North Mankato City Council was held in the Municipal Building Council Chambers on January 2, 2018. Mayor Dehen called the meeting to order at 7:51 p.m. The following were present for roll call: Mayor Dehen, Council Members Steiner, Norland, Freyberg and Whitlock, and City Clerk Van Genderen.

Open Forum

Mayor Dehen welcomed the citizens to the Open Forum and noted the forum would be limited to 15 minutes and each speaker to 3-minutes.

Stefanie Jaquette, 509 Wheeler Avenue, appeared before Council and stated she disagreed with eliminating the Public Comment period. She said she did not believe public comment should be limited and having a public comment period encourages Council accountability. Ms. Jaquette stated she attended the League of Minnesota Cities led Council Workshop and agreed that it is good practice to allow open comments.

Tom Hagen, 927 Lake Street, appeared before Council and stated if the purpose of changing the comment period was to increase citizen involvement he believed it failed. He requested Council return to the two comment periods during the Council Meeting.

Kim Spears, 916 South Avenue, appeared before Council and stated he believed the changes to the comment period were repressively designed to suppress citizens. He requested City Council return to an open forum during the regular Council Meeting.

Phil Henry, 1300 Noretta Drive, appeared before Council and stated he did not believe the open forum would be transparent because it was not being videotaped. He said he believed citizen involvement prevented the City from going broke.

Mayor Dehen stated that because this was an Open Forum the Council could respond to citizens or ask questions.

Council Member Steiner stated he believed the open forum should be a part of the regular Council Meeting so it would be videotaped.

Mayor Dehen stated this is an attempt at a compromise allowing citizens to comment on items that are not on the agenda. He said he was going to work at being more consistent at applying the rules. Mayor Dehen reported Council would continue to have Open Forums after the Council Meeting. Council could always review the Open Forum platform.

Mayor Dehen closed the Open Forum at 8:03 p.m.

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Mayor

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City Clerk

Pursuant to due call and notice thereof, a Council Workshop of the North Mankato City Council was held in the Municipal Building Council Chambers on January 2, 2018. Mayor Dehen called the meeting to order at 8:03 p.m. The following were present for roll call: Mayor Dehen, Council Members Steiner, Norland, Freyberg and Whitlock, and City Clerk Van Genderen.

Follow up Discussion to League of Minnesota Cities Workshop

Council Member Freyberg stated he would be interested in having this conversation when legal counsel was available.

Council Member Norland reported Attorney Kennedy would be able to provide legal advice.

Mayor Dehen stated the Council Workshop could be rescheduled to Tuesday, January 16, 2018, at 6:30 p.m. or when the Attorney would be available.

Mayor Dehen closed the Council Workshop at 8:06 p.m.

____
Mayor

____
City Clerk

CITY OF NORTH MANKATO

OFFICE OF THE MAYOR

PROCLAMATION

WHEREAS, all children in North Mankato should have access to the highest-quality education possible; and

WHEREAS, North Mankato recognizes the important role that an effective education plays in preparing all students in North Mankato to be successful adults; and

WHEREAS, quality education is crucial to the economic vitality of North Mankato; and

WHEREAS, North Mankato is home to a variety of high-quality public and nonpublic schools from which parents can choose for their children, in addition to families who educate their children in the home; and

WHEREAS, educational variety not only helps to diversify our economy but also enhances the vibrancy of our community; and

WHEREAS, North Mankato has many high-quality teaching professionals in all types of school settings who are committed to educating our children; and

WHEREAS, School Choice Week is celebrated across the country by millions of students, parents, educators, schools, and organizations to raise awareness of the need for effective educational options;

NOW THEREFORE I, Mark Dehen, Mayor of North Mankato, proclaim January 21-27, 2018 as:

NORTH MANKATO SCHOOL CHOICE WEEK

And I call this observance to the attention of all of our citizens.

Dated this 16th day of January 2018.

Mark Dehen, Mayor
City of North Mankato

CITY OF NORTH MANKATO

REQUEST FOR COUNCIL ACTION

Agenda Item #9	Department: Administration	Council Meeting Date: 1/16/18

TITLE OF ISSUE: Public Hearing-Consider Amending North Mankato City Code, Chapter 110, Entitled "General Business Regulations." Tobacco 21.

BACKGROUND AND SUPPLEMENTAL INFORMATION: The North Mankato City Council first discussed raising the age to purchase tobacco to 21 at the July 10, 2017, Council Meeting and further discussion was held at the July 17, 2017, Council Workshop. An Intergovernmental Meeting was held on August 2, 2017, and again on November 8, 2017, where it was determined, upon approval by each City Council, to hold Public Hearings at the second Council meetings in January. Included in your packet are submitted comments.

If additional space is required, attach a separate sheet

REQUESTED COUNCIL ACTION: Public Hearing.

Motion By: ____________________
Second By: ____________________

Vote Record:

Aye	Nay	
____	____	Whitlock
____	____	Steiner
____	____	Norland
____	____	Freyberg
____	____	Dehen

SUPPORTING DOCUMENTS ATTACHED

Resolution	Ordinance	Contract	Minutes	Map
[ ]	[X]	[ ]	[ ]	[ ]

Other (specify) Public Hearing Notice

[ ] Workshop
[X] Regular Meeting
[ ] Special Meeting

[ ] Refer to: ____________________
[ ] Table until: ____________________
[ ] Other: ____________________

NOTICE OF PUBLIC HEARING TO
AMEND CITY CODE, CHAPTER 110
BUSINESS REGULATIONS

Notice is hereby given that the City Council of the City of North Mankato, Minnesota, will hold a Public Hearing on Tuesday, January 16, 2018 at 7 p.m. in the Council Chambers of the Municipal Building, 1001 Belgrade Avenue, to consider amending the City Code Chapter 110.22, Tobacco; raising the purchasing age for tobacco to twenty-one.

Such persons as desire to be heard with reference to this issue should appear at this meeting. Public comments may be sent to the North Mankato Municipal Building, 1001 Belgrade Avenue, North Mankato, MN 56003.

Dated this 2nd day of January 2018.

April Van Genderen
City Clerk
City of North Mankato

ORDINANCE NO. 93, FOURTH SERIES

AN ORDINANCE OF THE CITY OF NORTH MANKATO, MINNESOTA, AMENDING NORTH MANKATO CITY CODE, CHAPTER 110, ENTITLED "GENERAL BUSINESS REGULATIONS"

THE CITY COUNCIL OF THE CITY OF NORTH MANKATO, MINNESOTA ORDAINS:

Section 1. The North Mankato City Code, Section 110.22, Tobacco is hereby amended by incorporating the following changes:

(A) Definition. As used in this section, the term ***Tobacco*** means and includes tobacco in any form, including but not limited to, cigarettes, cigars, bagged, canned or packaged product. ***Tobacco-related device*** includes any electronic delivery devices and nicotine or lobelia delivery products.

(B) License required. It is unlawful for any person, directly or indirectly, to keep for retail sale, sell at retail, or otherwise dispose of any tobacco or tobacco related devices in any form unless a license shall be first obtained from the City.

(C) Restrictions.

(1) Separate licenses and stickers for each dispensing machine shall be issued for the sale of tobacco or a tobacco related devices at each fixed place of business, and no license shall be issued for a movable place of business.

(2) It is unlawful for any person to sell give away any tobacco or tobacco related device in any form to any person under the age of twenty-one. Licensees shall verify by means of a government issued photographic identification that the person obtaining the tobacco or tobacco related device is over the age of twenty-one

(3) Smoking prohibited in tobacco and electronic delivery device retail establishment. Smoking or using electronic delivery device for the purpose of sampling tobacco, tobacco related products, nicotine or lobelia delivery devices shall be prohibited.

(4) The use of any electronic delivery device is prohibited anywhere smoking is prohibited by the Minnesota Clean Indoor Act. This section is intended to compliment the Minnesota Clean Indoor Act, M.S. §144.411 to 144.417, as amended from time to time. Nothing in the section authorizes smoking in any location where smoking is restricted by other applicable laws.

Section 2. After adoption, signing and attestation, this Ordinance shall be published once in the official newspaper of the City and shall be in effect on or after the date following such publication.

Adopted by the Council this _______day of ______2018.

____

Mayor

ATTEST:

____

City Clerk

CROIX OIL
company

January 10, 2018

Dear Mayor Dehen and Council Members ,

My name is Mark Ogren and my company owns and operates the SuperAmerica located at 729 N. Riverfront Dr. This letter is being written to address the consideration by Mankato of an ordinance which would raise the minimum lawful age to purchase tobacco from 18 to 21.

Frankly, I find it troubling that a city even has the authority to regulate the age at which someone can purchase tobacco. But given the fact it appears to be within your authority, I will address my concerns with the impending change.

As a father of four children, I have always felt it was my obligation to not only raise my children properly, but do the best I could to influence their actions when necessary. I am very pleased that none of my children are cigarette smokers. I do not condone the smoking of cigarettes at the age of 18 or any other age for that matter. What I do believe very strongly; however, is for the right of an individual to decide at the age of 18 whether they want to be a user of tobacco.

At the age of 16, a person can be granted a license to drive a vehicle. They are recognized as having the ability to make the proper decisions to operate a vehicle in such a manner so as not to endanger their own lives and the lives of everyone else on the road every time they get behind the wheel, yet they are not deemed to have the mental capacity to decide for themselves whether to smoke for another five years?

At the age of 18, a person can join the military, go into war and actually die for his or her country, but they cannot purchase tobacco?

At the age of 18, a person can legally live on their own, is required to make medical decisions for themselves, but they cannot purchase tobacco?

In perhaps the most ironic twist of all, at the age of 18, a person has the right to vote you into office, but they cannot purchase tobacco?

It is very costly to run a business in today's marketplace and this will have a negative impact on our sales and profitability. It is not so much the loss of the tobacco sale, it is all of the ancillary sales that we will lose when these customers take their business to stores in neighboring communities.

I strongly urge you to vote NO on the proposed Ordinance raising the legal minimum age to purchase any tobacco and nicotine products to age 21.

Sincerely,

CROIX OIL COMPANY

Mark J. Ogren
President

1749 South Greeley Street • P.O. Box 15 • Stillwater, Minnesota 55082
(651) 439-5755 • Fax (651) 439-1051

Claims List - Regular

City of North Mankato, MN

By Vendor Name

Date Range: 1-16-18

Vendor Number	Vendor Name	Payment Date	Payment Type	Discount Amount	Payment Amount	Number
Bank Code: APBNK-APBNK						
	Void	01/03/2018	VOID	0	-	88687
	MINNESOTA HERITAGE PUBLISHING	01/03/2018	VOID	0	(20.99)	88441
	HOWARD DRIVE LLC	01/03/2018	VOID	0	(6,360.35)	88566
00009	A-1 KEY CITY LOCKSMITHS, INC	01/16/2018	Regular	0	955.00	88689
02744	ALBERTSON ENGINEERING, INC.	01/16/2018	Regular	0	240.00	88690
00102	AUDIO EDITIONS	01/16/2018	Regular	0	16.00	88691
02248	BLINDS & MORE	01/16/2018	Regular	0	120.00	88692
00112	BLUE EARTH COUNTY FIRE CHIEFS ASSOC.	01/16/2018	Regular	0	120.00	88709
02475	BOONE, KATIE	01/16/2018	Regular	0	750.00	88693
00179	BOUND TREE MEDICAL LLC	01/16/2018	Regular	0	1,267.37	88694
02745	BRIGGS AND MORGAN	01/16/2018	Regular	0	7,000.00	88695
00221	CARGILL, INC.	01/16/2018	Regular	0	6,868.35	88696
00304	CREATIVE AD SOLUTIONS, INC.	01/16/2018	Regular	0	25.00	88697
00322	DALCO	01/16/2018	Regular	0	23.87	88698
02380	EVERGREEN COMPANIES	01/16/2018	Regular	0	342.50	88699
00401	EXPRESS SERVICES, INC.	01/16/2018	Regular	0	579.00	88700
00432	FLEETPRIDE	01/16/2018	Regular	0	3.14	88710
00447	FREE PRESS	01/16/2018	Regular	0	47.03	88701
00447	FREE PRESS	01/16/2018	Regular	0	295.63	88711
00462	G & K SERVICES	01/16/2018	Regular	0	66.69	88712
00506	GREATER MANKATO GROWTH, INC.	01/16/2018	Regular	0	30,615.73	88713
00534	HART'S AUTO SUPPLY	01/16/2018	Regular	0	118.00	88702
00797	MAC TOOLS DISTRIBUTOR	01/16/2018	Regular	0	29.99	88714
00812	MANKATO BEARING COMPANY	01/16/2018	Regular	0	33.54	88715
00819	MANKATO FORD, INC.	01/16/2018	Regular	0	3,165.28	88703
00819	MANKATO FORD, INC.	01/16/2018	Regular	0	494.15	88716
00847	MATHESON TRI-GAS, INC.	01/16/2018	Regular	0	120.99	88704
00871	MEG CORPORATION	01/16/2018	Regular	0	550.00	88717
00963	MINNESOTA BUREAU OF CRIMINAL APPREHEN	01/16/2018	Regular	0	270.00	88705
00917	MINNESOTA CITY/COUNTY MANAGEMENT AS	01/03/2018	Regular	0	185.00	88682
00932	MINNESOTA HERITAGE PUBLISHING	01/03/2018	Regular	0	20.99	88688
02717	NAJWA'S CATERING	01/16/2018	Regular	0	207.10	88718
01063	NORTHERN SEWER EQUIPMENT CO., INC.	01/16/2018	Regular	0	152.10	88719
01106	PETTY CASH	01/16/2018	Regular	0	66.38	88720
01133	POWERPLAN/RDO EQUIPMENT	01/16/2018	Regular	0	260.63	88721
02747	RENT-N-SAVE	01/16/2018	Regular	0	160.00	88722
01286	SKARPOHL PRESSURE WASHER SALES	01/16/2018	Regular	0	21.76	88723
01297	SOUTH CENTRAL COLLEGE	01/03/2018	Regular	0	950.00	88683
01323	SPS COMPANIES, INC.	01/16/2018	Regular	0	42.68	88724
02296	ST. CLOUD STATE UNIVERSITY	01/16/2018	Regular	0	325.00	88725
01336	STAPLES OIL CO., INC.	01/16/2018	Regular	0	659.73	88706
01352	STREICHER'S, INC	01/16/2018	Regular	0	328.00	88726
01432	TWIN RIVERS COUNCIL FOR THE ARTS	01/16/2018	Regular	0	12,000.00	88727
02150	U.S. BANK	01/16/2018	Regular	0	138,412.50	88728
02041	ULINE	01/16/2018	Regular	0	166.30	88707
01457	US HIGHWAY 169 CORRIDOR COALITION	01/16/2018	Regular	0	1,000.00	88729
01467	VARITECH INDUSTRIES, INC.	01/16/2018	Regular	0	401.89	88730
01477	VIKING ELECTRIC SUPPLY, INC.	01/16/2018	Regular	0	105.89	88731
01515	WELLS FARGO BANK, N.A.	01/16/2018	Regular	0	1,600.00	88732
01517	WELLS FARGO CORPORATE TRUST SERVICE	01/16/2018	Regular	0	177,398.13	88733
01525	WEST CENTRAL SANITATION, INC.	01/16/2018	Regular	0	26,547.08	88708
01557	XCEL ENERGY	01/03/2018	Regular	0	20,644.75	88686
00062	AMERICAN PAYMENT CENTERS	01/02/2018	Bank Draft	0	93.00	DFT0001691
00182	BOYER TRUCKS	01/04/2018	Bank Draft	0	55.79	DFT0001703
00182	BOYER TRUCKS	01/09/2018	Bank Draft	0	63.41	DFT0001712
02740	BRANDT PRINTING	12/29/2017	Bank Draft	0	52.50	DFT0001687
00241	CHARTER COMMUNICATIONS	01/08/2018	Bank Draft	0	496.58	DFT0001714

02058	CONSOLIDATED COMMUNICATIONS	01/08/2018	Bank Draft	0	3,156.31	DFT0001715
02058	CONSOLIDATED COMMUNICATIONS	01/09/2018	Bank Draft	0	259.41	DFT0001716
02058	CONSOLIDATED COMMUNICATIONS	01/09/2018	Bank Draft	0	40.04	DFT0001717
02058	CONSOLIDATED COMMUNICATIONS	01/09/2018	Bank Draft	0	40.93	DFT0001718
02058	CONSOLIDATED COMMUNICATIONS	01/09/2018	Bank Draft	0	30.92	DFT0001719
02058	CONSOLIDATED COMMUNICATIONS	01/09/2018	Bank Draft	0	42.94	DFT0001720
02058	CONSOLIDATED COMMUNICATIONS	01/09/2018	Bank Draft	0	30.92	DFT0001721
00311	CULLIGAN WATER CONDITIONING	01/05/2018	Bank Draft	0	26.75	DFT0001707
00311	CULLIGAN WATER CONDITIONING	01/05/2018	Bank Draft	0	27.00	DFT0001708
00608	INGRAM LIBRARY SERVICES	01/10/2018	Bank Draft	0	934.55	DFT0001724
00617	INTERNATIONAL INSTITUTE OF MUNICIPAL CLI	01/09/2018	Bank Draft	0	185.00	DFT0001713
00733	LAKES GAS CO #10	01/05/2018	Bank Draft	0	85.39	DFT0001706
00883	MID-STATES ORGANIZED CRIME	01/02/2018	Bank Draft	0	150.00	DFT0001689
00923	MINNESOTA DEPARTMENT OF LABOR & INDUS	01/08/2018	Bank Draft	0	100.00	DFT0001709
00923	MINNESOTA DEPARTMENT OF LABOR & INDUS	01/09/2018	Bank Draft	0	1,871.70	DFT0001710
01137	PRAXAIR DISTRIBUTION, INC	01/04/2018	Bank Draft	0	27.70	DFT0001704
01335	STAPLES ADVANTAGE	01/09/2018	Bank Draft	0	202.19	DFT0001711
02178	WASTE MANAGEMENT OF WI-MN	01/02/2018	Bank Draft	0	113.31	DFT0001690
00028	AFFORDABLE TOWING OF MANKATO, INC.	01/18/2018	EFT	0	220.00	554
00105	AUTO VALUE MANKATO	01/18/2018	EFT	0	141.65	555
00142	BETHANY LUTHERAN COLLEGE	01/18/2018	EFT	0	10,562.50	556
00174	BOLTON & MENK, INC.	01/18/2018	EFT	0	31,687.00	557
00216	C & S SUPPLY CO, INC.	01/18/2018	EFT	0	395.69	558
02706	CORE & MAIN LP	01/18/2018	EFT	0	8,084.09	559
00482	GMS INDUSTRIAL SUPPLIES, INC.	01/18/2018	EFT	0	98.05	560
00494	GOPHER STATE ONE-CALL	01/18/2018	EFT	0	58.05	561
00680	J.J. KELLER & ASSOCIATES, INC.	01/18/2018	EFT	0	605.00	562
00657	JT SERVICES	01/18/2018	EFT	0	294.00	563
00691	KENNEDY & KENNEDY LAW OFFICE	01/18/2018	EFT	0	658.62	564
00743	LARKSTUR ENGINEERING & SUPPLY, INC.	01/18/2018	EFT	0	16.73	565
00796	MACQUEEN EQUIPMENT, INC.	01/18/2018	EFT	0	4,629.44	566
00874	MENARDS-MANKATO	01/18/2018	EFT	0	13.99	567
00889	MIDWEST TAPE/HOOPLA	01/18/2018	EFT	0	1,832.41	568
00902	MINNESOTA IRON & METAL CO	01/18/2018	EFT	0	10.00	569
00910	MINNESOTA VALLEY TESTING LAB, INC.	01/18/2018	EFT	0	119.00	570
00956	MINNESOTA WASTE PROCESSING CO.	01/18/2018	EFT	0	21,125.43	571
00975	MORGAN, SHAWN	01/18/2018	EFT	0	34.00	572
02741	MUELLER, THOMAS	01/18/2018	EFT	0	179.00	573
02211	NORLAND, DIANE	01/18/2018	EFT	0	67.85	574
01052	NORTH CENTRAL INTERNATIONAL	01/18/2018	EFT	0	4,018.88	575
01056	NORTH MANKATO FIREMEN'S RELIEF ASSOCIA	01/18/2018	EFT	0	6,907.00	576
01090	PARAGON PRINTING, MAILING & SPECIALTIES	01/18/2018	EFT	0	2,968.67	577
01160	QUALITY OVERHEAD DOOR CO, INC	01/18/2018	EFT	0	90.50	578
01211	RIVER BEND BUSINESS PRODUCTS	01/18/2018	EFT	0	89.50	579
01257	SCHULTZ, BRADLEY S	01/18/2018	EFT	0	179.00	580
00050	ALPHA WIRELESS COMMUNICATIONS	01/18/2018	EFT	0	180.00	581
00063	AMERICAN PEST CONTROL	01/18/2018	EFT	0	65.00	582
00105	AUTO VALUE MANKATO	01/18/2018	EFT	0	319.07	583
00216	C & S SUPPLY CO, INC.	01/18/2018	EFT	0	1,282.08	584
00310	CRYSTEEL TRUCK EQUIPMENT, INC	01/18/2018	EFT	0	265.00	585
00334	DEHEN, MARK	01/18/2018	EFT	0	59.41	586
00463	G & L AUTO SUPPLY, LLC	01/18/2018	EFT	0	98.00	587
00493	GOODWIN, TONY	01/18/2018	EFT	0	300.00	588
02476	HARRISON TRUCK CENTERS	01/18/2018	EFT	0	66.20	589
00691	KENNEDY & KENNEDY LAW OFFICE	01/18/2018	EFT	0	8,647.06	590
00776	LLOYD LUMBER CO.	01/18/2018	EFT	0	224.12	591
00874	MENARDS-MANKATO	01/18/2018	EFT	0	182.96	592
00910	MINNESOTA VALLEY TESTING LAB, INC.	01/18/2018	EFT	0	192.50	593
02323	MOBOTREX	01/18/2018	EFT	0	1,700.00	594
01052	NORTH CENTRAL INTERNATIONAL	01/18/2018	EFT	0	125.10	595
01090	PARAGON PRINTING, MAILING & SPECIALTIES	01/18/2018	EFT	0	1,467.64	596
01099	PET EXPO DISTRIBUTORS	01/18/2018	EFT	0	97.99	597
01211	RIVER BEND BUSINESS PRODUCTS	01/18/2018	EFT	0	422.87	598
					548,259.22	120

Authorization Signatures

All Council

The above manual and regular claims lists for 1-16-18 are approved by:

____

MARK DEHEN- MAYOR

____

DIANE NORLAND- COUNCIL MEMBER

____

WILLIAM STEINER- COUNCIL MEMBER

____

ROBERT FREYBERG- COUNCIL MEMBER

____

JAMES WHITLOCK- COUNCIL MEMBER

RESOLUTION NO.

RESOLUTION APPROVING DONATIONS/CONTRIBUTIONS/GRANTS

WHEREAS, the Minnesota Statute 465.03 and 465.04 allows the governing body of any city, county, school district or town to accept gifts for the benefit of its citizens in accordance with terms prescribed by the donor;

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF NORTH MANKATO, MINNESOTA, that the following donations/contributions/grants are approved as follows:

Donor	**Restriction**	**Amount**
CERT Region Grant	North Mankato Police Station	\$1,000
Shelly Kain	Library-Book Club Bags	\$220.00
Katie Thompson	Library	\$1,000
		\$2,220.00

Adopted by the City Council this 16th day of January 2018.

Mayor

City Clerk

APPOINTMENT MADE JANUARY 16, 2018

1. Appoint JACOB SCHOONOVER to the KTV Advisory Board.

Minnesota NORTH MANKATO

PARK PERMIT

1001 Belgrade Ave
North Mankato, MN
56003 507-625-4141
www.northmankato.com

Permit #: 14 -2018 Start time: 8:00 AM Fee: $ 200.00

Date: 5/12/18 Stop time: 10:00 pm

walk: 11am - 1pm

Shelter: ☒ Spring Lake Shelter #1 ☒ Spring Lake Shelter #2 ☐ Wheeler Park Indoor Shelter

Event Name: MS Walk

Name: Emily Byrne MS Society emily.Byrne@nmss.org

Address: 212th Ave S. Minneapolis, MN 55415

Phone: 612-335-7919 **# of People:**

Use of Tents (or anything requiring staking) ☐ No ☒ Yes ** If Yes, Please contact* ***Gopher State One Call 800-252-1166*** *one week prior to event.*

**Bounce House requires waiver*

Notes:

Alcoholic Beverages (wine & beer only) ☒ No ☐ Yes ** $300 refundable deposit and $30 keg permit*

Please specify: *Cans Keg Catering* (must contact City Hall)*

Audio (requires audio permit) ☐ No ☒ Yes ** If Yes, Please fill out Audio Permit.*

Allowed

- Personal grills
- Keg beer provided a permit is obtained
- Fishing/ice fishing on Ladybug Lake and Spring Lake only
- Pets in Benson Park, Bluff Park and Spring Lake Park provided they are on a 6' leash
- Canoes and kayaks on Ladybug Lake and Spring Lake (children under 12 must be accompanied by an adult and wear a life preserver)
- Hog roasts provided they are on a hard-surfaced lot

Prohibited

- Vehicles are not allowed to be parked or driven on the grass for any reason unless permission is given from the Parks Department.
- Pets (allowed in Benson Park and Bluff Park only)
- Glass containers
- Campfires / Bonfires / Fire Rings
- Snowmobiles, ATVs, golfing, swimming, boating and motorized flotation devices
- Dunk Tanks
- Audio equipment may not be played so loud as to interfere with the reasonable use of the park by others. All audio devices must end at 10 PM

☒ I, the undersigned, understand that the park shelter reservation fee is non-refundable. If prior approval is not obtained for the installation of additional tents or stakes and causes disruption of utility services, I agree to be held liable for any repairs to service lines.

☒ I, the undersigned, have received the Audio Permit Instructions and understand that failure to comply with the audio instructions may terminate the event and prevent future ability to obtain an audio permit.

SIGNED: Emily Byrne 12/18/17

Applicant *Date*

☐ APPROVED ☐ DENIED

☒ REFER TO COUNCIL

City Clerk *Date*

Receipt # ____ X Book ____ Online ____ Park ____ Police *Staff Initials* ____

CITY of Minnesota NORTH MANKATO
1001 Belgrade Avenue
North Mankato, MN 56003
507-625-4141 Fax: 507-625-4151
www.northmankato.com

Audio Permit 14 A *2018*
Park Permit 14 *2018*

Audio Permit

About:
An audio permit is required for anyone operating outdoor amplified sound (i.e., a loudspeaker, public address system, or sound amplifying equipment). All Audio Permits must be approved by the Council. The sound system cannot be operated before 7:00 am or after 10:00 pm. There is a $25 fee.

Audio Permit Responsibilities:

- An onsite event coordinator must be available by mobile during the event.
- An applicant will provide a schedule of any music or entertainment proposed to occur during the event.
- A beginning and end time must be supplied on the application, and the event coordinator must ensure compliance.
- Applicants must comply with City Code Ordinance 90.045 and Minnesota Rules Chapter 7030 which limits noise.
- Noise levels cannot exceed 60 dBA more than 50 percent of the time.

What happens if there is a noise complaint?

- A North Mankato Patrol Officer will meet with the complainant and evaluate and measure the noise using a decibel reader at the location of the complainant.
- If the noise is found out of compliance, the Patrol Officer will contact the onsite event coordinator, and the amplified sound must be turned down.
- If the onsite event coordinator does not comply, the event will be immediately terminated, and the group will be disbursed.
- Failure to comply will affect future ability to obtain an audio permit.

AMPLIFIED SOUND: ☐ LIVE MUSIC/BAND ☒ DJ/KARAOKE MACHINE ☐ OTHER: ______

DATE OF EVENT: 5-12-18
BEGIN TIME: 10 am
END TIME: 12:30 pm

LOCATION / SHELTER: SLP #1 & #2

EVENT NAME: MS Walk

ONSITE COORDINATOR: PRINT NAME: Rachael Grooms

MOBILE NUMBER: 763-614-8191

☒ I, THE UNDERSIGNED, HAVE RECEIVED THE AUDIO PERMIT AND UNDERSTAND THAT FAILURE TO COMPLY WITH THE AUDIO POLICY MAY TERMINATE THE EVENT AND PREVENT FUTURE ABILITY TO OBTAIN AN AUDIO PERMIT.

SIGNATURE: [signature] DATE: 12/10/17

POLICE CHIEF: ______
CITY CLERK: ______ ☐ DENIED ☐ APPROVED

☒ BOOK ☐ POLICE ☐ ONLINE ☐ $25.00 FEE STAFF INTIALS ______

CITY OF Minnesota NORTH MANKATO

PARK PERMIT

1001 Belgrade Ave
North Mankato, MN
56003 507-625-4141
www.northmankato.com

Permit #: 11 -2018 Start time: 6:00 am Fee: $ 100.00

Date: 9/9/18 Stop time: 2:00 pm (Mass @10:00 am)

Shelter: ☐ Spring Lake Shelter #1 ☐ Spring Lake Shelter #2 ☒ Wheeler Park Indoor Shelter

Event Name: Holy Rosary Church Mass + Picnic

Name: Jim Theuninck

Address: 525 Grant Ave.

Phone: 387-6501 **# of People:** 500

Use of Tents (or anything requiring staking) ☐ No ☒ Yes ** If Yes, Please contact **Gopher State One Call** **800-252-1166** one week prior to event.*

**Bounce House requires waiver*

Notes:

Alcoholic Beverages (wine & beer only) ☒ No ☐ Yes ** $300 refundable deposit and $30 keg permit*

Please specify: *Cans* *Keg* *Catering* (must contact City Hall)*

Audio (requires audio permit) ☐ No ☒ Yes ** If Yes, Please fill out Audio Permit.*

Allowed

- Personal grills
- Keg beer provided a permit is obtained
- Fishing/ice fishing on Ladybug Lake and Spring Lake only
- Pets in Benson Park, Bluff Park and Spring Lake Park provided they are on a 6' leash
- Canoes and kayaks on Ladybug Lake and Spring Lake (children under 12 must be accompanied by an adult and wear a life preserver)
- Hog roasts provided they are on a hard-surfaced lot

Prohibited

- Vehicles are not allowed to be parked or driven on the grass for any reason unless permission is given from the Parks Department.
- Pets (allowed in Benson Park and Bluff Park only)
- Glass containers
- Campfires / Bonfires / Fire Rings
- Snowmobiles, ATVs, golfing, swimming, boating and motorized flotation devices
- Dunk Tanks
- Audio equipment may not be played so loud as to interfere with the reasonable use of the park by others. All audio devices must end at 10 PM

☒ I, the undersigned, understand that the park shelter reservation fee is non-refundable. If prior approval is not obtained for the installation of additional tents or stakes and causes disruption of utility services, I agree to be held liable for any repairs to service lines.

☒ I, the undersigned, have received the Audio Permit Instructions and understand that failure to comply with the audio instructions may terminate the event and prevent future ability to obtain an audio permit.

SIGNED: James A Theuninck 1-9-18

Applicant *Date*

☐ APPROVED ☐ DENIED

☒ REFER TO COUNCIL

City Clerk ***Date***

R00116640

Receipt # R00113645 ✓ Book __ Online __ Park __ Police *Staff Initials* __

CITY OF Minnesota NORTH MANKATO
1001 Belgrade Avenue
North Mankato, MN 56003
507-625-4141 Fax: 507-625-4151
www.northmankato.com

Audio Permit 11a - 2018
Park Permit 11 - 2018

Audio Permit

About:

An audio permit is required for anyone operating outdoor amplified sound (i.e., a loudspeaker, public address system, or sound amplifying equipment). All Audio Permits must be approved by the Council. The sound system cannot be operated before 7:00 am or after 10:00 pm. There is a $25 fee.

Audio Permit Responsibilities:

- An onsite event coordinator must be available by mobile during the event.
- An applicant will provide a schedule of any music or entertainment proposed to occur during the event.
- A beginning and end time must be supplied on the application, and the event coordinator must ensure compliance.
- Applicants must comply with City Code Ordinance 90.045 and Minnesota Rules Chapter 7030 which limits noise.
- Noise levels cannot exceed 60 dBA more than 50 percent of the time.

What happens if there is a noise complaint?

- A North Mankato Patrol Officer will meet with the complainant and evaluate and measure the noise using a decibel reader at the location of the complainant.
- If the noise is found out of compliance, the Patrol Officer will contact the onsite event coordinator, and the amplified sound must be turned down.
- If the onsite event coordinator does not comply, the event will be immediately terminated, and the group will be disbursed.
- Failure to comply will affect future ability to obtain an audio permit.

AMPLIFIED SOUND: ☒ LIVE MUSIC/BAND ☐ DJ/KARAOKE MACHINE ☐ OTHER: ____

DATE OF EVENT: 9-9-18
BEGIN TIME: 9:00 am
END TIME: 11:30 am

LOCATION / SHELTER: Wheeler

EVENT NAME: Holy Rosary Church Mass

ONSITE COORDINATOR: PRINT NAME: James Theuninck

MOBILE NUMBER: 507 351-7829

☒ I, THE UNDERSIGNED, HAVE RECEIVED THE AUDIO PERMIT AND UNDERSTAND THAT FAILURE TO COMPLY WITH THE AUDIO POLICY MAY TERMINATE THE EVENT AND PREVENT FUTURE ABILITY TO OBTAIN AN AUDIO PERMIT.

SIGNATURE: James a Theuninck DATE: 1-9-18

POLICE CHIEF: ____

CITY CLERK: ____ ☐ DENIED ☐ APPROVED

☑ BOOK ☐ POLICE ☐ ONLINE ☑ $25.00 FEE STAFF INTIALS ____

CITY OF *Minnesota* NORTH MANKATO
1001 Belgrade Avenue
North Mankato, MN 56003
507-625-4141 Fax: 507-625-4151
www.northmankato.com

Audio Permit 1-27 *2018*
Park Permit ______ *2018*

Audio Permit

About:
An audio permit is required for anyone operating outdoor amplified sound (i.e., a loudspeaker, public address system, or sound amplifying equipment). All Audio Permits must be approved by the Council. The sound system cannot be operated before 7:00 am or after 10:00 pm. There is a $25 fee.

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- If the onsite event coordinator does not comply, the event will be immediately terminated, and the group will be disbursed.
- Failure to comply will affect future ability to obtain an audio permit.

AMPLIFIED SOUND: LIVE MUSIC/BAND
X DJ/KARAOKE MACHINE
OTHER: ______

DATE OF EVENT: Jan 27 + 28
BEGIN TIME: 8:00 am
END TIME: 5:00 pm

LOCATION / SHELTER: Spring Lake Park

EVENT NAME: Anthony Ford Pond Hockey Classic

ONSITE COORDINATOR: PRINT NAME: Jeff Lang

MOBILE NUMBER: 507-277-3762

X I, THE UNDERSIGNED, HAVE RECEIVED THE AUDIO PERMIT AND UNDERSTAND THAT FAILURE TO COMPLY WITH THE AUDIO POLICY MAY TERMINATE THE EVENT AND PREVENT FUTURE ABILITY TO OBTAIN AN AUDIO PERMIT.

SIGNATURE: [signature] DATE: 1-11-18

POLICE CHIEF: [signature] #701

CITY CLERK: ______ DENIED X APPROVED

BOOK X POLICE ONLINE $25.00 FEE STAFF INTIALS ______

CITY OF *Minnesota* NORTH MANKATO

1001 Belgrade Avenue
North Mankato, MN 56003
507-625-4141 Fax: 507-625-4151
www.northmankato.com

Audio Permit 1-26 2018
Park Permit ______ 2018

Audio Permit

About:
An audio permit is required for anyone operating outdoor amplified sound (i.e., a loudspeaker, public address system, or sound amplifying equipment). All Audio Permits must be approved by the Council. The sound system cannot be operated before 7:00 am or after 10:00 pm. There is a $25 fee.

Audio Permit Responsibilities:

- An onsite event coordinator must be available by mobile during the event.
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What happens if there is a noise complaint?

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- If the noise is found out of compliance, the Patrol Officer will contact the onsite event coordinator, and the amplified sound must be turned down.
- If the onsite event coordinator does not comply, the event will be immediately terminated, and the group will be disbursed.
- Failure to comply will affect future ability to obtain an audio permit.

AMPLIFIED SOUND: LIVE MUSIC/BAND
X DJ/KARAOKE MACHINE
OTHER: ______

DATE OF EVENT: Jan 26
BEGIN TIME: 5:00 pm
END TIME: 8:00 pm

LOCATION / SHELTER: New Ice Rinks in Spring Lake Park

EVENT NAME: Anthony Ford East / West Alumni Game

ONSITE COORDINATOR: PRINT NAME: Jeff Lang

MOBILE NUMBER: 507-227-3362

X I, THE UNDERSIGNED, HAVE RECEIVED THE AUDIO PERMIT AND UNDERSTAND THAT FAILURE TO COMPLY WITH THE AUDIO POLICY MAY TERMINATE THE EVENT AND PREVENT FUTURE ABILITY TO OBTAIN AN AUDIO PERMIT.

SIGNATURE: Jeff Lang DATE: 1-11-18

POLICE CHIEF: C. L. #701

CITY CLERK: ______

DENIED X APPROVED

BOOK X POLICE ONLINE $25.00 FEE

STAFF INTIALS ______

RESOLUTION ___

A RESOLUTION CLOSING AND TRANSFERRING CITY FUNDS

WHEREAS, sound financial planning by the City Council and Staff is the purpose behind the transfer and closing of funds; and

WHEREAS, after the completion of construction projects or inactivity of certain funds, the Finance Director recommends that the following funds be closed and their remaining balances, if any, to be transferred effective December 31, 2017:

- Close Fund 430 (2010 Construction Fund) – 12/31/17 Balance: $0
- Close Fund 431 (2011 Construction Fund) – 12/31/17 Balance: $(79,651)
    - Transfer appropriate funds ***from*** Fund 221 (Sales Tax Fund) to eliminate deficit
- Close Fund 432 (2012 Construction Fund) – 12/31/17 Balance: $0
- Close Fund 433 (2013 Construction Fund) – 12/31/17 Balance: $0
- Close Fund 434 (2014 Construction Fund) – 12/31/17 Balance: $175,175
    - Transfer any remaining funds ***to*** Fund 312 (2014A Debt Service Fund)
- Close Fund 861 (Public Access) – 12/31/17 Balance: $(206,268.32)
    - Transfer appropriate funds ***from*** Fund 862 (Public Access Equipment Replacement) to eliminate deficit
- Close Fund 862 (Public Access Equipment Replacement) – 12/31/17 Balance: $309,113.65
    - Transfer any remaining funds after Fund 862 transfer ***to*** Fund 101 (General Fund)

NOW THEREFORE BE IT RESOLVED, that the City Council of the City of North Mankato hereby approve the closing and transferring of these funds as of December 31, 2017.

Adopted by the City Council this ___ day of ________, 2018.

____

Mayor

____

City Clerk

CITY OF NORTH MANKATO

REQUEST FOR COUNCIL ACTION

Agenda Item #12A	Department: Community Dev.	Council Meeting Date: 1/16/18

TITLE OF ISSUE: Consider Approving Recommendations for the Intersection Control Evaluations for Lor Ray/ Carlson Drive and Lookout/Howard Drive Studies.

BACKGROUND AND SUPPLEMENTAL INFORMATION: Please review the Planning Commission Report. Community Development Director Fischer will report on the Planning Commissions findings. City Staff recommends approving the Lor Ray/Carlson report and recommends the Lookout/Howard Drive report be reexamined by the consultant to address UPS access.

If additional space is required, attach a separate sheet

REQUESTED COUNCIL ACTION: Consider Planning Commission recommendations.

Motion By: ______________________
Second By: ______________________

Vote Record:

Aye	Nay	
____	____	Whitlock
____	____	Steiner
____	____	Norland
____	____	Freyberg
____	____	Dehen

SUPPORTING DOCUMENTS ATTACHED

Resolution	Ordinance	Contract	Minutes	Map
☐	☐	☐	☐	☐

Other (specify) Planning Commission Report

☐ Workshop
☒ Regular Meeting
☐ Special Meeting

☐ Refer to: ______________________
☐ Table until: ______________________
☐ Other: ______________________

REVIEW OF INTERSECTION CONTROL EVALUATIONS

THE CITY OF NORTH MANKATO

SUBJECT:	Intersection Control Evaluations
APPLICANT:	Mankato/North Mankato MAPO
LOCATION:	Lookout/ Howard – Lor Ray/Carlson
EXISTING ZONING:	NA
DATE OF HEARING:	January 11, 2018
DATE OF REPORT:	January 3, 2018
REPORTED BY:	Mike Fischer, Community Development Director

APPLICATION SUBMITTED
Request to review Intersection Control Evaluations

COMMENT
In partnership with the Mankato/North Mankato Area Planning Organization (MAPO), SRF Consulting Group was hired to prepare Intersection Control Evaluations (ICE) for the intersections of Lookout Drive/Howard Drive and Lor Ray Drive/Carlson Drive. The reports are attached.

The purpose of the evaluations was to analyze the intersection control alternatives for each intersection to identify the long term preferred intersection control. Types of control alternatives which were considered included:

- All-way stop control
- Roundabout control
- Traffic signal control
- Side-street stop control

Regarding the Lookout/Howard intersection, the conclusions and recommendations (page 17), state that maintaining the existing all-way stop control is recommend since this type of control would have no capital costs, require no right-of-way and have low delay. However, the recommendation states that a roundabout should be considered in the future if safety issues develop or traffic volumes increase more than what was forecasted. On page 6 of the report or Figure 3, a rendering of a roundabout is shown at this intersection. As the roundabout shown would require the closure of a Howard Drive access for UPS, staff contacted UPS to obtain their input and attached is a response from them.

Regarding the Lor Ray Drive/Carlson Drive report, the conclusion and recommendations (page 17) state a mini-roundabout is recommended as the preferred long-term intersection control. A rendering of the mini-roundabout is shown on page 6 of the report or as Figure 3.

RECOMMENDATION

Staff recommends approval of the Lor Ray/Carlson report and recommends the Lookout/Howard report be reexamined by the consultant to address the access issue for UPS.

Michael Fischer

From: jzangl@ups.com
Sent: Wednesday, December 27, 2017 9:15 AM
To: michaelf@northmankato.com
Subject: transportation study

Hello! We reviewed the diagram and the suggested changes. We feel that we will have safety concerns if we lose the first entrance. Our customers use the first driveway. We want to keep the general public out of the flow of our vehicles, especially our tractor trailers. In addition to safety concerns, we would have congestion on our lot with all of our equipment and the general public. Please call me if you want to discuss further. You can reach me at (507) 625-1907. Thanks again for asking us for our opinion.

Have a wonderful new year,

Joy Zangl
UPS Business manager

Intersection Control Evaluation

Lookout Drive at Howard Drive

in North Mankato, Nicollet County, Minnesota

Mankato/North Mankato Area Planning Organization

SRF Consulting Group, Inc.
Engineers
Planners
Designers

October 2017

SRF No. 10279

Intersection Control Evaluation

Lookout Drive at Howard Drive

Proposed Letting Date: TBD

Report Certification:

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Adrian S. Potter	42785
Print Name	Reg. No.
Signature	Date

Approved:

City of North Mankato City Engineer	Date
Nicollet County Public Works Director	Date

Table of Contents

H:\Projects\10000\10279\SD\3 Report\Lookout Drive at Howard Drive\ICE Lookout Drive at Howard Drive 2017-10-02.docx

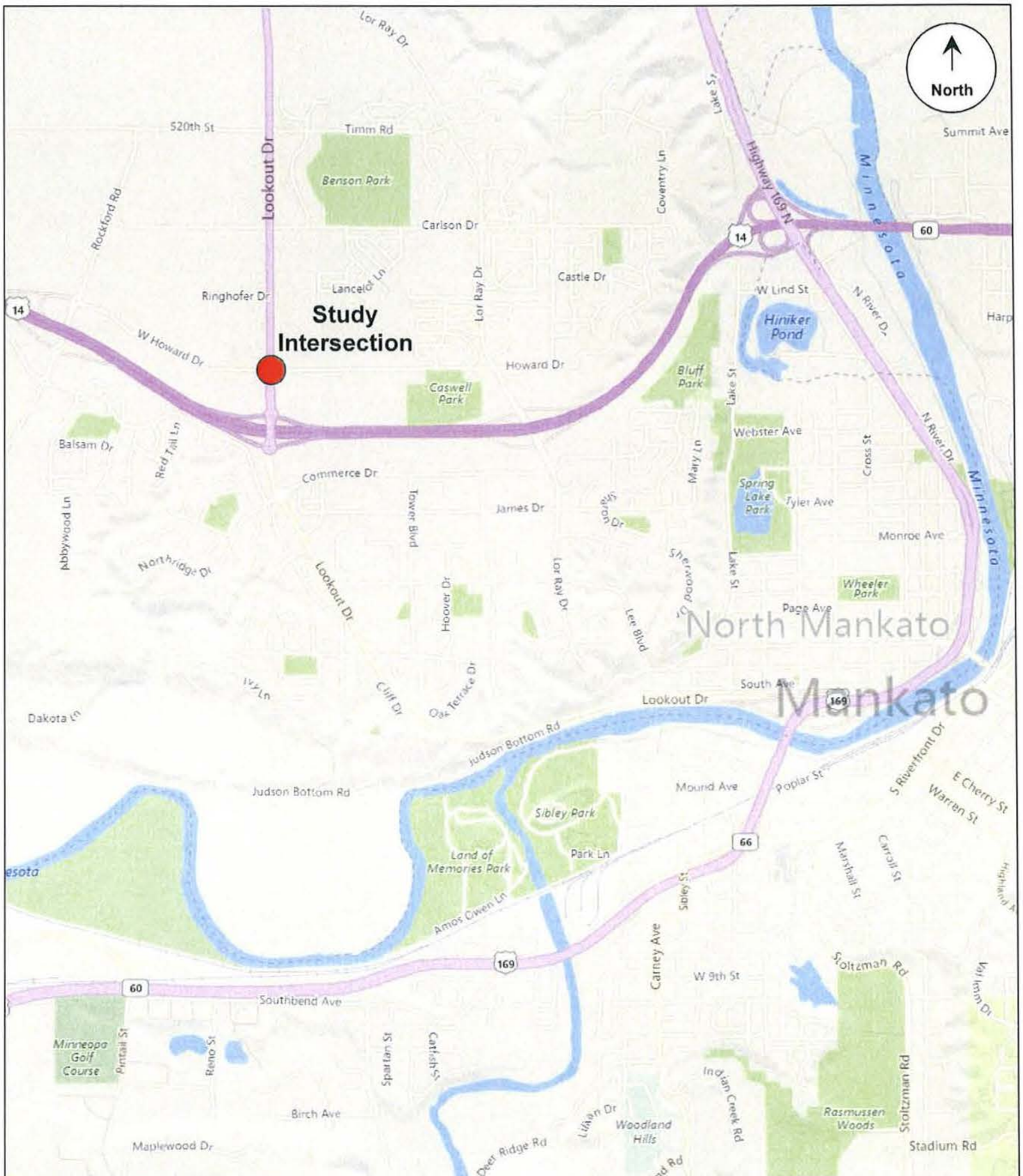
Introduction

This report contains the intersection control evaluation results for the Lookout Drive (CSAH 13) at Howard Drive intersection in North Mankato, Nicollet County, Minnesota (see Figure 1). The purpose of the evaluation was to analyze the intersection control alternatives for the intersection to identify the long-term preferred intersection control. The following intersection control alternatives were considered applicable and are analyzed within this report:

- All-Way Stop Control
- Roundabout Control
- Traffic Signal Control

A detailed warrants analysis, operational analysis, safety analysis, and planning-level cost analysis were performed to determine the preferred intersection control alternative. In addition to these analyses, other factors considered for this evaluation that were applicable to determining the long-term preferred intersection control included:

- Right-of-Way Considerations
- Transportation System Considerations
- Pedestrian and Bicycle Considerations
- Local Acceptance



SRF Consulting Group, Inc.

10279
September 2017

Study Intersection

Figure 1

Intersection Control Evaluation
Lookout Drive at Howard Drive
North Mankato, Nicollet County, Minnesota

Existing Intersection Characteristics

Existing Conditions

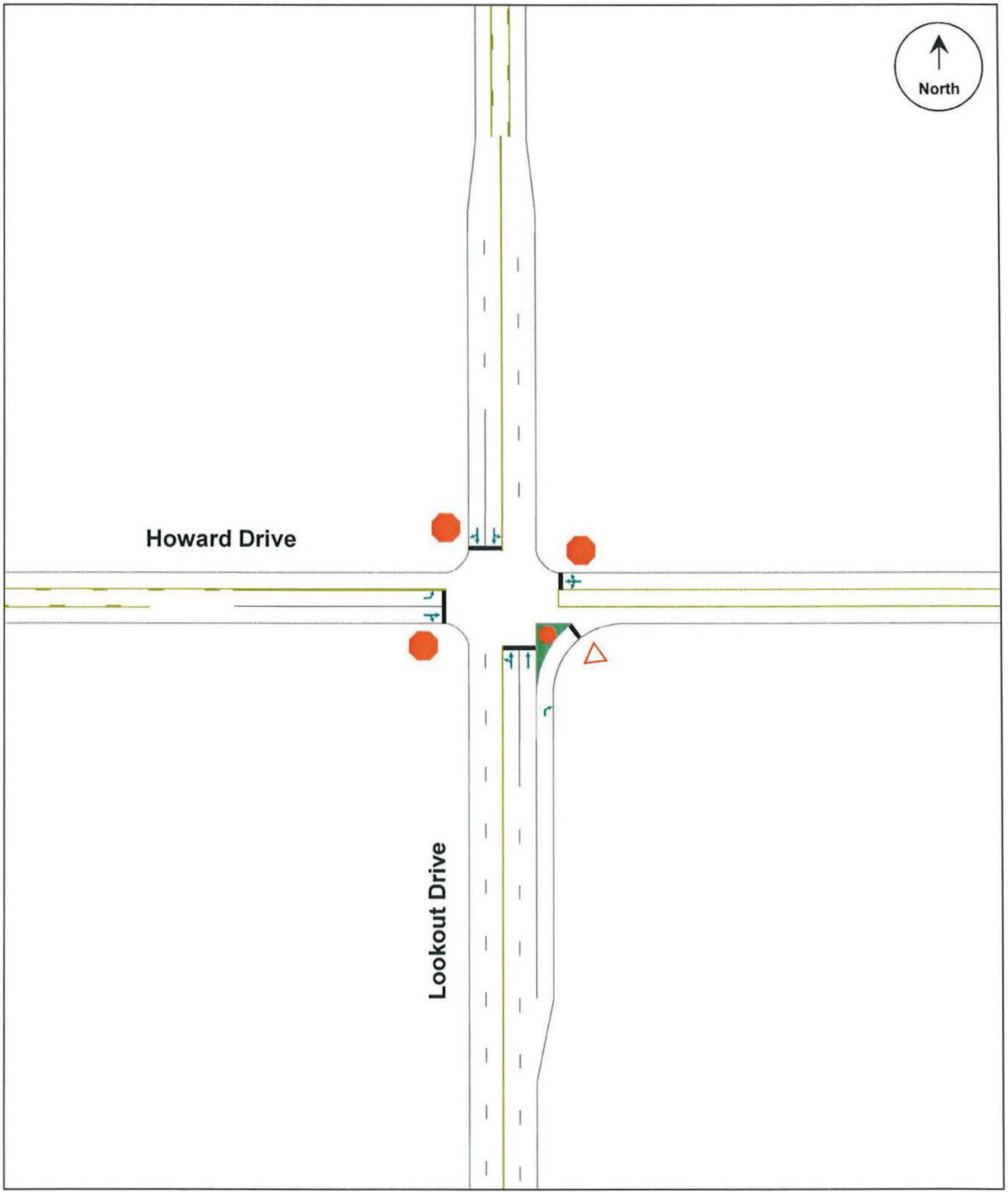
The study intersection is located in the City of North Mankato, Nicollet County as shown in Figure 1. Lookout Drive (CSAH 13) is a four-lane roadway south of the study intersection and transitions to a three-lane roadway immediately north of the intersection. Lookout Drive is functionally classified as a minor arterial. Lookout Drive has a posted speed limit of 45 mph. West of the intersection, Howard Drive is a three-lane roadway and is functionally classified as a local road, while to the east Howard Drive is a two-lane roadway that is functionally classified as a major collector. Howard Drive has a posted speed limit of 30 mph. The intersection of Lookout Drive and Howard Drive is currently all-way stop controlled. There are sidewalks/trails on both sides of Howard Drive and Lookout Drive, except for the north side of Lookout Drive west of the study intersection. There are marked pedestrian crossings on all four legs of the intersection. The adjacent area has primarily industrial land uses. The existing lane configurations for the Lookout Drive at Howard Drive intersection are listed in Table 1 below and are shown in Figure 2.

Table 1. Existing Conditions

Approach	Configuration
Northbound Lookout Drive	One shared thru/left-turn lane, one thru lane, and one channelized right-turn lane
Southbound Lookout Drive	One shared thru/left-turn lane and one shared thru/right-turn lane
Eastbound Howard Drive	One left-turn lane and one shared thru/right-turn lane
Westbound Howard Drive	One shared lane (all movements)

Crash History

Crash data was obtained from the Minnesota Crash Mapping Analysis Tool (MnCMAT) database for a five-year period from 2011 to 2015. There were three recorded crashes at the study intersection during the analysis period. Detailed crash data is provided in the Appendix. This results in a crash rate of 0.19 crashes per million entering vehicles, which is below the statewide average of 0.35 for all-way stop controlled intersections and well below the critical crash rate of 0.76 (0.995 level of confidence) for this intersection.



Existing Conditions

Figure 2

Intersection Control Evaluation
Lookout Drive at Howard Drive
North Mankato, Nicollet County, Minnesota

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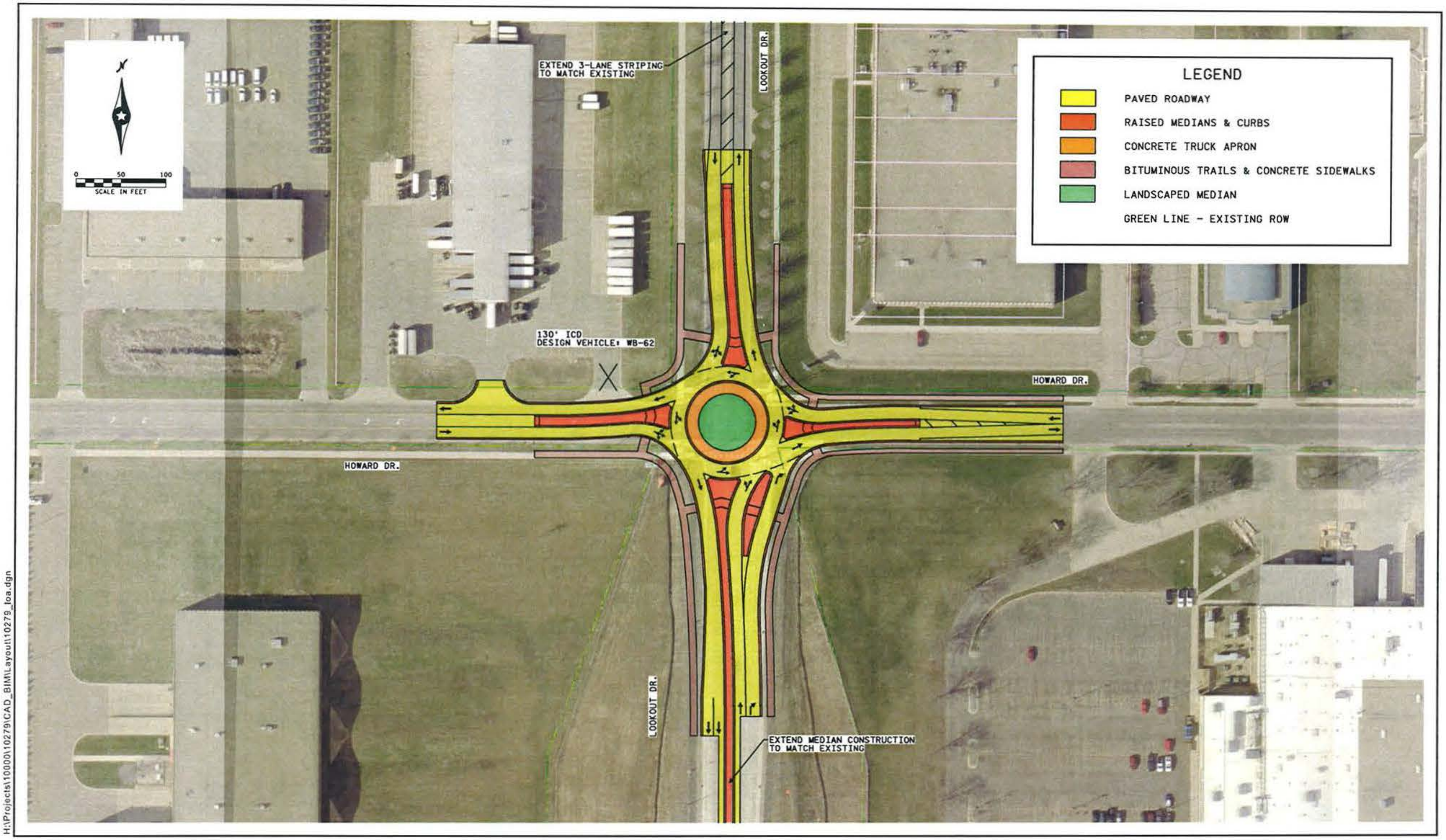
Future Conditions

Based on discussions with City and County staff in the summer of 2017, no short-term improvements to Lookout Drive, Howard Drive, or the study intersection are planned. For the alternatives analysis, the existing lane configurations under all-way stop control (listed in Table 1 and shown in Figure 2) were assumed to be the same for the traffic signal control alternative. The lane configurations for the roundabout control alternative are listed in Table 2 below and are shown in Figure 3.

Table 2. Proposed Lane Configurations for Roundabout Control Alternative

Approach	Configuration
Northbound Lookout Drive	One shared thru/left-turn lane and one right-turn bypass lane
Southbound Lookout Drive	One shared lane (all movements)
Eastbound Howard Drive	One shared lane (all movements)
Westbound Howard Drive	One shared lane (all movements)



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Roundabout Control Alternative

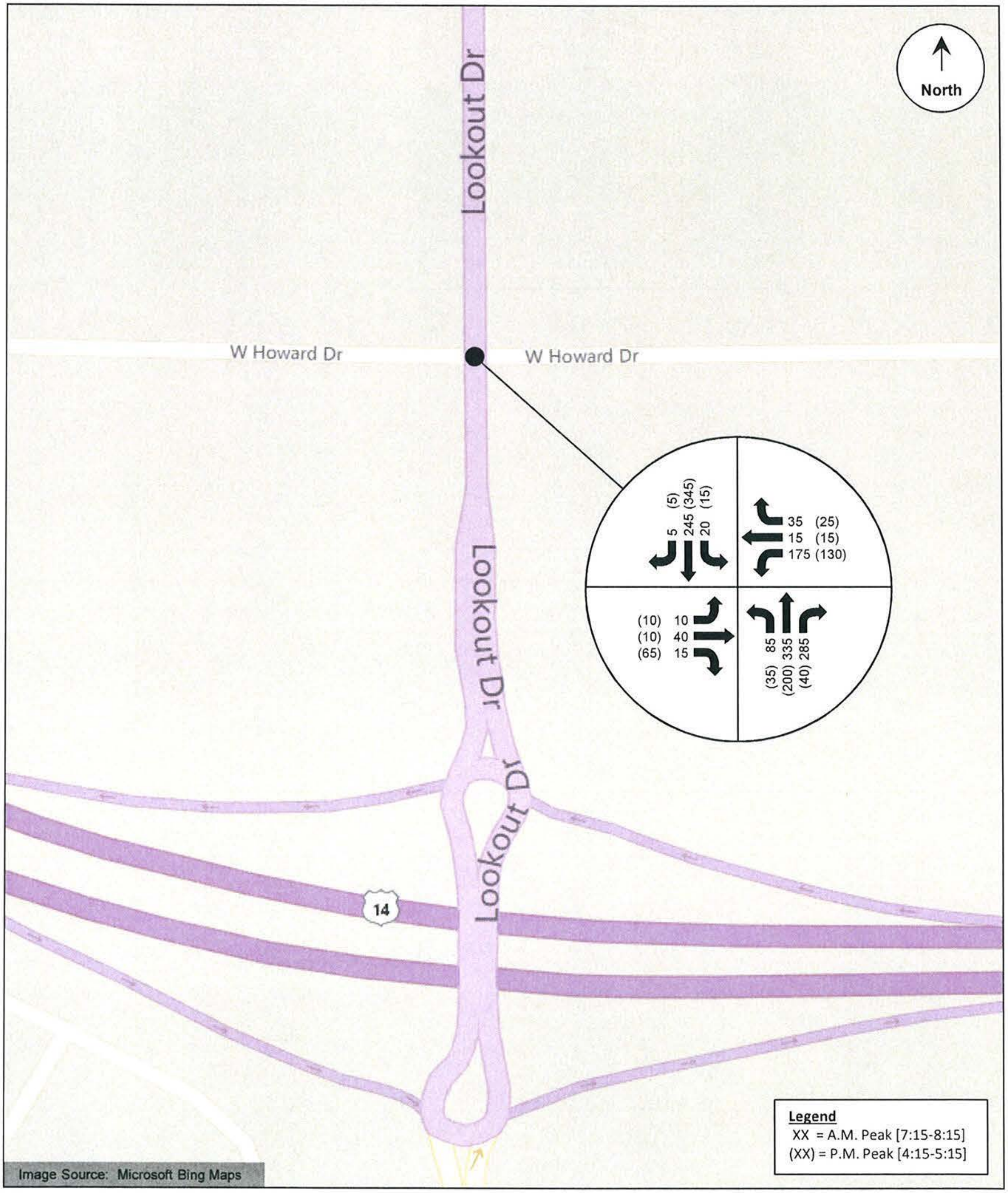
Intersection Control Evaluation

Lookout Drive at Howard Drive

Figure 3

Traffic Volumes

Hourly traffic volumes including the existing a.m. and p.m. peak hour were collected in April 2017 by SRF prior to the conclusion of the spring term at Minnesota State University and are shown in Figure 4. Pedestrian and bicycle volumes were also collected. Growth rates from the MAPO 2045 Transportation Plan (1.2% for the east and west legs, and 1.0% for the north and south legs) were used as the basis for traffic forecasts. The growth rates for the north and south legs were adjusted to 2.0% and 1.5%, respectively, based on significant proposed housing development north of the study intersection in the vicinity of Lookout Drive and Timm Road. These growth rates were used to determine Forecasted Year 2037 peak hour turning movement volumes, which are shown in Figure 5.



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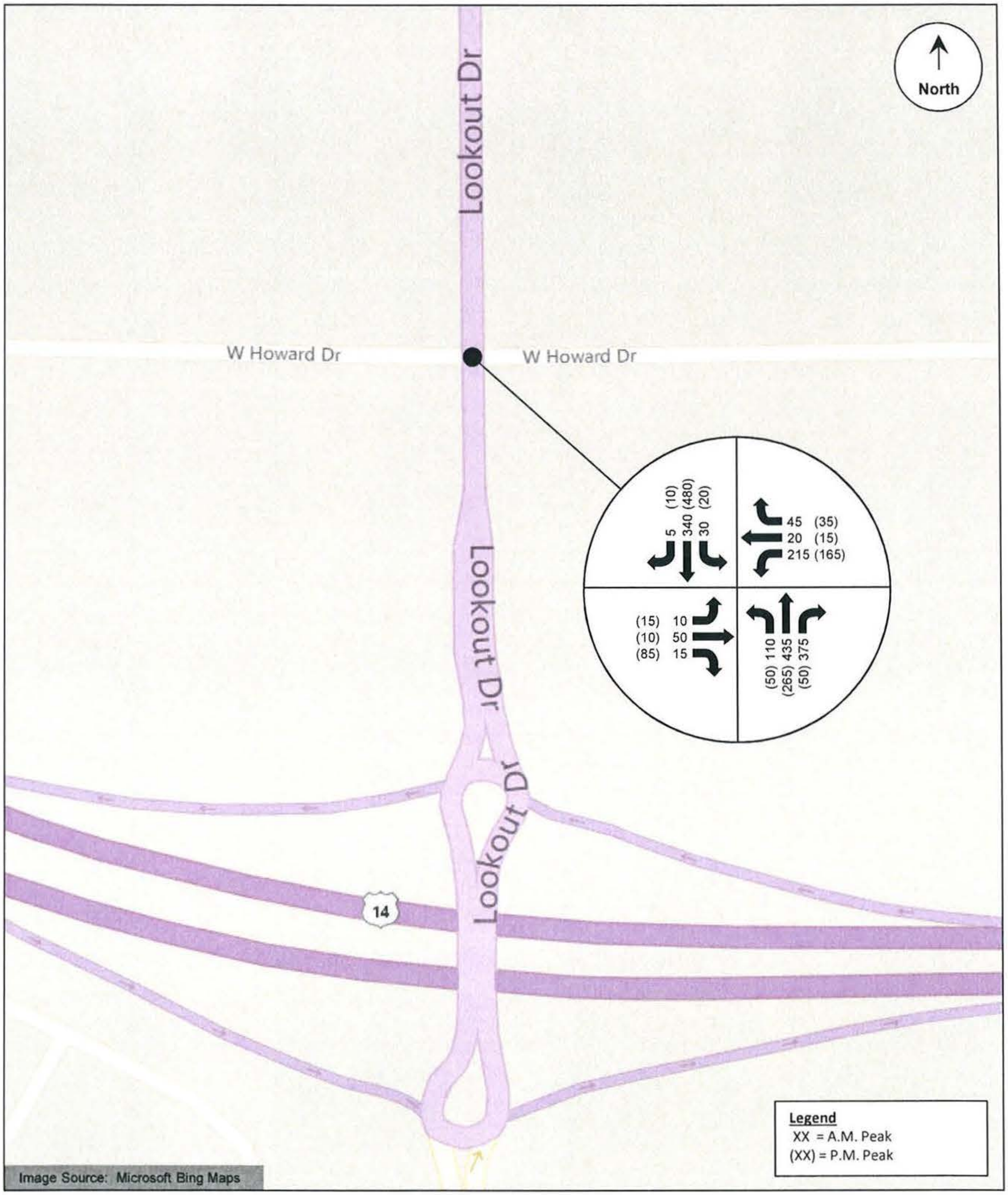
Existing Year 2017 Volumes

Figure 4

Intersection Control Evaluation
Lookout Drive at Howard Drive
North Mankato, Nicollet County, Minnesota



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Forecasted Year 2037 Volumes

Figure 5

Intersection Control Evaluation
Lookout Drive at Howard Drive
North Mankato, Nicollet County, Minnesota

Analysis of Alternatives

The analysis of the all-way stop control, traffic signal control, and roundabout control alternatives included a warrants analysis, operational analysis, planning-level crash analysis, and a planning-level cost analysis. Existing Year 2017 and Forecasted Year 2037 volumes with proposed lane configurations discussed previously were used for the analysis.

Warrants Analysis

A warrants analysis was performed for the traffic signal control alternative as outlined in the February 2015 *Minnesota Manual on Uniform Traffic Control Devices* (MN MUTCD). The signal warrants analysis was based on the assumptions shown in Table 3.

Table 3. Warrants Analysis Assumptions

Approach	Geometry	Speed
Northbound Major Street (Lookout Drive)	2 or more approach lanes	45 mph
Southbound Major Street (Lookout Drive)	2 or more approach lanes	45 mph
Eastbound Minor Street (Howard Drive)	1 approach lane	30 mph
Westbound Minor Street (Howard Drive)	1 approach lane	30 mph

Northbound right-turns were excluded from the analysis because of the channelized right-turn lane with a long storage length. Minor street right-turns were included in the analysis because of the shared eastbound thru/right-turn lane and the shared westbound lane. The eastbound approach was considered a one lane approach because of the low left-turn volume. Table 4 provides a summary of the results of the warrants analysis. The detailed warrants analysis can be found in the Appendix.

Table 4. Warrants Analysis Results

MN MUTCD Warrant	Hours Required	Existing Year 2017 Volumes		Forecasted Year 2037 Volumes	
		Hours Met	Warrant Met	Hours Met	Warrant Met
Warrant 1A: Minimum Vehicular Volume	8	3	No	6	No
Warrant 1B: Interruption of Continuous Traffic	8	0	No	5	No
Warrant 1C: Combination of Warrants	8	2	No	7	No
Warrant 2: Four-Hour Volume	4	2	No	5	Yes
Warrant 3B: Peak-Hour Volume	1	0	No	2	Yes
Multi-way Stop Applications Condition C	8	7	No	8	Yes

Warrants 4-9 were investigated but were determined to be not applicable. Results of the warrants analysis indicate that Existing Year 2017 volumes do not satisfy any MN MUTCD traffic signal warrants, while Forecasted Year 2037 volumes satisfy the MN MUTCD warrant requirements for traffic signal Warrants 2 and 3B. The intersection meets multi-way stop warrants with Forecasted Year 2037 volumes.

Operational Analysis

An initial planning-level analysis was performed for the roundabout control alternative based on methods found in the *Highway Capacity Manual, Sixth Edition* (Transportation Research Board, 2016). The analysis involved testing the theoretical capacity of a single-lane roundabout against the Forecasted Year 2037 entering and circulating volumes. As shown in Chart 1, the Forecasted Year 2037 volumes do not exceed the theoretical capacity of a single-lane roundabout. Therefore, a single lane roundabout was selected for further analysis. A separate northbound right-turn bypass lane was included because of the existing south leg roadway configuration and the high northbound right-turn volume.

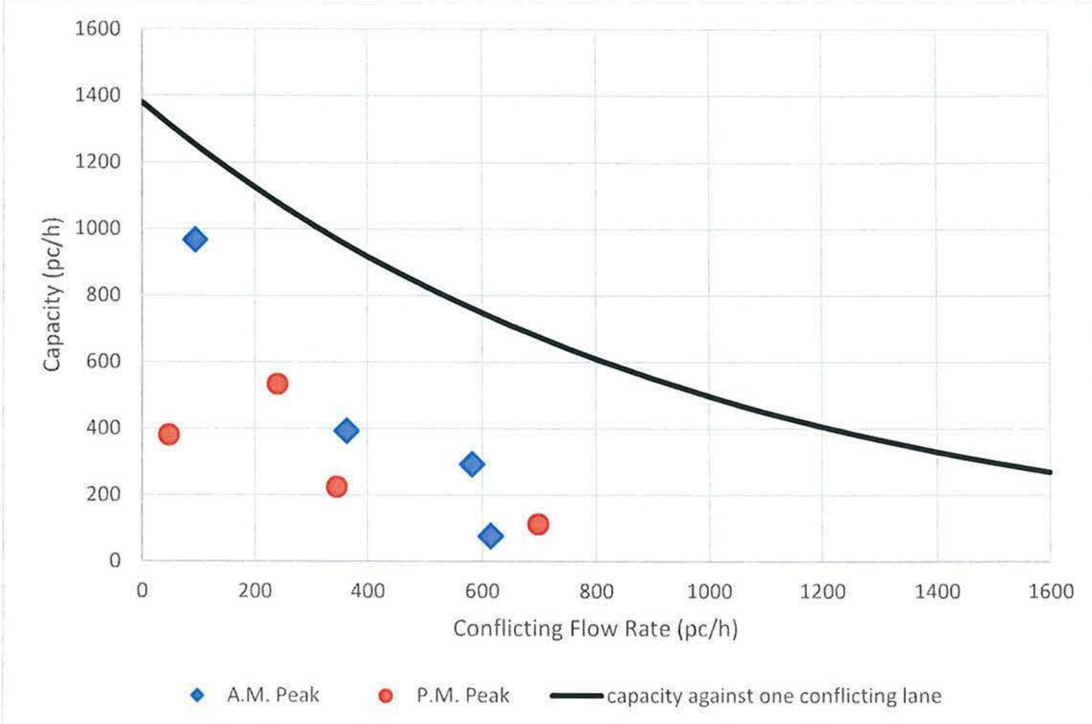


Chart 1. Single-Lane Roundabout Entry Lane Capacity (Forecasted Year 2037 volumes)

Operational analysis of the roundabout control alternative was performed using Highway Capacity Software (HCS). HCS is based on methodologies found in the *Highway Capacity Manual, 6th Edition* (HCM). It is important to note that HCS only reports "stop" or "control" delay. Therefore, to determine the total delay, "geometric" delay, or delay due to vehicle deceleration and acceleration through an intersection, must be added to the "stop" or "control" delay.

The detailed operational analysis of all-way stop control and traffic signal control was performed using methods outlined in the HCM using Synchro/SimTraffic. Synchro/ SimTraffic can calculate various measures of effectiveness such as control delay, queuing, and total travel time impacts. SimTraffic results are reported for the analysis.

The operational analysis identified a Level of Service (LOS), which indicates how well an intersection is operating based on average delay per vehicle. Intersections are given a ranking from LOS A to LOS F. LOS A indicates the best traffic operation and LOS F indicates an intersection where demand exceeds capacity. LOS A through LOS D are generally considered acceptable.

Table 5 and Table 6 provide a summary of the operational analysis for Existing Year 2017 and Forecasted Year 2037 conditions, respectively. Detailed operational analysis results can be found in the Appendix.

Table 5. Existing Year 2017 Operational Analysis Results

Alternative	Analysis Tool	A.M. Peak		P.M. Peak	
		Delay (1) (sec/veh)	LOS	Delay (1) (sec/veh)	LOS
All-Way Stop Control	Synchro/SimTraffic	4/5	A/A	3/4	A/A
Traffic Signal Control	Synchro/SimTraffic	5/9	A/A	4/8	A/A
Roundabout Control	HCS	6/7	A/A	6/7	A/A

(1) Control/stop delay is reported. Overall results are followed by the worst approach results.

Table 6. Forecasted Year 2037 Operational Analysis Results

Alternative	Analysis Tool (Variation)	A.M. Peak		P.M. Peak	
		Delay (1) (sec/veh)	LOS	Delay (1) (sec/veh)	LOS
All-Way Stop Control	Synchro/SimTraffic	6/9	A/A	4/5	A/A
Traffic Signal Control	Synchro/SimTraffic	6/11	A/B	5/8	A/A
Roundabout Control	HCS	8/10	A/A	7/9	A/A

(1) Control/stop delay is reported. Overall results are followed by the worst approach results.

Results of the operational analysis indicate that under the existing all-way stop control, the intersection operates with an acceptable level of service, and would continue to do so under Forecasted Year 2037 conditions. The traffic signal control and roundabout control alternatives would operate with acceptable levels of service under Forecasted Year 2037 conditions.

Safety Analysis

A crash analysis was performed to determine the projected crashes per year for Existing Year 2017 and Forecasted Year 2037 conditions for the study intersection. Crash rates from the MnDOT Green Sheets (2011 to 2015 data) were used for the crash analysis of the alternatives. According to *NCHRP Report 672 Roundabouts: An Informational Guide, Second Edition* (Transportation Research Board, 2010), the conversion of an all-way stop controlled intersection to a roundabout has an insignificant impact on the crash rate. Therefore, the crash rate for all-way stop control was used for the roundabout control alternative. A summary of the crash analysis is shown in Table 7.

Table 7. Crash Analysis Results

Alternative	Intersection AADT (2017)	Intersection AADT (2037)	Crash Rate	Projected Crashes/Year (2017)	Projected Crashes/Year (2037)
All-Way Stop Control	8,700	11,500	0.35	2	2
Traffic Signal Control			0.52	2	3
Roundabout Control			0.35	2	2

Based on the results of the crash analysis, the all-way stop control and roundabout control alternatives are anticipated to have slightly less crashes than the traffic signal control alternative.

Studies have determined that the installation of a roundabout can improve overall safety of an intersection when compared to other forms of intersection control. Roundabouts typically have fewer conflict points than conventional intersections and the geometry of a roundabout induces lower speeds for vehicles approaching and traversing an intersection. With lower speeds, the severity of the crashes is decreased. A roundabout virtually eliminates right-angle and left-turn head-on crashes. Studies have shown the frequency of injury crashes is reduced more than property damage only crashes.

At a roundabout, drivers must be aware of traffic traveling around the circle when merging on or off the roundabout. Conversely, drivers at a traditional intersection must be aware of vehicles at all approaches and the movements they are making. This issue is most prevalent at stop-controlled intersections where there is not a traffic signal to control vehicle movements.

Planning-Level Cost Analysis

Capital Costs

The intersection is currently all-way stop controlled, therefore with the "no build" alternative there would be no cost to continue with this type of intersection control. The traffic signal control alternative can utilize the existing geometric conditions, therefore the cost for this alternative would only be the cost of installing a traffic signal system, along with ADA improvements. The roundabout control alternative would require substantial reconstruction at and leading up to the intersection, which results in a much higher construction cost than the traffic signal control alternative.

Operation and Maintenance Costs

Traffic signals typically have higher operation and maintenance costs than roundabouts because of the electricity required to operate the signal and routine maintenance required to keep the signal in operation. Operation and maintenance costs associated with a roundabout can vary depending on the amount of illumination required or landscaping alternatives used for the center island. All-way stop control operation and maintenance costs are only the ongoing costs of maintaining the stop signs and pavement markings.

A cost analysis summary is shown in Table 8. Detailed cost analysis results can be found in the Appendix.

Table 8. Cost Analysis Summary

Alternative	Capital Costs (1)	Operation/Maintenance Costs (annual)
All-Way Stop Control	$0	< $200
Traffic Signal Control	$300,000	$4,000-$6,000
Roundabout Control	$1,260,000	$500-$1,000

(1) Does not include engineering or right-of-way costs.

Alternatives Assessment

Right-of-Way Considerations

The roadway geometry for the all-way stop control and traffic signal control alternatives would use existing conditions and therefore no additional right-of-way would be required. Construction of a roundabout at the study intersection would require additional right-of-way in all four quadrants of the intersection.

Transportation System Considerations

There are several roundabouts immediately south of the intersection at the TH 14 interchange and immediately west of the intersection along County Road 41. Roundabout control was also recommended for the Lor Ray Drive and Howard Drive intersection east of the subject intersection. The roundabout would require closure of one of the UPS facility driveways. No significant queues are expected with any of the alternatives.

Pedestrian and Bicycle Considerations

As previously mentioned, there are currently sidewalks/trails on both sides of Howard Drive and Lookout Drive, except for the north side of Lookout Drive to the west of the study intersection. There are marked pedestrian crossings on all four legs of the intersection. Pedestrian accommodations can be provided regardless of the selected intersection control.

The design of a roundabout allows pedestrians to cross one direction of traffic at a time with a refuge space in the middle of each leg of the roundabout, and these short crossing distances and reduced travel speeds of vehicle traffic improve pedestrian safety. However, their route is slightly longer since they are kept to the outside of the inscribed circle.

The design of a traffic signal can create a safe environment for pedestrian crossings with the use of pedestrian signal phasing. This phasing allows pedestrians to safely cross an intersection while vehicular movements are served. Although signalized intersections can provide indications showing pedestrian right-of-way, potential conflicts can come from red-light running through vehicles and permissive turning traffic.

The all-way stop alternative provides a safety benefit for pedestrians by having all vehicular movements stop; however, there are safety concerns for pedestrians where all road users expect other road users to stop. Most vehicle-pedestrian collisions at all-way stop controlled intersections are a result of either vehicles not stopping when pedestrians assume they are, or pedestrians not paying attention to vehicles approaching the intersection.

Local Acceptance

Drivers are familiar with traveling through all-way stop controlled and signalized intersections since there are many intersections in the area under these types of traffic control. Drivers are also familiar with traveling through roundabout controlled intersections since there are many existing roundabouts throughout the greater Mankato area.

Conclusions and Recommendations

The following conclusions are provided for this intersection control evaluation for the Lookout Drive (CSAH 13) at Howard Drive intersection in North Mankato, Nicollet County, Minnesota:

- *Warrants Analysis*
  Results of the warrants analysis indicate that Existing Year 2017 volumes do not satisfy any MN MUTCD traffic signal warrants, while Forecasted Year 2037 volumes satisfy the MN MUTCD warrant requirements for traffic signal Warrants 2 and 3B.

- *Operational Analysis*
  Results of the operational analysis indicate that under the existing all-way stop control, the intersection operates with an acceptable level of service, and would continue to do so under Forecasted Year 2037 conditions. The traffic signal control and roundabout control alternatives would also operate with acceptable levels of service under forecasted conditions.

- *Safety Analysis*
  Based on the results of the crash analysis, the all-way stop control and roundabout control alternatives are anticipated to have slightly less crashes than the traffic signal control alternative. Roundabouts typically have fewer conflict points than conventional intersections and the geometry of a roundabout induces lower speeds for vehicles approaching and traversing an intersection. With lower speeds, the severity of the crashes is decreased.

- *Planning-Level Cost Analysis*
  There would be no cost to continue with the existing all-way stop control. The traffic signal control alternative can utilize the existing geometric conditions, therefore the cost for this alternative would only be the cost of installing a traffic signal system, along with ADA improvements, which would be approximately $300,000. The roundabout control alternative would require substantial reconstruction at and leading up to the intersection, which would cost approximately $1,260,000. Traffic signals typically have higher operation and maintenance costs because of the electricity required to operate the signal and routine maintenance required to keep the signal in operation. Operation and maintenance costs associated with a roundabout can vary depending on the amount of illumination required or landscaping alternatives used for the center island. Stop control operation and maintenance costs are only the ongoing costs of maintaining the stop signs and pavement markings.

- *Right-of-Way Considerations*
  The roadway geometry for the all-way stop and traffic signal control alternatives would use existing conditions and therefore no additional right-of-way would be required. Construction of a roundabout at the study intersection would require additional right-of-way in all four quadrants of the intersection.

- *Transportation System Considerations*
  There are several roundabouts immediately south of the intersection at the TH 14 interchange and immediately west of the intersection along County Road 41. No significant queues are expected with any of the alternatives.

- *Pedestrian and Bicycle Considerations*
  The design of signalized intersections can take pedestrian crossings and safety into consideration with the use of pedestrian signal phasing. The design of a roundabout allows pedestrians to cross one direction of traffic at a time on each leg of the roundabout. Their route is slightly longer since they are kept to the outside of the inscribed circle. All-way stop control provides a safety benefit for pedestrians by having all vehicular movements stop; however, most vehicle-pedestrian collisions at all-way stop controlled intersections are a result of either vehicles not stopping when pedestrians assume they are, or pedestrians not paying attention to vehicles approaching the intersection.

- *Local Acceptance*
  Drivers are familiar with traveling through all-way stop controlled and signalized intersections since there are many intersections in the area under these types of traffic control. Drivers are also familiar with traveling through roundabout controlled intersections since there are many existing roundabouts throughout the greater Mankato area.

A decision matrix was developed to help evaluate the key factors and is provided on the following page. Based on the results of this Intersection Control Evaluation, the all-way stop control, traffic signal control, and roundabout control alternatives are all viable options for the Lookout Drive at Howard Drive intersection. All alternatives have acceptable operations under forecasted conditions. The "no build" all-way stop alternative does not require any capital improvements. The traffic signal control alternative has comparable operations to the all-way stop control alternative. However, it has a significant capital cost. Therefore a traffic signal is not practical at this intersection. Compared to a traffic signal, a roundabout would have more consistent off-peak operations throughout the day when traffic volumes are lower. However, the existing dual northbound and southbound thru lanes provide better operations under all-way stop control than would be provided by a single-lane roundabout, without the additional capital costs. Therefore, maintaining the existing all-way stop control is recommended since this type of control would have no capital cost, require no right-of way, and have low delay. A roundabout should be considered at this location in the future if safety issues develop or traffic volumes increase more than what was forecasted. A roundabout would match the control type used at adjacent intersections.

Alternatives Decision Matrix: Lookout Drive at Howard Drive

Factor		All-Way Stop Control	Traffic Signal Control	Roundabout Control	Recommended Alternative(s) Based on Factor
Warrants Analysis	2017	• AWSC warrant not met	• Existing Year 2017 volumes do not meet traffic signal control warrants	N/A	Roundabout Control
	2037	• AWSC warrant met	• Forecasted Year 2037 volumes meet traffic signal control warrants	N/A	All-Way Stop Control Traffic Signal Control Roundabout Control
Operational Analysis	2017	• Acceptable LOS	• Acceptable LOS	• Acceptable LOS • Consistent off-peak operations	All-Way Stop Control Traffic Signal Control Roundabout Control
	2037	• Acceptable LOS	• Acceptable LOS	• Acceptable LOS • Consistent off-peak operations	
Safety Analysis	Pro(s):	• Least number of crashes expected • Lower vehicle speeds through intersection	• Signal indications show vehicle right-of-way	• Least number of crashes expected • Lower vehicle speeds through intersection	All-Way Stop Control Roundabout Control
	Con(s):	• Drivers decide right-of-way	• Slightly more crashes expected than all-way stop/roundabout	• Drivers select acceptable gaps	
Cost Analysis	Pro(s):	• No capital cost • Low operation/maintenance costs	• Lower capital costs ($300,000) than roundabout control	• Lower operation/maintenance costs than traffic signal control	All-Way Stop Control
	Con(s):	none	• Higher operation/maintenance costs than roundabout control	• Higher capital costs ($1,260,000) than traffic signal control • Requires substantial reconstruction	
Right-of-Way	Pro(s):	N/A (existing control)	• No ROW impacts expected	none	All-Way Stop Control Traffic Signal Control
	Con(s):		none	• Requires additional ROW in all four quadrants	
Transportation System Considerations	Pro(s):	• Existing control	• Nearest signal is south of TH 14 interchange	• Matches adjacent intersections at TH 14 interchange	Roundabout Control
	Con(s):	• Majority of adjacent intersections are roundabouts	• Majority of adjacent intersections are roundabouts	none	
Pedestrian and Bicycle Considerations	Pro(s):	• All vehicular movements stop	• Pedestrian pushbuttons and signal phasing	• Pedestrian Refuge islands • Lower vehicle speeds thru intersection	Traffic Signal Control
	Con(s):	• Expecting vehicles to yield to pedestrians can lead to a false sense of security	• Pedestrian signal phasing can lead to a false sense of security	• Longer route • No pedestrian phase	
Local Acceptance	Pro(s):	N/A (existing control)	• Familiar to drivers	• Familiar to drivers • Positive public feedback	All-Way Stop Control Roundabout Control
	Con(s):		none	none	

Appendix

- 2011-2015 Crash History
- Existing Year 2017 Warrants Analysis
- Forecasted Year 2037 Warrants Analysis
- Existing Year 2017 Detailed Operational Analysis
    - All-Way Stop Control
    - Traffic Signal Control
    - Roundabout Control
- Forecasted Year 2037 Detailed Operational Analysis
    - All-Way Stop Control
    - Traffic Signal Control
    - Roundabout Control
- Detailed Cost Analysis

2011-2015 Crash History

Crash Detail Report

Lookout Drive at Howard Drive

Report Version 1.0 March 2010

Crash ID:	110110165	**Date:**	01/10/2011	**Time:**	1600	**Sys:**	04-CSAH
County:	NICOLLET	**City:**	NORTH MANKATO			**Route:**	52000013 000+00.220

Severity:	PROPERTY DAMAGE	**First Event:**	ON ROADWAY
Road Type:	OTHER	**To Junction:**	INTERSECTION-RELATED
Road Char:	STRAIGHT AND LEVEL	**Traffic Device:**	STOP SIGN 4-WAY
Crash Type:	COLL W/MV IN TRANSPORT	**Speed Limit:**	45
Surf Cond:	ICE/PACKED SNOW	**Diagram:**	REAR END
Light Cond:	DAYLIGHT	**Officer:**	
Weather 1:	SNOW	**Reliability:**	CONFIDENT
Weather 2:	NOT SPECIFIED	**# of Vehicles:**	2.00

	Unit 1	Unit 2	Unit 3
Trav Dir:	N	S	
Veh Act:	BACKING	STOPPED TRAFFIC	
Veh Type:	SPORT UNTILITY VEHICLE	SPORT UNTILITY VEHICLE	
Age:	25	35	
Gender:	F	M	
Cond:	NORMAL	NORMAL	
Cont Fact 1	SKIDDING	NO IMPROPER DRIVING	
Cont Fact 2	UNSAFE BACKING	NOT SPECIFIED	

Crash ID:	110630060	**Date:**	01/31/2011	**Time:**	0115	**Sys:**	05-MSAS
County:	NICOLLET	**City:**	NORTH MANKATO			**Route:**	28550255 000+00.000

Severity:	PROPERTY DAMAGE	**First Event:**	NOT SPECIFIED
Road Type:	NOT SPECIFIED	**To Junction:**	NOT SPECIFIED
Road Char:	NOT SPECIFIED	**Traffic Device:**	STOP SIGN 4-WAY
Crash Type:	COLL W/MV IN TRANSPORT	**Speed Limit:**	30
Surf Cond:	ICE/PACKED SNOW	**Diagram:**	RIGHT ANGLE
Light Cond:	DAYLIGHT	**Officer:**	
Weather 1:	SNOW	**Reliability:**	CONFIDENT
Weather 2:	NOT SPECIFIED	**# of Vehicles:**	2.00

	Unit 1	Unit 2	Unit 3
Trav Dir:	W	N	
Veh Act:	STRAIGHT AHEAD	STRAIGHT AHEAD	
Veh Type:	SPORT UNTILITY VEHICLE	PICKUP TRUCK	
Age:	57	44	
Gender:	M	M	
Cond:	NOT SPECIFIED	NOT SPECIFIED	
Cont Fact 1	NOT SPECIFIED	NOT SPECIFIED	
Cont Fact 2	NOT SPECIFIED	NOT SPECIFIED	

Crash ID:	113340064	**Date:**	11/30/2011	**Time:**	1150	**Sys:**	04-CSAH
County:	NICOLLET	**City:**	NORTH MANKATO			**Route:**	52000013 000+00.220

Severity:	PROPERTY DAMAGE	**First Event:**	ON ROADWAY
Road Type:	4_6 LANES UNDIV 2_WAY	**To Junction:**	4-LEGGED INTERSECTION
Road Char:	STRAIGHT AND GRADE	**Traffic Device:**	STOP SIGN 4-WAY
Crash Type:	COLL W/MV IN TRANSPORT	**Speed Limit:**	45
Surf Cond:	DRY	**Diagram:**	REAR END
Light Cond:	DAYLIGHT	**Officer:**	
Weather 1:	CLEAR	**Reliability:**	CONFIDENT
Weather 2:	NOT SPECIFIED	**# of Vehicles:**	2.00

	Unit 1	Unit 2	Unit 3
Trav Dir:	N	N	
Veh Act:	STOPPED TRAFFIC	BIKE SLOWING/STOPPING/STARTI	
Veh Type:	SPORT UNTILITY VEHICLE	PASSENGER CAR	
Age:	43	59	
Gender:	F	M	
Cond:	NORMAL	NORMAL	
Cont Fact 1	NO IMPROPER DRIVING	OTHER HUMAN FACTOR	
Cont Fact 2	NOT SPECIFIED	NOT SPECIFIED	

Selection Filter:

WORK AREA: CONST_DIST_CODE('7') - FILTER: CRASH_YEAR('2011','2012','2013','2014','2015') - SPATIAL FILTER APPLIED

Analyst:

Luke James

Notes:

Existing Year 2017 Warrants Analysis

Consulting Group, Inc.

WARRANTS ANALYSIS

Existing Year 2017

Lookout Drive at Howard Drive
Intersection Control Evaluation
City of North Mankato, Nicollet County

Background Information

		Speed (mph)	Lanes	Approach	
Location :	City of North Mankato, Nicollet County				
Date:	5/24/2017	45	2 or more	Major Approach 1:	Northbound Lookout Drive
Analysis Prepared By:	Luke James	45	2 or more	Major Approach 3:	Southbound Lookout Drive
Population Less than 10,000:	No	30	1	Minor Approach 2:	Eastbound Howard Drive
Seventy Percent Factor Used:	Yes	30	1	Minor Approach 4:	Westbound Howard Drive

Warrants Analysis: Warrants 1A, 1B and 1C

Hour	Major Approach 1	Major Approach 3	Total 1 + 3	Warrant Met		Minor Approach 2	Minor Approach 4	Largest Minor App.	Warrant Met		Met Same Hours		Combination		MWSA (C)	
				420	630				105	53	Condition A	Condition B	A	B	210	140
6 - 7 AM	130	98	228			10	15	15							X	
7 - 8 AM	305	244	549	X		56	179	179	X	X	X		X	X	X	X
8 - 9 AM	359	178	537	X		73	120	120	X	X	X		X	X	X	X
9 - 10 AM	135	108	243			47	53	53		X					X	
10 - 11 AM	117	114	231			38	34	38							X	
11 - 12 AM	169	207	376			59	105	105	X	X			X		X	X
12 - 1 PM	238	229	467	X		71	79	79		X					X	X
1 - 2 PM	212	131	343			40	54	54		X					X	
2 - 3 PM	189	162	351			58	65	65		X					X	
3 - 4 PM	185	204	389			60	238	238	X	X			X		X	X
4 - 5 PM	218	272	490	X		103	162	162	X	X	X		X		X	X
5 - 6 PM	200	283	483	X		83	96	96		X			X		X	X
6 - 7 PM	110	103	213			45	41	45							X	
7 - 8 PM	71	52	123			21	54	54		X						
8 - 9 PM	55	38	93			21	21	21								
9 - 10 PM	38	29	67			13	15	15								
10 - 11 PM	26	22	48			12	4	12								
											3	0	6	2	7	

Warrant Summary

Warrant and Description		Hours Met	Hours Required	Met/Not Met
MWSA (C):	Multiway Stop Applications Condition C	7	8	Not Met
Warrant 1A:	Minimum Vehicular Volume	3	8	Not Met
Warrant 1B:	Interruption of Continuous Traffic	0	8	Not Met
Warrant 1C:	Combination of Warrants	2	8	Not Met
Warrant 2:	Four-Hour Vehicular Volume	2	4	Not Met
Warrant 3B:	Peak Hour	0	1	Not Met

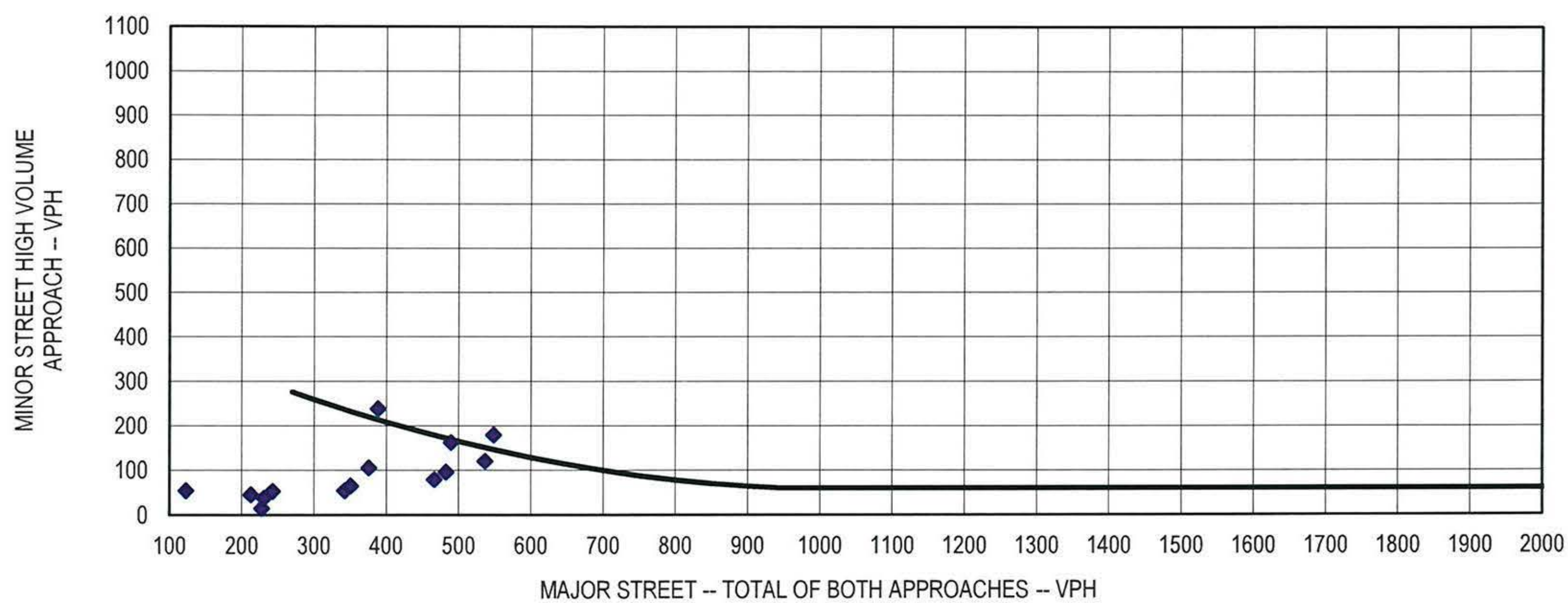
WARRANTS ANALYSIS

Existing Year 2017

Lookout Drive at Howard Drive
Intersection Control Evaluation
City of North Mankato, Nicollet County

Warrants Analysis: Warrant 2

WARRANT 2 - FOUR-HOUR VEHICULAR VOLUME



Number of Hours Satisfying Requirements:	2

Notes:
1. 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 60 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.
2. INTERSECTION IS EITHER (1) WITHIN A COMMUNITY LESS THAN 10,000 POPULATION OR (2) HAS SPEEDS ABOVE 40 MPH ON MAJOR STREET.

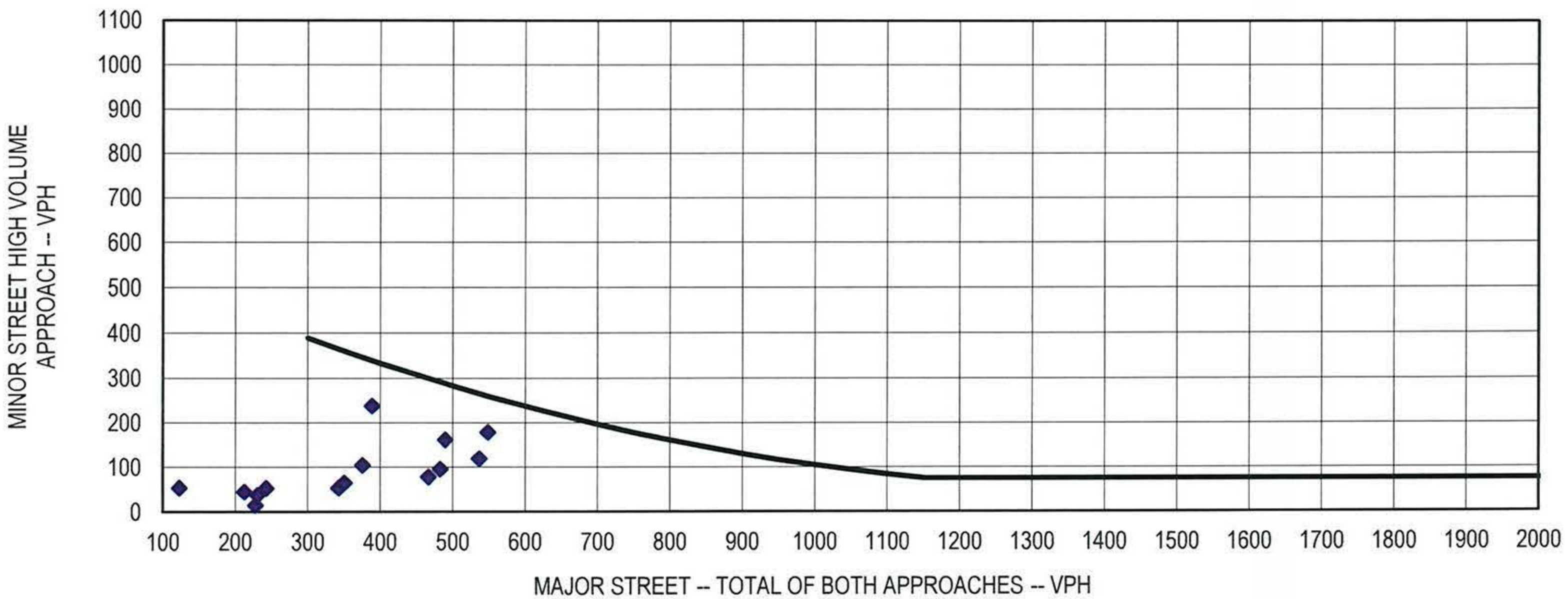
WARRANTS ANALYSIS

Existing Year 2017

Lookout Drive at Howard Drive
Intersection Control Evaluation
City of North Mankato, Nicollet County

Warrants Analysis: Warrant 3

WARRANT 3 - PEAK HOUR



Number of Hours Satisfying Requirements:	0

Notes:
1. 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.
2. INTERSECTION IS EITHER (1) WITHIN A COMMUNITY LESS THAN 10,000 POPULATION OR (2) HAS SPEEDS ABOVE 40 MPH ON MAJOR STREET.

Forecasted Year 2037 Warrants Analysis

Consulting Group, Inc.

WARRANTS ANALYSIS

Forecasted Year 2037

Lookout Drive at Howard Drive
Intersection Control Evaluation
City of North Mankato, Nicollet County

Background Information

		Speed (mph)	Lanes	Approach	
Location :	City of North Mankato, Nicollet County				
Date:	7/12/2017	45	2 or more	Major Approach 1:	Northbound Lookout Drive
Analysis Prepared By:	Luke James	45	2 or more	Major Approach 3:	Southbound Lookout Drive
Population Less than 10,000:	No	30	1	Minor Approach 2:	Eastbound Howard Drive
Seventy Percent Factor Used:	Yes	30	1	Minor Approach 4:	Westbound Howard Drive

Warrants Analysis: Warrants 1A, 1B, and 1C

Hour	Major Approach 1	Major Approach 3	Total 1 + 3	Warrant Met 420	Warrant Met 630	Minor Approach 2	Minor Approach 4	Largest Minor App.	Warrant Met 105	Warrant Met 53	Met Same Hours Condition A	Met Same Hours Condition B	Combination A	Combination B	MWSA (C) 210	MWSA (C) 140
6 - 7 AM	169	137	306			12	18	18							X	
7 - 8 AM	397	342	739	X	X	69	221	221	X	X	X	X	X	X	X	X
8 - 9 AM	466	249	715	X	X	91	148	148	X	X	X	X	X	X	X	X
9 - 10 AM	176	151	327			58	66	66		X					X	
10 - 11 AM	151	160	311			47	42	47							X	
11 - 12 AM	219	289	508	X		73	130	130	X	X	X		X	X	X	X
12 - 1 PM	309	321	630	X	X	88	98	98		X		X	X	X	X	X
1 - 2 PM	276	183	459	X		50	66	66		X					X	
2 - 3 PM	245	226	471	X		72	80	80		X					X	X
3 - 4 PM	241	286	527	X		74	295	295	X	X	X		X	X	X	X
4 - 5 PM	283	381	664	X	X	127	201	201	X	X	X	X	X	X	X	X
5 - 6 PM	260	396	656	X	X	102	118	118	X	X	X	X	X	X	X	X
6 - 7 PM	142	144	286			55	50	55		X					X	
7 - 8 PM	92	73	165			25	67	67		X						
8 - 9 PM	72	53	125			25	25	25								
9 - 10 PM	49	40	89			16	19	19								
10 - 11 PM	34	31	65			15	4	15								
											6	5	7	7	8	

Warrant Summary

Warrant and Description		Hours Met	Hours Required	Met/Not Met
MWSA (C):	Multiway Stop Applications Condition C	8	8	Met - Multiway Stop Applications
Warrant 1A:	Minimum Vehicular Volume	6	8	Not Met
Warrant 1B:	Interruption of Continuous Traffic	5	8	Not Met
Warrant 1C:	Combination of Warrants	7	8	Not Met
Warrant 2:	Four-Hour Vehicular Volume	5	4	Met - Warrant 2 Satisfied
Warrant 3B:	Peak Hour	2	1	Met - Warrant 3B Satisfied

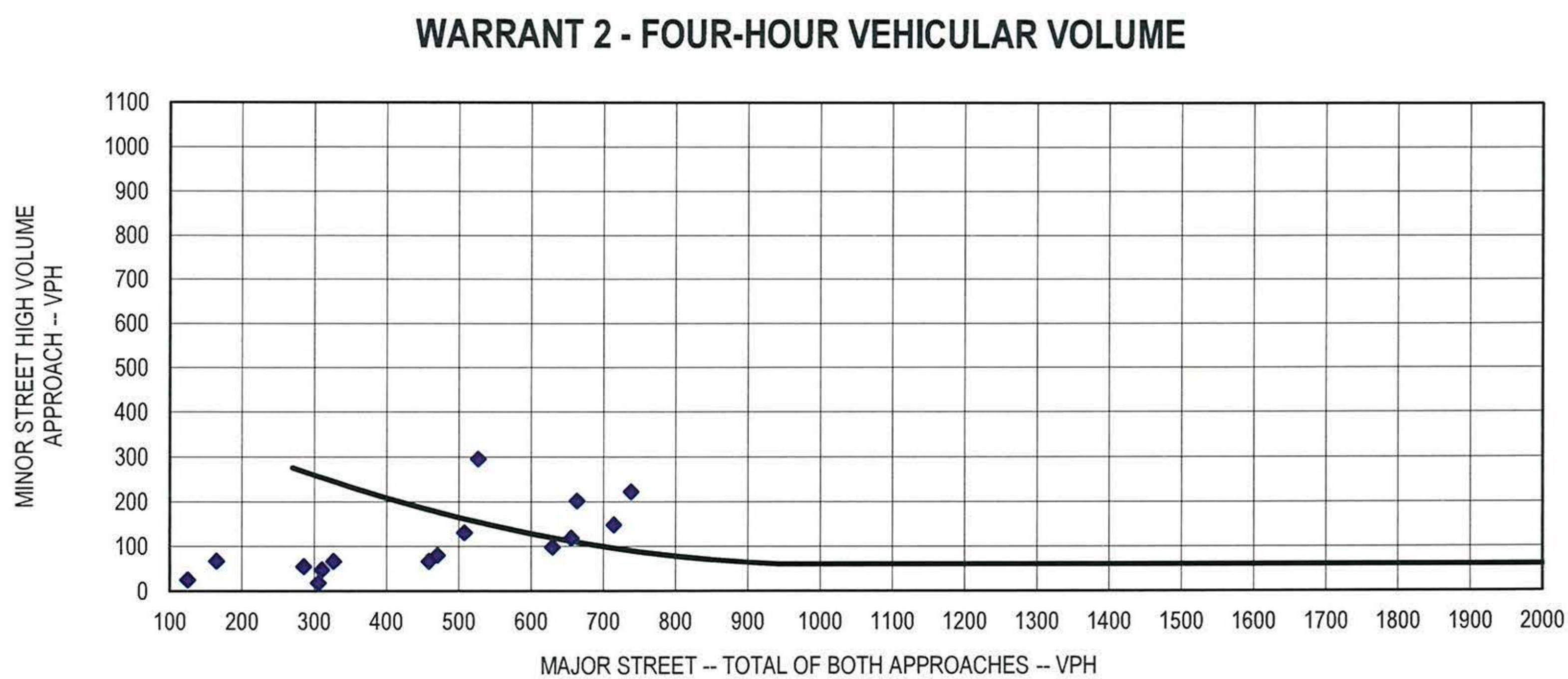
Consulting Group, Inc.

WARRANTS ANALYSIS

Forecasted Year 2037

Lookout Drive at Howard Drive
Intersection Control Evaluation
City of North Mankato, Nicollet County

Warrants Analysis: Warrant 2



Number of Hours Satisfying Requirements:	5

Notes:

1. 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 60 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.
2. INTERSECTION IS EITHER (1) WITHIN A COMMUNITY LESS THAN 10,000 POPULATION OR (2) HAS SPEEDS ABOVE 40 MPH ON MAJOR STREET.

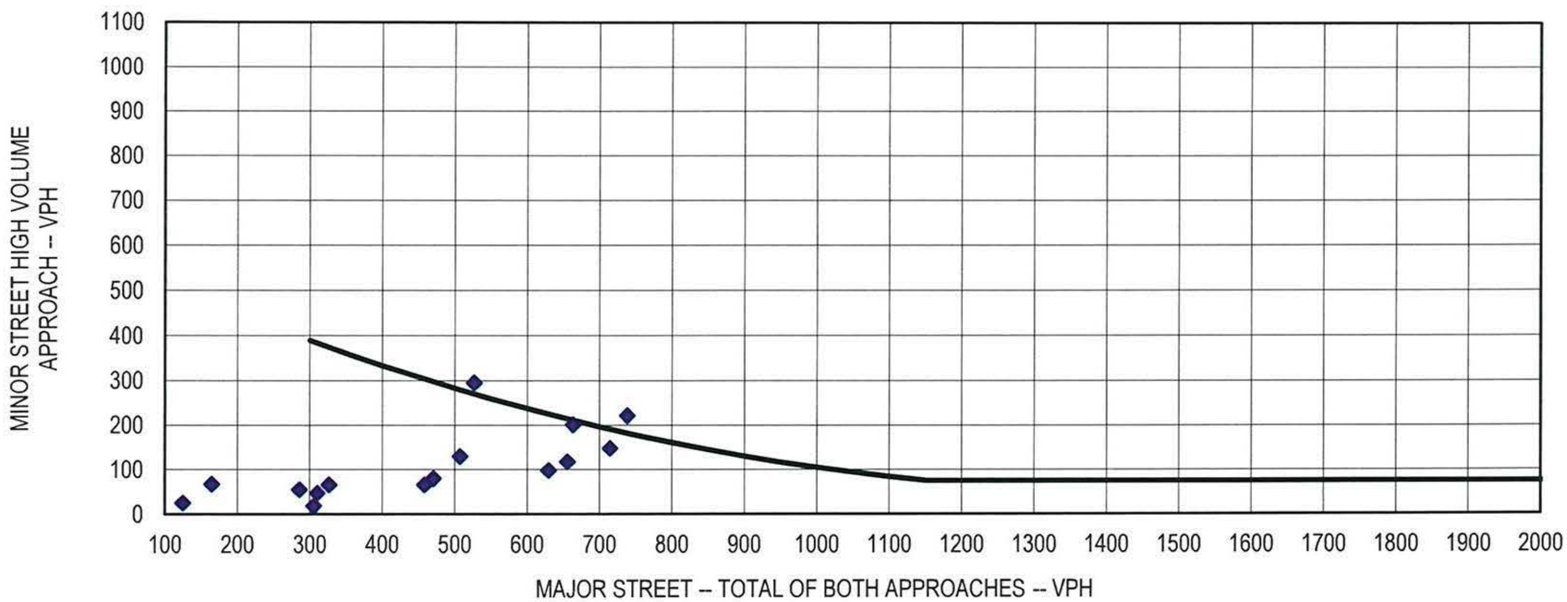
WARRANTS ANALYSIS

Forecasted Year 2037

Lookout Drive at Howard Drive
Intersection Control Evaluation
City of North Mankato, Nicollet County

Warrants Analysis: Warrant 3

WARRANT 3 - PEAK HOUR



Number of Hours Satisfying Requirements:	2

Notes:
1. 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 75 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.
2. INTERSECTION IS EITHER (1) WITHIN A COMMUNITY LESS THAN 10,000 POPULATION OR (2) HAS SPEEDS ABOVE 40 MPH ON MAJOR STREET.

Existing Year 2017 Detailed Operational Analysis

All-Way Stop Control

1: Lookout Drive & Howard Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.3	0.0	0.3
Denied Del/Veh (s)	0.7	0.2	1.4	0.0	0.8
Total Delay (hr)	0.1	0.5	1.7	0.7	2.9
Total Del/Veh (s)	7.5	7.4	8.8	8.7	8.4
Stop Delay (hr)	0.1	0.3	0.5	0.3	1.2
Stop Del/Veh (s)	4.8	4.7	2.8	3.6	3.5
Total Stops	67	224	425	270	986
Stop/Veh	1.00	1.00	0.62	1.00	0.79

Intersection: 1: Lookout Drive & Howard Drive

Movement	EB	EB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	LTR	LT	T	R	LT	TR
Maximum Queue (ft)	42	67	112	119	80	91	87	88
Average Queue (ft)	9	31	54	61	38	16	44	40
95th Queue (ft)	34	58	88	99	64	65	71	69
Link Distance (ft)		960	960	966	966		238	238
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	250					250		
Storage Blk Time (%)								
Queuing Penalty (veh)								

1: Lookout Drive & Howard Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.5	0.2	0.7	0.0	0.3
Total Delay (hr)	0.1	0.3	0.7	0.9	2.0
Total Del/Veh (s)	4.5	6.6	8.5	9.0	8.0
Stop Delay (hr)	0.1	0.2	0.2	0.4	0.8
Stop Del/Veh (s)	3.4	4.0	2.7	3.5	3.3
Total Stops	82	173	232	374	861
Stop/Veh	1.00	1.00	0.84	1.00	0.95

Intersection: 1: Lookout Drive & Howard Drive

Movement	EB	EB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	LTR	LT	T	R	LT	TR
Maximum Queue (ft)	31	62	92	88	70	11	99	101
Average Queue (ft)	7	33	48	45	23	0	49	46
95th Queue (ft)	29	55	76	73	53	8	81	76
Link Distance (ft)		960	960	966	966		238	238
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	250					250		
Storage Blk Time (%)								
Queuing Penalty (veh)								

Existing Year 2017 Detailed Operational Analysis

Traffic Signal Control

1: Lookout Drive & Howard Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.3	0.0	0.3
Denied Del/Veh (s)	0.7	0.2	1.4	0.0	0.9
Total Delay (hr)	0.2	0.8	1.8	0.5	3.2
Total Del/Veh (s)	10.2	12.0	8.7	6.6	8.9
Stop Delay (hr)	0.1	0.6	0.8	0.3	1.8
Stop Del/Veh (s)	8.0	8.9	3.7	4.0	4.9
Total Stops	45	157	220	100	522
Stop/Veh	0.69	0.68	0.30	0.37	0.40

Intersection: 1: Lookout Drive & Howard Drive

Movement	EB	EB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	LTR	LT	T	R	LT	TR
Maximum Queue (ft)	36	76	150	203	140	65	88	95
Average Queue (ft)	8	31	76	82	29	4	43	24
95th Queue (ft)	31	65	131	145	85	30	75	64
Link Distance (ft)		960	960	966	966		238	238
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	250					250		
Storage Blk Time (%)								
Queuing Penalty (veh)								

1: Lookout Drive & Howard Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.5	0.2	0.7	0.0	0.3
Total Delay (hr)	0.1	0.5	0.6	0.6	1.9
Total Del/Veh (s)	5.6	10.5	7.6	6.0	7.4
Stop Delay (hr)	0.1	0.4	0.3	0.3	1.1
Stop Del/Veh (s)	4.6	7.7	3.8	3.3	4.4
Total Stops	51	118	105	125	399
Stop/Veh	0.70	0.66	0.35	0.34	0.44

Intersection: 1: Lookout Drive & Howard Drive

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	TR	LTR	LT	T	LT	TR
Maximum Queue (ft)	35	69	126	104	48	108	97
Average Queue (ft)	6	28	62	49	10	49	29
95th Queue (ft)	27	57	105	90	39	89	69
Link Distance (ft)		960	960	966	966	238	238
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	250						
Storage Blk Time (%)							
Queuing Penalty (veh)							

Existing Year 2017 Detailed Operational Analysis

Roundabout Control

HCS7 Roundabouts Report

General Information / Site Information

Analyst	Luke James	Intersection	Lookout Drive at Howard Drive
Agency or Co.	SRF Consulting Group, Inc.	E/W Street Name	Howard Drive
Date Performed	7/6/2017	N/S Street Name	Lookout Drive
Analysis Year	2017	Analysis Time Period (hrs)	0.25
Time Period	A.M. Peak	Peak Hour Factor	1.00
Project Description	10279	Jurisdiction	MAPO

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LT				LTR	
Volume (V), veh/h	0	10	40	15	0	175	15	35	0	85	335	285	0	20	245	5
Percent Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Flow Rate (v_{PCE}), pc/h	0	10	42	16	0	184	16	37	0	89	352	299	0	21	257	5
Right-Turn Bypass	None				None				Yielding				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)		4.9763			4.9763			4.9763	4.9763		4.9763	
Follow-Up Headway (s)		2.6087			2.6087			2.6087	2.6087		2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		68			237			441	299		283	
Entry Volume veh/h		65			226			420	285		270	
Circulating Flow (v_c), pc/h	462			451			73			289		
Exiting Flow (v_{ex}), pc/h	63			110			399			457		
Capacity (c_{pce}), pc/h		861			871			1281	1294		1028	
Capacity (c), veh/h		820			830			1220	1232		979	
v/c Ratio (x)		0.08			0.27			0.34	0.23		0.28	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		5.2			7.3			6.2	5.0		6.4	
Lane LOS		A			A			A	A		A	
95% Queue, veh		0.3			1.1			1.6	0.9		1.1	
Approach Delay, s/veh	5.2			7.3			5.7			6.4		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh | LOS	6.1						A					

HCS7 Roundabouts Report

General Information

Analyst	Luke James
Agency or Co.	SRF Consulting Group, Inc.
Date Performed	7/6/2017
Analysis Year	2017
Time Period	P.M. Peak
Project Description	10279

Site Information

Intersection	Lookout Drive at Howard Drive
E/W Street Name	Howard Drive
N/S Street Name	Lookout Drive
Analysis Time Period (hrs)	0.25
Peak Hour Factor	1.00
Jurisdiction	MAPO

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LT				LTR	
Volume (V), veh/h	0	10	10	65	0	130	15	25	0	35	200	40	0	15	345	5
Percent Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Flow Rate (v_{PCE}), pc/h	0	10	10	68	0	136	16	26	0	37	210	42	0	16	362	5
Right-Turn Bypass	None				None				Yielding				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)		4.9763			4.9763			4.9763	4.9763		4.9763	
Follow-Up Headway (s)		2.6087			2.6087			2.6087	2.6087		2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		88			178			247	42		383	
Entry Volume veh/h		84			170			235	40		365	
Circulating Flow (v_c), pc/h	514			257			36			189		
Exiting Flow (v_{ex}), pc/h	26			58			246			566		
Capacity (c_{pce}), pc/h		817			1062			1330	1344		1138	
Capacity (c), veh/h		778			1011			1267	1280		1084	
v/c Ratio (x)		0.11			0.17			0.19	0.03		0.34	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		5.7			5.1			4.4	3.1		6.7	
Lane LOS		A			A			A	A		A	
95% Queue, veh		0.4			0.6			0.7	0.1		1.5	
Approach Delay, s/veh	5.7			5.1			4.2			6.7		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh | LOS	5.5						A					

Forecasted Year 2037 Detailed Operational Analysis

All-Way Stop Control

1: Lookout Drive & Howard Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.4	0.0	0.4
Denied Del/Veh (s)	0.6	0.3	1.4	0.0	0.8
Total Delay (hr)	0.2	0.9	3.1	1.2	5.3
Total Del/Veh (s)	8.2	11.5	12.2	10.9	11.6
Stop Delay (hr)	0.1	0.7	1.4	0.6	2.8
Stop Del/Veh (s)	5.6	8.7	5.5	5.6	6.1
Total Stops	75	276	581	391	1323
Stop/Veh	1.00	0.99	0.64	1.00	0.80

Intersection: 1: Lookout Drive & Howard Drive

Movement	EB	EB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	LTR	LT	T	R	LT	TR
Maximum Queue (ft)	36	71	163	235	195	138	136	108
Average Queue (ft)	8	33	75	92	52	32	57	50
95th Queue (ft)	31	60	129	171	117	107	97	86
Link Distance (ft)		960	960	966	966		238	238
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	250					250		
Storage Blk Time (%)					0			
Queuing Penalty (veh)					0			

1: Lookout Drive & Howard Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.5	0.2	0.6	0.0	0.3
Total Delay (hr)	0.2	0.5	1.0	1.5	3.0
Total Del/Veh (s)	5.3	7.8	9.7	10.2	9.1
Stop Delay (hr)	0.1	0.3	0.3	0.6	1.4
Stop Del/Veh (s)	4.2	5.2	3.5	4.4	4.2
Total Stops	107	210	305	515	1137
Stop/Veh	0.98	0.99	0.85	1.00	0.95

Intersection: 1: Lookout Drive & Howard Drive

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	TR	LTR	LT	T	LT	TR
Maximum Queue (ft)	56	78	111	98	78	115	119
Average Queue (ft)	11	37	55	52	29	59	58
95th Queue (ft)	39	65	90	81	57	92	98
Link Distance (ft)		960	960	966	966	238	238
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	250						
Storage Blk Time (%)							
Queuing Penalty (veh)							

Forecasted Year 2037 Detailed Operational Analysis

Traffic Signal Control

1: Lookout Drive & Howard Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.4	0.0	0.4
Denied Del/Veh (s)	0.8	0.3	1.4	0.0	0.9
Total Delay (hr)	0.2	1.2	3.0	0.8	5.2
Total Del/Veh (s)	10.9	14.7	11.4	7.8	11.1
Stop Delay (hr)	0.2	0.9	1.4	0.5	3.0
Stop Del/Veh (s)	8.7	11.1	5.4	4.8	6.3
Total Stops	45	206	338	158	747
Stop/Veh	0.66	0.73	0.36	0.41	0.44

Intersection: 1: Lookout Drive & Howard Drive

Movement	EB	EB	WB	NB	NB	NB	SB	SB
Directions Served	L	TR	LTR	LT	T	R	LT	TR
Maximum Queue (ft)	40	74	254	244	190	97	117	121
Average Queue (ft)	8	27	104	108	53	12	58	38
95th Queue (ft)	32	61	189	189	128	57	99	92
Link Distance (ft)		960	960	966	966		238	238
Upstream Blk Time (%)								
Queuing Penalty (veh)								
Storage Bay Dist (ft)	250					250		
Storage Blk Time (%)								
Queuing Penalty (veh)								

1: Lookout Drive & Howard Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.7	0.2	0.7	0.0	0.3
Total Delay (hr)	0.2	0.6	1.0	1.1	2.9
Total Del/Veh (s)	6.0	10.4	9.6	7.4	8.5
Stop Delay (hr)	0.1	0.5	0.5	0.6	1.7
Stop Del/Veh (s)	4.9	7.5	5.1	4.1	5.1
Total Stops	67	136	153	204	560
Stop/Veh	0.63	0.63	0.41	0.39	0.46

Intersection: 1: Lookout Drive & Howard Drive

Movement	EB	EB	WB	NB	NB	SB	SB
Directions Served	L	TR	LTR	LT	T	LT	TR
Maximum Queue (ft)	47	81	150	140	92	123	110
Average Queue (ft)	10	34	68	66	21	62	50
95th Queue (ft)	36	66	122	120	60	105	97
Link Distance (ft)		960	960	966	966	238	238
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	250						
Storage Blk Time (%)							
Queuing Penalty (veh)							

Forecasted Year 2037 Detailed Operational Analysis

Roundabout Control

HCS7 Roundabouts Report

General Information

Analyst	Luke James
Agency or Co.	SRF Consulting Group, Inc.
Date Performed	7/13/2017
Analysis Year	2037
Time Period	A.M. Peak
Project Description	10279

Site Information

Intersection	Lookout Drive at Howard Drive
E/W Street Name	Howard Drive
N/S Street Name	Lookout Drive
Analysis Time Period (hrs)	0.25
Peak Hour Factor	1.00
Jurisdiction	MAPO

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LT				LTR	
Volume (V), veh/h	0	10	50	15	0	215	20	45	0	110	435	375	0	30	340	5
Percent Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Flow Rate (v_{PCE}), pc/h	0	10	52	16	0	226	21	47	0	116	457	394	0	32	357	5
Right-Turn Bypass	None				None				Yielding				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)		4.9763			4.9763			4.9763	4.9763		4.9763	
Follow-Up Headway (s)		2.6087			2.6087			2.6087	2.6087		2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		78			294			573	394		394	
Entry Volume veh/h		74			280			546	375		375	
Circulating Flow (v_c), pc/h	615			583			94			363		
Exiting Flow (v_{ex}), pc/h	84			142			514			599		
Capacity (c_{pce}), pc/h		737			761			1254	1267		953	
Capacity (c), veh/h		702			725			1194	1206		908	
v/c Ratio (x)		0.11			0.39			0.46	0.31		0.41	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		6.3			10.0			7.8	5.9		8.8	
Lane LOS		A			A			A	A		A	
95% Queue, veh		0.4			1.8			2.5	1.3		2.1	
Approach Delay, s/veh	6.3			10.0			7.0			8.8		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh | LOS	7.9						A					

HCS7 Roundabouts Report

General Information

Analyst	Luke James
Agency or Co.	SRF Consulting Group, Inc.
Date Performed	7/13/2017
Analysis Year	2037
Time Period	P.M. Peak
Project Description	10279

Site Information

Intersection	Lookout Drive at Howard Drive
E/W Street Name	Howard Drive
N/S Street Name	Lookout Drive
Analysis Time Period (hrs)	0.25
Peak Hour Factor	1.00
Jurisdiction	MAPO

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LT				LTR	
Volume (V), veh/h	0	15	10	85	0	165	15	35	0	50	265	50	0	20	480	10
Percent Heavy Vehicles, %	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
Flow Rate (v_{PCE}), pc/h	0	16	10	89	0	173	16	37	0	52	278	52	0	21	504	10
Right-Turn Bypass	None				None				Yielding				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)		4.9763			4.9763			4.9763	4.9763		4.9763	
Follow-Up Headway (s)		2.6087			2.6087			2.6087	2.6087		2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		115			226			330	52		535	
Entry Volume veh/h		110			215			314	50		510	
Circulating Flow (v_c), pc/h	698			346			47			241		
Exiting Flow (v_{ex}), pc/h	31			78			331			766		
Capacity (c_{pce}), pc/h		677			970			1315	1337		1079	
Capacity (c), veh/h		645			923			1253	1273		1028	
v/c Ratio (x)		0.17			0.23			0.25	0.04		0.50	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		7.6			6.2			5.1	3.1		9.4	
Lane LOS		A			A			A	A		A	
95% Queue, veh		0.6			0.9			1.0	0.1		2.8	
Approach Delay, s/veh	7.6			6.2			4.8			9.4		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh | LOS	7.3						A					

Detailed Cost Analysis

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SRF Consulting Group, Inc. | Engineers Planners Designers

Concept Cost Estimate (based upon 2017 bid price information)

Prepared By: SRF Consulting Group, Inc., Date 7/2017

	ITEM DESCRIPTION		UNIT	UNIT PRICE	Lookout Drive at Howard Drive EST. QUANTITY	EST. AMOUNT
PAVING AND GRADING COSTS						
GrP 1	Excavation - common & subgrade		cu. yd.	$7.00	5,100	$35,700
GrP 2	Granular Subgrade (CV)		cu. yd.	$14.00	3,000	$42,000
GrP 3	County Road Pavement	(1)	sq. yd.	$32.00	6,060	$193,920
GrP 4	Concrete Median	(1)	sq. yd.	$40.00	1,590	$63,600
GrP 5	Walk / Trail	(1)	sq. yd.	$25.00	1,510	$37,750
GrP 6	ADA Pedestrian Curb Ramp		each	$800.00	18	$14,400
GrP 7	Concrete Curb and Gutter		lin. ft.	$12.00	5,250	$63,000
GrP 8	Removals - Pavement		sq. yd.	$2.50	9,770	$24,425
	SUBTOTAL PAVING AND GRADING COSTS:					**$474,795**
DRAINAGE, UTILITIES AND EROSION CONTROL						
Dr 1	Local Utilities - Sanitary Sewers		lin. ft.			
Dr 2	Local Utilities - Watermains		lin. ft.			
Dr 3	Water Quality Ponds		l.s.			
Dr 5	Drainage - urban (10-30%)		30%			$142,000
Dr 6	Turf Establishment & Erosion Control		10%			$47,000
Dr 7	Landscaping					
	SUBTOTAL DRAINAGE, UTILITIES AND EROSION CONTROL					**$189,000**
SIGNAL AND LIGHTING COSTS						
SGL 1	Signals (permanent)		each	$200,000		
SGL 2	At Grade Intersection Lighting (permanent - non signa		each	$10,000	12	$120,000
	SUBTOTAL SIGNAL AND LIGHTING COSTS:					**$120,000**
SIGNING & STRIPING COSTS						
SGN 1	Mainline Signing (C&D)		mile	$20,000	0.3	$6,000
SGN 2	Mainline Striping		mile	$10,000	0.3	$3,000
	SUBTOTAL SIGNING & STRIPING COSTS:					**$9,000**
	SUBTOTAL CONSTRUCTION COSTS:					**$792,795**
MISCELLANEOUS COSTS						
M 1	Mobilization		6%			$48,000
M 2	Non Quantified Minor Items (10% to 30%)		20%			$159,000
M 3	Temporary Pavement & Drainage		2%			$16,000
M 4	Traffic Control		4%			$32,000
	SUBTOTAL MISCELLANEOUS COSTS:					**$255,000**
ESTIMATED TOTAL CONSTRUCTION COSTS without Contingency:						**$1,047,795**
1	Contingency or "risk" (10% to 30%)		20%			$210,000
ESTIMATED TOTAL CONSTRUCTION COSTS PLUS CONTINGENCY:						**$1,257,795**

OTHER PROJECT COSTS:				
R/W ACQUISITIONS	Lump Sum			
DESIGN ENG. & CONSTRUCTION ADMIN.	Lump Sum			
SUBTOTAL OTHER PROJECT COSTS				
TOTAL PROJECT COST (based upon 2016 bid price information)				**$1,257,795**

INFLATION COST (CURRENT YR. TO YR. OF OPE	Years	3%		
TOTAL PROJECT COST (OPENING YEAR DOLLARS)				**$1,257,795**

NOTE: (1) Includes aggregate base class 5.

MAJOR ITEMS NOT INCLUDED:
- Local utilities (sanitary sewer or watermain)
- Water quality ponds or other BMPs
- R/W acquisitions
- Engineering design fees
- Inflation

Intersection Control Evaluation

Lor Ray Drive at Carlson Drive/Countryside Drive

in North Mankato, Nicollet County, Minnesota

Mankato/North Mankato Area Planning Organization

SRF Consulting Group, Inc.

Engineers
Planners
Designers

October 2017

SRF No. 10279

Intersection Control Evaluation

Lor Ray Drive at
Carlson Drive/Countryside Drive

Proposed Letting Date: TBD

Report Certification:

I hereby certify that this report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Adrian S. Potter	42785
Print Name	Reg. No.
Signature	Date

Approved:

City of North Mankato City Engineer	Date

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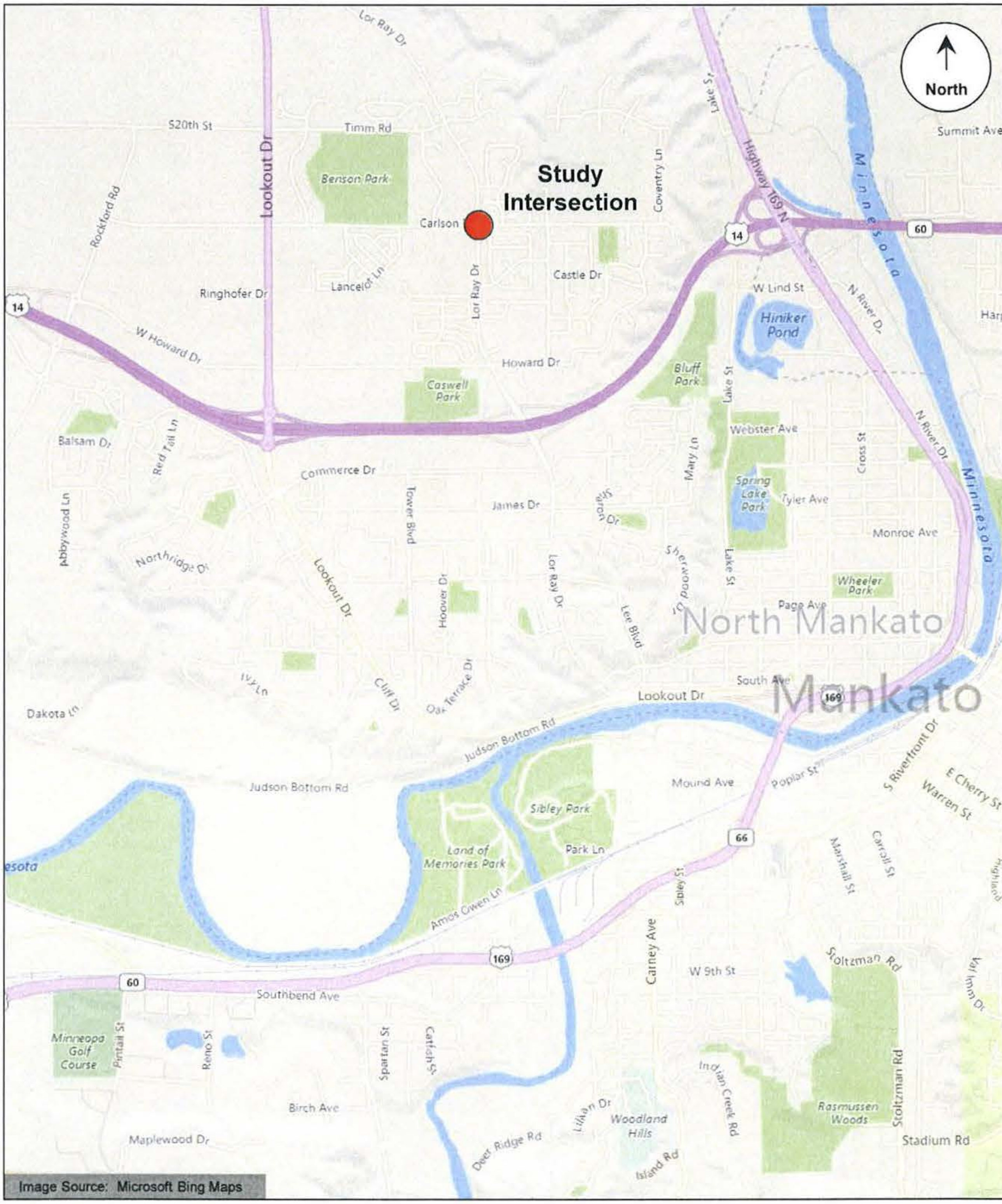
Introduction

This report contains the intersection control evaluation results for the Lor Ray Drive at Carlson Drive/Countryside Drive intersection in North Mankato, Nicollet County, Minnesota (see Figure 1). The purpose of the evaluation was to analyze the intersection control alternatives for the intersection to identify the long-term preferred intersection control. The following intersection control alternatives were considered applicable and are analyzed within this report:

- Side-Street Stop Control
- All-Way Stop Control
- Roundabout Control

A detailed warrants analysis, operational analysis, safety analysis, and planning-level cost analysis were performed to determine the preferred intersection control alternative. In addition to these analyses, other factors considered for this evaluation that were applicable to determining the long-term preferred intersection control included:

- Right-of-Way Considerations
- Transportation System Considerations
- Pedestrian and Bicycle Considerations
- Local Acceptance



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Study Intersection

Figure 1

Intersection Control Evaluation
Lor Ray Drive at Carlson Drive/Countryside Drive
North Mankato, Nicollet County, Minnesota

10279
September 2017

Existing Intersection Characteristics

Existing Conditions

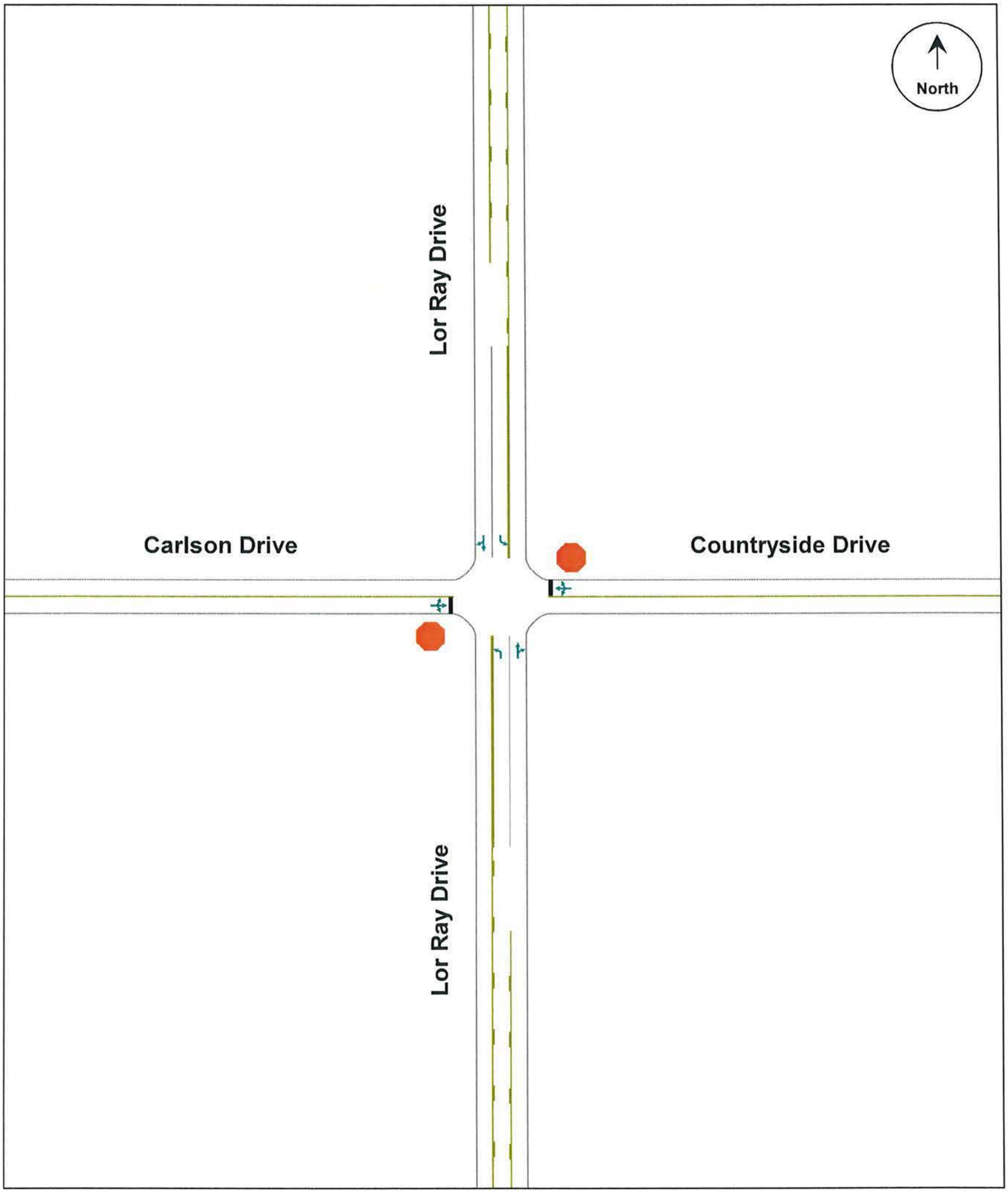
The study intersection is located in the City of North Mankato, Nicollet County as shown in Figure 1. Lor Ray Drive is a three-lane undivided city street and is functionally classified as a minor arterial. Carlson Drive goes west of the intersection and Countryside Drive goes east. Carlson Drive/Countryside Drive is a two-lane undivided city street and is functionally classified as a local road. The intersection of Lor Ray Drive and Carlson Drive/Countryside Drive is currently side-street stop controlled and the speed limit on all approaches is 30 mph. There are sidewalks/trails on both sides of Lor Ray Drive and Carlson Drive, and on the north side of Countryside Drive. There are marked pedestrian crossings on all four legs of the intersection. The adjacent area has primarily residential and recreational land uses. The existing lane configurations for the Lor Ray Drive at Carlson Drive/Countryside Drive intersection are listed in Table 1 below and are shown in Figure 2.

Table 1. Existing Conditions

Approach	Configuration
Northbound Lor Ray Drive	One left-turn lane and one shared thru/right-turn lane
Southbound Lor Ray Drive	One left-turn lane and one shared thru/right-turn lane
Eastbound Carlson Drive	One shared lane (all movements)
Westbound Countryside Drive	One shared lane (all movements)

Crash History

Crash data was obtained from the Minnesota Crash Mapping Analysis Tool (MnCMAT) database for a five-year period from 2011 to 2015. There were eleven recorded crashes at the study intersection during the analysis period. Detailed crash data is provided in the Appendix. This results in a crash rate of 1.21 crashes per million entering vehicles, which is above the statewide average of 0.18 for side-street stop controlled intersections, and is above the critical crash rate of 0.60 (0.995 level of confidence) for this intersection, indicating that there is an existing crash problem.



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Existing Conditions

Figure 2

Intersection Control Evaluation
Lor Ray Drive at Carlson Drive/Countryside Drive
North Mankato, Nicollet County, Minnesota

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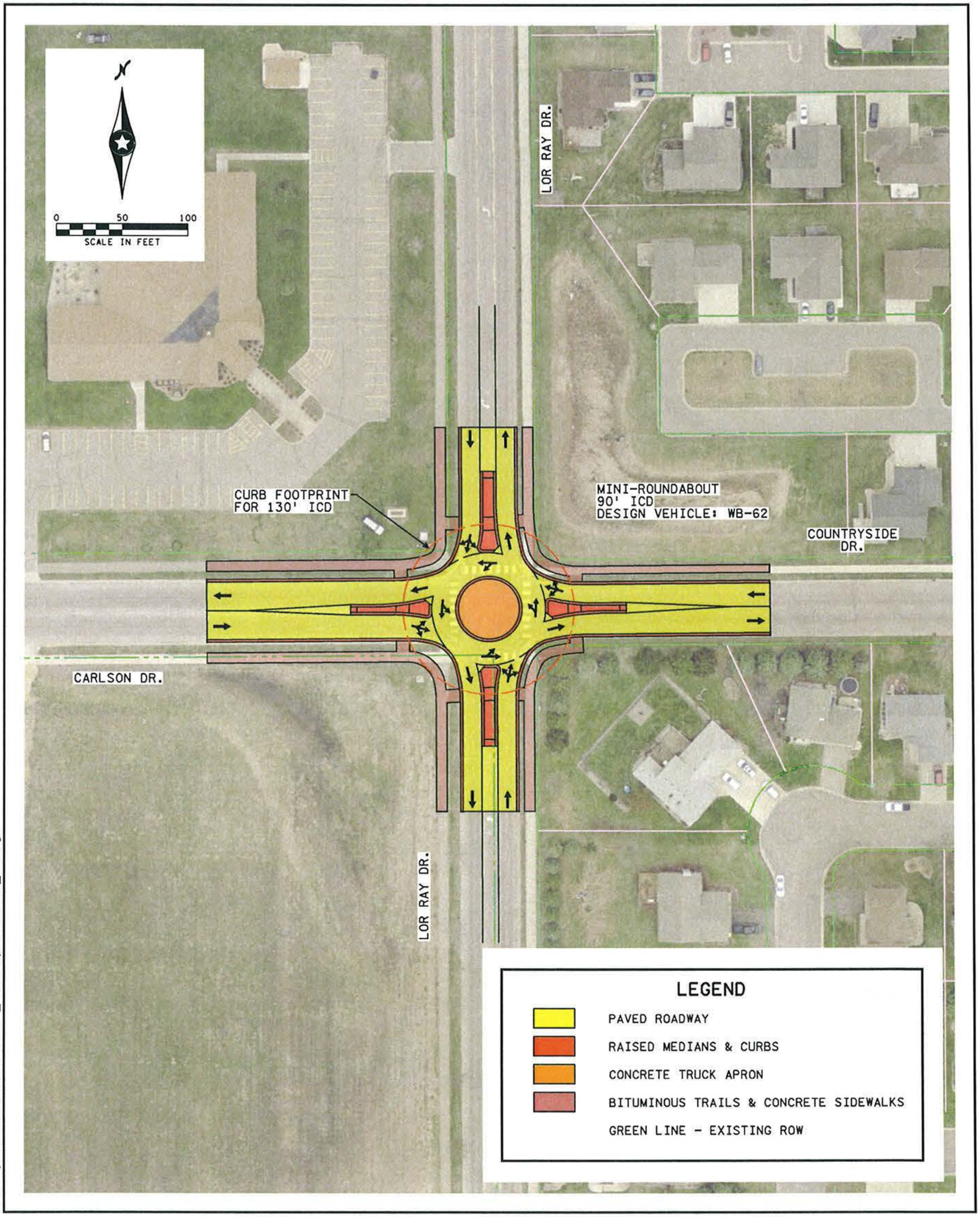
September 2017

Future Conditions

Based on discussions with City staff in the summer of 2017, no short-term improvements to Lor Ray Drive, Carlson Drive, Countryside Drive, or the study intersection are planned. For the alternatives analysis, the existing lane configurations under side-street stop control (listed in Table 1 and shown in Figure 2) were assumed to be the same for the all-way stop control alternative. The lane configurations for the roundabout control alternative are listed in Table 2 below and are shown in Figure 3, with a mini-roundabout variation being utilized for this alternative. Mini-roundabouts can typically be built within the existing footprint of an intersection, resulting in little or no right-of way impacts. According to *Mini-Roundabouts Technical Summary* (Federal Highway Administration, 2010), mini-roundabouts are best suited and most efficient in lower speed environments (30 mph or less), and are generally recommended for intersections where the total entering daily traffic volume does not exceed approximately 15,000 vehicles. This criteria fits the characteristics of the study intersection.

Table 2. Proposed Lane Configurations for Mini-Roundabout Control Alternative

Approach	Configuration
Northbound Lor Ray Drive	One shared lane (all movements)
Southbound Lor Ray Drive	One shared lane (all movements)
Eastbound Carlson Drive	One shared lane (all movements)
Westbound Countryside Drive	One shared lane (all movements)



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September 2017

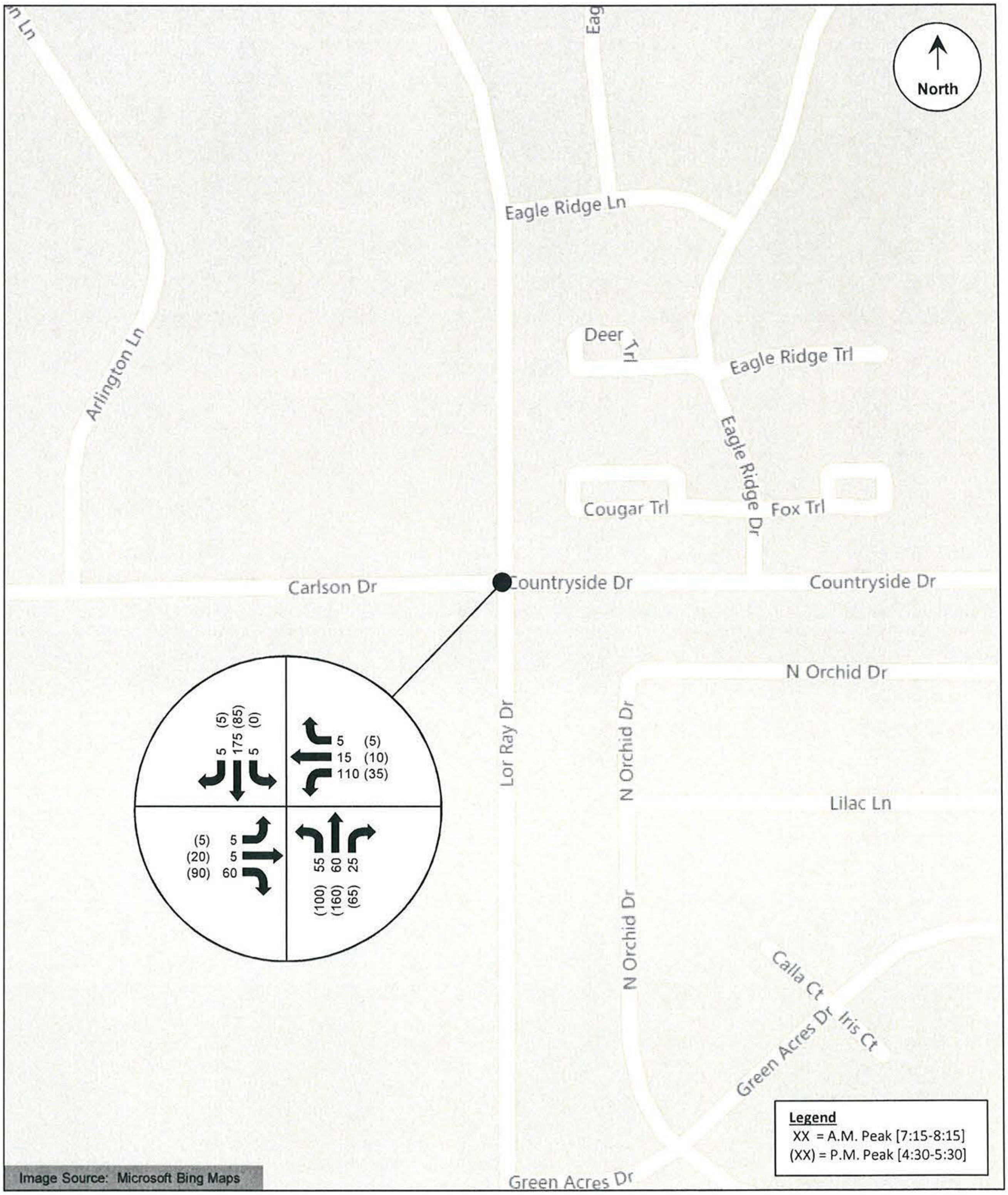
Mini-Roundabout Control Alternative

Intersection Control Evaluation
Lor Ray Drive at Carlson Drive/Countyside Drive

Figure 3

Traffic Volumes

Hourly traffic volumes including the existing a.m. and p.m. peak hour were collected in April 2017 by SRF prior to the conclusion of the spring term at Minnesota State University and are shown in Figure 4. Pedestrian and bicycle volumes were also collected. Growth rates from the MAPO 2045 Transportation Plan were explored for traffic forecasts, however, these growth rates do not fully account for recently proposed housing developments north and east of the study intersection. Furthermore, the property in the southwest quadrant is owned by the school district, and is a possible location of a future elementary school. If these developments all occur, there would be significant traffic growth at the study intersection. Therefore, a trip generation was completed for these developments to obtain growth rates. The trip generation assumed the worst-case scenario for the study intersection of an elementary school with all access points on Carlson Drive. The resulting growth rates were 3.7% and 3.0% on the north and south legs of Lor Ray Drive, respectively, 6.0% on Countryside Drive (east leg), and 2.0% on Carlson Drive (west leg). These growth rates account for the two housing developments occurring in the next 20 years, growth in the surrounding area, and the worst-case scenario of an elementary school access on the west leg. These growth rates were used to determine Forecasted Year 2037 peak hour turning movement volumes, which are shown in Figure 5.



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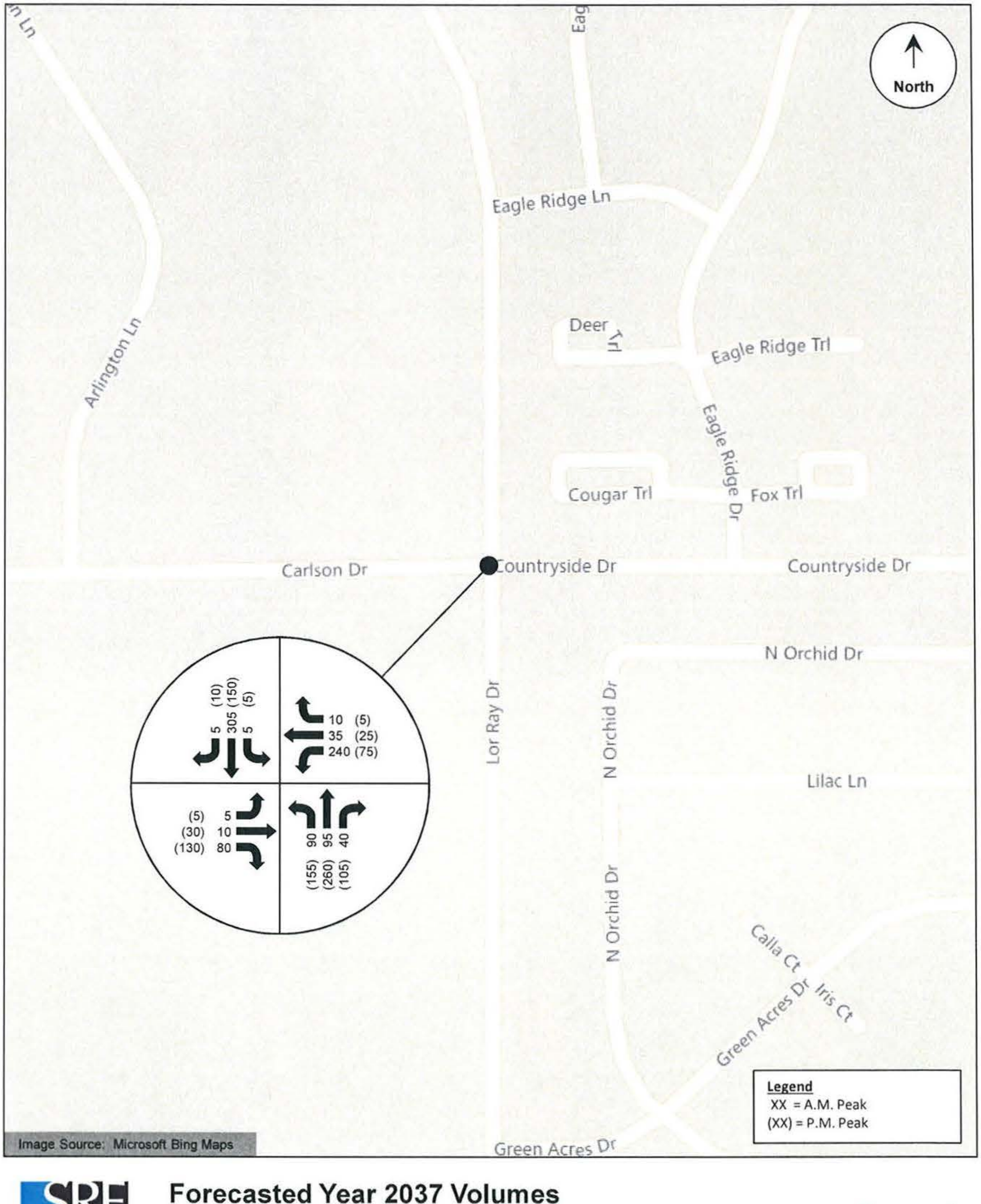
September 2017

Existing Year 2017 Volumes

Figure 4

Intersection Control Evaluation
Lor Ray Drive at Carlson Drive/Countryside Drive
North Mankato, Nicollet County, Minnesota



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September 2017

Forecasted Year 2037 Volumes

Figure 5

Intersection Control Evaluation
Lor Ray Drive at Carlson Drive/Countryside Drive
North Mankato, Nicollet County, Minnesota

Analysis of Alternatives

The analysis of the side-street stop control, all-way stop control, and mini-roundabout control alternatives included a warrants analysis, operational analysis, planning-level crash analysis, and a planning-level cost analysis. Existing Year 2017 and Forecasted Year 2037 volumes with proposed lane configurations discussed previously were used for the analysis.

Warrants Analysis

A warrants analysis was performed for the traffic signal control alternative as outlined in the February 2015 *Minnesota Manual on Uniform Traffic Control Devices* (MN MUTCD). The signal warrants analysis was based on the assumptions shown in Table 3.

Table 3. Warrants Analysis Assumptions

Approach	Geometry	Speed
Northbound Major Street (Lor Ray Drive)	2 or more approach lanes	30 mph
Southbound Major Street (Lor Ray Drive)	1 approach lane	30 mph
Eastbound Minor Street (Carlson Drive)	1 approach lane	30 mph
Westbound Minor Street (Countryside Drive)	1 approach lane	30 mph

Minor street right-turns were included in the analysis because of the shared eastbound and westbound lanes. The southbound approach was considered a one lane approach because of the low left-turn volume. Table 4 provides a summary of the results of the warrants analysis. The detailed warrants analysis can be found in the Appendix.

Table 4. Warrants Analysis Results

MN MUTCD Warrant	Hours Required	Existing Year 2017 Volumes		Forecasted Year 2037 Volumes	
		Hours Met	Warrant Met	Hours Met	Warrant Met
Warrant 1A: Minimum Vehicular Volume	8	0	No	0	No
Warrant 1B: Interruption of Continuous Traffic	8	0	No	0	No
Warrant 1C: Combination of Warrants	8	0	No	0	No
Warrant 2: Four-Hour Volume	4	0	No	0	No
Warrant 3B: Peak-Hour Volume	1	0	No	0	No
Multi-way Stop Applications Condition C	8	0	No	4	No

Warrants 4-9 were investigated but were determined to be not applicable. Results of the warrants analysis indicate that the intersection does not satisfy any MN MUTCD traffic signal warrants or multi-way stop warrants in 2017 or 2037.

Operational Analysis

An initial planning-level analysis was performed for the mini-roundabout control alternative based on methods found in the *Highway Capacity Manual, Sixth Edition* (Transportation Research Board, 2016). The analysis involved testing the theoretical capacity of a single-lane roundabout against the Forecasted Year 2037 entering and circulating volumes. As shown in Chart 1, the Forecasted Year 2037 volumes do not exceed the theoretical capacity of a single-lane roundabout. Therefore, a single lane mini-roundabout was selected for further analysis.

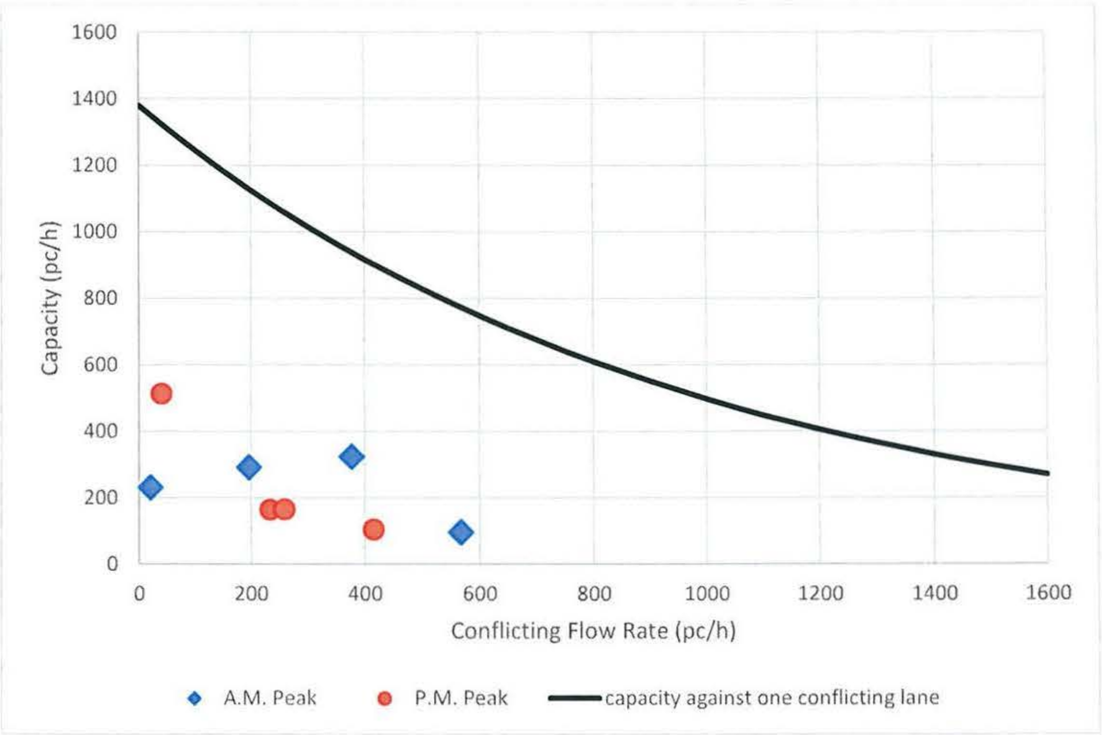


Chart 1. Single-Lane Roundabout Entry Lane Capacity (Forecasted Year 2037 volumes)

Operational analysis of the mini-roundabout control alternative was performed using Highway Capacity Software (HCS). HCS is based on methodologies found in the *Highway Capacity Manual, 6th Edition* (HCM). It is important to note that HCS only reports "stop" or "control" delay. Therefore, to determine the total delay, "geometric" delay, or delay due to vehicle deceleration and acceleration through an intersection, must be added to the "stop" or "control" delay.

The detailed operational analysis of all-way stop control and traffic signal control was performed using methods outlined in the HCM using Synchro/SimTraffic. Synchro/SimTraffic can calculate various measures of effectiveness such as control delay, queuing, and total travel time impacts. SimTraffic results are reported for the analysis.

The operational analysis identified a Level of Service (LOS), which indicates how well an intersection is operating based on average delay per vehicle. Intersections are given a ranking from LOS A to LOS F. LOS A indicates the best traffic operation and LOS F indicates an intersection where demand exceeds capacity. LOS A through LOS D are generally considered acceptable.

Table 5 and Table 6 provide a summary of the operational analysis for Existing Year 2017 and Forecasted Year 2037 conditions, respectively. Detailed operational analysis results can be found in the Appendix.

Table 5. Existing Year 2017 Operational Analysis Results

Alternative	Analysis Tool	A.M. Peak		P.M. Peak	
		Delay (1) (sec/veh)	LOS	Delay (1) (sec/veh)	LOS
Side-Street Stop Control	Synchro/SimTraffic	2/4	A (2)	1/5	A (2)
All-Way Stop Control	Synchro/SimTraffic	3/3	A/A	3/3	A/A
Mini-Roundabout Control	HCS	4/5	A/A	4/5	A/A

(1) Control/stop delay is reported. Overall results are followed by the worst approach results.
(2) LOS for side-street stop control as defined in the HCM is not applicable to the overall intersection.

Table 6. Forecasted Year 2037 Operational Analysis Results

Alternative	Analysis Tool (Variation)	A.M. Peak		P.M. Peak	
		Delay (1) (sec/veh)	LOS	Delay (1) (sec/veh)	LOS
Side-Street Stop Control	Synchro/SimTraffic	8/24	C (2)	2/8	A (2)
All-Way Stop Control	Synchro/SimTraffic	7/9	A/A	4/4	A/A
Mini-Roundabout Control	HCS	6/8	A/A	6/6	A/A

(1) Control/stop delay is reported. Overall results are followed by the worst approach results.
(2) LOS for side-street stop control as defined in the HCM is not applicable to the overall intersection.

Results of the operational analysis indicate that under the existing side-street stop control, the intersection operates with an acceptable level of service, and would continue to do so under Forecasted Year 2037 conditions. The worst approach delay is LOS C in the Forecasted Year 2037 a.m. peak, with more delay than all-way stop control or mini-roundabout control. The all-way stop control and mini-roundabout control alternatives would also operate with acceptable levels of service under existing and forecasted conditions.

Safety Analysis

A crash analysis was performed to determine the projected crashes per year for Existing Year 2017 and Forecasted Year 2037 conditions for the study intersection. Crash rates from the MnDOT Green Sheets (2011 to 2015 data) were used for the crash analysis of the all-way stop control alternative. The existing crash rate for side-street strop control was used for that alternative, as the existing crash rate far exceeds the average rate. According to *NCHRP Report 672 Roundabouts: An Informational Guide, Second Edition* (Transportation Research Board, 2010), the conversion of a suburban side-street stop controlled intersection to a single lane roundabout results in an estimated 78.2% reduction in crashes. Therefore, the crash rate for the mini-roundabout control alternative was calculated using the existing crash rate and this factor. A summary of the crash analysis is shown in Table 7.

Table 7. Crash Analysis Results

Alternative	Intersection AADT (2017)	Intersection AADT (2037)	Crash Rate	Projected Crashes/Year (2017)	Projected Crashes/Year (2037)
Side-Street Stop Control	5,000	8,400	1.21	3	4
All-Way Stop Control			0.35	1	2
Mini-Roundabout Control			0.26	1	1

Based on the results of the crash analysis, the all-way stop control and mini-roundabout control alternatives are anticipated to have less crashes than the side-street stop control alternative.

Studies have determined that the installation of a roundabout can improve overall safety of an intersection when compared to other forms of intersection control. Roundabouts typically have fewer conflict points than conventional intersections and the geometry of a roundabout induces lower speeds for vehicles approaching and traversing an intersection. With lower speeds, the severity of the crashes is decreased. A roundabout virtually eliminates right-angle and left-turn head-on crashes. Studies have shown the frequency of injury crashes is reduced more than property damage only crashes.

At a roundabout, drivers must be aware of traffic traveling around the circle when merging on or off the roundabout. Conversely, drivers at a traditional intersection must be aware of vehicles at all approaches and the movements they are making. This issue is most prevalent at stop-controlled intersections where there is not a traffic signal to control vehicle movements.

Planning-Level Cost Analysis

Capital Costs

The intersection is currently side-street stop controlled, therefore with the "no build" alternative there would be no cost to continue with this type of intersection control. The mini-roundabout control alternative would require reconstruction at the intersection, which results in a much higher cost than either stop control alternative.

Operation and Maintenance Costs

Operation and maintenance costs associated with a mini-roundabout can vary depending on the amount of illumination required. Mini-roundabouts have a mountable (traversable) center island so there is no additional landscaping to maintain. Stop control operation and maintenance costs are only the ongoing costs of maintaining the stop signs and pavement markings.

A cost analysis summary is shown in Table 8. Detailed cost analysis results can be found in the Appendix.

Table 8. Cost Analysis Summary

Alternative	Capital Costs (1)	Operation/Maintenance Costs (annual)
Side-Street Stop Control	$0	< $200
All-Way Stop Control	$1,000	< $200
Mini-Roundabout Control	$620,000	$500-$1,000

(1) Does not include engineering or right-of-way costs.

Alternatives Assessment

Right-of-Way Considerations

The roadway geometry for the side-street stop control and all-way stop control would use existing conditions and therefore no additional right-of-way would be required. Construction of a mini-roundabout at the study intersection would require additional right-of-way for the sidewalks/trails, but the impacts would be minimal compared to a full-size roundabout.

Transportation System Considerations

There are several roundabouts southwest of the study intersection at the Lookout Drive and County Road 41 interchanges with TH 14. Roundabout control was also recommended for the Lor Ray Drive and Howard Drive intersection to the south. The mini-roundabout control alternative could be considered a traffic calming measure for the surrounding residential area. No significant queues are expected with any of the alternatives.

Pedestrian and Bicycle Considerations

As previously mentioned, there are currently sidewalks/trails on both sides of Lor Ray Drive and Carlson Drive, and on the north side of Countryside Drive. There are marked pedestrian crossings on all four legs of the intersection. Pedestrian accommodations can be provided regardless of the selected intersection control.

The design of a mini-roundabout allows pedestrians to cross one direction of traffic at a time with a small refuge space in the middle of each leg of the mini-roundabout, and these short crossing distances and reduced travel speeds of vehicle traffic improve pedestrian safety. However, their route is slightly longer since they are kept to the outside of the inscribed circle.

The all-way stop alternative provides a safety benefit for pedestrians by having all vehicular movements stop; however, there are safety concerns for pedestrians where all road users expect other road users to stop. Most vehicle-pedestrian collisions at all-way stop controlled intersections are a result of either vehicles not stopping when pedestrians assume they are, or pedestrians not paying attention to vehicles approaching the intersection.

With side-street stop control, mainline vehicles do not have to stop except for pedestrians in crosswalks; when crossing the mainline, pedestrians must select acceptable gaps or verify that vehicles are stopping. Potential conflicts can also come from turning mainline traffic not looking for pedestrians crossing the side-street. In-street pedestrian crossing signs or rectangular rapid flashing beacons can be used to enhance the crossings.

Local Acceptance

Drivers are familiar with traveling through side-street stop controlled and all-way stop controlled intersections since there are many intersections in the area under these types of traffic control. Drivers are also familiar with traveling through roundabout controlled intersections since there are many existing roundabouts throughout the greater Mankato area.

Conclusions and Recommendations

The following conclusions are provided for this intersection control evaluation for the Lor Ray Drive at Carlson Drive/Countryside Drive intersection in North Mankato, Nicollet County, Minnesota:

- *Warrants Analysis*
  Results of the warrants analysis indicate that Existing Year 2017 and Forecasted Year 2037 volumes do not satisfy any MN MUTCD traffic signal warrants or multi-way stop warrants.

- *Operational Analysis*
  Results of the operational analysis indicate that under the existing side-street stop control, the intersection operates with an acceptable level of service, and would continue to do so under Forecasted Year 2037 conditions. The worst approach delay is LOS C in the Forecasted Year 2037 a.m. peak, with more delay than all-way stop control or mini-roundabout control. The all-way stop control and mini-roundabout control alternatives would operate with acceptable levels of servicer under forecasted conditions.

- *Safety Analysis*
  Based on the results of the crash analysis, the all-way stop control and mini-roundabout control alternatives are anticipated to have slightly less crashes than the side-street stop control alternative. Roundabouts typically have fewer conflict points than conventional intersections and the geometry of a roundabout induces lower speeds for vehicles approaching and traversing an intersection. With lower speeds, the severity of the crashes is decreased.

- *Planning-Level Cost Analysis*
  There would be no cost to continue with the existing side-street stop control, and minimal cost to convert to all-way stop control. The mini-roundabout control alternative would require reconstruction at the intersection, which results in a much higher cost estimate of approximately $620,000. Operation and maintenance costs associated with a mini-roundabout can vary depending on the amount of illumination required. Stop control operation and maintenance costs are only the ongoing costs of maintaining the stop signs and pavement markings.

- *Right-of-Way Considerations*
  The roadway geometry for the side-street stop control and all-way stop control alternatives would use existing conditions and therefore no additional right-of-way would be required. Construction of a mini-roundabout at the study intersection would require additional right-of-way, but the impacts would be minimal compared to a full-size roundabout.

- *Transportation System Considerations*
  There are several roundabouts southwest of the study intersection at the Lookout Drive and County Road 41 interchanges with TH 14. The roundabout control alternative could be considered a traffic calming measure for the surrounding residential area.

- *Pedestrian and Bicycle Considerations*
  The design of a roundabout allows pedestrians to cross one direction of traffic at a time on each leg of the roundabout. Their route is slightly longer since they are kept to the outside of the inscribed circle. All-way stop control provides a safety benefit for pedestrians by having all vehicular movements stop; however, most vehicle-pedestrian collisions at all-way stop controlled intersections are a result of either vehicles not stopping when pedestrians assume they are, or pedestrians not paying attention to vehicles approaching the intersection. Side-street stop control is not ideal for pedestrians with high traffic volumes, but can be enhanced by a variety of treatments.

- *Local Acceptance*
  Drivers are familiar with traveling through stop controlled intersections since there are many intersections in the area under these types of traffic control. Drivers are also familiar with traveling through roundabout controlled intersections since there are many existing roundabouts throughout the greater Mankato area.

A decision matrix was developed to help evaluate the key factors and is provided on the following page. Based on the results of this Intersection Control Evaluation, the side-street stop control, all-way stop control, and mini-roundabout control alternatives are all viable options for the Lor Ray Drive at Carlson Drive/Countryside Drive intersection. All alternatives have acceptable operations under forecasted conditions with all-way stop control and mini-roundabout control have less side-street delays. The "no build" alternative of side-street stop control does not require any capital improvements. However, there is an existing crash problem, so improvements to the intersection or change of control type are desired to help address this issue. Changing to all-way stop control would be expected to increase safety, but all-way stop control is not warranted and would greatly impact traffic flow. A mini-roundabout is expected to increase both vehicle and pedestrian safety within the existing intersection footprint, and could be considered a traffic calming measure for the surrounding residential area. Therefore, a mini-roundabout is recommended as the preferred long-term intersection control.

Alternatives Decision Matrix: Lor Ray Drive at Carlson Drive/Countryside Drive

Factor		Side-Street Stop Control	All-Way Stop Control	Mini-Roundabout Control	Recommended Alternative(s) Based on Factor
Warrants Analysis	2017	N/A	• AWSC warrant not met	N/A	Side-Street Stop Control Mini-Roundabout Control
	2037	N/A	• AWSC warrant not met	N/A	
Operational Analysis	2017	• Poor side-street LOS	• Acceptable LOS	• Acceptable LOS • Consistent off-peak operations	All-Way Stop Control Mini-Roundabout Control
	2037	• Poor side-street LOS	• Acceptable LOS	• Acceptable LOS • Consistent off-peak operations	
Safety Analysis	Pro(s):	none	• Low number of crashes expected • Lower vehicle speeds through intersection	• Least number of crashes expected • Lower vehicle speeds through intersection	All-Way Stop Control Mini-Roundabout Control
	Con(s):	• Most number of crashes expected • Higher vehicle speeds through intersection	• Drivers decide right-of-way	• Drivers select acceptable gaps	
Cost Analysis	Pro(s):	• No capital cost • Low operation/maintenance costs	• Low capital cost • Low operation/maintenance costs	• Low operation/maintenance costs	Side-Street Stop Control All-Way Stop Control
	Con(s):	none	none	• Higher capital costs ($620,000) than stop control • Requires substantial reconstruction	
Right-of-Way	Pro(s):	N/A (existing control)	• No ROW impacts expected	none	Side-Street Stop Control All-Way Stop Control
	Con(s):		none	• Requires minimal additional ROW	
Transportation System Considerations	Pro(s):	• Existing control • Adjacent intersections are side-street stop controlled	• Adjacent intersections are all-way stop controlled	• Adjacent intersections are recommended to be roundabouts	Mini-Roundabout Control
	Con(s):	• Adjacent intersections are recommended to be roundabouts	• No adjacent signals • Adjacent intersections are recommended to be roundabouts	none	
Pedestrian and Bicycle Considerations	Pro(s):	none	• All vehicular movements stop	• Pedestrian Refuge islands • Lower vehicle speeds thru intersection	All-Way Stop Control Mini-Roundabout Control
	Con(s):	• Mainline vehicles do not stop • Higher vehicle speeds thru intersection	• Expecting vehicles to yield to pedestrians can lead to a false sense of security	• Longer route	
Local Acceptance	Pro(s):	N/A (existing control)	• Familiar to drivers	• Familiar to drivers • Positive public feedback	Side-Street Stop Control Mini-Roundabout Control
	Con(s):		none	none	

Appendix

- 2011-2015 Crash History
- Existing Year 2017 Warrants Analysis
- Forecasted Year 2037 Warrants Analysis
- Existing Year 2017 Detailed Operational Analysis
    - Side-Street Stop Control
    - All-Way Stop Control
    - Roundabout Control
- Forecasted Year 2037 Detailed Operational Analysis
    - Side-Street Stop Control
    - All-Way Stop Control
    - Roundabout Control
- Detailed Cost Analysis

2011-2015 Crash History

Crash Detail Report

Lor Ray Drive at Carlson Drive/Countryside Drive

Report Version 1.0 March 2010

Crash ID:	110360040	**Date:**	02/04/2011	**Time:**	2202	**Sys:**	05-MSAS
County:	NICOLLET	**City:**	NORTH MANKATO			**Route:**	28550117 001+00.332

Severity:	PROPERTY DAMAGE	**First Event:**	ON ROADWAY
Road Type:	2 LANES UNDIV 2_WAY	**To Junction:**	INTERSECTION-RELATED
Road Char:	STRAIGHT AND LEVEL	**Traffic Device:**	STOP SIGN 4-WAY
Crash Type:	COLL W/MV IN TRANSPORT	**Speed Limit:**	30
Surf Cond:	ICE/PACKED SNOW	**Diagram:**	OTHER
Light Cond:	DARK - STREET LIGHTS ON	**Officer:**	
Weather 1:	CLOUDY	**Reliability:**	CONFIDENT
Weather 2:	NOT SPECIFIED	**# of Vehicles:**	2.00

	Unit 1	Unit 2	Unit 3
Trav Dir:	N	W	
Veh Act:	STRAIGHT AHEAD	START TRAFFIC	
Veh Type:	PASSENGER CAR	PASSENGER CAR	
Age:	20	60	
Gender:	F	F	
Cond:	NORMAL	NORMAL	
Cont Fact 1	NO IMPROPER DRIVING	FAIL TO YIELD ROW	
Cont Fact 2	NOT SPECIFIED	NOT SPECIFIED	

Crash ID:	110520423	**Date:**	02/21/2011	**Time:**	1940	**Sys:**	05-MSAS
County:	NICOLLET	**City:**	NORTH MANKATO			**Route:**	28550254 001+00.320

Severity:	PROPERTY DAMAGE	**First Event:**	ON ROADWAY
Road Type:	2 LANES UNDIV 2_WAY	**To Junction:**	INTERSECTION-RELATED
Road Char:	STRAIGHT AND LEVEL	**Traffic Device:**	STOP SIGN OTHER
Crash Type:	COLL W/MV IN TRANSPORT	**Speed Limit:**	30
Surf Cond:	ICE/PACKED SNOW	**Diagram:**	RIGHT ANGLE
Light Cond:	DARK - STREET LIGHTS ON	**Officer:**	
Weather 1:	SNOW	**Reliability:**	CONFIDENT
Weather 2:	NOT SPECIFIED	**# of Vehicles:**	2.00

	Unit 1	Unit 2	Unit 3
Trav Dir:	EAST	S	
Veh Act:	START TRAFFIC	STRAIGHT AHEAD	
Veh Type:	SPORT UNTILITY VEHICLE	PICKUP TRUCK	
Age:	43	28	
Gender:	M	M	
Cond:	NORMAL	NORMAL	
Cont Fact 1	FAIL TO YIELD ROW	NO IMPROPER DRIVING	
Cont Fact 2	NOT SPECIFIED	NOT SPECIFIED	

Crash ID: 123370008	**Date:** 12/01/2012	**Time:** 1725	**Sys:** 05-MSAS		
County: NICOLLET	**City:** NORTH MANKATO		**Route:** 28550254	001+00.320	

Severity:	PROPERTY DAMAGE	**First Event:**	ON ROADWAY
Road Type:	2 LANES UNDIV 2_WAY	**To Junction:**	4-LEGGED INTERSECTION
Road Char:	STRAIGHT AND LEVEL	**Traffic Device:**	STOP SIGN OTHER
Crash Type:	COLL W/MV IN TRANSPORT	**Speed Limit:**	30
Surf Cond:	DRY	**Diagram:**	RIGHT ANGLE
Light Cond:	DARK - STREET LIGHTS ON	**Officer:**	
Weather 1:	CLEAR	**Reliability:**	CONFIDENT
Weather 2:	FOG/SMOG/SMOKE	**# of Vehicles:**	2.00

	Unit 1	Unit 2	Unit 3
Trav Dir:	EAST	S	
Veh Act:	PED. FAIL TO YIELD R/W TO T	STRAIGHT AHEAD	
Veh Type:	SPORT UNTILITY VEHICLE	PASSENGER CAR	
Age:	18	45	
Gender:	F	M	
Cond:	NORMAL	NORMAL	
Cont Fact 1	FAIL TO YIELD ROW	NO IMPROPER DRIVING	
Cont Fact 2	NOT SPECIFIED	NOT SPECIFIED	

Crash ID: 131970063	**Date:** 07/16/2013	**Time:** 0930	**Sys:** 05-MSAS	
County: NICOLLET	**City:** NORTH MANKATO		**Route:** 28550254	001+00.320

Severity:	PROPERTY DAMAGE	**First Event:**	ON ROADWAY
Road Type:	2 LANES UNDIV 2_WAY	**To Junction:**	INTERSECTION-RELATED
Road Char:	STRAIGHT AND LEVEL	**Traffic Device:**	STOP SIGN OTHER
Crash Type:	COLL W/MV IN TRANSPORT	**Speed Limit:**	30
Surf Cond:	DRY	**Diagram:**	REAR END
Light Cond:	DAYLIGHT	**Officer:**	
Weather 1:	CLEAR	**Reliability:**	CONFIDENT
Weather 2:	NOT SPECIFIED	**# of Vehicles:**	2.00

	Unit 1	Unit 2	Unit 3
Trav Dir:	EAST	E	
Veh Act:	STRAIGHT AHEAD	STRAIGHT AHEAD	
Veh Type:	PASSENGER CAR	PASSENGER CAR	
Age:	30	68	
Gender:	F	F	
Cond:	NORMAL	NORMAL	
Cont Fact 1	OTHER HUMAN FACTOR	NO IMPROPER DRIVING	
Cont Fact 2	NOT SPECIFIED	NOT SPECIFIED	

Crash ID: 140170011	**Date:** 01/16/2014	**Time:** 0630	**Sys:** 05-MSAS
County: NICOLLET	**City:** NORTH MANKATO		**Route:** 28550117 001+00.330

Severity:	PROPERTY DAMAGE	**First Event:**	ON ROADWAY
Road Type:	2 LANES UNDIV 2_WAY	**To Junction:**	4-LEGGED INTERSECTION
Road Char:	STRAIGHT AND LEVEL	**Traffic Device:**	STOP SIGN OTHER
Crash Type:	COLL W/MV IN TRANSPORT	**Speed Limit:**	30
Surf Cond:	ICE/PACKED SNOW	**Diagram:**	HEAD ON
Light Cond:	SUNRISE	**Officer:**	
Weather 1:	BLOWING SAND/DUST/SNOW	**Reliability:**	CONFIDENT
Weather 2:	NOT SPECIFIED	**# of Vehicles:**	2.00

	Unit 1	Unit 2	Unit 3
Trav Dir:	N	S	
Veh Act:	STRAIGHT AHEAD	STRAIGHT AHEAD	
Veh Type:	BUS (7-15 SEATS)	PASSENGER CAR	
Age:	53	32	
Gender:	F	F	
Cond:	NORMAL	NORMAL	
Cont Fact 1	SKIDDING	NO IMPROPER DRIVING	
Cont Fact 2	WEATHER	NOT SPECIFIED	

Crash ID: 141540200	**Date:** 06/03/2014	**Time:** 1930	**Sys:** 05-MSAS
County: NICOLLET	**City:** NORTH MANKATO		**Route:** 28550117 001+00.332

Severity:	PROPERTY DAMAGE	**First Event:**	ON ROADWAY
Road Type:	2 LANES UNDIV 2_WAY	**To Junction:**	INTERSECTION-RELATED
Road Char:	STRAIGHT AND LEVEL	**Traffic Device:**	STOP SIGN OTHER
Crash Type:	COLL W/MV IN TRANSPORT	**Speed Limit:**	30
Surf Cond:	DRY	**Diagram:**	RIGHT ANGLE
Light Cond:	DAYLIGHT	**Officer:**	
Weather 1:	CLEAR	**Reliability:**	CONFIDENT
Weather 2:	NOT SPECIFIED	**# of Vehicles:**	2.00

	Unit 1	Unit 2	Unit 3
Trav Dir:	W	N	
Veh Act:	STRAIGHT AHEAD	STRAIGHT AHEAD	
Veh Type:	SPORT UNTILITY VEHICLE	PASSENGER CAR	
Age:	39	68	
Gender:	F	M	
Cond:	NORMAL	NORMAL	
Cont Fact 1	FAIL TO YIELD ROW	NO IMPROPER DRIVING	
Cont Fact 2	DISTRACTION	NOT SPECIFIED	

Crash ID:	142920033	**Date:**	10/18/2014	**Time:**	1508	**Sys:**	05-MSAS
County:	NICOLLET	**City:**	NORTH MANKATO			**Route:**	28550254 001+00.320

Severity:	NON-INCAPACITATING INJURY	**First Event:**	ON ROADWAY
Road Type:	2 LANES UNDIV 2_WAY	**To Junction:**	4-LEGGED INTERSECTION
Road Char:	STRAIGHT AND LEVEL	**Traffic Device:**	STOP SIGN OTHER
Crash Type:	COLL W/MV IN TRANSPORT	**Speed Limit:**	30
Surf Cond:	DRY	**Diagram:**	NOT APPLICABLE
Light Cond:	DAYLIGHT	**Officer:**	
Weather 1:	CLEAR	**Reliability:**	LESS CONFIDENT
Weather 2:	NOT SPECIFIED	**# of Vehicles:**	2.00

	Unit 1	Unit 2	Unit 3
Trav Dir:	S	E	
Veh Act:	STRAIGHT AHEAD	STRAIGHT AHEAD	
Veh Type:	SPORT UNTILITY VEHICLE	PASSENGER CAR	
Age:	33	48	
Gender:	M	F	
Cond:	NORMAL	NORMAL	
Cont Fact 1	NO IMPROPER DRIVING	FAIL TO YIELD ROW	
Cont Fact 2	NOT SPECIFIED	NOT SPECIFIED	

Crash ID:	150090263	**Date:**	01/07/2015	**Time:**	1540	**Sys:**	05-MSAS
County:	NICOLLET	**City:**	NORTH MANKATO			**Route:**	28550117 001+00.332

Severity:	PROPERTY DAMAGE	**First Event:**	ON ROADWAY
Road Type:	2 LANES UNDIV 2_WAY	**To Junction:**	4-LEGGED INTERSECTION
Road Char:	STRAIGHT AND LEVEL	**Traffic Device:**	STOP SIGN OTHER
Crash Type:	COLL W/MV IN TRANSPORT	**Speed Limit:**	30
Surf Cond:	ICE/PACKED SNOW	**Diagram:**	OTHER
Light Cond:	DAYLIGHT	**Officer:**	
Weather 1:	CLEAR	**Reliability:**	CONFIDENT
Weather 2:	NOT SPECIFIED	**# of Vehicles:**	2.00

	Unit 1	Unit 2	Unit 3
Trav Dir:	N	E	
Veh Act:	STRAIGHT AHEAD	STRAIGHT AHEAD	
Veh Type:	PASSENGER CAR	PASSENGER CAR	
Age:	36	47	
Gender:	M	M	
Cond:	NORMAL	NORMAL	
Cont Fact 1	NO IMPROPER DRIVING	FAIL TO YIELD ROW	
Cont Fact 2	NOT SPECIFIED	ILLEGAL SPEED	

Crash ID: 150530064 **Date:** 02/22/2015 **Time:** 0853 **Sys:** 10-M
County: NICOLLET **City:** NORTH MANKATO **Route:** 28550194 000+00.000

Severity: PROPERTY DAMAGE
Road Type: 2 LANES UNDIV 2_WAY
Road Char: STRAIGHT AND LEVEL
Crash Type: COLL W/MV IN TRANSPORT
Surf Cond: DRY
Light Cond: DAYLIGHT
Weather 1: CLEAR
Weather 2: NOT SPECIFIED
First Event: ON ROADWAY
To Junction: 4-LEGGED INTERSECTION
Traffic Device: STOP SIGN OTHER
Speed Limit: 30
Diagram: SIDESWIPE OPPOSING
Officer:
Reliability: CONFIDENT
# of Vehicles: 2.00

	Unit 1	Unit 2	Unit 3
Trav Dir:	S	SE	
Veh Act:	STRAIGHT AHEAD	RIGHT TURN	
Veh Type:	VAN OR MINIVAN	PICKUP TRUCK	
Age:	62	28	
Gender:	F	M	
Cond:	NORMAL	NORMAL	
Cont Fact 1	NO IMPROPER DRIVING	FAIL TO YIELD ROW	
Cont Fact 2	NOT SPECIFIED	DISREGARD TRAFFIC DEVICE	

Crash ID: 152300056 **Date:** 08/18/2015 **Time:** 1000 **Sys:** 05-MSAS
County: NICOLLET **City:** NORTH MANKATO **Route:** 28550117 001+00.332

Severity: PROPERTY DAMAGE
Road Type: 2 LANES UNDIV 2_WAY
Road Char: STRAIGHT AND LEVEL
Crash Type: COLL W/MV IN TRANSPORT
Surf Cond: WET
Light Cond: DAYLIGHT
Weather 1: RAIN
Weather 2: NOT SPECIFIED
First Event: ON ROADWAY
To Junction: INTERSECTION-RELATED
Traffic Device: STOP SIGN OTHER
Speed Limit: 30
Diagram: RIGHT ANGLE
Officer:
Reliability: CONFIDENT
# of Vehicles: 2.00

	Unit 1	Unit 2	Unit 3
Trav Dir:	S	S	
Veh Act:	STRAIGHT AHEAD	RIGHT TURN	
Veh Type:	SPORT UNTILITY VEHICLE	PASSENGER CAR	
Age:	41	84	
Gender:	F	M	
Cond:	NORMAL	NORMAL	
Cont Fact 1	NO IMPROPER DRIVING	FAIL TO YIELD ROW	
Cont Fact 2	NOT SPECIFIED	NOT SPECIFIED	

Crash ID: 152720037	**Date:** 09/28/2015	**Time:** 1544	**Sys:** 05-MSAS		
County: NICOLLET	**City:** NORTH MANKATO		**Route:** 28550117	001+00.332	

Severity:	PROPERTY DAMAGE	**First Event:**	ON ROADWAY
Road Type:	2 LANES UNDIV 2_WAY	**To Junction:**	4-LEGGED INTERSECTION
Road Char:	STRAIGHT AND LEVEL	**Traffic Device:**	STOP SIGN OTHER
Crash Type:	COLL W/MV IN TRANSPORT	**Speed Limit:**	30
Surf Cond:	DRY	**Diagram:**	REAR END
Light Cond:	DAYLIGHT	**Officer:**	
Weather 1:	CLEAR	**Reliability:**	CONFIDENT
Weather 2:	NOT SPECIFIED	**# of Vehicles:**	2.00

	Unit 1	Unit 2	Unit 3
Trav Dir:	N	N	
Veh Act:	STRAIGHT AHEAD	STRAIGHT AHEAD	
Veh Type:	PICKUP TRUCK	PICKUP TRUCK	
Age:	55	42	
Gender:	M	M	
Cond:	NORMAL	NORMAL	
Cont Fact 1	NO IMPROPER DRIVING	FOLLOWING TOO CLOSELY	
Cont Fact 2	NOT SPECIFIED	DISTRACTION	

Selection Filter:

WORK AREA: CONST_DIST_CODE('7') - FILTER: CRASH_YEAR('2011','2012','2013','2014','2015') - SPATIAL FILTER APPLIED

Analyst:

Luke James

Notes:

Existing Year 2017 Warrants Analysis

SRF Consulting Group, Inc.

WARRANTS ANALYSIS

Existing Year 2017

Lor Ray Drive at Carlson Drive/Countryside Drive
Intersection Control Evaluation
City of North Mankato, Nicollet County

Background Information

		Speed (mph)	Lanes	Approach	
Location :	City of North Mankato, Nicollet County	30	2 or more	Major Approach 1:	Northbound Lor Ray Drive
Date:	6/7/2017	30	1	Major Approach 3:	Southbound Lor Ray Drive
Analysis Prepared By:	Luke James	30	1	Minor Approach 2:	Eastbound Carlson Drive
Population Less than 10,000:	No	30	1	Minor Approach 4:	Westbound Countryside Drive
Seventy Percent Factor Used:	No				

Warrants Analysis: Warrants 1A, 1B and 1C

Hour	Major Approach 1	Major Approach 3	Total 1 + 3	Warrant Met 600	Warrant Met 900	Minor Approach 2	Minor Approach 4	Largest Minor App.	Warrant Met 150	Warrant Met 75	Met Same Hours Condition A	Met Same Hours Condition B	Combination A	Combination B	MWSA (C) 300	MWSA (C) 200
6 - 7 AM	39	53	92			48	34	48								
7 - 8 AM	97	183	280			67	116	116		X						
8 - 9 AM	128	69	197			62	60	62								
9 - 10 AM	77	54	131			47	28	47								
10 - 11 AM	89	51	140			37	34	37								
11 - 12 AM	132	63	195			48	35	48								
12 - 1 PM	145	64	209			73	43	73								
1 - 2 PM	121	60	181			50	29	50								
2 - 3 PM	154	79	233			64	41	64								
3 - 4 PM	179	74	253			62	39	62								
4 - 5 PM	232	82	314			84	42	84		X					X	
5 - 6 PM	271	83	354			93	41	93		X					X	
6 - 7 PM	192	65	257			40	45	45								
7 - 8 PM	157	43	200			50	31	50								
8 - 9 PM	110	29	139			27	17	27								
9 - 10 PM	78	18	96			18	11	18								
10 - 11 PM	36	6	42			13	7	13								
											0	0	0	0	0	

Warrant Summary

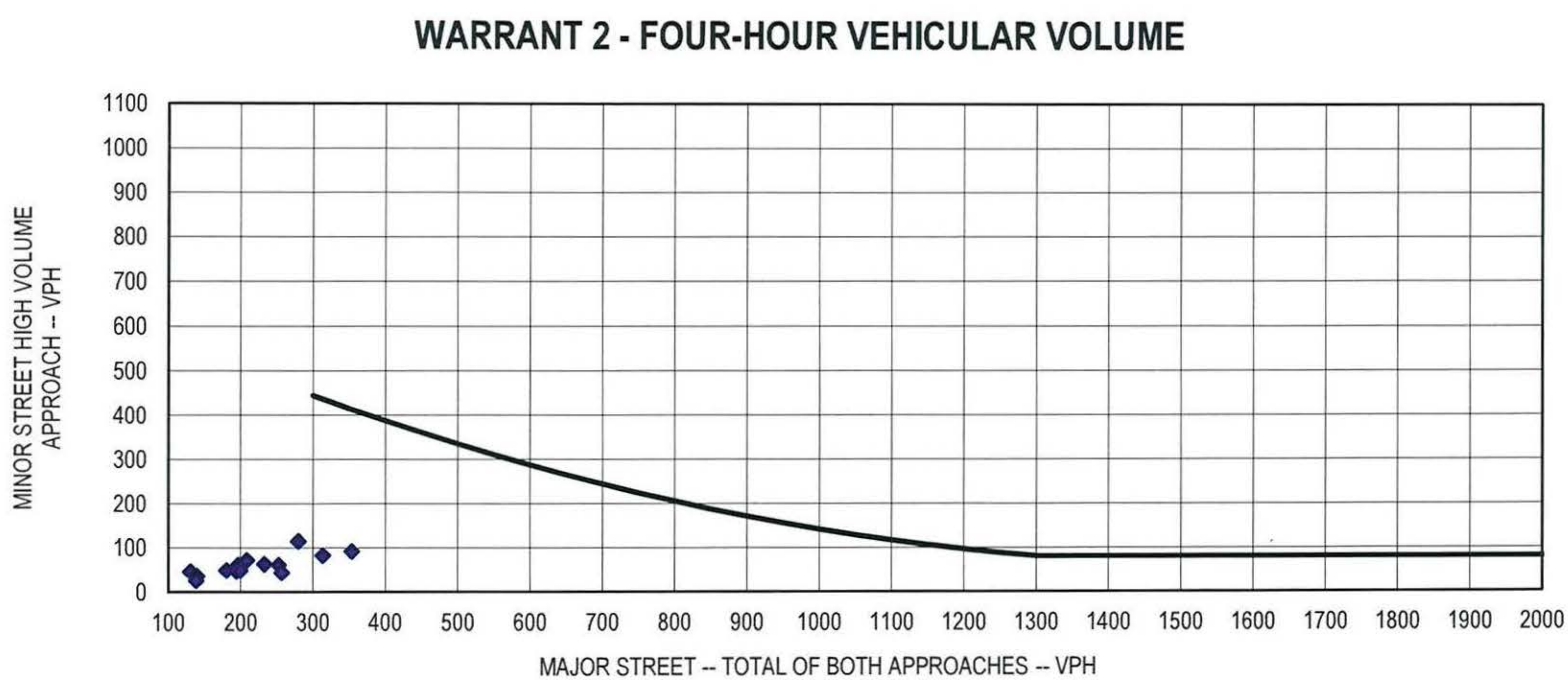
Warrant and Description		Hours Met	Hours Required	Met/Not Met
MWSA (C):	Multiway Stop Applications Condition C	0	8	Not Met
Warrant 1A:	Minimum Vehicular Volume	0	8	Not Met
Warrant 1B:	Interruption of Continuous Traffic	0	8	Not Met
Warrant 1C:	Combination of Warrants	0	8	Not Met
Warrant 2:	Four-Hour Vehicular Volume	0	4	Not Met
Warrant 3B:	Peak Hour	0	1	Not Met

WARRANTS ANALYSIS

Existing Year 2017

Lor Ray Drive at Carlson Drive/Countryside Drive
Intersection Control Evaluation
City of North Mankato, Nicollet County

Warrants Analysis: Warrant 2



Number of Hours Satisfying Requirements: 0

Notes: 1. 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

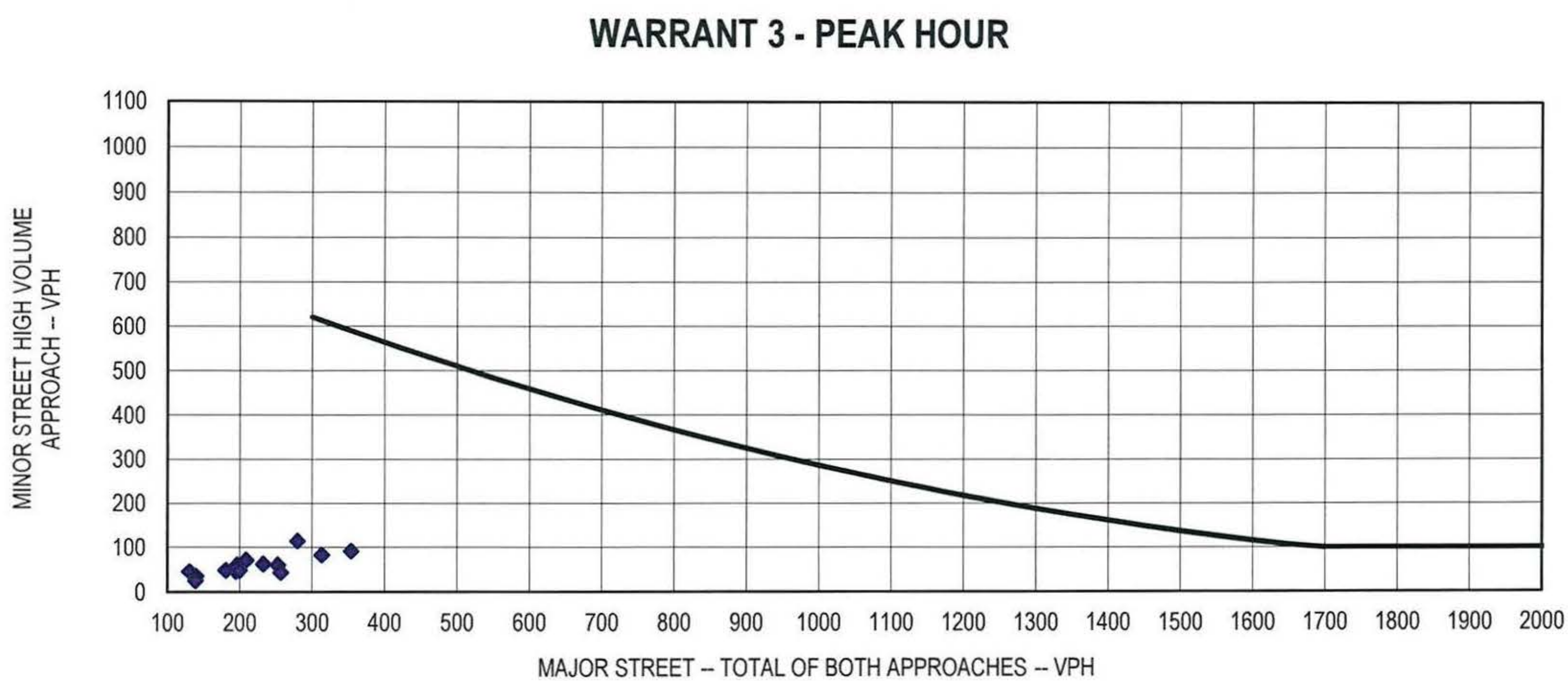
Consulting Group, Inc.

WARRANTS ANALYSIS

Existing Year 2017

Lor Ray Drive at Carlson Drive/Countryside Drive
Intersection Control Evaluation
City of North Mankato, Nicollet County

Warrants Analysis: Warrant 3



Number of Hours Satisfying Requirements:	0

Notes: 1. 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Forecasted Year 2037 Warrants Analysis

Consulting Group, Inc.

WARRANTS ANALYSIS

Forecasted Year 2037

Lor Ray Drive at Carlson Drive/Countryside Drive
Intersection Control Evaluation
City of North Mankato, Nicollet County

Background Information

		Speed (mph)	Lanes	Approach	
Location :	City of North Mankato, Nicollet County				
Date:	7/12/2017	30	2 or more	Major Approach 1:	Northbound Lor Ray Drive
Analysis Prepared By:	Luke James	30	1	Major Approach 3:	Southbound Lor Ray Drive
Population Less than 10,000:	No	30	1	Minor Approach 2:	Eastbound Carlson Drive
Seventy Percent Factor Used:	No	30	1	Minor Approach 4:	Westbound Countryside Drive

Warrants Analysis: Warrants 1A, 1B, and 1C

Hour	Major Approach 1	Major Approach 3	Total 1 + 3	Warrant Met 600	Warrant Met 900	Minor Approach 2	Minor Approach 4	Largest Minor App.	Warrant Met 150	Warrant Met 75	Met Same Hours Condition A	Met Same Hours Condition B	Combination A	Combination B	MWSA (C) 300	MWSA (C) 200
6 - 7 AM	62	92	154			67	74	74								
7 - 8 AM	154	318	472			94	255	255	X	X					X	X
8 - 9 AM	205	120	325			86	132	132		X					X	X
9 - 10 AM	123	93	216			66	61	66								
10 - 11 AM	142	88	230			52	75	75		X						
11 - 12 AM	211	110	321			67	76	76		X					X	
12 - 1 PM	231	110	341			102	94	102		X					X	
1 - 2 PM	194	104	298			70	63	70								
2 - 3 PM	246	137	383			89	89	89		X					X	
3 - 4 PM	286	128	414			86	86	86		X					X	
4 - 5 PM	370	143	513			117	91	117		X					X	X
5 - 6 PM	434	144	578			130	90	130		X			X		X	X
6 - 7 PM	306	112	418			56	98	98		X					X	
7 - 8 PM	250	74	324			70	67	70							X	
8 - 9 PM	175	50	225			38	37	38								
9 - 10 PM	125	31	156			25	23	25								
10 - 11 PM	58	10	68			18	15	18								
											0	0	1	0	4	

Warrant Summary

Warrant and Description		Hours Met	Hours Required	Met/Not Met
MWSA (C):	Multiway Stop Applications Condition C	4	8	Not Met
Warrant 1A:	Minimum Vehicular Volume	0	8	Not Met
Warrant 1B:	Interruption of Continuous Traffic	0	8	Not Met
Warrant 1C:	Combination of Warrants	0	8	Not Met
Warrant 2:	Four-Hour Vehicular Volume	0	4	Not Met
Warrant 3B:	Peak Hour	0	1	Not Met

Consulting Group, Inc.

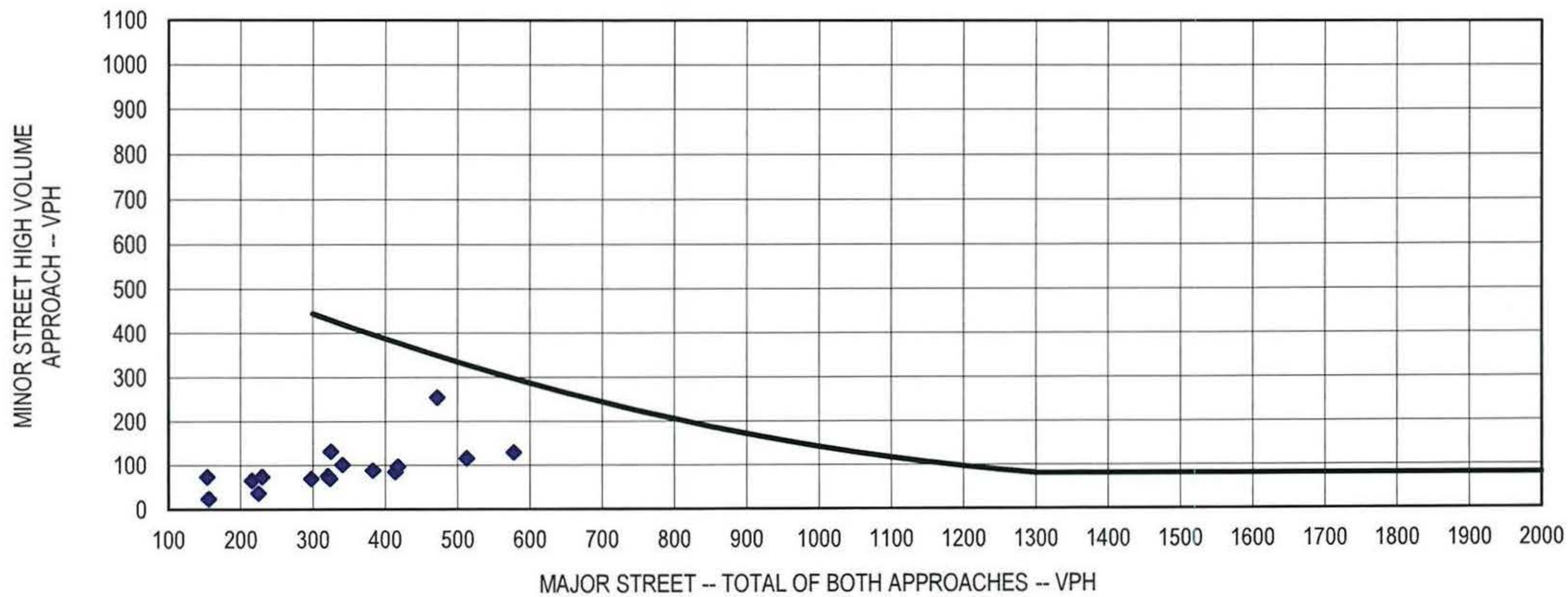
WARRANTS ANALYSIS

Forecasted Year 2037

Lor Ray Drive at Carlson Drive/Countryside Drive
Intersection Control Evaluation
City of North Mankato, Nicollet County

Warrants Analysis: Warrant 2

WARRANT 2 - FOUR-HOUR VEHICULAR VOLUME

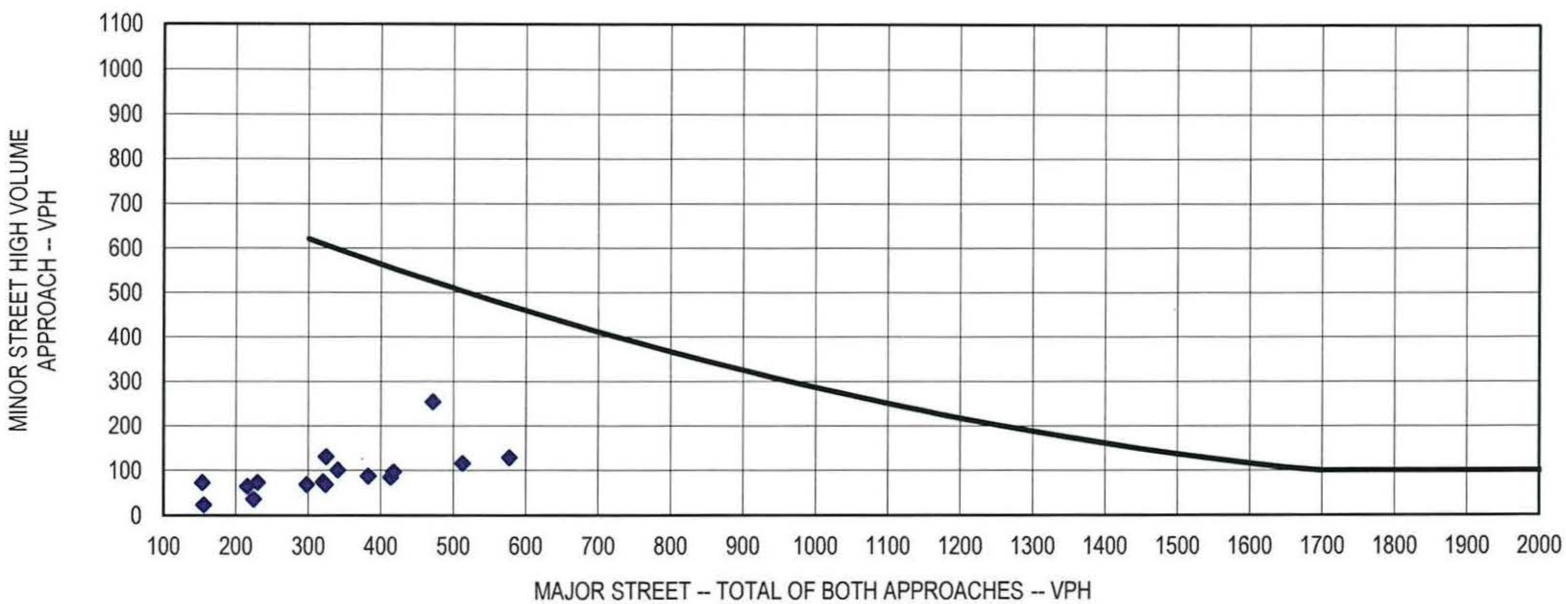


Number of Hours Satisfying Requirements:	0

Notes: 1. 115 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 80 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Warrants Analysis: Warrant 3

WARRANT 3 - PEAK HOUR



Number of Hours Satisfying Requirements:	0

Notes: 1. 150 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACH WITH TWO OR MORE LANES AND 100 VPH APPLIES AS THE LOWER THRESHOLD VOLUME FOR A MINOR STREET APPROACHING WITH ONE LANE.

Existing Year 2017 Detailed Operational Analysis

Side-Street Stop Control

2: Lor Ray Drive & Carlson Drive/Countryside Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.1	0.2	1.5	0.3	0.6
Total Delay (hr)	0.1	0.2	0.0	0.0	0.4
Total Del/Veh (s)	4.6	7.0	1.2	0.6	2.9
Stop Delay (hr)	0.1	0.2	0.0	0.0	0.2
Stop Del/Veh (s)	3.7	4.4	0.2	0.0	1.6
Total Stops	70	128	11	1	210
Stop/Veh	0.99	1.00	0.08	0.01	0.40

Intersection: 2: Lor Ray Drive & Carlson Drive/Countryside Drive

Movement	EB	WB	NB	SB	SB
Directions Served	LTR	LTR	L	L	TR
Maximum Queue (ft)	61	101	48	12	4
Average Queue (ft)	32	42	10	1	0
95th Queue (ft)	56	73	35	9	3
Link Distance (ft)	966	966			972
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			250	250	
Storage Blk Time (%)					
Queuing Penalty (veh)					

2: Lor Ray Drive & Carlson Drive/Countryside Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.1	0.1	1.3	0.1	0.8
Total Delay (hr)	0.1	0.1	0.1	0.0	0.4
Total Del/Veh (s)	4.6	6.5	1.3	0.3	2.3
Stop Delay (hr)	0.1	0.1	0.0	0.0	0.2
Stop Del/Veh (s)	3.2	4.5	0.1	0.0	1.1
Total Stops	111	50	8	0	169
Stop/Veh	1.00	1.00	0.02	0.00	0.29

Intersection: 2: Lor Ray Drive & Carlson Drive/Countryside Drive

Movement	EB	WB	NB
Directions Served	LTR	LTR	L
Maximum Queue (ft)	65	53	39
Average Queue (ft)	37	27	7
95th Queue (ft)	59	50	29
Link Distance (ft)	966	966	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			250
Storage Blk Time (%)			
Queuing Penalty (veh)			

Existing Year 2017 Detailed Operational Analysis

All-Way Stop Control

2: Lor Ray Drive & Carlson Drive/Countryside Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.1	0.2	1.6	0.3	0.6
Total Delay (hr)	0.1	0.2	0.2	0.4	0.9
Total Del/Veh (s)	3.9	5.9	5.6	7.3	6.1
Stop Delay (hr)	0.1	0.1	0.1	0.2	0.5
Stop Del/Veh (s)	3.1	3.4	3.0	3.4	3.2
Total Stops	62	134	148	188	532
Stop/Veh	1.00	0.99	1.00	0.99	1.00

Intersection: 2: Lor Ray Drive & Carlson Drive/Countryside Drive

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	54	77	57	76	25	85
Average Queue (ft)	30	40	30	35	5	46
95th Queue (ft)	52	65	53	58	23	73
Link Distance (ft)	966	966		972		972
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			250		250	
Storage Blk Time (%)						
Queuing Penalty (veh)						

2: Lor Ray Drive & Carlson Drive/Countryside Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.1
Denied Del/Veh (s)	0.1	0.1	1.3	0.2	0.8
Total Delay (hr)	0.1	0.1	0.5	0.2	0.9
Total Del/Veh (s)	4.1	5.0	5.9	6.4	5.6
Stop Delay (hr)	0.1	0.0	0.2	0.1	0.4
Stop Del/Veh (s)	2.7	2.9	2.7	2.9	2.8
Total Stops	111	49	315	97	572
Stop/Veh	0.99	0.98	0.99	0.99	0.99

Intersection: 2: Lor Ray Drive & Carlson Drive/Countryside Drive

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	TR
Maximum Queue (ft)	67	45	59	81	70
Average Queue (ft)	35	26	32	46	36
95th Queue (ft)	52	47	49	72	58
Link Distance (ft)	966	966		972	972
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			250		
Storage Blk Time (%)					
Queuing Penalty (veh)					

Existing Year 2017 Detailed Operational Analysis

Roundabout Control

HCS7 Roundabouts Report

General Information

Analyst	Luke James
Agency or Co.	SRF Consulting Group, Inc.
Date Performed	7/6/2017
Analysis Year	2017
Time Period	A.M. Peak
Project Description	10279

Site Information

Intersection	Lor Ray Drive at Carlson Drive/Countryside Drive
E/W Street Name	Carlson Drive/Countryside Drive
N/S Street Name	Lor Ray Drive
Analysis Time Period (hrs)	0.25
Peak Hour Factor	1.00
Jurisdiction	MAPO

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	5	5	60	0	110	15	5	0	55	60	25	0	5	175	5
Percent Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Flow Rate (v_{PCE}), pc/h	0	5	5	62	0	113	15	5	0	57	62	26	0	5	180	5
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		72			133			145			190	
Entry Volume veh/h		70			129			141			184	
Circulating Flow (v_c), pc/h	298			124			15			185		
Exiting Flow (v_{ex}), pc/h	36			77			72			355		
Capacity (c_{pce}), pc/h		1018			1216			1359			1143	
Capacity (c), veh/h		989			1181			1319			1109	
v/c Ratio (x)		0.07			0.11			0.11			0.17	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		4.3			4.0			3.6			4.7	
Lane LOS		A			A			A			A	
95% Queue, veh		0.2			0.4			0.4			0.6	
Approach Delay, s/veh	4.3			4.0			3.6			4.7		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh | LOS	4.2						A					

HCS7 Roundabouts Report

General Information

Analyst	Luke James
Agency or Co.	SRF Consulting Group, Inc.
Date Performed	7/6/2017
Analysis Year	2017
Time Period	P.M. Peak
Project Description	10279

Site Information

Intersection	Lor Ray Drive at Carlson Drive/Countryside Drive
E/W Street Name	Carlson Drive/Countryside Drive
N/S Street Name	Lor Ray Drive
Analysis Time Period (hrs)	0.25
Peak Hour Factor	1.00
Jurisdiction	MAPO

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	5	20	90	0	35	10	5	0	100	160	65	0	0	85	5
Percent Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Flow Rate (v_{PCE}), pc/h	0	5	20	91	0	35	10	5	0	101	162	66	0	0	86	5
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		116			50			329			91	
Entry Volume veh/h		115			50			326			90	
Circulating Flow (v_c), pc/h	121			268			25			146		
Exiting Flow (v_{ex}), pc/h	86			116			172			212		
Capacity (c_{pce}), pc/h		1220			1050			1345			1189	
Capacity (c), veh/h		1208			1040			1332			1177	
v/c Ratio (x)		0.10			0.05			0.24			0.08	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		3.8			3.9			4.8			3.7	
Lane LOS		A			A			A			A	
95% Queue, veh		0.3			0.1			1.0			0.2	
Approach Delay, s/veh	3.8			3.9			4.8			3.7		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh | LOS	4.3						A					

Forecasted Year 2037 Detailed Operational Analysis

Side-Street Stop Control

2: Lor Ray Drive & Carlson Drive/Countryside Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.2
Denied Del/Veh (s)	0.2	0.3	1.6	0.3	0.6
Total Delay (hr)	0.2	2.0	0.1	0.1	2.5
Total Del/Veh (s)	8.1	26.6	1.8	1.0	9.5
Stop Delay (hr)	0.2	1.9	0.0	0.0	2.1
Stop Del/Veh (s)	6.9	24.3	0.5	0.0	8.0
Total Stops	98	271	32	0	401
Stop/Veh	0.99	0.99	0.14	0.00	0.43

Intersection: 2: Lor Ray Drive & Carlson Drive/Countryside Drive

Movement	EB	WB	NB	SB
Directions Served	LTR	LTR	L	L
Maximum Queue (ft)	79	283	64	6
Average Queue (ft)	40	106	22	0
95th Queue (ft)	68	244	52	6
Link Distance (ft)	966	966		
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)			250	250
Storage Blk Time (%)				
Queuing Penalty (veh)				

2: Lor Ray Drive & Carlson Drive/Countryside Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.2	0.0	0.2
Denied Del/Veh (s)	0.2	0.2	1.4	0.3	0.9
Total Delay (hr)	0.3	0.3	0.3	0.0	1.0
Total Del/Veh (s)	7.5	10.9	2.0	0.7	3.7
Stop Delay (hr)	0.3	0.2	0.0	0.0	0.5
Stop Del/Veh (s)	5.9	8.3	0.2	0.1	2.0
Total Stops	167	104	30	2	303
Stop/Veh	0.99	0.98	0.06	0.01	0.31

Intersection: 2: Lor Ray Drive & Carlson Drive/Countryside Drive

Movement	EB	WB	NB	NB	SB
Directions Served	LTR	LTR	L	TR	L
Maximum Queue (ft)	112	87	54	9	36
Average Queue (ft)	49	42	19	0	2
95th Queue (ft)	85	70	49	5	15
Link Distance (ft)	966	966		972	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)			250		250
Storage Blk Time (%)					
Queuing Penalty (veh)					

Forecasted Year 2037 Detailed Operational Analysis

All-Way Stop Control

2: Lor Ray Drive & Carlson Drive/Countryside Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.2
Denied Del/Veh (s)	0.1	0.3	1.6	0.3	0.6
Total Delay (hr)	0.2	1.0	0.4	1.2	2.8
Total Del/Veh (s)	6.2	11.9	7.1	13.4	10.7
Stop Delay (hr)	0.1	0.7	0.3	0.8	2.0
Stop Del/Veh (s)	5.0	8.8	4.4	9.2	7.4
Total Stops	98	297	226	316	937
Stop/Veh	0.99	1.00	0.99	0.99	0.99

Intersection: 2: Lor Ray Drive & Carlson Drive/Countryside Drive

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	73	173	78	80	31	197
Average Queue (ft)	37	74	36	41	6	80
95th Queue (ft)	61	133	62	66	26	148
Link Distance (ft)	966	966		972		972
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			250		250	
Storage Blk Time (%)						1
Queuing Penalty (veh)						0

2: Lor Ray Drive & Carlson Drive/Countryside Drive Performance by approach

Approach	EB	WB	NB	SB	All
Denied Delay (hr)	0.0	0.0	0.2	0.0	0.2
Denied Del/Veh (s)	0.2	0.1	1.4	0.3	0.9
Total Delay (hr)	0.3	0.2	1.1	0.3	1.9
Total Del/Veh (s)	5.3	6.2	7.5	7.4	7.0
Stop Delay (hr)	0.2	0.1	0.5	0.2	1.0
Stop Del/Veh (s)	3.6	3.7	3.7	3.7	3.7
Total Stops	171	97	527	157	952
Stop/Veh	0.99	0.99	0.99	0.99	0.99

Intersection: 2: Lor Ray Drive & Carlson Drive/Countryside Drive

Movement	EB	WB	NB	NB	SB	SB
Directions Served	LTR	LTR	L	TR	L	TR
Maximum Queue (ft)	90	58	66	126	31	89
Average Queue (ft)	45	35	39	62	4	42
95th Queue (ft)	72	54	60	102	21	68
Link Distance (ft)	966	966		972		972
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)			250		250	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Forecasted Year 2037 Detailed Operational Analysis

Roundabout Control

HCS7 Roundabouts Report

General Information		Site Information	
Analyst	Luke James	Intersection	Lor Ray Drive at Carlson Drive/Countryside Drive
Agency or Co.	SRF Consulting Group, Inc.	E/W Street Name	Carlson Drive/Countryside Drive
Date Performed	7/13/2017	N/S Street Name	Lor Ray Drive
Analysis Year	2037	Analysis Time Period (hrs)	0.25
Time Period	A.M. Peak	Peak Hour Factor	1.00
Project Description	10279	Jurisdiction	MAPO

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	5	10	80	0	240	35	10	0	90	95	40	0	5	305	5
Percent Heavy Vehicles, %	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
Flow Rate (v_{PCE}), pc/h	0	5	10	82	0	247	36	10	0	93	98	41	0	5	314	5
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		97			293			232			324	
Entry Volume veh/h		94			284			225			315	
Circulating Flow (v_c), pc/h	566			196			20			376		
Exiting Flow (v_{ex}), pc/h	56			134			113			643		
Capacity (c_{pce}), pc/h		775			1130			1352			940	
Capacity (c), veh/h		752			1097			1313			913	
v/c Ratio (x)		0.13			0.26			0.17			0.34	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		6.1			5.7			4.2			7.7	
Lane LOS		A			A			A			A	
95% Queue, veh		0.4			1.0			0.6			1.5	
Approach Delay, s/veh	6.1			5.7			4.2			7.7		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh | LOS	6.1						A					

HCS7 Roundabouts Report

General Information

Analyst	Luke James
Agency or Co.	SRF Consulting Group, Inc.
Date Performed	7/13/2017
Analysis Year	2037
Time Period	P.M. Peak
Project Description	10279

Site Information

Intersection	Lor Ray Drive at Carlson Drive/Countryside Drive
E/W Street Name	Carlson Drive/Countryside Drive
N/S Street Name	Lor Ray Drive
Analysis Time Period (hrs)	0.25
Peak Hour Factor	1.00
Jurisdiction	MAPO

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	5	30	130	0	75	25	5	0	155	250	105	0	5	150	10
Percent Heavy Vehicles, %	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Flow Rate (v_{PCE}), pc/h	0	5	30	131	0	76	25	5	0	157	252	106	0	5	152	10
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway (s)		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway (s)		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		166			106			515			167	
Entry Volume veh/h		164			105			510			165	
Circulating Flow (v_c), pc/h	233			414			40			258		
Exiting Flow (v_{ex}), pc/h	141			192			262			359		
Capacity (c_{pce}), pc/h		1088			905			1325			1061	
Capacity (c), veh/h		1077			896			1312			1050	
v/c Ratio (x)		0.15			0.12			0.39			0.16	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		4.7			5.1			6.4			4.9	
Lane LOS		A			A			A			A	
95% Queue, veh		0.5			0.4			1.9			0.6	
Approach Delay, s/veh	4.7			5.1			6.4			4.9		
Approach LOS	A			A			A			A		
Intersection Delay, s/veh | LOS	5.7						A					

Detailed Cost Analysis

SRF Consulting Group, Inc. | Engineers Planners Designers

Concept Cost Estimate (based upon 2017 bid price information)

Prepared By: SRF Consulting Group, Inc., Date 7/2017

					Lor Ray Drive at Carlson Drive/ Countryside Drive	
	ITEM DESCRIPTION		**UNIT**	**UNIT PRICE**	**EST. QUANTITY**	**EST. AMOUNT**
PAVING AND GRADING COSTS						
GrP 1	Excavation - common & subgrade		cu. yd.	$7.00	2,400	$16,800
GrP 2	Granular Subgrade (CV)		cu. yd.	$14.00	1,400	$19,600
GrP 3	County Road Pavement	(1)	sq. yd.	$32.00	2,850	$91,200
GrP 4	Concrete Median	(1)	sq. yd.	$40.00	400	$16,000
GrP 5	Walk / Trail	(1)	sq. yd.	$25.00	960	$24,000
GrP 6	ADA Pedestrian Curb Ramp		each	$800.00	16	$12,800
GrP 7	Concrete Curb and Gutter		lin. ft.	$12.00	1,980	$23,760
GrP 8	Removals - Pavement		sq. yd.	$2.50	4,540	$11,350
	SUBTOTAL PAVING AND GRADING COSTS:					**$215,510**
DRAINAGE, UTILITIES AND EROSION CONTROL						
Dr 1	Local Utilities - Sanitary Sewers		lin. ft.			
Dr 2	Local Utilities - Watermains		lin. ft.			
Dr 3	Water Quality Ponds		l.s.			
Dr 5	Drainage - urban (10-30%)		30%			$65,000
Dr 6	Turf Establishment & Erosion Control		10%			$22,000
Dr 7	Landscaping					
	SUBTOTAL DRAINAGE, UTILITIES AND EROSION CONTROL					**$87,000**
SIGNAL AND LIGHTING COSTS						
SGL 1	Signals (permanent)		each	$200,000		
SGL 2	At Grade Intersection Lighting (permanent - non signa		each	$10,000	8	$80,000
	SUBTOTAL SIGNAL AND LIGHTING COSTS:					**$80,000**
SIGNING & STRIPING COSTS						
SGN 1	Mainline Signing (C&D)		mile	$20,000	0.2	$4,000
SGN 2	Mainline Striping		mile	$10,000	0.2	$2,000
	SUBTOTAL SIGNING & STRIPING COSTS:					**$6,000**
	SUBTOTAL CONSTRUCTION COSTS:					**$388,510**
MISCELLANEOUS COSTS						
M 1	Mobilization		6%			$23,000
M 2	Non Quantified Minor Items (10% to 30%)		20%			$78,000
M 3	Temporary Pavement & Drainage		2%			$8,000
M 4	Traffic Control		4%			$16,000
	SUBTOTAL MISCELLANEOUS COSTS:					**$125,000**
ESTIMATED TOTAL CONSTRUCTION COSTS without Contingency:						**$513,510**
1	Contingency or "risk" (10% to 30%)		20%			$103,000
ESTIMATED TOTAL CONSTRUCTION COSTS PLUS CONTINGENCY:						**$616,510**

OTHER PROJECT COSTS:				
R/W ACQUISITIONS	Lump Sum			
DESIGN ENG. & CONSTRUCTION ADMIN.	Lump Sum			
SUBTOTAL OTHER PROJECT COSTS				
TOTAL PROJECT COST (based upon 2016 bid price information)				**$616,510**

INFLATION COST (CURRENT YR. TO YR. OF OPE	Years	3%		
TOTAL PROJECT COST (OPENING YEAR DOLLARS)				**$616,510**

NOTE: (1) Includes aggregate base class 5.

MAJOR ITEMS NOT INCLUDED:
- Local utilities (sanitary sewer or watermain)
- Water quality ponds or other BMPs
- R/W acquisitions
- Engineering design fees
- Inflation

CITY OF NORTH MANKATO

REQUEST FOR COUNCIL ACTION

Agenda Item #12B	Department: Finance	Council Meeting Date: 1/16/18

TITLE OF ISSUE: Consider Resolution Decertifying Tax Increment Financing District IDD 1-17 (National Dentex Project) Located in the City of North Mankato, MN.

BACKGROUND AND SUPPLEMENTAL INFORMATION: Please review the memo provided by Consultant Ed Tschida from Advance Resources For Development, Inc.

If additional space is required, attach a separate sheet

REQUESTED COUNCIL ACTION: Adopt Resolution Decertifying Tax Increment Financing District IDD 1-17 (National Dentex Project) Located in the City of North Mankato, MN.

Motion By: ______________________
Second By: ______________________

Vote Record:

Aye	Nay	
____	____	Whitlock
____	____	Steiner
____	____	Norland
____	____	Freyberg
____	____	Dehen

SUPPORTING DOCUMENTS ATTACHED

Resolution	Ordinance	Contract	Minutes	Map
X				

Other (specify) Memo, Certificate

☐ Workshop	☐ Refer to: ______________
X Regular Meeting	☐ Table until: ______________
☐ Special Meeting	☐ Other: ______________

Advance Resources for Development, Inc.

To: North Mankato City Council

From: Ed Tschida

Date: January 5, 2018

Re: Request for City to decertify TIF No. IDD 1-17 (National Dentex Project)

As of December 31, 2017, the City will have met its obligations regarding debt service payments with respect to TIF No. IDD 1-17. I am recommending that the City decertify the District at this.

Attached is a resolution stating the City's intent to decertify the District. Also attached is the **Confirmation of Decertified TIF District** form, which is provided to Nicollet County and the Office of the State Auditor. Submission the resolution and form will cause Nicollet County and the Office of State Auditor to decertify the TIF District in their respective systems. In addition, the City will return excess increment in the amount of $5,260.34. Upon receipt of the excess increment, Nicollet County will return the pro rata share of the excess increment to the City for deposit in the City's general fund.

Upon decertification of the District, the property tax valuation included in the District will be returned to the general tax rolls, which then can be used by the respective taxing jurisdiction to calculate future tax levies.

CONFIRMATION OF DECERTIFIED TIF DISTRICT

Please complete the information requested below in Part A and then forward the form to the County Auditor to be certified in Part B. Once the information has been completed by both the authorized TIF representative and the County Auditor, please return the form to the Office of the State Auditor at the address listed below:

Office of the State Auditor - TIF Division
525 Park Street, Suite 500 St. Paul, MN 55103

PART A. To be completed by the TIF authorized representative:

County Auditor/Treasurer's Name: Jaci Kopet, Public Services Manager Date: 01/16/2018

County Name: Nicollet County Address: 501 S. Minnesota Ave., St. Peter, MN 56082

TIF Authority Name: City of North Mankato

TIF District # and Name: IDD 1-17 National Dentex Project

TIF District Type: Economic Development TIF Plan Approval Date: 03/17/2008

Certification Request Date: 04/03/2008 Certification Date: 05/09/2008

Required Decertification Date: 12/31/2018 Based on: Statutory limitation

(Information to be confirmed by the County Auditor:)

1. Actual decertification date: 01/16/2018 2. Date of first tax increment received: 06/2010

3. Final tax increment distribution date 12/04/2017 and amount $7,067.05

4. Amount of excess tax increment returned to the county, if any $5,260.34 and date 01/17/2018

Please note: If the district is decertifying early, please forward a copy of the resolution with this form to the County Auditor and the TIF Division. (City Council Resolution attached)

Signature: Date: 01/16/2018

Name and title of TIF authorized representative: John Harrenstein, City Administrator

PART B: To be completed by the County Auditor or representative:

On behalf of the County Auditor/Treasurer, I certify that the above information, specifically information provided in questions 1-4, is correct with the following exceptions, if any:

Signature: Date:

Name and title of the county representative: Jaci Kopet, Public Services Manager

Phone: 507-934-7806 Exceptions? ☐ No ☐ Yes If yes, please describe below:

RESOLUTION NO. __________

RESOLUTION DECERTIFYING TAX INCREMENT FINANCING DISTRICT NO. IDD 1-17
(NATIONAL DENTEX PROJECT)
LOCATED IN THE CITY OF NORTH MANKATO, MINNESOTA

WHEREAS, the City Council of North Mankato has reviewed the status of Tax Increment Financing District No. IDD 1-17 (the "District") originally established by resolution of the City Council on March 17, 2008; and

WHEREAS, all project costs to which the District's tax increments, are obligated have been paid from District increments collected from taxes payable in tax years 2010 through 2017, inclusive; and

WHEREAS, the City desires by this resolution to cause decertification of the District after which all property taxes generated by property within the District will be distributed in the same manner as all other property taxes.

NOW, THEREFORE, BE IT RESOLVED, by the City Council of the City of North Mankato, Minnesota, as follows:

Sec. 1. That Tax Increment Financing District No. IDD 1-17, North Mankato, Minnesota is hereby decertified effective January 16, 2018.

Sec. 2. That Nicollet County is hereby requested to return parcels in the District to the general tax rolls effective for taxes payable with the 2018 first half tax settlement.

Sec. 3 That the City Administrator is authorized to return all surplus tax increment to Nicollet County.

Sec. 4. That the City Clerk is authorized to make available a copy of this resolution to Nicollet County and the Office of State Auditor.

The foregoing resolution was offered at a regular meeting of the City Council held on January 16, 2018, 2018, by Council Member __________________________ who moved its adoption, was seconded by Council Member __________________________ and adopted by the following vote:

AYES:

NAYS:

Whereupon the above resolution was duly adopted.

Attest:

____
Mark D. Dehen, Mayor

____
April Van Genderen, City Clerk

Clean Energy Resource Teams

www.CleanEnergyResourceTeams.org

December 29, 2017

Kevin McCann, Courtney Kietzer
City of North Mankato
1001 Belgrade Avenue
North Mankato, MN 56003

Organization: City of North Mankato
Project: North Mankato Police Station Energy Savings
Awarded Amount: $1,000
CERT Region: West Central

Congratulations! CERTs is pleased to officially announce that City of North Mankato's North Mankato Police Station Energy Savings has been selected for a CERTs Seed Grant in the amount of $1,000. CERTs received 63 applications for this year's CERTs Seed Grant round, requesting a total of $355,603. We are very excited about so many clean energy projects being pursued around the state and thank you for being a part of making that happen.

This letter is your official notice of award. Below is a summary of the process and key deadlines. Please read through it carefully to see what **action is needed from you by January 10th** and **save this letter for future reference**. This letter outlines:

I. Contract Timeline
II. Contract Paperwork (W-9, Release of Information, update work plan)
III. Interim Report
IV. Final Report
V. Invoicing
VI. Keeping in Touch

I. Contract Timeline:

CERT Seed Grant Funding Cycle: February 1, 2018 to February 28, 2019
Mark these dates and deadlines on your calendar:

Date	Task
Wed., January 10, 2018	Contract paperwork due by 4pm to RFP@cleanenergyresourceteams.org
February 1, 2018	Projects may begin work
June 15, 2018	Interim Report due by 4pm to RFP@cleanenergyresourceteams.org (form provided by CERTs) Interim Invoice may be submitted with Interim Report for eligible expenses up to 50% of the full project award.

	Any project that has yet to begin project activities will have funding revoked.
February 28, 2019	Final Report and Final Invoice due by 4pm to RFP@cleanenergyresourceteams.org (form provided by CERTs)
March 1 – July 2019	CERTs will work with Seed Grant Recipients to develop project case studies, to be published on CERTs website.

II. Contract Paperwork: ACTION REQUIRED:

- **By 4pm January 10, 2018,** submit the following paperwork to rfp@cleanenergyresourceteams.org:

1) Read, complete, and sign "Release of Information/Terms of Funding" sheet
2) Complete W-9 form from https://www.irs.gov/pub/irs-pdf/fw9.pdf
3) Update the Work Plan and any other relevant portions of your application

(Since your project received less than the full amount requested, you were contacted by CERTs staff to confirm the amount and adjust the scope of work or focus of the funding. Update the Work Plan and any other relevant portions of the application to reflect these changes, making any changes apparent through highlighting or other indication. The original application is attached for your convenience.)

- **February 1, 2018**: Project work for the CERTs Seed grant may begin. Work prior to this date will not be eligible for funding.

III. Interim Report:

- **June 15, 2018 at 4pm:** The Interim Report (i.e., a project status update) is due by June 15, 2018 to rfp@cleanenergyresourceteams.org on a form provided by CERTs. Expect this form (and the Final Report form) by Spring 2018. The Interim Report is an opportunity to update us on the project's status.
- **Important Notice: Any project that has yet to begin project activities by June 15th will have funding revoked.**
- An Interim Invoice may be submitted with the Interim Report for eligible expenses up to 50% of the full project award.

IV. Final Report:

- **February 28, 2019 at 4pm:** The Final Report is due by February 28, 2019 to rfp@cleanenergyresourceteams.org on a form provided by CERTs. The project must be completed and final reports and documents submitted. Include in your Final Report updated impact report details, as well as photos, news articles, and other documentation of the project.

V. Invoicing:

- The CERTs Grant will be administered on a reimbursement basis. Your organization will be paid *after* work is completed on the project and your report and invoice have been approved.
- Please be thorough in your Interim and Final Reports. Invoices will not be processed for payment until the corresponding report has been received and approved. **Incomplete or missing data will prolong the approval process, thereby delaying your payment.**
- Interim Invoice (up to 50% of grant amount for costs already incurred) and Final Invoice will be submitted to **rfp@cleanenergyresourceteams.org** *in conjunction* with your Interim and Final Reports. If you complete your work and associated report early, you may also submit the corresponding invoice at that time.
- In your Interim and Final Invoice, please do NOT include expenses that are non-labor or are not intended to be covered by your CERTs award. We can only fund labor expenses and the activities identified in your approved seed grant application.
- You will invoice the University of Minnesota, as outlined below.
- The University has a "net 30" policy; payment will be made 30 days from the date of the invoice, provided the corresponding report has been approved.

Your Invoice must include the following:

- The invoice must be from "City of North Mankato" to "University of Minnesota." Please note: we cannot pay invoices from your contractor.
- The date the invoice is being submitted
- The invoice number (this could be the date again if you don't have a formal invoice numbering system)
- The amount of hours, who worked them, and each person's rate per hour (labor only)
- A short phrase describing the work, making clear the nature of the labor as noted in your application
- Our contact information:

  University of Minnesota
  Lissa Pawlisch and Joel Haskard, CERTs Directors
  411 Borlaug Hall
  1991 Upper Buford Circle
  Saint Paul, MN 55108

VI. Keeping in Touch:

- Over the course of the year, CERT staff and Regional Coordinators will reach out to you to check in on the progress of your project.
- **March 1 – July 2019:** CERTs will work with Seed Grant Recipients to develop project case studies, to be published on CERTs website.

If you have any questions throughout this process, please contact Maggie Kozak at RFP@cleanenergyresourceteams.org or call 612-626-0555.

We look forward to working with you and supporting your project as it moves forward.

Best regards,
Lissa Pawlisch and Joel Haskard, CERTs Directors
Maggie Kozak, CERTs Seed Grants Manager

University of Minnesota Extension, Regional Sustainable Development Partnerships
411 Borlaug Hall
1991 Upper Buford Circle
St. Paul, MN 55108

U.S. Hwy 14 Partnership

2018 January Membership Meeting

Owatonna Arts Center
540 West Hills Circle, Owatonna, MN 55060
Tuesday, January 9, 2018
9:30 a.m. – 11:30 a.m.

Agenda

9:30 a.m. **Welcome & Introductions**
Karen Foreman, U.S. Highway 14 Partnership President/City Councilor, City of Mankato

9:40 a.m. **MnDOT Presentation on Corridors of Commerce Scoring System**
Patrick Weidemann, MnDOT

10:25 a.m. **Remarks and Q & A with Transportation Committee Legislators**
Rep. Paul Torkeslon, Chair, House Transportation Finance Committee
Rep. John Petersburg, Vice Chair, House Transportation Finance Committee

10:55 a.m. **2018 Advocacy and Legislative Preview**
Shane Zahrt, Flaherty & Hood

11:15 a.m. **Business Meeting**
- Approval of minutes from 2017 Summer Meeting
- Treasurer's Report
- Consideration and Approval of Policy Positions

11:25 a.m. **Other Business**

11:30 a.m. **Adjourn**

For more information on the U.S. Highway 14 Partnership, please visit www.ushighway14.com
or contact Shane Zahrt at SAZahrt@flaherty-hood.com

U.S. Hwy 14 Partnership

FIX IT NOW!

For Immediate Release
December 20, 2017

Contact: Shane Zahrt
651-259-1906
sazahrt@flaherty-hood.com

Highway 14 advocates warn proposed changes to funding program would put Greater Minnesota projects at risk

ST. PAUL, MINN.—As the Minnesota Department of Transportation (MnDOT) prepares to roll out a revised scoring system for the Corridors of Commerce highway funding program early next year, members of the U.S. Highway 14 Partnership are expressing concern that the new system could put Greater Minnesota projects like the Highway 14 expansion at a disadvantage.

"Corridors of Commerce has been a valuable source of funding for Highway 14 in recent years, but MnDOT's proposed scoring system would put our ability to access those funds at risk," said Karen Foreman, president of the U.S. Highway 14 Partnership and a member of the Mankato City Council.

The Partnership submitted a formal letter to MnDOT officials this week to outline its concerns with the proposed scoring system and other changes that are being considered as to how MnDOT will allocate the $400 million in Corridors of Commerce funding passed by the Legislature last spring.

The Partnership's biggest qualm with the new system is that, if implemented as proposed, it will award more points to highway projects that connect to the Twin Cities metro area than projects that connect regional trade centers in Greater Minnesota to one another, such as Highway 14.

"Under MnDOT's plan, highways that go through Eden Prairie or Wayzata would score higher than a highway that connects to Rochester or Mankato," Foreman said. "For those who live and work along the corridor, Highway 14 is the lifeblood of our communities and economies. A scoring system that handicaps a corridor like Highway 14 from the outset belies the priorities of the Corridors of Commerce program."

The Partnership is also concerned that a push by some metro-area interests may lead MnDOT to consider lowering Greater Minnesota's share of Corridors of Commerce funding. Since the program was created in 2013, Corridors of Commerce funding has been divided 50-50 between Greater Minnesota and the metro area. Although the Legislature did not discuss making any changes to the funding distribution during its last session, MnDOT recently began soliciting feedback on whether the 50-50 split should remain.

"The Highway 14 Partnership is strongly opposed to any efforts to deviate from the 50-50 split," Foreman said. "If MnDOT chooses to move toward an arrangement that favors one area of the state over another, it would be detrimental to not only Highway 14, but other Greater Minnesota projects as well."

Foreman continued, "Agencies should look for ways to make the best use of their funding, but that should not include moving away from historic norms in a way that pits regions of the state against one another and results in state government picking economic winners and losers."

The U.S. Highway 14 Partnership is an advocacy organization supporting the four-lane expansion of Highway 14. Formed in 1998, the Highway 14 Partnership includes local governments, private businesses and other organizations across Southern Minnesota.

###

U.S. Hwy 14 Partnership

FIX IT NOW!

December 20, 2017

Commissioner Charles Zelle
Minnesota Department of Transportation
395 John Ireland Blvd.
St. Paul, MN 55155

Mr. Patrick Weidemann
Director of Capital Planning and Programming
Minnesota Department of Transportation
395 John Ireland Blvd.
St. Paul, MN 55155

Dear Commissioner Zelle and Mr. Weidemann:

As President of the U.S. Highway 14 Partnership and a member of the Mankato City Council, I submit the following comments on the Minnesota Department of Transportation's (MnDOT) draft Corridors of Commerce scoring system. The U.S. Highway 14 Partnership represents cities, counties, chambers of commerce, businesses and individuals along Highway 14 in southern Minnesota, all of whom have joined together in pursuit of one goal: to expand Highway 14 to four lanes from New Ulm to Rochester.

The Highway 14 Partnership advocated for the creation and funding of the Corridors of Commerce program in 2013, and continues to support the program today. We are grateful for the Corridors of Commerce funds that have already been invested in the expansion of Highway 14, and we are committed to ensuring that the program continues to fulfill its purpose of investing in transportation projects that foster economic growth by facilitating the movement of freight and people throughout our state.

We appreciate working with you and MnDOT staff on these efforts. Thank you for the hard work and thoughtful consideration agency staff has demonstrated in creating this draft scoring system.

Regional Connections Criteria

Prioritizing connection to the metro unfairly handicaps important corridors like Highway 14

MnDOT's proposed rubric for the regional connections criteria creates a hierarchy that prioritizes interstate highways and corridors that connect Level 1 trade centers to the Twin Cities metro area by capping the points available to other corridors. We are troubled that MnDOT has chosen to handicap Greater Minnesota corridors like Highway 14 by making it impossible for them to receive all points available in this rubric, solely because they do not connect to the metro area.

Approximately 400,000 people live along the Highway 14 corridor from New Ulm to Rochester—the most highly populated stretch of road in Greater Minnesota not to be connected by continuous four-lane highway. From those who live along the corridor, Highway 14 is the lifeblood of our communities and economies, moving people and goods between our population centers and providing access to world-class medical facilities. A scoring system that handicaps a corridor like Highway 14 from the outset belies the priorities of the Corridors of Commerce program.

Nonetheless, the maximum points available in this rubric for an interregional corridor like Highway 14 is 90, whereas a similar corridor could receive up to 100 points if connected to the Twin Cities metro area. We request that important interregional corridors like Highway 14 be put on equal footing in this rubric.

MnDOT's definition of "closing a gap" should not arbitrarily penalize projects like Highway 14

Also in the regional connections rubric, MnDOT has chosen to prioritize expansion projects that fill a gap in the existing corridor system over those that add lanes to a corridor but do not fill a gap in the current system. We commend MnDOT's goals of minimizing gaps in the highway system and finishing projects it has already invested in. The Partnership also appreciates MnDOT's acknowledgment during its rollout of these draft scoring criteria that the remaining two-lane portion of Highway 14 between Owatonna and Dodge Center would qualify as a gap project. However, we were troubled by comments made during MnDOT's presentation to the District 7 Area Transportation Partnership that the remaining two-lane segment of Highway 14 between Nicollet and New Ulm would be considered an expansion project. If that is the case, we strongly disagree with the agency's determination.

As MnDOT settles on its final definition of "closing a gap," it should duly acknowledge the investment that has already been made on the New Ulm side of Highway 14. As you know, preparation work is currently beginning on the New Ulm Gateway project, which will upgrade the intersection of Highways 14 and 15 to increase safety, and will be designed facilitate the future expansion of Highway 14 to four lanes. MnDOT already publicly recognizes on its website that the New Ulm Gateway project is part of the long-term plan to expand Highway 14 to four lanes from North Mankato to New Ulm.[1]

As the scoring system is currently drafted, the expansion of Highway 14 between Nicollet and New Ulm is arbitrarily penalized because the remaining two-lane portion happens to fall at the end of the corridor's planned expansion. MnDOT should recognize that this corridor already qualifies as "closing a gap" due to the investment in readying the Highway 14/15 interchange for four-lane expansion, or MnDOT should modify its draft criteria to avoid this illogical result.

Return on Investment and Economic Impact Criteria

Return on investment and economic impact should be fairly balanced

The return on investment criteria is weighted more heavily than any other component in MnDOT's draft scoring system. The economic impact criteria is allotted 90 fewer points than return on investment, and half the points of any other category. MnDOT has explained that this was done in

[1] http://www.dot.state.mn.us/d7/projects/14newulmtonmankato/index.html (Accessed Dec. 11, 2017).

attempt to balance these criteria, because high-cost projects will score highly on the Economic Impact multiplier the agency chose to use, to the detriment of lower-cost, high return on investment projects. Moreover, MnDOT is seeking to mitigate the fact that "economic impacts are somewhat built into [the return on investment] criteria as well."[2]

Given that this is the case, we hope MnDOT has also adjusted its scoring criteria to account for other factors that may overlap with return on investment, such as safety considerations. If not, these measures should be adjusted accordingly.

MnDOT's return on investment score should recognize the full scope of the state's investment

Statute requires MnDOT to use "a return on investment measure that provides for comparison across eligible projects."[3] While the agency is required to consider this criterion, MnDOT has broad discretion in determining what its return on investment equation will consist of. In the current draft scoring system, all available return on investment points will be awarded from only two categories: travel time reduction and crash reduction savings.

This criterion is incomplete. We agree that return on investment is an important consideration in any investment of taxpayer dollars, but MnDOT should score projects in a way that also prioritizes long-term solutions for our transportation system.

One way to do this is by awarding additional points to corridors that have seen significant previous investment, or previous Corridors of Commerce investment in particular. Some portion of the points available in the return on investment category should be awarded to such projects. Doing so would advance the public policy goal of finishing projects that have been started and make best use of the state's dollars by ensuring that long-term problems don't continue to linger.
We urge you to favor significant advancements toward completion of longstanding issues over piecemeal projects.

Regional Balance of Funding

MnDOT originally indicated that its intention was to divide Corridors of Commerce funding evenly between Greater Minnesota and the metro area, as it did in the 2013 and 2015 funding cycles. Now, the agency seeks input on whether to continue this practice in the future. This is concerning in both policy and procedural terms.

MnDOT should continue to evenly split Corridors of Commerce funding between Greater Minnesota and Metro projects

Corridors like Highway 14 play a central role in our state's economy, support important industries like agriculture and health care, and have an immeasurable impact on the quality of life in Greater Minnesota communities. If MnDOT chooses to move away from evenly dividing funds between

[2] http://www.dot.state.mn.us/corridorsofcommerce/pdf/2017/draft-process-details.pdf (Slide 37, accessed December 11, 2017).
[3] Minn. Stat. § 161.088 Subd. 5 (c)(1) (2017).

Greater Minnesota and the Metro toward an arrangement that favors one area of the state over another, many parts of our state would be slowly devastated. Agencies should look for ways to make the best use of their funding, but that should not include moving away from historic norms in a way that pits regions of the state against one another and results in state government picking economic winners and losers.

The 2017 Legislature recognized this when it added "regional balance throughout the state" to the list of criteria MnDOT is required to consider when selecting Corridors of Commerce projects. This fact makes it particularly perplexing why MnDOT would now consider moving away from its historic practice of a 50-50 split.

MnDOT's communication with the public regarding regional balance has been inconsistent

MnDOT presented this draft scoring system at two different Area Transportation Partnership meetings along Highway 14: in Rochester on November 17 and in Mankato on December 1. Highway 14 Partnership members attended both of the meetings. However, the two groups received different information regarding how funds would be split between Greater Minnesota and the metro area.

Attendees at the meeting in Rochester were shown a presentation indicating that Corridors of Commerce funds would be evenly divided "along a 50-50 split." MnDOT also acknowledged in its presentation that "[p]revious Corridors of Commerce programs have been split along the 50-50 Metro to Greater Minnesota line, so there is historical precedent."

Two weeks later in Mankato, MnDOT presented different information. MnDOT said that it had not yet settled on a division of funds. The "50-50 split" language had been removed from its presentation, along with its reference to "historical precedent." Instead, the presentation said funding would be divided "along a split," and that MnDOT wanted input from the public on the division.

It would be greatly appreciated if you could help us understand why MnDOT presented two different sets of information. On behalf of our members, I want to ensure that we have received the most accurate information possible so that we may fully and accurately comment on this public process. In any event, the Highway 14 Partnership supports a split that allocates at least 50 percent of Corridors of Commerce funding to important Greater Minnesota projects.

Freight Efficiency

MnDOT should ensure its scoring system accurately measures freight traffic and density

Half of the 100 points available under the freight efficiency criterion are awarded based on Heavy Commercial Annual Average Daily Traffic (HCAADT) data within 5 miles of the project and relevant to the project. In the interest of accurately capturing freight congestion that the Corridors of Commerce program is intended to alleviate, MnDOT should consider adding another input to this criterion and adjusting available points accordingly.

Specifically, important context would be missed if the HCAADT figures MnDOT uses in its score are reached by estimating the total heavy commercial traffic on a roadway over the course of the year and then divides that total to find a daily average of heavy commercial vehicles. Important economic engines in Greater Minnesota such as agriculture and resource-based industries often feature busy and slow seasons. As a result, a Greater Minnesota highway might have extremely heavy commercial traffic during certain times of the year, but a lower annual average. MnDOT's scoring system should account for this.

MnDOT should add a metric that acknowledges that the character of prominent industries in Greater Minnesota may not be captured by HCAADT alone. While the most significant commercial congestion on some corridors may be seasonal, it is still extremely important that products get to market on time and families can safely share the road with large trucks.

Conclusion

The four-lane expansion of Highway 14 has been a priority for southern Minnesota for decades. The expansions and improvements that have been made—including those funded by the Corridors of Commerce program—have greatly improved safety along the corridor and spurred economic growth in our communities. We look forward to building on that progress.

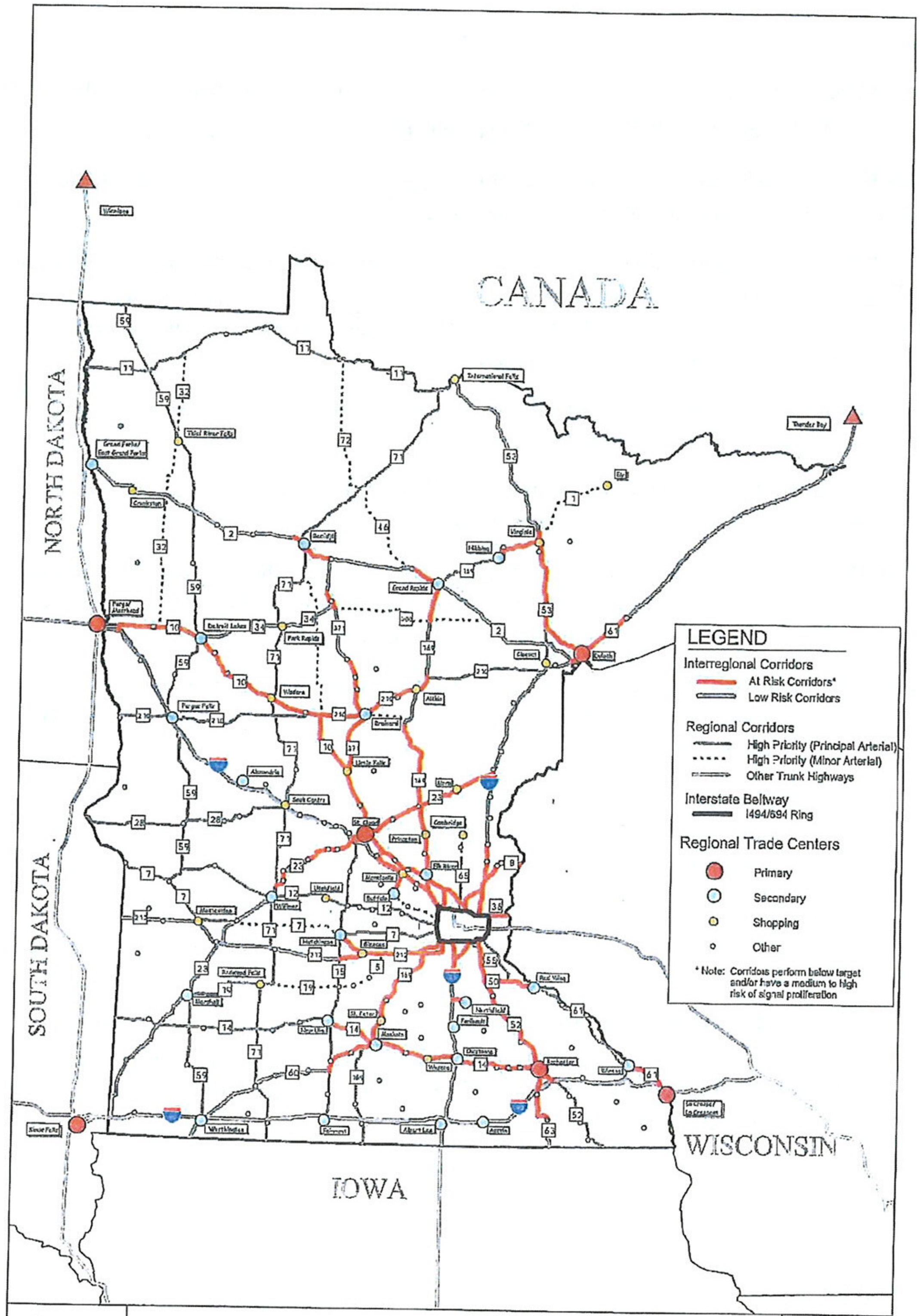
The hard work of MnDOT officials and staff throughout this process is sincerely appreciated. We hope that you consider the recommendations in this letter.

Respectfully submitted,

Karen L Foreman

Karen Foreman
Mankato City Councilor
President, U.S. Highway 14 Partnership

cc: Governor Mark Dayton
Speaker of the House Kurt Daudt
Senate Majority Leader Paul Gazelka
House Minority Leader Melissa Hortman
Senate Minority Leader Thomas Bakk
Highway 14 Legislators
Tenzin Dolkar, Office of Governor Mark Dayton



SRF Consulting

Mobility Risk Corridors

(Based on 2020 Volumes)

INTERREGIONAL CORRIDOR STUDY

FIGURE

15

2017 Annual Membership Meeting Minutes

Owatonna Arts Center
540 West Hills Circle, Owatonna, MN 55060
Wednesday, June 12, 2017
9:30 a.m. – 11:30 a.m.

U.S. Highway 14 Partnership President Karen Foreman Called the meeting to order at 9:34 a.m. All attendees introduced themselves.

MnDOT District 6 Project Update

MnDOT District 6 Assistant Engineer Greg Paulson provided an update on recent developments related to Highway 14. Paulson outlined the contents of the 2017 Transportation bill recently passed by the Legislature, but indicated that it was not yet clear what the bill's full impact would be.

Paulson then narrowed in on the bill's impact on Highway 14 through the Corridors of Commerce Program. MnDOT is currently developing a scoring process. Requests for public recommendations for Corridors of Commerce projects will go out in October 2017, with the first round of Corridors of Commerce project selection taking place in January 2018. The project requests will likely take the form of a letter that puts the project on MnDOT's radar. MnDOT District 7 Engineer Greg Ous provided additional updates.

An audience member inquired how far this Corridors of Commerce funding will go, once allocated statewide. Paulson acknowledged that this is a key point. Owatonna to Dodge Center, for example, would cost $150-180 million on its own.

Paulson then provided an update on Land Acquisition currently in progress. 8.8 million was previously funded through Corridors of Commerce. 18.5 million still needed.

- Segment 1
  - Completed October '15
    - $12 million construction cost. Corridors of Commerce program
  - Project limits were from Hwy 218 to Steele County Road 180.
    - Expanded 2.5 miles of Highway
- Segment 2
  - All 20 offers have been made to property owners.
  - All 3 relocations have been acquired
  - Demo property is being leased back.
- Segment 3

- 7 of 9 relocations have been acquired
    - 2 additional relocations are being processed but offers haven't been presented.
    - 60-65 additional property owners will be affected through partial acquisition.
- Layout activities
    - District coordinating with utility for relocation of gas line.
    - Environmental doc status:
        - FEIS approved in 2010
            - Considered active until Fall 2018.

Paulson concluded his presentation with a discussion of bridge replacements at the intersection of I-35/Highway 14.

MnDOT District 7 Project Update

MnDOT District 7 engineer Greg Ous provided an update on his District's activities relating to Highway 14. The update focused on a progress report related to the New Ulm Gateway project, which consists of the replacement of two bridges in 2018-19 at the intersection of Highways 14 and 15. Project letting will begin September 22, 2017.

Audience questions:

Both engineers responded to an audience questions. First, regarding what ability there is to do partial Hwy 14 projects if the 2017-18 round of Corridors of Commerce funding is not sufficient. District 7: We always keep that in the back of our mind and plan for the possibility, but view the project as a whole corridor.

If the project has to be done in 3 phases, how does that increase the cost of your work? District 6: We are now into the portion of the project where it's mostly realignment, so there are efficiencies in doing it all as one project.

Federal Update

Kyle Olson, transportation advisor for U.S. Sen. Amy Klobuchar.

The Federal FAST Act brought more money to state in 2015, some of that was focused on freight corridors. State & local governments are going to be asked to put forward more of the dollars as the Fast Lane program proceeds and reinterpretations of the Fast Act. Klobuchar's office will continue to monitor.

With regard to a Federal infrastructure package, Senator Klobuchar is hopeful this is something there can be bi-partisan compromise on. There is a good chance it may be tied to tax reform, which is on hold while healthcare holds the debate stage.

Legislative Wrap-up

Carolyn Jackson of Flaherty & Hood, P.A. presented a legislative recap. She began by reiterating the Partnership's goals for the 2017 session. The Partnership introduced bills to describe and fund each 12-mile segment of Highway 14. Both bills had bi-partisan support. Partnership members testified on the bills in the House.

The Partnership also vigorously pursued avenues to fund the Corridors of Commerce program. Rep. Petersburg and Sen. Jasinski introduced the Partnership's bill to fund the program using surplus funds and

$300 million in trunk highway bonds. Rep. Lucero and Sen. Jasinski signed on to a different bill to appropriate $200M for two years to Corridors of Commerce.

The Partnership's advocacy included meeting with all Highway 14 Legislators, as well as key Transportation committee members. The Partnership also participated in the Transportation Alliance's Lobby Day on March 8, 2017 along with the Rochester Chamber of Commerce. Carolyn Jackson presented to chambers of commerce along the Highway 14 corridor about the economic importance of the Highway.

The Partnership monitored and researched proposed changes to the Corridors of Commerce project selection system. The Partnership was successful in adding "Regional Balance" as a criterion in the Corridors of Commerce project selection system. This criterion was not originally in the Senate bill, but was added as an amendment. The Partnership also monitored and testified on the Senate's bonding proposal, which included Trunk Highway bonds for Hwy 14 Owatonna to Dodge Center and general fund cash for Hwy 14 Nicollet to New Ulm. President Foreman and Vice President Raney testified in favor before Senate Transportation Committee

The Partnership then lobbied heavily on the Transportation Omnibus bills as they took shape. The Partnership was key to including Trunk Highway cash for Corridors of Commerce in the bill with the help of Rep. John Petersburg. The final transportation bills included $25M/year in trunk highway cash, $300M in bonding over 4 years, and policy changes for Corridors of Commerce. The Governor vetoed the first version of the bill for other reasons, and the Corridors of Commerce provisions remained unchanged in the final version that he signed.

In summary, the transportation bill was substantive, but does not meet the state's needs. Corridors of Commerce funding is not a path to completion, but it's a path to progress.

Legislator Panel

A panel of Legislators representing the Highway 14 Corridor then spoke to the group. Legislators participating in the panel include: Sen. John Jasinski, Sen. Carla Nelson, Rep. Paul Torkelson, Rep. John Petersburg, Rep. Clark Johnson, Rep. Duane Sauke, Rep. Jack Considine, Rep. Brian Daniels, Rep. Duane Quam.

The legislators gave a recap of the 2017 session, their opinions on the omnibus transportation bill, and their intent and concerns related to the new Corridors of Commerce project scoring criteria.

Audience question: What are we going to do moving forward? Why can't we index a gas tax? Sen. Jasinski replied that the impact of raising the gas tax could be up to $300/year for individual families, and would also drive up the cost for everything through business and industry passing along costs.

Audience question: What's the plan for the 2018 session? Rep. Torkelson: If there is a supplemental bill, goal is to push for additional funding. Torkelson doesn't think language will squeeze Highway 14, but is still in communication with the Department.

Business meeting

Approval of minutes: Foreman asked for approval of last meeting's minutes. Moved and seconded. Approved.

Treasurer's report: Sitting at about 69,000 total revenue with assessments still to come in. Will go over 70k by the end of the year. Contract payments to F&H + membership in transportation alliance. Currently about 28k revenue over expense.

2017-'18 budget and work plan. Moved and seconded. Approved.

Election of Officers: Foreman, Raney, Hentges running as ticket. Moved and seconded, approved.

Other business: Carolyn Jackson She noted that no policy positions have changed, but an edit was suggested to the document to reflect that the policy positions apply to the entire 2017-18 legislative session.

On the budget, Jackson expressed that there is still room in the budget to meet with legislators in the interim on an educational basis and to survey our own members to create materials to do so.

Date on policy positions updated. Moved and seconded, approved.

Highway 14 Partnership Fund
Balance Sheet
December 31, 2017

Account		Amount
Assets:		
Cash & Investments	$	33,064
Total Assets:	$	33,064
Liabilities:		
Deferred Revenue	$	21,400
Due To Other Funds	$	-
Total Liabilities:	$	21,400
Fund Balance:		
Fund Balance	$	11,664
Total Fund Balance	$	11,664
Total Liabilities & Fund Balance	$	33,064

Highway 14 Partnership Fund
Program Revenues and Expenditures
Period Ended December 31, 2017

Account		Amount
Revenues:		
Governmental Member Assessments	$	54,700
Miscellaneous Revenue	$	-
Private Member Assessments	$	14,525
Total Revenues	$	69,225
Expenditures:		
Contractual Payments		
Flaherty & Hood Pymts	$	69,008
Highway 14 Partnership Web Site Costs	$	-
Membership - Transportation Alliance	$	393
Total Expenditures	$	69,401
Net Revenues Over (Under) Expenditures	$	(176)

2017-18 Legislative Policy Positions

MISSION: The U.S. Highway 14 Partnership supports the completion of a consistent four-lane corridor on U.S. Highway 14 from Rochester to New Ulm.

STATE POLICY POSITIONS

1. The Partnership opposes any delay or defunding of projects that have been identified for completion:
    - Highway 14 Minnesota River Bridge in New Ulm to be replaced in 2018.

~~2. The Partnership supports the dedication of the 2017-18 funds previously identified for the North Mankato to Nicollet expansion projects (approximately $19 million) for use on other Highway 14 improvements now that this project has been accelerated to 2015-16 and will be funded through the Corridors of Commerce program.~~

2~~3~~. The Partnership will work to secure state funding for the projects that are currently unplanned and un/underfunded:

- The remaining phases of the Owatonna to Dodge Center Highway 14 four-lane expansion: 54th Ave to County Road 16 (phase 2) and County Road 16 to Highway 56 (phase 3).
    i. Funding for Phase 2 right-of-way acquisition was provided through the Corridors of Commerce program in 2014.
- The Highway 14 four-lane expansion from New Ulm to (west) Nicollet.
- The development of a draft Environmental Impact Statement for the TH14/TH169 interchange.
- The two-lane upgrade of Highway 14 west of New Ulm. MnDOT should study the expansion of Highway 14 west of New Ulm.

3~~4~~. Recognizing that Highway 14 projects are strong candidates under program criteria, the Partnership supports the continued and ongoing funding of the Corridors of Commerce program. The goals of this program are to build highway capacity by removing bottlenecks, improve the movement of freight, and remove barriers to commerce. Projects are selected and awarded by MnDOT on a competitive basis. Given the billions of dollars of unmet need for highway expansion projects throughout the state in addition to Highway 14, the Partnership supports at least $200 million in annual program funding. While the Partnership supports the use of Trunk

Highway bonds, the program should also receive an annual appropriation for non-bondable project needs, such as right-of-way acquisition, environmental work, and design. The Partnership opposes any efforts to modify Corridors of Commerce program criteria in ways that do not uphold the program's original goals or that disadvantage vital corridors like U.S. Highway 14.

4. The Partnership supports a division of Corridors of Commerce funding in which Greater Minnesota projects receive at least 50% of funding.

5. The Partnership opposes legislation that designates specific projects eligible for Corridors of Commerce program funding irrespective of the eligibility criteria set forth in state statute.

6~~5~~. The Partnership will support measures to generate additional revenue for transportation projects, including, but not limited to:

   a. Appropriation of trunk highway bonds;
   b. Gas tax increase, including indexing;
   c. Increase in Motor Vehicles Sales Tax;
   d. Increase in motor vehicle registration taxes;
   e. A gross receipts tax on motor fuels.

7. The Partnership supports the inclusion of language that specifically directs resources towards Highway 14 in transportation finance legislation.

8. The Partnership supports the statutory allocation of the MVST constitutional amendment, with a 60% dedication to highways, 36% dedication to metro-area transit, and 4% dedication to Greater Minnesota transit. The Partnership opposes any legislative effort to reduce the percentage of funding dedicated to the Highway User Tax Distribution Fund.

9~~8~~. The Partnership supports state research and study of alternative measures to fund transportation projects including value capture fees, tolling, congestion pricing, mileage fees, and weight fees.

10~~9~~. Public-private partnerships between MnDOT and private interests should not replace or downgrade programmed highway expansion projects or other meritorious highway expansion projects like those on Highway 14.

11~~0~~. The Partnership encourages Highway 14 corridor legislators to secure positions on the Senate Transportation and Public Safety Budget Division and House Transportation Finance Committee

12~~1~~. The Partnership requests MnDOT to create a National Highway Freight Network in accordance with the federal FAST Act surface transportation funding program. The Partnership further requests MnDOT to designate U.S. Highway 14 as a critical rural freight corridor and to apply for federal funding to support the expansion of U.S. Highway 14 to four lanes between New Ulm and Rochester.

FEDERAL POLICY POSITIONS

1. Any new federal funds directed to Highway 14 are meant to supplement current funding and do not act as replacement of state funding.

2. The Partnership encourages Congressional members representing the Highway 14 corridor to secure positions on the House Transportation & Infrastructure Committee or the Senate Environment and Public Works Committee.

Proposed January 9, 2018

CITY OF NORTH MANKATO

RESOLUTION IN SUPPORT OF CORRIDORS OF COMMERCE FUNDING FOR THE EXPANSION OF U.S. HIGHWAY 14

WHEREAS, U.S. Highway 14 serves a central and vital role in connecting individuals and businesses in communities across Southern Minnesota; and

WHEREAS, the Corridors of Commerce program was created and funded by the Minnesota Legislature in 2013 for the specific purpose of funding the expansion and improvement of interregional corridors like U.S. Highway 14, which play an important role in the movement of freight and people between regions of our State; and

WHEREAS, U.S. Highway 14 remains the most densely populated corridors in Greater Minnesota without a continuous four-lane connection; and

WHEREAS, the remaining two-lane segments of U.S. Highway 14 between Rochester and New Ulm remain dangerous and deadly stretches of road; and

WHEREAS, freight movement makes up a significant portion of the traffic on U.S. Highway 14, and the four-lane expansion of the corridor would not only facilitate commerce, but allow passenger vehicles to more safely share the road with heavy commercial vehicles; and

WHEREAS, the State of Minnesota has repeatedly recognized that the four-lane expansion of Highway 14 is necessary, having previously invested nearly $400 million in expansion and safety projects along the corridor; and

WHEREAS, completing the four-lane expansion of U.S. Highway 14 will enhance commerce and create new economic development opportunities for Southern Minnesota, with benefits that will resound across the State; and

WHEREAS, communities across southern Minnesota, including the City of North Mankato have publicly voiced their support for this project through their membership in the U.S. Highway 14 Partnership.

NOW, THEREFORE BE IT RESOLVED THAT THE CITY OF NORTH MANAKTO supports the use of Corridors of Commerce funding to expand Highway 14 to four-lanes between Rochester and New Ulm or any segment thereof, including the funding of engineering or right-of-way acquisition needed to facilitate such expansion.

Adopted by the Council this 16th day of January 2018.

____
Mayor

____
City Clerk