Application

13861 - 2020 Roadway Modernization

14021 - Marystown Road, Shakopee

Regional Solicitation - Roadways Including Multimodal Elements

Status:	Submitted
Submitted Date:	05/15/2020 12:15 PM

Primary Contact

Name:*	Ms.	Joy		Sutton
	Salutation	First Name	Middle Name	Last Name
Title:	Grants and Special Projects Coordinator			
Department:				
Email:	JSutton@shakopeemn.gov			
Address:	485 Gorman St			
*	Shakopee	Minnesota	55379	
	City	State/Province	Postal Code/Zip	
Phone:*	952-233-9321			
	Phone		Ext.	
Fax:				
What Grant Programs are you most interested in?	Regional Solicitation - Bicycle and Pedestrian Facilities			

Organization Information

Name:	SHAKOPEE, CITY OF
Jurisdictional Agency (if different):	

Organization Type:	City
Organization Website:	
Address:	485 GORMAN ST

*	SHAKOPEE	Minnesota	55379
	City	State/Province	Postal Code/Zip

County:	Scott
Phone:*	952-233-9300 Ext.
Fax:	
PeopleSoft Vendor Number	0000020995A5

Project Information

Project Name	Marystown Road Corridor
Primary County where the Project is Located	Scott
Cities or Townships where the Project is Located:	City of Shakopee
Jurisdictional Agency (If Different than the Applicant):	N/A

Brief Project Description (Include location, road name/functional class, type of improvement, etc.)

The City of Shakopee, in partnership with Scott County and MnDOT is developing the ultimate vision for CSAH 15/Marystown Road/Adams Street from Vierling Drive to CSAH 16 (17th Avenue) in Shakopee, Minnesota (see Conceptual Layout). The project reconstructs approximately 1.2 miles of a four-lane A-Minor Expander roadway, replaces four existing stop-controlled intersections with roundabouts, and installs pedestrian and bicycle shared use paths and sidewalks to improve multimodal connectivity.

Previous studies, including the Jackson Township Development Area - Shakopee AUAR Transportation Analysis and Trident Development Transportation Study (2019) identified the current traffic control along the corridor will not accommodate future growth and planned development in the areas by the year 2025. The Hy-Vee development was completed in 2017, the Windermere development is on-going, and there are several other developments planned in the area (see preferred development concept). Development includes over 1,600 housing units, and 1.1 million square feet of retail business, which will bring over 2,750 jobs into the area. As development in the study area continues to grow at a rapid pace, traffic operations and safety are expected to deteriorate. The TH 169 South Ramp intersection is expected to fail by year 2025, and the TH 169 North Ramp and the CSAH 15/CSAH 16 intersections are expected to have failing side-street approaches during peak hours.

Historical crash data (see Crash figure) indicates there has been an alarming increase in crashes along the corridor since construction of the Hy-Vee and Windermere developments. Average crashes per year along the corridor have increased from 2.3 from 2014-2016 to 9.3 from 2017-2019. As traffic

operations begin to fail, drivers will begin to accept smaller gaps, which could present even more safety risks along the high-speed corridor (45/55 mph). In 2010, there was a right-angle crash at the TH 169 Ramp intersection that resulted in fatalities of a female driver and her unborn child. The installation of roundabouts will provide acceptable traffic operations, while significantly slowing travel speeds and reducing high-risk conflict points. The loss of life in 2010 could have been prevented if a roundabout configuration were in place.

The project increases transportation options for residents of all ages and socioeconomic backgrounds while delivering multimodal options for those wishing to walk or bike to work or school by providing a fully connected shared-use path/sidewalk system. This off-street access connects area parks, Sweeney and Jackson Elementary Schools, places of employment, and residences in the area.

(Limit 2,800 characters; approximately 400 words)

TRANSPORTATION IMPROVEMENT PROGRAM (TIP) DESCRIPTION - will be used in TIP if the project is selected for funding. See MnDOT's TIP description guidance.

CSAH 15/Marystown Road, Shakopee, from north of Vierling Drive to south of CSAH 16 (17th Avenue), Road Reconstruction, Reconstruct intersections to roundabouts at Vierling Drive, TH 169 WB ramps, TH 169 EB ramps/Windermere Way, and CSAH 16/17th Ave

Project Length (Miles)

to the nearest one-tenth of a mile

1.2

Project Funding

Are you applying for competitive funds from another source(s) to implement this project?

Yes

If yes, please identify the source(s)

MnDOT Highway Safety Improvement Program (HSIP) for State Fiscal Years 2024 and 2025

Federal Amount

$4,918,000.00

Match Amount

$1,229,500.00

Minimum of 20% of project total

Project Total $6,147,500.00

For transit projects, the total cost for the application is total cost minus fare revenues.

Match Percentage 20.0%

Minimum of 20%
Compute the match percentage by dividing the match amount by the project total

Source of Match Funds City of Shakopee

A minimum of 20% of the total project cost must come from non-federal sources; additional match funds over the 20% minimum can come from other federal sources

Preferred Program Year

Select one: 2024

Select 2022 or 2023 for TDM projects only. For all other applications, select 2024 or 2025.

Additional Program Years: 2022, 2023

Select all years that are feasible if funding in an earlier year becomes available.

Project Information-Roadways

County, City, or Lead Agency Scott County, City of Shakopee

Functional Class of Road B Minor (North of north ramp of TH 169) / A Minor Expander (South of TH 169)

Road System CSAH and MSAS

TH, CSAH, MSAS, CO. RD., TWP. RD., CITY STREET

Road/Route No. 15

i.e., 53 for CSAH 53

Name of Road Marystown Road

Example; 1st ST., MAIN AVE

Zip Code where Majority of Work is Being Performed 55379

(Approximate) Begin Construction Date 05/02/2022

(Approximate) End Construction Date 10/31/2023

TERMINI:(Termini listed must be within 0.3 miles of any work)

From:
(Intersection or Address) Vierling Drive - Road work extends 650 feet beyond intersection

To:
(Intersection or Address) CSAH 16 / 17th Avenue - Road work extends 800 feet beyond intersection

DO NOT INCLUDE LEGAL DESCRIPTION

Or At

Miles of Sidewalk (nearest 0.1 miles) 0.1

Miles of Trail (nearest 0.1 miles) 1.0

Miles of Trail on the Regional Bicycle Transportation Network (nearest 0.1 miles) 0

Primary Types of Work *Examples: GRADE, AGG BASE, BIT BASE, BIT SURF, SIDEWALK, CURB AND GUTTER,STORM SEWER, SIGNALS, LIGHTING, GUARDRAIL, BIKE PATH, PED RAMPS, BRIDGE, PARK AND RIDE, ETC.*	Bridge and roundabout construction, bike path, sidewalk, grading, aggregate base, lighting, storm sewer, ponds, median, erosion control

BRIDGE/CULVERT PROJECTS (IF APPLICABLE)

Old Bridge/Culvert No.:	Bridge #7011, (1995)
New Bridge/Culvert No.:	N/A
Structure is Over/Under (Bridge or culvert name):	TH 169

Requirements - All Projects

All Projects

1.The project must be consistent with the goals and policies in these adopted regional plans: Thrive MSP 2040 (2014), the 2040 Transportation Policy Plan (2018), the 2040 Regional Parks Policy Plan (2018), and the 2040 Water Resources Policy Plan (2015).

Check the box to indicate that the project meets this requirement. Yes

2.The project must be consistent with the 2040 Transportation Policy Plan. Reference the 2040 Transportation Plan goals, objectives, and strategies that relate to the project.

Briefly list the goals, objectives, strategies, and associated pages:

The project is consistent with the 2040 Transportation Policy Plans goals, objectives, and strategies:

Goal B: Safety and Security - The regional transportation is safe and secure for all users (p. 2.5).

- Obj. A: reduce fatal and serious injury crashes and improve safety and security for all modes of passenger travel and freight transport (p. 2.5).

- Strat. B1: Regional transportation partners will incorporate safety and security considerations for all modes and users throughout the processes of planning, funding, construction, operation (p. 2.5).

- Strat. B6: Regional transportation partners will use best practices to provide and improve facilities for safe walking and bicycling, since pedestrians and bicyclists are the most vulnerable users of the transportation system (p. 2.8).

Goal C: A reliable, affordable, and efficient multimodal transportation system supports the prosperity of people and businesses by connecting them to destinations throughout the region and beyond (p. 2.10).

- Obj. A: increase the availability of multimodal travel options, especially in congested highway corridors (p. 2.10).

- Obj. E: Improve the availability of and quality of multimodal travel options for people of all ages and abilities to connect to jobs and other opportunities, particularly for historically under-represented populations (p. 2.10).

- Strat. C1: Regional transportation partners continue to work together to plan and implement

transportation systems that are multimodal and provide connections between modes (p. 2.10).

- Strat. C2: Local units of government should provide a network of interconnected roadways, bicycle facilities, and pedestrian facilities to meet local travel needs using Complete Streets principles (p. 2.11).

Goal E: Healthy and Equitable Communities - The regional transportation system advances equity and contributes to communities' livability and sustainability while protecting the natural, cultural, and developed environments (p. 2.30).
- Obj. C: Increase the availability and attractiveness of transit, bicycling, and walking to encourage healthy communities throughout the use of active transportation options (p. 2.30).

- Obj. D: Provide a transportation system that promotes community cohesion and connectivity for people of all ages and abilities, particularly for historically under-represented populations (p. 2.30).

- Strat. E3: Regional transportation partners will plan and implement a transportation system that considers the needs of all potential users, including children, senior citizens, and persons with disabilities, and that promotes active lifestyles and cohesive communities. A special emphasis should be placed on promoting the environmental and health benefits of alternatives to single-occupant vehicle travel (p. 2.31).

Limit 2,800 characters, approximately 400 words

3.The project or the transportation problem/need that the project addresses must be in a local planning or programming document. Reference the name of the appropriate comprehensive plan, regional/statewide plan, capital improvement program, corridor study document [studies on trunk highway must be approved by the Minnesota Department of Transportation and the Metropolitan Council], or other official plan or program of the applicant agency [includes Safe Routes to School Plans] that the project is included in and/or a transportation problem/need that the project addresses.

List the applicable documents and pages:

- City of Shakopee Capital Improvement Plan 2020-2024, pgs. 85-87

a. Projects Map

- Jackson Township Development Area - Shakopee AUAR Transportation Analysis

- Envision Shakopee 2040 Comprehensive Plan (2019), Pages 175, 178-179, 202

- West End Land Use Master Plan (2016) - Preferred Development Concept

- Trident Development Transportation Study (2019)

Limit 2,800 characters, approximately 400 words

4.The project must exclude costs for studies, preliminary engineering, design, or construction engineering. Right-of-way costs are only eligible as part of transit stations/stops, transit terminals, park-and-ride facilities, or pool-and-ride lots. Noise barriers, drainage projects, fences, landscaping, etc., are not eligible for funding as a standalone project, but can be included as part of the larger submitted project, which is otherwise eligible.

Check the box to indicate that the project meets this requirement. Yes

5.Applicants that are not State Aid cities or counties in the seven-county metro area with populations over 5,000 must contact the MnDOT Metro State Aid Office prior to submitting their application to determine if a public agency sponsor is required.

Check the box to indicate that the project meets this requirement. Yes

6.Applicants must not submit an application for the same project elements in more than one funding application category.

Check the box to indicate that the project meets this requirement. Yes

7.The requested funding amount must be more than or equal to the minimum award and less than or equal to the maximum award. The cost of preparing a project for funding authorization can be substantial. For that reason, minimum federal amounts apply. Other federal funds may be combined with the requested funds for projects exceeding the maximum award, but the source(s) must be identified in the application. Funding amounts by application category are listed below.
Strategic Capacity (Roadway Expansion): *$1,000,000 to $10,000,000*
Roadway Reconstruction/Modernization: *$1,000,000 to $7,000,000*
Traffic Management Technologies (Roadway System Management): *$250,000 to $3,500,000*
Spot Mobility and Safety: *$1,000,000 to $3,500,000*
Bridges Rehabilitation/Replacement: *$1,000,000 to $7,000,000*

Check the box to indicate that the project meets this requirement. Yes

8.The project must comply with the Americans with Disabilities Act (ADA).

Check the box to indicate that the project meets this requirement. Yes

9.In order for a selected project to be included in the Transportation Improvement Program (TIP) and approved by USDOT, the public agency sponsor must either have a current Americans with Disabilities Act (ADA) self-evaluation or transition plan that covers the public right of way/transportation, as required under Title II of the ADA. The plan must be completed by the local agency before the Regional Solicitation application deadline. For the 2022 Regional Solicitation funding cycle, this requirement may include that the plan is updated within the past five years.

The applicant is a public agency that employs 50 or more people and has a completed ADA transition plan that covers the public right of way/transportation. Yes

Date plan completed: 06/19/2018

Link to plan: https://www.shakopeemn.gov/living-here/my-street/ada-transition-plan

The applicant is a public agency that employs fewer than 50 people and has a completed ADA self-evaluation that covers the public right of way/transportation.

Date self-evaluation completed:

Link to plan:

Upload plan or self-evaluation if there is no link

Upload as PDF

10.The project must be accessible and open to the general public.

Check the box to indicate that the project meets this requirement. Yes

11.The owner/operator of the facility must operate and maintain the project year-round for the useful life of the improvement, per FHWA direction established 8/27/2008 and updated 6/27/2017.

Check the box to indicate that the project meets this requirement. Yes

12.The project must represent a permanent improvement with independent utility. The term independent utility means the project provides benefits described in the application by itself and does not depend on any construction elements of the project being funded from other sources outside the regional solicitation, excluding the required non-federal match. Projects that include traffic management or transit operating funds as part of a construction project are exempt from this policy.

Check the box to indicate that the project meets this requirement. Yes

13.The project must not be a temporary construction project. A temporary construction project is defined as work that must be replaced within five years and is ineligible for funding. The project must also not be staged construction where the project will be replaced as part of future stages. Staged construction is eligible for funding as long as future stages build on, rather than replace, previous work.

Check the box to indicate that the project meets this requirement. Yes

14.The project applicant must send written notification regarding the proposed project to all affected state and local units of government prior to submitting the application.

Check the box to indicate that the project meets this requirement. Yes

Roadways Including Multimodal Elements

1.All roadway and bridge projects must be identified as a principal arterial (non-freeway facilities only) or A-minor arterial as shown on the latest TAB approved roadway functional classification map.

Check the box to indicate that the project meets this requirement. Yes

Roadway Expansion and Reconstruction/Modernization and Spot Mobility projects only:

2.The project must be designed to meet 10-ton load limit standards.

Check the box to indicate that the project meets this requirement. Yes

Bridge Rehabilitation/Replacement and Strategic Capacity projects only:

3.Projects requiring a grade-separated crossing of a principal arterial freeway must be limited to the federal share of those project costs identified as local (non-MnDOT) cost responsibility using MnDOTs Cost Participation for Cooperative Construction Projects and Maintenance Responsibilities manual. In the case of a federally funded trunk highway project, the policy guidelines should be read as if the funded trunk highway route is under local jurisdiction.

Check the box to indicate that the project meets this requirement.

4.The bridge must carry vehicular traffic. Bridges can carry traffic from multiple modes. However, bridges that are exclusively for bicycle or pedestrian traffic must apply under one of the Bicycle and Pedestrian Facilities application categories. Rail-only bridges are ineligible for funding.

Check the box to indicate that the project meets this requirement.

Bridge Rehabilitation/Replacement projects only:

5.The length of the bridge must equal or exceed 20 feet.

Check the box to indicate that the project meets this requirement.

6. The bridge must have a National Bridge Inventory Rating of 6 or less for rehabilitation projects and 4 or less for replacement projects.

Check the box to indicate that the project meets this requirement.

Roadway Expansion, Reconstruction/Modernization, and Bridge Rehabilitation/Replacement projects only:

7. All roadway projects that involve the construction of a new/expanded interchange or new interchange ramps must have approval by the Metropolitan Council/MnDOT Interchange Planning Review Committee prior to application submittal. Please contact Michael Corbett at MnDOT (Michael.J.Corbett@state.mn.us or 651-234-7793) to determine whether your project needs to go through this process as described in Appendix F of the 2040 Transportation Policy Plan.

Check the box to indicate that the project meets this requirement.

Requirements - Roadways Including Multimodal Elements

Specific Roadway Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Mobilization (approx. 5% of total cost)	$190,000.00
Removals (approx. 5% of total cost)	$403,950.00
Roadway (grading, borrow, etc.)	$181,400.00
Roadway (aggregates and paving)	$907,175.00
Subgrade Correction (muck)	$0.00
Storm Sewer	$416,000.00
Ponds	$60,000.00
Concrete Items (curb & gutter, sidewalks, median barriers)	$1,133,825.00
Traffic Control	$84,000.00
Striping	$21,000.00
Signing	$63,000.00
Lighting	$125,000.00

Turf - Erosion & Landscaping	$250,000.00
Bridge	$900,000.00
Retaining Walls	$0.00
Noise Wall (not calculated in cost effectiveness measure)	$0.00
Traffic Signals	$0.00
Wetland Mitigation	$0.00
Other Natural and Cultural Resource Protection	$0.00
RR Crossing	$0.00
Roadway Contingencies	$561,000.00
Other Roadway Elements	$700,000.00
Totals	**$5,996,350.00**

Specific Bicycle and Pedestrian Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Path/Trail Construction	$118,750.00
Sidewalk Construction	$0.00
On-Street Bicycle Facility Construction	$0.00
Right-of-Way	$0.00
Pedestrian Curb Ramps (ADA)	$32,400.00
Crossing Aids (e.g., Audible Pedestrian Signals, HAWK)	$0.00
Pedestrian-scale Lighting	$0.00
Streetscaping	$0.00
Wayfinding	$0.00
Bicycle and Pedestrian Contingencies	$0.00
Other Bicycle and Pedestrian Elements	$0.00
Totals	**$151,150.00**

Specific Transit and TDM Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Fixed Guideway Elements	$0.00
Stations, Stops, and Terminals	$0.00
Support Facilities	$0.00

Transit Systems (e.g. communications, signals, controls, fare collection, etc.)	$0.00
Vehicles	$0.00
Contingencies	$0.00
Right-of-Way	$0.00
Other Transit and TDM Elements	$0.00
Totals	**$0.00**

Transit Operating Costs

Number of Platform hours	0
Cost Per Platform hour (full loaded Cost)	$0.00
Subtotal	$0.00
Other Costs - Administration, Overhead,etc.	$0.00

Totals

Total Cost	$6,147,500.00
Construction Cost Total	$6,147,500.00
Transit Operating Cost Total	$0.00

Measure B: Project Location Relative to Jobs, Manufacturing, and Education

Existing Employment within 1 Mile:	2619
Existing Manufacturing/Distribution-Related Employment within 1 Mile:	315
Existing Post-Secondary Students within 1 Mile:	0
Upload Map	1589043220080_Regional Economy.pdf

Please upload attachment in PDF form.

Measure C: Current Heavy Commercial Traffic

RESPONSE: Select one for your project, based on the Regional Truck Corridor Study:

Along Tier 1:

Miles:	0

(to the nearest 0.1 miles)

Along Tier 2:

Miles:	0

(to the nearest 0.1 miles)

Along Tier 3:

Miles: 0

(to the nearest 0.1 miles)

The project provides a direct and immediate connection (i.e., intersects) with either a Tier 1, Tier 2, or Tier 3 corridor: Yes

None of the tiers:

Measure A: Current Daily Person Throughput

Location CSAH 15/Marystown Road south of Vierling Drive

Current AADT Volume 11500

Existing Transit Routes on the Project 5

For New Roadways only, list transit routes that will likely be diverted to the new proposed roadway (if applicable).

Upload Transit Connections Map 1589043431328_Transit Connections.pdf

Please upload attachment in PDF form.

Response: Current Daily Person Throughput

Average Annual Daily Transit Ridership 0

Current Daily Person Throughput 14950.0

Measure B: 2040 Forecast ADT

Use Metropolitan Council model to determine forecast (2040) ADT volume No

If checked, METC Staff will provide Forecast (2040) ADT volume

OR

Identify the approved county or city travel demand model to determine forecast (2040) ADT volume Scott County TDM; 11,600 ADT from Scott County approved model; AUAR Traffic Forecast volumes based on Intersection Control Evaluation Reports for Marystown Road/TH 169 - April 2020 are 17,500 AADT.

Forecast (2040) ADT volume 11600

Measure A: Connection to disadvantaged populations and projects benefits, impacts, and mitigation

*1.**Sub-measure**: Equity Population Engagement: A successful project is one that is the result of active engagement of low-income populations, people of color, persons with disabilities, youth and the elderly. Engagement should occur prior to and during a projects development, with the intent to provide direct benefits to, or solve, an expressed transportation issue, while also limiting and mitigating any negative impacts. Describe and map the location of any low-income populations, people of color, disabled populations, youth or the elderly within a ½ mile of the proposed project. Describe how these specific populations were engaged and provided outreach to, whether through community planning efforts, project needs identification, or during the project development process. Describe what engagement methods and tools were used and how the input is reflected in the projects purpose and need and design. Elements of quality engagement include: outreach and engagement to specific communities and populations that are likely to be directly impacted by the project; techniques to reach out to populations traditionally not involved in community engagement related to transportation projects; feedback from these populations identifying potential positive and negative elements of the proposed project through engagement, study recommendations, or plans that provide feedback from populations that may be impacted by the proposed project. If relevant, describe how NEPA or Title VI regulations will guide engagement activities.*

Response:

The City of Shakopee has conducted informal stakeholder engagement as new development has occurred, and the need for transportation improvements have been identified, including the Windemere development, Hy-Vee grocery chain, and the Trident Development. Specifically, the need for intersection improvements to provide safer operations and multi-modal facilities to accommodate all users was identified.

Engagement with equity populations is tied to the 2040 Envision Shakopee, the city's 2040 Comp. Plan process. Through that endeavor, the city heard from over 3,000 residents to learn more about their vision for the future.

Among the key themes that emerged was a priority on making regional system connections, creating corridors that are welcoming and attractive, filling gaps in the trail network, connecting employment centers, and providing diverse housing options. All are accomplished by this project.

Additional opportunities to engage with the community was planned in late spring 2020 specifically for the Marystown Road corridor but was postponed due to the public health crisis. Rescheduling these events will likely occur in summer/fall 2020 and will focus on a variety of ways to participate including surveys, in person meetings and presentations, and pop up events with a specific focus on underrepresented populations, including low-income populations, people of color, disabled populations, youth, and the elderly.

(Limit 2,800 characters; approximately 400 words)

*2.**Sub-measure**: Equity Population Benefits and Impacts: A successful project is one that has been designed to provide direct benefits to low-income populations, people of color, persons with disabilities, youth and the elderly. All projects must mitigate potential negative benefits as required under federal law. Projects that are designed to provide benefits go beyond the mitigation requirement to proactively provide transportation benefits and solve transportation issues experienced by Equity populations.*

a.Describe the projects benefits to low-income populations, people of color, children, people with disabilities, and the elderly. Benefits could relate to pedestrian and bicycle safety improvements; public health benefits; direct access improvements for residents or improved access to destinations such as jobs, school, health care or other; travel time improvements; gap closures; new transportation services or modal options, leveraging of other beneficial projects and investments; and/or community connection and cohesion improvements. Note that this is not an exhaustive list.

Response:

The project provides multi-modal transportation options, increased safety, access, and public health benefits to all residents in the city, including low-income populations, people of color, people with disabilities, youth, and the elderly.

The project resides in Census Tracts 806 and 807. These tracts have more than 25 percent of the population identified as persons of color - Arlington Ridge Apartments (48 units), Sixton Apartments (133 units), and Mobile Manor (67 sites) offer nearly 250 affordable housing units. Numerous duplexes and multi-family homes are also located within the corridor area (see map of the socioeconomic characteristics).

The corridor is located in an area above the regional average concentration of race/poverty. Oftentimes, this means access to a vehicle is a challenge and investing funds into multi-modal facilities such as bicycle, pedestrian, and transit facilities is a sound investment.

Pedestrian and bicycle safety improvements: the shared use path system on both sides of Marystown Road provide a separated off-street system for all users, eliminating the need to share the roadway with vehicles traveling at a high rate of speed. This is especially important for less skilled bicyclists and children who wish to bike to school or who would otherwise be confined to narrow travelling lanes amidst a 55-mph roadway. Roundabout improvements at intersections are ADA compliant and feature safer two-stage pedestrian/bicycle crossings.

Improved access to destinations: The project will benefit underrepresented populations by improving connections throughout the corridor for motorists, pedestrians, bicyclists, and transit users. The

project infrastructure links populations to parks, employment centers, schools and residences, and options which are critical to populations who do not have access to a vehicle or cannot/choose not to drive.

Two senior housing complexes, two affordable housing facilities, three social service buildings, three schools, a daycare, and a linguistically isolated area are located within one mile of the project. Safe facilities and crossings which are ADA compatible are paramount to accommodate these populations.

Public health benefits: the project increases transportation options and livability for residents of all ages and socioeconomic backgrounds and encourages an active lifestyle. The project delivers multi-modal options for those wishing to walk or bike to work, school, etc. on a safe facility away from vehicles. Lighted paths help illuminate the facility and allow for exercise during non-daylight hours.

(Limit 2,800 characters; approximately 400 words)

b. Describe any negative impacts to low-income populations, people of color, children, people with disabilities, and the elderly created by the project, along with measures that will be taken to mitigate them. Negative impacts that are not adequately mitigated can result in a reduction in points.
Below is a list of negative impacts. Note that this is not an exhaustive list.
Increased difficulty in street crossing caused by increased roadway width, increased traffic speed, wider turning radii, or other elements that negatively impact pedestrian access.
Increased noise.
Decreased pedestrian access through sidewalk removal / narrowing, placement of barriers along the walking path, increase in auto-oriented curb cuts, etc.
Project elements that are detrimental to location-based air quality by increasing stop/start activity at intersections, creating vehicle idling areas, directing an increased number of vehicles to a particular point, etc.
Increased speed and/or cut-through traffic.
Removed or diminished safe bicycle access.
Inclusion of some other barrier to access to jobs and other destinations.
Displacement of residents and businesses.
Mitigation of temporary construction/implementation impacts such as dust; noise; reduced access for travelers and to businesses; disruption of utilities; and eliminated street crossings.
Other

As with any construction project, negative impacts will be created; however, impacts are expected to be temporary and minimal in nature.

Temporary road and sidewalk closures: Construction will result in road and sidewalk closures. This can lead to traffic congestion, delays, and impact travel time reliability to destinations. To account for this, detour routes will be implemented and appropriately messaged and signed. To minimize traffic congestion and delays near the work zone, a transportation management plan (TMP) will be created and implemented to maintain acceptable levels of safety, accessibility, and mobility. These closures could lead to conditions which will temporarily not meet ADA requirements, especially at intersections.

Response:

Noise impacts: Noise impacts will also be experienced during construction of the Marystown Road reconstruction project. These noise impacts will occur near existing employment centers, parks, and residences. Any negative impacts will be publicized, advertised, and mitigated as needed.

(Limit 2,800 characters; approximately 400 words)

Select one:

*3.**Sub-measure: Bonus Points** Those projects that score at least 80% of the maximum total points available through sub-measures 1 and 2 will be awarded bonus points based on the geographic location of the project. These points will be assigned as follows, based on the highest-scoring geography the project contacts:*
a.25 points to projects within an Area of Concentrated Poverty with 50% or more people of color
b.20 points to projects within an Area of Concentrated Poverty
c.15 points to projects within census tracts with the percent of population in poverty or population of color above the regional average percent
d.10 points for all other areas

Project is located in an Area of Concentrated Poverty where 50% or more of residents are people of color (ACP50):

Project located in Area of Concentrated Poverty:

Projects census tracts are above the regional average for population in poverty or population of color: Yes

Project located in a census tract that is below the regional average for population in poverty or populations of color or includes children, people with disabilities, or the elderly:

(up to 40% of maximum score)

Upload the "Socio-Economic Conditions" map used for this measure. The second map created for sub measure A1 can be uploaded on the Other Attachments Form, or can be combined with the "Socio-Economic Conditions" map into a single PDF and uploaded here.

Upload Map 1589044966103_Socio-Economic.pdf

Measure B: Part 1: Housing Performance Score

City	Segment Length (For stand-alone projects, enter population from Regional Economy map) within each City/Township	Segment Length/Total Project Length	Score	Housing Score Multiplied by Segment percent
Shakopee	1.2	1.0	98.0	98.0

Total Project Length

Total Project Length 1.2

Project length entered on the Project Information - General form.

Housing Performance Score

Total Project Length (Miles) or Population 1.2

Total Housing Score 98.0

Affordable Housing Scoring

Part 2: Affordable Housing Access

Reference Access to Affordable Housing Guidance located under Regional Solicitation Resources for information on how to respond to this measure and create the map.
If text box is not showing, click Edit or "Add" in top right of page.

The Marystown Road project provides multimodal transportation options, increased safety, access, and public health benefits to all residents in the city, including low-income populations, people of color, people with disabilities, youth, and the elderly. The corridor is located in an area above the regional average concentration of race and poverty.

The project resides in Census Tract 806 and 807. These tracts have more than 25 percent of the population identified as person of color. Arlington Ridge Apartments (48 units), Sixton Apartments (133 units), and Mobile Manor (67 sites) offer nearly 250 affordable housing units. Numerous duplexes, three social service buildings, three schools, two daycare businesses, two senior housing facilities and multi-family homes are also located within the corridor area.

Response:

Additionally, the Willows at Windermere is being developed by CommonBond Communities. This Low-Income Housing Tax Credit project received funding from the Scott County Community Development Authority and serves those with incomes at or below 30 percent of the Area Median Income. The project is supportive of housing with units focused on those which were previously homeless or distressed and includes services for job training and after school programs. The project contains 60 units with 15 one-bedrooms, 30 two-bedrooms and 15 three-bedroom units. This location was chosen by CommonBond to provide affordable housing in the west end, the fastest growing area in the city. It is adjacent to Benedictine Living Community of Shakopee, a 178-unit senior facility, which will provide job opportunities for some residents and is less than a half mile from Hy-Vee grocery store, another major employer in the area.

The project infrastructure links populations to parks, employment centers, schools and residences, options that are critical to populations who don't have access to a vehicle, cannot, or choose not to drive. Safe facilities and crossings that are ADA compatible are paramount to accommodate these populations.

(Limit 2,100 characters; approximately 300 words)

Upload map: 1589054488729_Shakopee Socioeconomic Context.pdf

Measure A: Year of Roadway Construction

Year of Original Roadway Construction or Most Recent Reconstruction	Segment Length	Calculation	Calculation 2
1995	1.2	2394.0	1995.0
	1	**2394**	**1995**

Total Project Length

Total Project Length (as entered in "Project Information" form) 1.2

Average Construction Year

Weighted Year 1995

Total Segment Length (Miles)

Total Segment Length 1.2

Measure B: Geometric, Structural, or Infrastructure Improvements

Improved roadway to better accommodate freight movements: Yes

Response:

The proposed project will provide a significant benefit to freight movements along a high-speed roadway where truck drivers will not have to make judgement calls on gap acceptance with an easier time making maneuvers from side-street approaches. This results in safer access to/from TH 169. Additionally, current conditions require left-turning traffic to make full stops at existing intersections, which leads to travel delays and increased noise and emissions between intersections. Roundabout control will allow trucks to move more freely through the corridor at non-peak times.

(Limit 700 characters; approximately 100 words)

Improved clear zones or sight lines:

Yes

Response:

The 55-mph roadway requires increased sight distance for side-street stop vehicles. With the roundabouts, speeds will be reduced to 40 mph (20 mph through roundabouts) and side-street sight lines will provide adequate time to enter the roundabouts. This will significantly reduce right-angle crashes on the corridor.

There are sight distance issues at the westbound approaches of the Marystown Road/TH 169 ramp intersections. With roundabouts, sight distance issues will be resolved.

The project utilizes curb and gutter in most areas which will provide better vehicular lane guidance during inclement weather conditions, allowing for more consistent sight distances throughout the project.

(Limit 700 characters; approximately 100 words)

Improved roadway geometrics:

Yes

Response:

Significant safety benefits for vehicles and pedestrians will be realized through improved roadway geometrics. Speeds along the corridor will be reduced from the current 55 mph to 40 mph (20 mph through roundabouts). Land use to the south of TH 169 is mainly rural, and land use north of TH 169 is suburban. The urbanization and roundabout construction would provide a transition to alert drivers coming from the south that they are entering a more suburban area where pedestrian activity could be higher.

(Limit 700 characters; approximately 100 words)

Access management enhancements:

Yes

Response:

A roundabout at Marystown Road/17th Ave. allows southbound traffic to utilize the U-turn to enter the Trident site. This reduces trips from passing by the RRFB on 17th Avenue and the school crossing between Jackson Elementary School and the Ladybug Daycare Center. The Trident development will provide direct right-in/right-out access to Marystown Road between 17th Avenue and the TH 169 eastbound ramps.

Illegal driver maneuvers are currently occurring at the Hy-Vee right-in/right-out access. The roundabout at the Adams Street/Vierling Drive intersection eliminates this maneuver.

In addition, four roundabouts will allow for median separated two-stage crossing for bicycles and pedestrians.

(Limit 700 characters; approximately 100 words)

Vertical/horizontal alignment improvements:

Yes

Response:

Minor horizontal and vertical alignment improvements will be made within the current roadway footprint to provide adequate speed control for vehicles approaching and traversing the roundabout.

(Limit 700 characters; approximately 100 words)

Improved stormwater mitigation: Yes

Response: Implementation of stormwater BMPs to provide water quality treatment will reduce discharge of suspended solids and phosphorus loadings. The addition of curb and gutter with formalized urban drainage system will improve stormwater runoff.

(Limit 700 characters; approximately 100 words)

Signals/lighting upgrades: Yes

Response: Lighting improvements will be made as part of the improved pedestrian network creating a safer environment for users of all ages for travel during the early morning and late evening periods. It is anticipated that there will be significantly more lighting along the corridor, especially at the suburban roundabout intersections versus the previous suburban/rural side-street stop approaches.

(Limit 700 characters; approximately 100 words)

Other Improvements Yes

Response: Access and operations at Talpah Park will be improved through the roundabout construction which will benefit event traffic flow before and after sporting events. Roundabouts would provide the flexibility to handle these traffic surges efficiently and safely.

(Limit 700 characters; approximately 100 words)

Measure A: Congestion Reduction/Air Quality

Total Peak Hour Delay Per Vehicle Without The Project (Seconds/ Vehicle)	Total Peak Hour Delay Per Vehicle With The Project (Seconds/ Vehicle)	Total Peak Hour Delay Per Vehicle Reduced by Project (Seconds/ Vehicle)	Volume without the Project (Vehicles per hour)	Volume with the Project (Vehicles Per Hour):	Total Peak Hour Delay Reduced by the Project:	Total Peak Hour Delay Reduced by the Project:	EXPLANATION of methodology used to calculate railroad crossing delay, if applicable.	Synchro or HCM Reports

35.0	24.0	11.0	4203	4203	46233.0	46233.0	N/A	1589555287980_TRAFFIC OPERATIONS.pdf
						46233		

Vehicle Delay Reduced

Total Peak Hour Delay Reduced	46233.0
Total Peak Hour Delay Reduced	46233.0

Measure B:Roadway projects that do not include new roadway segments or railroad grade-separation elements

Total (CO, NOX, and VOC) Peak Hour Emissions without the Project (Kilograms):	Total (CO, NOX, and VOC) Peak Hour Emissions with the Project (Kilograms):	Total (CO, NOX, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms):
7.53	9.43	-1.9
8	**9**	**-2**

Total

Total Emissions Reduced:	-1.9
Upload Synchro Report	1589555410282_EMISSIONS Report.pdf

Please upload attachment in PDF form. (Save Form, then click 'Edit' in top right to upload file.)

Measure B: Roadway projects that are constructing new roadway segments, but do not include railroad grade-separation elements (for Roadway Expansion applications only):

Total (CO, NOX, and VOC) Peak Hour Emissions without the Project (Kilograms):	Total (CO, NOX, and VOC) Peak Hour Emissions with the Project (Kilograms):	Total (CO, NOX, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms):
0	**0**	**0**

Total Parallel Roadway

Emissions Reduced on Parallel Roadways	0
Upload Synchro Report	

Please upload attachment in PDF form. (Save Form, then click 'Edit' in top right to upload file.)

New Roadway Portion:

Cruise speed in miles per hour with the project:	0
Vehicle miles traveled with the project:	0
Total delay in hours with the project:	0
Total stops in vehicles per hour with the project:	0
Fuel consumption in gallons:	0
Total (CO, NOX, and VOC) Peak Hour Emissions Reduced or Produced on New Roadway (Kilograms):	0
EXPLANATION of methodology and assumptions used:(Limit 1,400 characters; approximately 200 words)	
Total (CO, NOX, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms):	0.0

Measure B:Roadway projects that include railroad grade-separation elements

Cruise speed in miles per hour without the project:	0
Vehicle miles traveled without the project:	0
Total delay in hours without the project:	0
Total stops in vehicles per hour without the project:	0
Cruise speed in miles per hour with the project:	0
Vehicle miles traveled with the project:	0
Total delay in hours with the project:	0
Total stops in vehicles per hour with the project:	0
Fuel consumption in gallons (F1)	0
Fuel consumption in gallons (F2)	0
Fuel consumption in gallons (F3)	0
Total (CO, NOX, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms):	0
EXPLANATION of methodology and assumptions used:(Limit 1,400 characters; approximately 200 words)	

Measure A: Roadway Projects that do not Include Railroad Grade-Separation Elements

Crash Modification Factor Used:	Crash modification factors for the conversion of a stop-controlled intersection into a single-lane roundabout and a 15 percent reduction in mean speed of the corridor were utilized.

(Limit 700 Characters; approximately 100 words)

Rationale for Crash Modification Selected:	All four of the corridor study intersections will be converted from stop-controlled intersections to single-lane roundabouts. Therefore, a CMF that captured the significant safety benefits associated with single-lane roundabouts was utilized. While the roundabouts are expected to provide speed reductions at the intersections, the design speed for the corridor will also be reduced from 55 mph to 40 mph. With the design standards associated with the reduced design speed, the vehicular speeds along the corridor are expected to be reduced by as high as 30 percent. This reduction will result in slower vehicular speeds not only along the corridor but also into/out of the roundabout, which is expected to provide even greater safety benefits. Therefore, the 15 percent reduction in mean speed CMF was utilized.

(Limit 1400 Characters; approximately 200 words)

Project Benefit ($) from B/C Ratio	$7,658,645.00
Total Fatal (K) Crashes:	0
Total Serious Injury (A) Crashes:	0
Total Non-Motorized Fatal and Serious Injury Crashes:	0
Total Crashes:	17
Total Fatal (K) Crashes Reduced by Project:	0
Total Serious Injury (A) Crashes Reduced by Project:	0
Total Non-Motorized Fatal and Serious Injury Crashes Reduced by Project:	0
Total Crashes Reduced by Project:	14
Worksheet Attachment	1589055539978_Marystown Rd_BCA.pdf

Please upload attachment in PDF form.

Roadway projects that include railroad grade-separation elements:

Current AADT volume:	0
Average daily trains:	0
Crash Risk Exposure eliminated:	0

Measure A: Multimodal Elements and Existing Connections

The proposed project will significantly improve pedestrian and bicycle safety within the project area. The proposed improvements will provide a vital multimodal link with the construction of approximately one mile of shared-use path and 0.1 miles of new sidewalk will be constructed on both sides of Marystown Road.

One of the main objectives which supports the roundabout alternatives at the Marystown Road/TH 169 ramp intersections is the ability to re-purpose the TH 169 bridge to provide a multiuse trail on both sides, thus connecting a gap in the City of Shakopee's trail system. The existing roadway configuration along the TH 169 bridge does not have adequate space to provide safe pedestrian facilities. The signal alternative would result in a trail/sidewalk being terminated before the bridge, unless existing turn lanes and/or travel lanes were reduced.

Response:

A new segment on both sides of Marystown Road fills a current trail gap and extends south from Tahpah Park to Windemere Road over TH 169. The new trail will be installed on the east side of Marystown Road from the Hy-Vee development to 17th Avenue serving the Trident Development and connecting to Jackson Elementary School.

The new trail system paired with roundabouts at intersections will provide numerous safety benefits. The project addresses a gap in the sidewalk network at the Marystown Road/CR 16 intersection and puts in place infrastructure to comply with ADA standards and allow for the safe crossing of pedestrians, bicyclists and wheelchairs. Improving this intersection to roundabout control will allow for a connected sidewalk system and two-stage crossing for all users which enhances safety.

The proposed pedestrian and bicycle improvements for Marystown Road are one of the pedestrian/bicycle safety strategies identified in MnDOT's Best Practices for Pedestrians/Bicycle Safety and FHWA's Proven Safety Countermeasures documents. Additionally, the project includes construction of roundabouts at four intersections. Roundabouts are identified in the FHWA's Proven Safety Countermeasures document as they have a 78 to 82 percent reduction severe crashes when converted from a signalized or two-way stop-controlled intersection.

(Limit 2,800 characters; approximately 400 words)

Measure A: Multimodal Elements and Existing Connections

Approximately one mile of shared-use path and 0.1 miles of new sidewalk will be constructed on both sides of Marystown Road. One of the main objectives which supports the roundabout alternatives at the Marystown Road/TH 169 ramp intersections is the ability to re-purpose the TH 169 bridge to provide a multi-use trail on both sides, thus connecting a gap in the City of Shakopee's trail system. The existing roadway configuration along the TH 169 bridge does not have adequate space to provide safe pedestrian facilities.

The new proposed trail on both sides of the roadway completes an existing trail gap in the area. The proposed trail on the west side will connect Tahpah Park to Windemere Way over TH 169. The proposed trail on the east side of Marystown Road will connect the Hy-Vee development to 17th Avenue, serving the Trident Development and connecting to Jackson Elementary School.

Response:

The new trail system paired with roundabouts at intersections will provide numerous safety benefits. The project addresses a gap in the sidewalk network at the Marystown Road/CSAH 16 intersection, puts in place infrastructure to comply with ADA standards, and allow for the safe crossing of pedestrians, bicyclists and wheelchairs. Improving this intersection to roundabout control will allow for a connected sidewalk system and two-stage crossing for all users which enhances safety.

These improvements are consistent with the Regional Bicycle Transportation Network (RBTN) Map in showing a planned regional bike way extending north to south along both sides of Marystown Road from Vierling Drive to 150th Street. The planned improvements will connect to an existing RBTN Tier 2 alignment at 150th Street W and connect to an existing regional bike way within Lions Park. The new bike way and

enhancements will also improve connectivity to Tahpah Park, Sand Venture Aquatic Park, Jackson Elementary School, employment centers, and thousands of residences. This connection will have measurable safety benefits for the bicyclists and pedestrians using the system.

(Limit 2,800 characters; approximately 400 words)

Transit Projects Not Requiring Construction

If the applicant is completing a transit application that is operations only, check the box and do not complete the remainder of the form. These projects will receive full points for the Risk Assessment.
Park-and-Ride and other transit construction projects require completion of the Risk Assessment below.

Check Here if Your Transit Project Does Not Require Construction

Measure A: Risk Assessment - Construction Projects

1)Layout (25 Percent of Points)

Layout should include proposed geometrics and existing and proposed right-of-way boundaries.

Layout approved by the applicant and all impacted jurisdictions (i.e., cities/counties that the project goes through or agencies that maintain the roadway(s)). A PDF of the layout must be attached along with letters from each jurisdiction to receive points.

Yes

100%

Attach Layout

1589562555744_CONCEPTUAL LAYOUT_MARYSTOWN ROAD 8.5x11.pdf

Please upload attachment in PDF form.

Layout completed but not approved by all jurisdictions. A PDF of the layout must be attached to receive points.

50%

Attach Layout

Please upload attachment in PDF form.

Layout has not been started

0%

Anticipated date or date of completion

2)Review of Section 106 Historic Resources (15 Percent of Points)

No known historic properties eligible for or listed in the National Register of Historic Places are located in the project area, and project is not located on an identified historic bridge

Yes

100%

There are historical/archeological properties present but determination of no historic properties affected is anticipated.

100%

Historic/archeological property impacted; determination of no adverse effect anticipated

80%

Historic/archeological property impacted; determination of adverse effect anticipated

40%

Unsure if there are any historic/archaeological properties in the project area.

0%

Project is located on an identified historic bridge

3)Right-of-Way (25 Percent of Points)

Right-of-way, permanent or temporary easements either not required or all have been acquired Yes

100%

Right-of-way, permanent or temporary easements required, plat, legal descriptions, or official map complete

50%

Right-of-way, permanent or temporary easements required, parcels identified

25%

Right-of-way, permanent or temporary easements required, parcels not all identified

0%

Anticipated date or date of acquisition

4)Railroad Involvement (15 Percent of Points)

No railroad involvement on project or railroad Right-of-Way agreement is executed (include signature page, if applicable) Yes

100%

Signature Page

Please upload attachment in PDF form.

Railroad Right-of-Way Agreement required; negotiations have begun

50%

Railroad Right-of-Way Agreement required; negotiations have not begun.

0%

Anticipated date or date of executed Agreement

5) Public Involvement (20 percent of points)

Projects that have been through a public process with residents and other interested public entities are more likely than others to be successful. The project applicant must indicate that events and/or targeted outreach (e.g., surveys and other web-based input) were held to help identify the transportation problem, how the potential solution was selected instead of other options, and the public involvement completed to date on the project. List Dates of most recent meetings and outreach specific to this project:

Meeting with general public:	12/17/2019
Meeting with partner agencies:	03/18/2020
Targeted online/mail outreach:	09/15/2018
Number of respondents:	1000
Meetings specific to this project with the general public and partner agencies have been used to help identify the project need.	Yes

100%

Targeted outreach to this project with the general public and partner agencies have been used to help identify the project need.

75%

At least one meeting specific to this project with the general public has been used to help identify the project need.

50%

At least one meeting specific to this project with key partner agencies has been used to help identify the project need.

50%

No meeting or outreach specific to this project was conducted, but the project was identified through meetings and/or outreach related to a larger planning effort.

25%

No outreach has led to the selection of this project.

0%

Response (Limit 2,800 characters; approximately 400 words):

The Marystown Road/TH 169 interchange area has evolved in recent years with notable developments, including Hy-Vee, Windermere Development, and the upcoming Trident Development with a multitude of public involvement (public meetings and hearings) occurring over the past 14 years. These meetings served to develop the final corridor vision for Marystown Road:

- 2006-2020, multiple Windermere development projects. Windermere Traffic Impact Study (see attached addendum memo and TIS), dating back to as early as 2006 and again in 2016 when the Windermere Development resurfaced and proceeded.

- 2016 Shakopee West End Study.

- 2016, Hy-Vee. As a result of the Hy-Vee project and safety concerns with the corridor, the community developed a concept corridor vision for the interchange area of the corridor in 2016.

- 2018, Past city grant initiative via Local Road Improvement Program (see attached resolution).

- 2019 Envision Shakopee (2040 Comprehensive Plan).

- 2020 Trident Development public info meetings hearing. Traffic Impact study paid for by the developer identified the need of these improvement. Meeting with School District key leaders to discuss need of this project, relative to the adjacent Jackson Elementary (see attached letter of support).

- 2020 AUAR public info meetings, agency input and public comment.

- 2020 Marystown Road Corridor. Study includes

project layout, ICE reports, project estimate.

Engagement with jurisdictional agencies including Scott County, MnDOT, the City of Shakopee and Jackson Township occurred over the years and most recently, in 2019 as part of the Jackson Township AUAR and the 2020 Marystown Road Corridor Study.

A key theme emerged from the engagement portion of the city's Comprehensive Plan update was to support and focus on connections and key links to the regional transportation system. This area is continuing to be prime for development and is an important focus area for the city due to its location and access to TH 169. As part of this outreach, over 4,000 residents, employees, stakeholders, business leaders, and visitors were engaged including:

- 140 Focus Group Participants

- 150 Community Workshop Participants

- 425 Participants at Community Events

- 505 Employee Surveys

- 70 High School Workshop Participants

- 1,270 Scott County Community Engagement

- 700 National Citizens Survey (Livability Survey)

- 700 High School Survey Participants

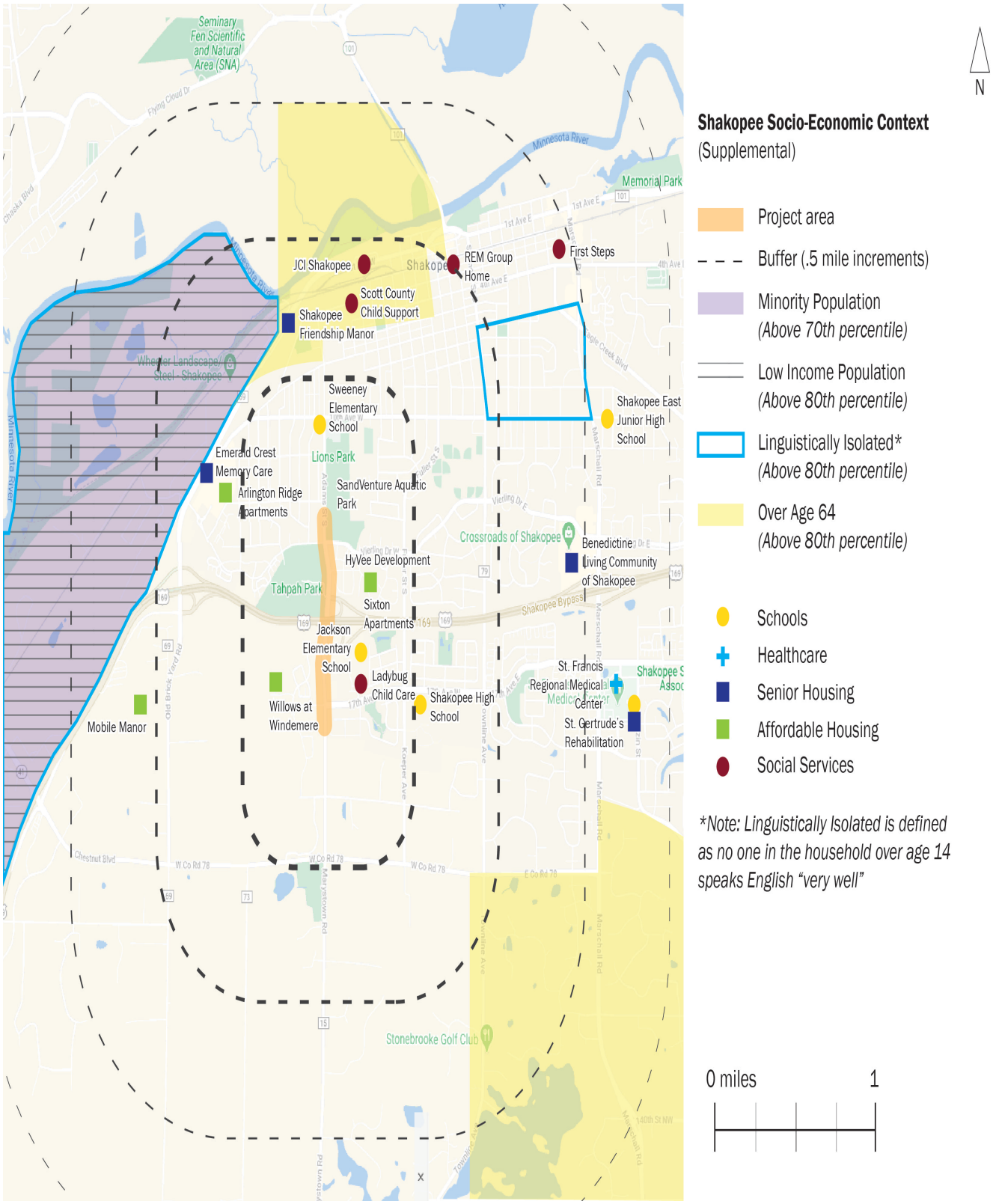
Meetings with business/property owners along

Marystown Road have occurred. Additional engagement/outreach and public meetings are planned to occur summer 2020 to obtain feedback on the preliminary design.

Measure A: Cost Effectiveness

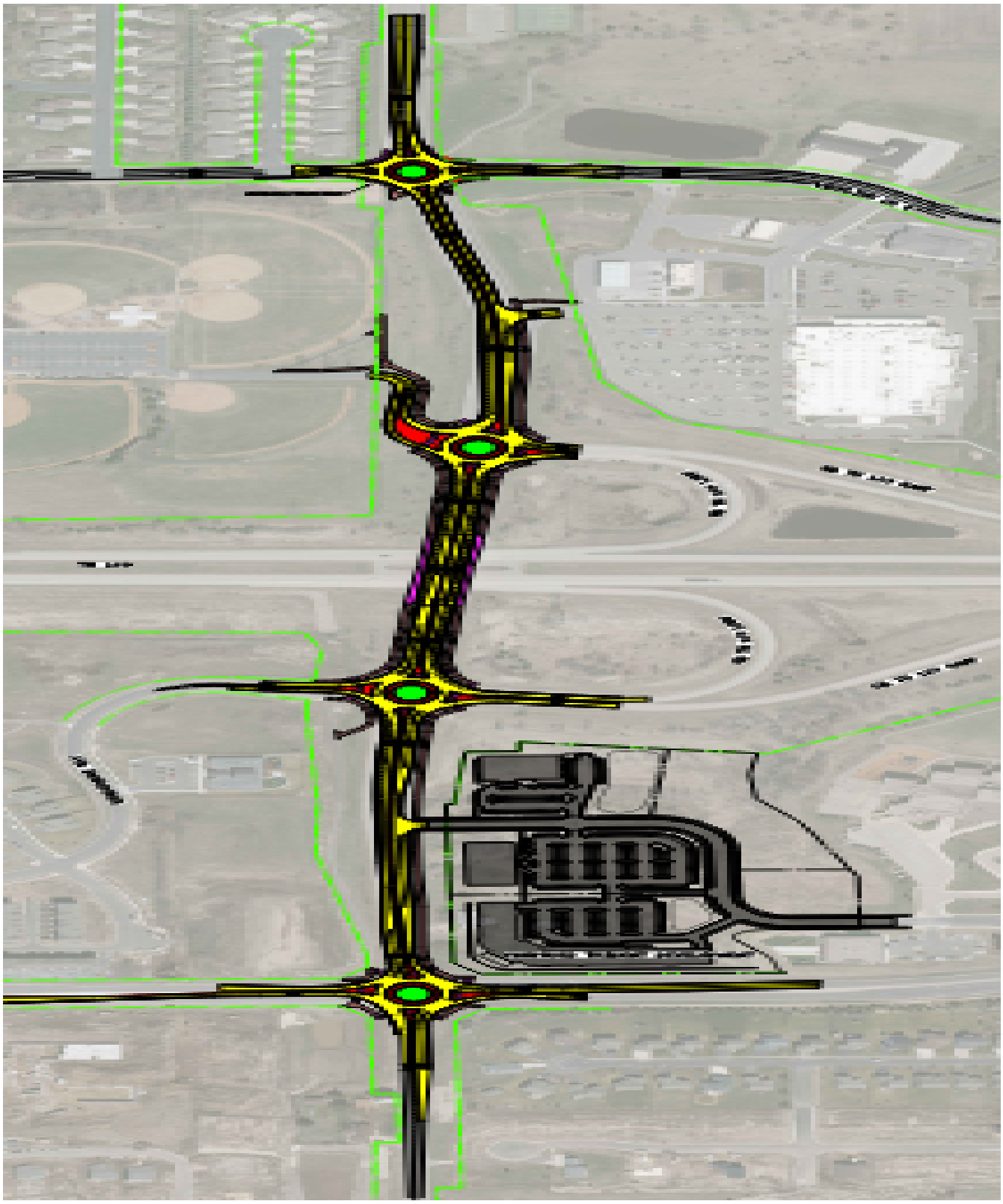
Total Project Cost (entered in Project Cost Form):	$6,147,500.00
Enter Amount of the Noise Walls:	$0.00
Total Project Cost subtract the amount of the noise walls:	$6,147,500.00
Enter amount of any outside, competitive funding:	$0.00
Attach documentation of award:	
Points Awarded in Previous Criteria	
Cost Effectiveness	$0.00

Other Attachments



Shakopee Socioeconomic Context Map

1.8 MB



Project Photo

255 KB

File Name	Description	File Size
13195_ConceptCostEST_200430.pdf	Detailed Cost Estimate of Project	123 KB
2006 TIS Bluffs.pdf	2006 Traffic Study - Bluffs at Marystown Residential Development	59 KB
2020_24 CIP Projects Map 8.5x11.pdf	2020-2024 Shakopee CIP Map - identifying Marystown Rd project	1.3 MB
2040 Comp Plan Intersection Operations 8.5_11.pdf	2040 Comprehensive Plan Intersection Operations 8.5x11	931 KB
AADTs from September 2019 AUAR Analysis.pdf	Study area AADTs from September 2019 Shakopee AUAR Transportation Analysis	875 KB
CONCEPTUAL LAYOUT_MARYSTOWN ROAD 8.5x11.pdf	Conceptual Layout of Marystown Road Corridor 8.5x11	505 KB
County Letters of Support.pdf	Two Scott County Letters of Support	425 KB
Crash Figure.pdf	Historical Crash Data Figure	66 KB
CSAH 15_Resolution 7937.pdf	Resolution for City of Shakopee to pursue 2017 LRIP grant	77 KB
Existing AADTs from April 2020.pdf	Existing AADTs from April 2020 Draft - Marystown Road Corridor Study	327 KB
Forecast AADTs from April 2020.pdf	April 2020 - Forecasted 2040 volumes from DRAFT-Marystown Road Corridor Study	556 KB
Marystown Road Project Summary Sheet.pdf	One page project summary sheet	540 KB
MET C_Regional Bicycle Transportation Map.pdf	Metro Council Regional Bicycle Transportation Map showing Planned Regional Bikeway Connection	514 KB
MnDOT Letters of Support.pdf	Two MnDOT Letters of Support	555 KB
Proposed Trails 8.5x11.pdf	Proposed Trails as part of project	501 KB
Resolution R2020-035.pdf	2020 City Resolution for Regional Solicitation	356 KB
Shakopee School District Letter of Support.pdf	Shakopee School District Letter of Support	589 KB
_Windermere TIA 12-7-16.pdf	Windemere Development TIA	1.4 MB

Regional Economy

Roadway Reconstruction/Modernization Project: Marystown Road | Map ID: 1583853257172

Results

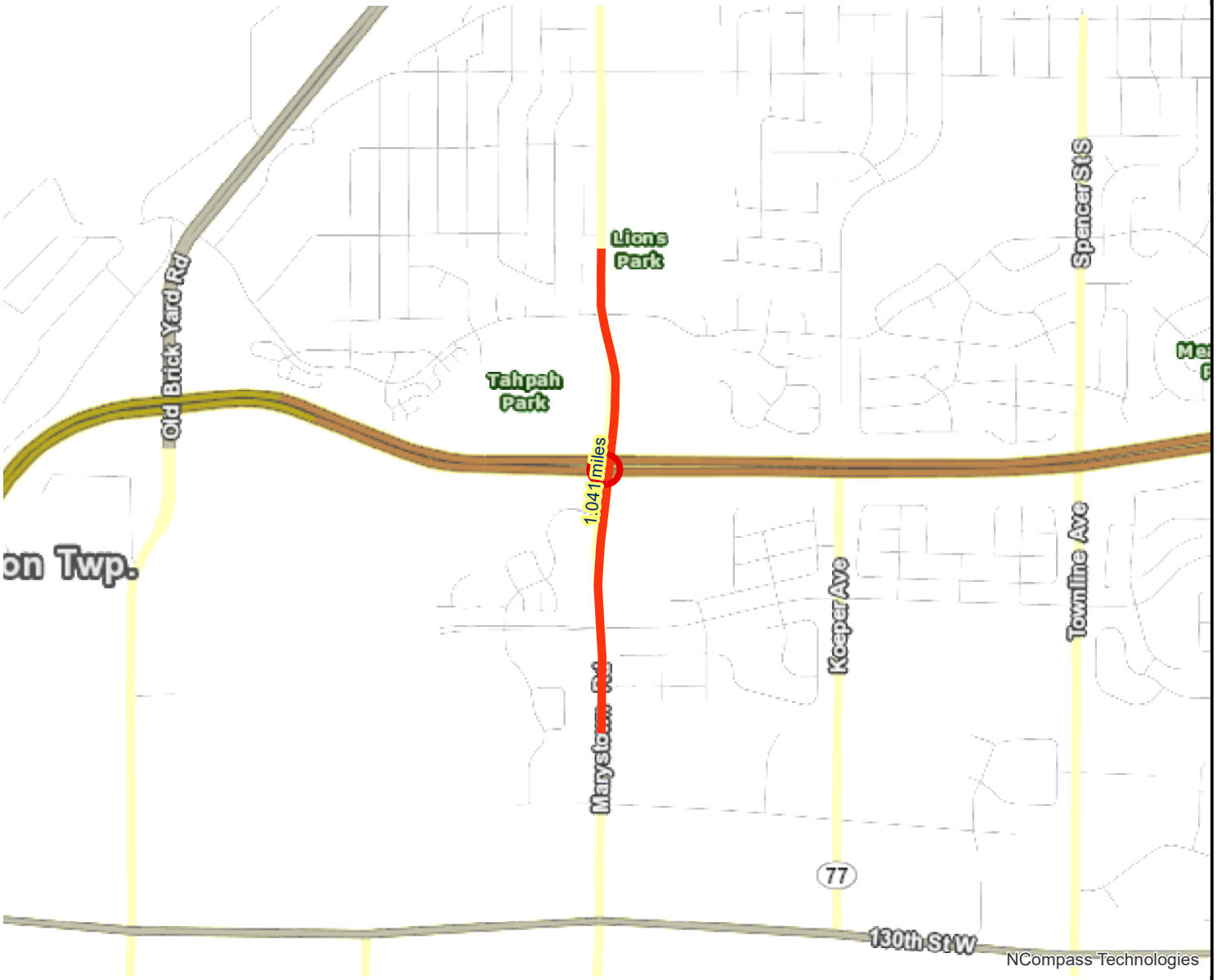
WITHIN ONE MI of project:
Postsecondary Students: 0

Totals by City:

Jackson Twp.
Population: 2235
Employment: 410
Mfg and Dist Employment: 71

Louisville Twp.
Population: 109
Employment: 9
Mfg and Dist Employment: 0

Shakopee
Population: 7082
Employment: 2200
Mfg and Dist Employment: 244



Project Points
Project
Manfacturing/Distribution Centers
Job Concentration Centers

0 0.2 0.4 0.8 1.2 1.6 Miles

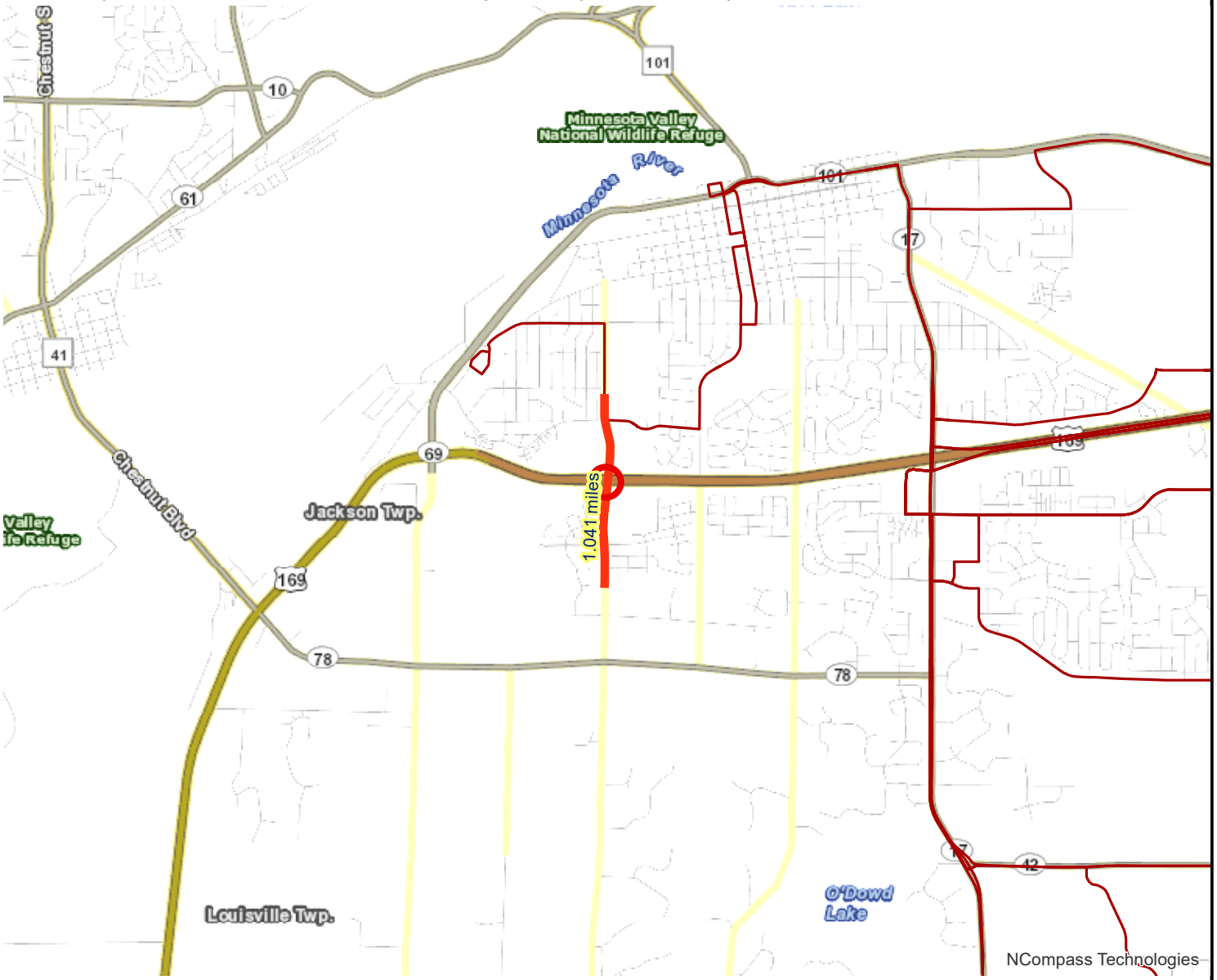
Created: 3/10/2020
LandscapeRSA5

For complete disclaimer of accuracy, please visit
http://giswebsite.metc.state.mn.us/gissitenew/notice.aspx

METROPOLITAN COUNCIL

Transit Connections

Roadway Reconstruction/Modernization Project: Marystown Road | Map ID: 1583853257172



Results

Transit with a Direct Connection to project: 497

**indicates Planned Alignments*

Transit Market areas: 5

Project Points — Transit Routes

Project

Project Area

0 0.5 1 2 3 4 Miles

Created: 3/10/2020
LandscapeRSA3

For complete disclaimer of accuracy, please visit https://giswebsite.metc.state.mn.us/gissite/notice.aspx

METROPOLITAN COUNCIL

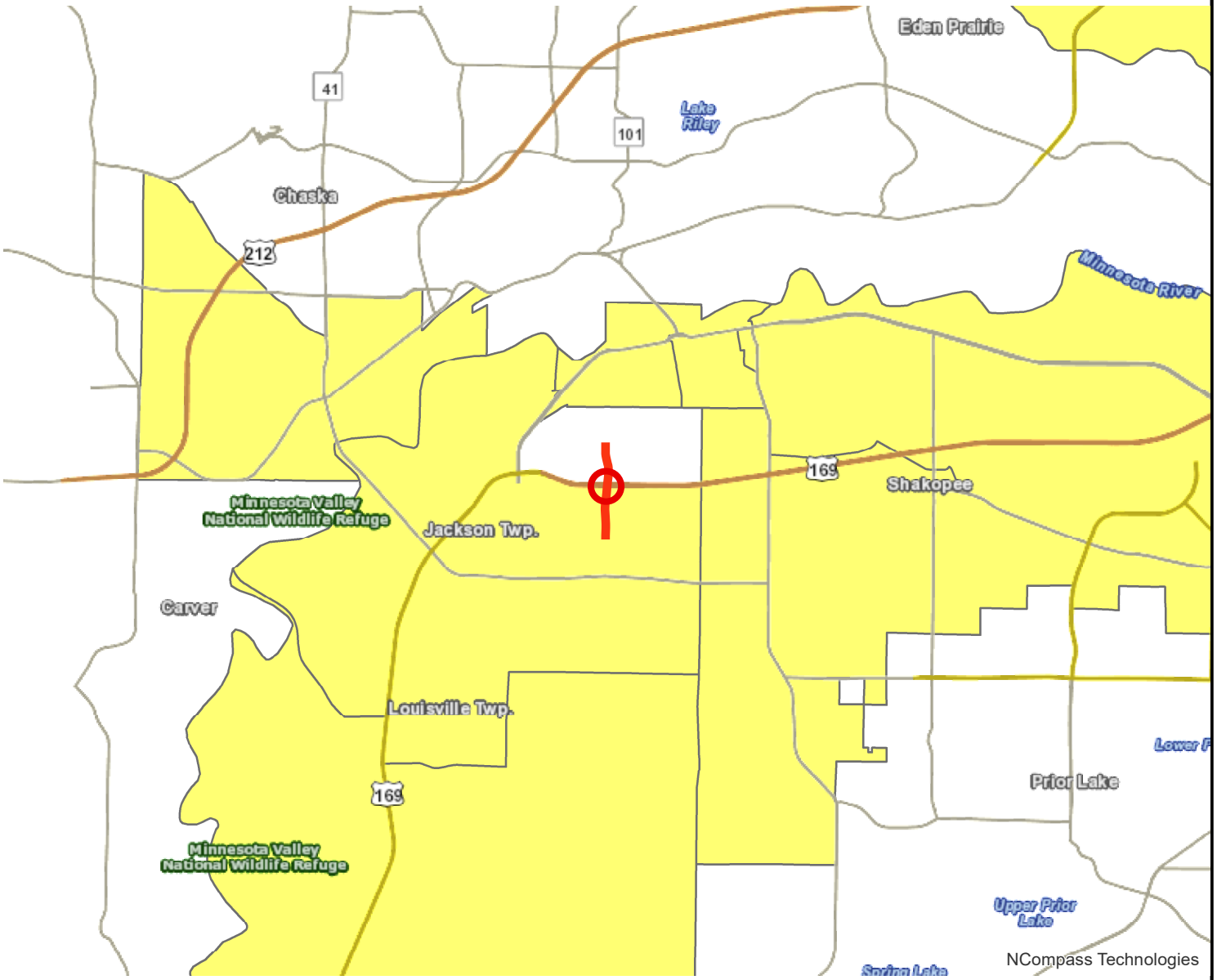
Socio-Economic Conditions

Roadway Reconstruction/Modernization Project: Marystown Road | Map ID: 1583853257172

Results

Project census tracts are above the regional average for population in poverty or population of color:
(0 to 18 Points)

Tracts within half-mile:
80500 80600 80700



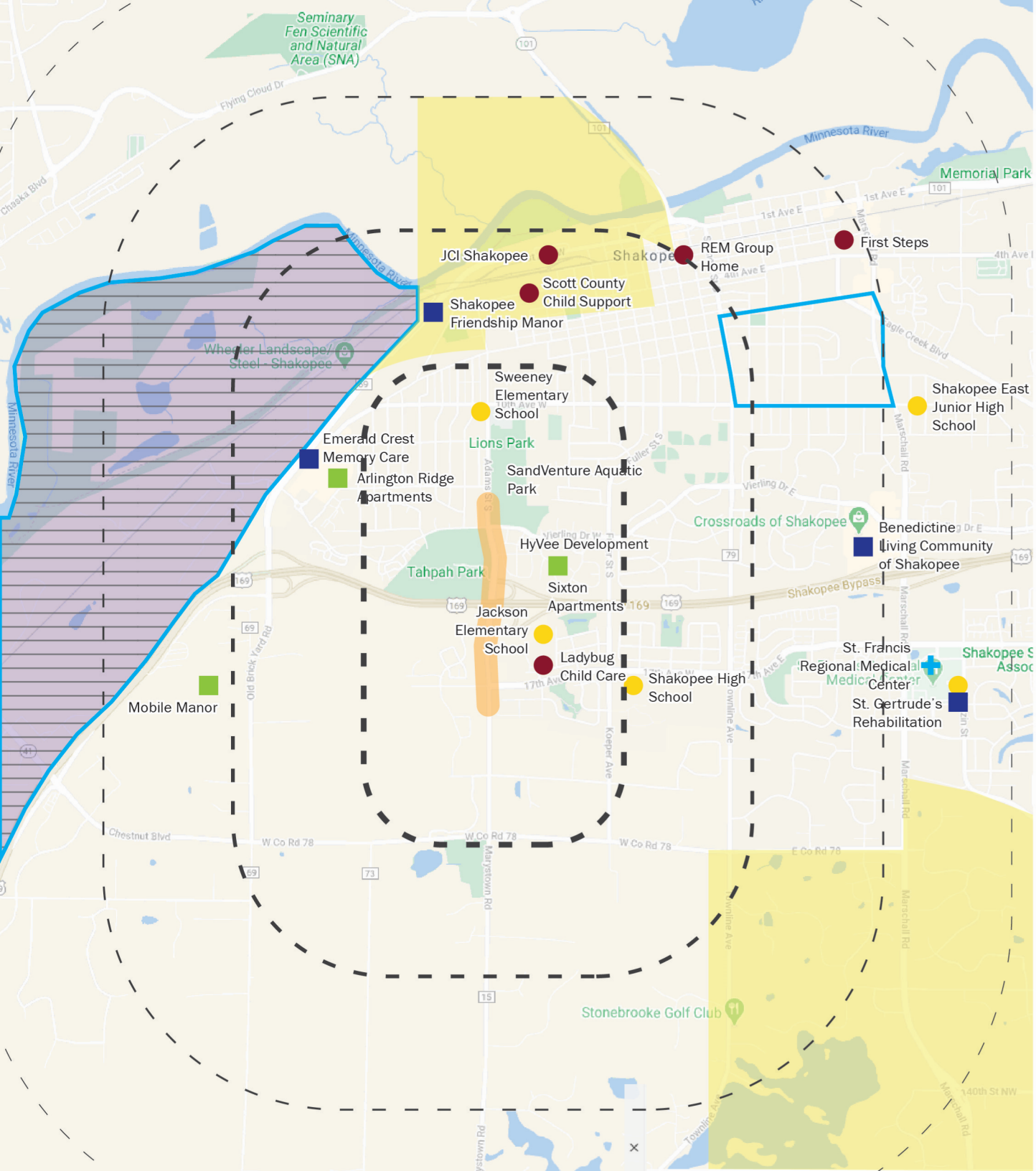
Points
Lines
Area of Concentrated Povertry > 50% residents of color
Area of Concentrated Poverty
Above reg'l avg conc of race/poverty

0 1 2 4 6 8 Miles

Created: 3/10/2020
LandscapeRSA2

For complete disclaimer of accuracy, please visit http://giswebsite.metc.state.mn.us/gissite/notice.aspx

METROPOLITAN COUNCIL



N

Shakopee Socio-Economic Context
(Supplemental)

- Project area
- Buffer (.5 mile increments)
- Minority Population *(Above 70th percentile)*
- Low Income Population *(Above 80th percentile)*
- Linguistically Isolated* *(Above 80th percentile)*
- Over Age 64 *(Above 80th percentile)*

- Schools
- Healthcare
- Senior Housing
- Affordable Housing
- Social Services

**Note: Linguistically Isolated is defined as no one in the household over age 14 speaks English "very well"*

0 miles 1

Intersection	
Intersection Delay, s/veh	15
Intersection LOS	B

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	50	96	258	38	80	47	198	48	69	158	8
Future Vol, veh/h	9	50	96	258	38	80	47	198	48	69	158	8
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	8	2
Mvmt Flow	10	57	109	293	43	91	53	225	55	78	180	9
Number of Lanes	0	2	0	0	2	0	0	2	0	0	2	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	2	2
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	2	2	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	2	2	2	2
HCM Control Delay	11.7	19	13.1	13.1
HCM LOS	B	C	B	B

Lane	NBLn1	NBLn2	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1	SBLn2
Vol Left, %	32%	0%	26%	0%	93%	0%	47%	0%
Vol Thru, %	68%	67%	74%	21%	7%	19%	53%	91%
Vol Right, %	0%	33%	0%	79%	0%	81%	0%	9%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	146	147	34	121	277	99	148	87
LT Vol	47	0	9	0	258	0	69	0
Through Vol	99	99	25	25	19	19	79	79
RT Vol	0	48	0	96	0	80	0	8
Lane Flow Rate	166	167	39	138	315	112	168	99
Geometry Grp	7	7	7	7	7	7	7	7
Degree of Util (X)	0.333	0.317	0.08	0.259	0.64	0.196	0.346	0.198
Departure Headway (Hd)	7.227	6.829	7.493	6.787	7.322	6.271	7.404	7.204
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Cap	498	526	478	529	497	576	486	498
Service Time	4.969	4.57	5.237	4.531	5.022	3.971	5.149	4.948
HCM Lane V/C Ratio	0.333	0.317	0.082	0.261	0.634	0.194	0.346	0.199
HCM Control Delay	13.6	12.7	10.9	11.9	22.1	10.5	14	11.7
HCM Lane LOS	B	B	B	B	C	B	B	B
HCM 95th-tile Q	1.4	1.4	0.3	1	4.4	0.7	1.5	0.7

Intersection	
Int Delay, s/veh	4.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1	2	120	1	180	5	234	65	59	446	7
Future Vol, veh/h	2	1	2	120	1	180	5	234	65	59	446	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	215	330	-	320	200	-	360
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	7	2	2	2	3	2	2	4	2
Mvmt Flow	2	1	2	136	1	205	6	266	74	67	507	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	787	993	254	666	927	133	515	0	0	340	0	0
Stage 1	641	641	-	278	278	-	-	-	-	-	-	-
Stage 2	146	352	-	388	649	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.64	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.64	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.64	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.57	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	282	244	745	335	267	892	1047	-	-	1216	-	-
Stage 1	430	468	-	691	679	-	-	-	-	-	-	-
Stage 2	842	630	-	594	464	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	207	229	745	317	251	892	1047	-	-	1216	-	-
Mov Cap-2 Maneuver	207	229	-	317	251	-	-	-	-	-	-	-
Stage 1	427	442	-	687	675	-	-	-	-	-	-	-
Stage 2	644	626	-	558	438	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	17.3	16.1	0.1	0.9
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1047	-	-	299	316	892	1216	-	-
HCM Lane V/C Ratio	0.005	-	-	0.019	0.435	0.229	0.055	-	-
HCM Control Delay (s)	8.5	-	-	17.3	24.9	10.2	8.1	-	-
HCM Lane LOS	A	-	-	C	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.1	2.1	0.9	0.2	-	-

Intersection	
Int Delay, s/veh	7.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	18	10	61	3	40	9	242	156	227	314	27
Future Vol, veh/h	22	18	10	61	3	40	9	242	156	227	314	27
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	115	-	-	300	165	-	270	370	-	175
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	5	2	2	2	4	3	2	8	2
Mvmt Flow	25	20	11	69	3	45	10	275	177	258	357	31

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1032	1345	179	1000	1199	138	388	0	0	452	0	0
Stage 1	873	873	-	295	295	-	-	-	-	-	-	-
Stage 2	159	472	-	705	904	-	-	-	-	-	-	-
Critical Hdwy	7.54	6.54	6.94	7.6	6.54	6.94	4.14	-	-	4.14	-	-
Critical Hdwy Stg 1	6.54	5.54	-	6.6	5.54	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.54	5.54	-	6.6	5.54	-	-	-	-	-	-	-
Follow-up Hdwy	3.52	4.02	3.32	3.55	4.02	3.32	2.22	-	-	2.22	-	-
Pot Cap-1 Maneuver	187	150	833	193	184	885	1167	-	-	1105	-	-
Stage 1	311	366	-	681	668	-	-	-	-	-	-	-
Stage 2	827	557	-	386	354	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	142	114	833	135	140	885	1167	-	-	1105	-	-
Mov Cap-2 Maneuver	142	114	-	135	140	-	-	-	-	-	-	-
Stage 1	308	281	-	675	662	-	-	-	-	-	-	-
Stage 2	774	552	-	271	272	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	40.2	40	0.2	3.7
HCM LOS	E	E		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1167	-	-	128	833	135	885	1105	-	-
HCM Lane V/C Ratio	0.009	-	-	0.355	0.014	0.539	0.051	0.233	-	-
HCM Control Delay (s)	8.1	-	-	47.9	9.4	59.2	9.3	9.2	-	-
HCM Lane LOS	A	-	-	E	A	F	A	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.4	0	2.6	0.2	0.9	-	-

Intersection	
Int Delay, s/veh	7.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	15	3	23	5	210	5	175	52	260	95	30
Future Vol, veh/h	22	15	3	23	5	210	5	175	52	260	95	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	265	-	265	415	-	285	215	-	215	430	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	2	2	5	2	3	2	7	5	2
Mvmt Flow	25	17	3	26	6	239	6	199	59	295	108	34

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1061	968	108	936	943	199	142	0	0	258	0	0
Stage 1	698	698	-	211	211	-	-	-	-	-	-	-
Stage 2	363	270	-	725	732	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.25	4.12	-	-	4.17	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.345	2.218	-	-	2.263	-	-
Pot Cap-1 Maneuver	202	254	946	245	263	834	1441	-	-	1278	-	-
Stage 1	431	442	-	791	728	-	-	-	-	-	-	-
Stage 2	656	686	-	416	427	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	116	195	946	187	201	834	1441	-	-	1278	-	-
Mov Cap-2 Maneuver	116	195	-	187	201	-	-	-	-	-	-	-
Stage 1	429	340	-	788	725	-	-	-	-	-	-	-
Stage 2	463	683	-	303	328	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	34.5	12.8	0.2	5.8
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	EBLn3	WBLn1	WBLn2	WBLn3	SBL	SBT	SBR
Capacity (veh/h)	1441	-	-	116	195	946	187	201	834	1278	-	-
HCM Lane V/C Ratio	0.004	-	-	0.216	0.087	0.004	0.14	0.028	0.286	0.231	-	-
HCM Control Delay (s)	7.5	-	-	44.4	25.2	8.8	27.4	23.4	11	8.7	-	-
HCM Lane LOS	A	-	-	E	D	A	D	C	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.8	0.3	0	0.5	0.1	1.2	0.9	-	-

Intersection	
Intersection Delay, s/veh	6.7
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	163	396	308	247
Demand Flow Rate, veh/h	166	404	320	251
Vehicles Circulating, veh/h	520	277	137	368
Vehicles Exiting, veh/h	99	180	549	313
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	6.7	7.7	5.6	6.6
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Left
Designated Moves	LTR	LTR	LTR	LTR
Assumed Moves	LTR	LTR	LTR	LTR
RT Channelized				
Lane Util	1.000	1.000	1.000	1.000
Follow-Up Headway, s	2.609	2.609	2.609	2.609
Critical Headway, s	4.976	4.976	4.976	4.976
Entry Flow, veh/h	166	404	320	251
Cap Entry Lane, veh/h	812	1040	1200	948
Entry HV Adj Factor	0.982	0.981	0.961	0.983
Flow Entry, veh/h	163	396	308	247
Cap Entry, veh/h	797	1020	1153	932
V/C Ratio	0.204	0.388	0.267	0.265
Control Delay, s/veh	6.7	7.7	5.6	6.6
LOS	A	A	A	A
95th %tile Queue, veh	1	2	1	1

Intersection	
Intersection Delay, s/veh	6.3
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	5	316	319	538
Demand Flow Rate, veh/h	5	323	330	548
Vehicles Circulating, veh/h	670	263	66	135
Vehicles Exiting, veh/h	13	133	609	258
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.3	4.9	5.2	7.9
Approach LOS	A	A	A	A

Lane	Left	Left	Bypass	Left	Left
Designated Moves	LTR	LT	R	LTR	LTR
Assumed Moves	LTR	LT	R	LTR	LTR
RT Channelized			Yield		
Lane Util	1.000	1.000		1.000	1.000
Follow-Up Headway, s	2.609	2.609		2.609	2.609
Critical Headway, s	4.976	4.976	193	4.976	4.976
Entry Flow, veh/h	5	130	1061	330	548
Cap Entry Lane, veh/h	697	1055	0.980	1290	1202
Entry HV Adj Factor	0.996	0.977	189	0.967	0.981
Flow Entry, veh/h	5	127	1040	319	538
Cap Entry, veh/h	694	1031	0.182	1248	1180
V/C Ratio	0.007	0.123	5.1	0.256	0.456
Control Delay, s/veh	5.3	4.6	A	5.2	7.9
LOS	A	A	1	A	A
95th %tile Queue, veh	0	0		1	2

Intersection	
Intersection Delay, s/veh	6.0
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	2	2	2	2
Adj Approach Flow, veh/h	53	109	428	598
Demand Flow Rate, veh/h	53	111	439	611
Vehicles Circulating, veh/h	647	295	286	77
Vehicles Exiting, veh/h	12	263	414	329
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	5.1	4.2	5.4	6.9
Approach LOS	A	A	A	A

Lane	Left	Left	Left	Bypass	Left	Bypass
Designated Moves	LTR	LTR	LT	R	LT	R
Assumed Moves	LTR	LTR	LT	R	LT	R
RT Channelized				Yield		Yield
Lane Util	1.000	1.000	1.000		1.000	
Follow-Up Headway, s	2.535	2.535	2.535		2.535	
Critical Headway, s	4.328	4.328	4.328	167	4.328	29
Entry Flow, veh/h	53	111	272	1055	582	1363
Cap Entry Lane, veh/h	819	1105	1114	0.980	1330	0.980
Entry HV Adj Factor	0.993	0.981	0.972	164	0.980	28
Flow Entry, veh/h	53	109	264	1035	570	1336
Cap Entry, veh/h	814	1085	1082	0.159	1304	0.021
V/C Ratio	0.065	0.100	0.244	4.9	0.438	2.9
Control Delay, s/veh	5.1	4.2	5.6	A	7.1	A
LOS	A	A	A	1	A	0
95th %tile Queue, veh	0	0	1		2	

Intersection	
Intersection Delay, s/veh	5.1
Intersection LOS	A

Approach	EB	WB	NB	SB
Entry Lanes	1	1	1	1
Conflicting Circle Lanes	1	1	1	1
Adj Approach Flow, veh/h	42	250	244	406
Demand Flow Rate, veh/h	42	261	254	414
Vehicles Circulating, veh/h	405	221	318	34
Vehicles Exiting, veh/h	10	295	129	216
Ped Vol Crossing Leg, #/h	0	0	0	0
Ped Cap Adj	1.000	1.000	1.000	1.000
Approach Delay, s/veh	4.4	5.2	5.3	5.1
Approach LOS	A	A	A	A

Lane	Left	Left	Bypass	Left	Bypass	Left	Bypass
Designated Moves	LTR	LT	R	LT	R	LT	R
Assumed Moves	LTR	LT	R	LT	R	LT	R
RT Channelized			Yield		Yield		Yield
Lane Util	1.000	1.000		1.000		1.000	
Follow-Up Headway, s	2.609	2.609		2.609		2.609	
Critical Headway, s	4.976	4.976	232	4.976	56	4.976	33
Entry Flow, veh/h	42	29	1107	198	1021	381	1366
Cap Entry Lane, veh/h	913	1101	0.952	998	0.980	1333	0.980
Entry HV Adj Factor	0.993	0.997	221	0.954	55	0.982	32
Flow Entry, veh/h	42	29	1054	189	1001	374	1339
Cap Entry, veh/h	906	1098	0.210	951	0.055	1308	0.024
V/C Ratio	0.046	0.026	5.4	0.198	4.1	0.286	2.9
Control Delay, s/veh	4.4	3.5	A	5.7	A	5.3	A
LOS	A	A	1	A	0	A	0
95th %tile Queue, veh	0	0		1		1	

190: Adams St & Vierling Dr

Direction	All
Future Volume (vph)	1059
CO Emissions (kg)	1.43
NOx Emissions (kg)	0.28
VOC Emissions (kg)	0.33

200: Marystown Rd/Adams St & Tahpah Park/US 169 N Ramp

Direction	All
Future Volume (vph)	1121
CO Emissions (kg)	0.97
NOx Emissions (kg)	0.19
VOC Emissions (kg)	0.22

210: CR 15/Marystown Rd & Windermere Way/US 169 S Ramp

Direction	All
Future Volume (vph)	1128
CO Emissions (kg)	1.38
NOx Emissions (kg)	0.27
VOC Emissions (kg)	0.32

220: CR 15 & CR 16 (17th Avenue)

Direction	All
Future Volume (vph)	895
CO Emissions (kg)	1.50
NOx Emissions (kg)	0.29
VOC Emissions (kg)	0.35

190: Adams St & Vierling Dr

Direction	All
Future Volume (vph)	1059
CO Emissions (kg)	1.23
NOx Emissions (kg)	0.24
VOC Emissions (kg)	0.29

200: Marystown Rd/Adams St & Tahpah Park/US 169 N Ramp

Direction	All
Future Volume (vph)	1120
CO Emissions (kg)	1.81
NOx Emissions (kg)	0.35
VOC Emissions (kg)	0.42

210: CR 15/Marystown Rd & Windermere Way/US 169 S Ramp

Direction	All
Future Volume (vph)	1130
CO Emissions (kg)	1.96
NOx Emissions (kg)	0.38
VOC Emissions (kg)	0.45

220: CR 15 & CR 16 (17th Avenue)

Direction	All
Future Volume (vph)	895
CO Emissions (kg)	1.62
NOx Emissions (kg)	0.31
VOC Emissions (kg)	0.37

Traffic Safety Benefit-Cost Calculation

Highway Safety Improvement Program (HSIP) Reactive Project

DEPARTMENT OF TRANSPORTATION

A. Roadway Description

Route	CR 15/Marystown Rd	**District**		**County**	Scott County
Begin RP		**End RP**		**Miles**	
Location	CR 15/Marystown Rd/Adam St from Vierling Drive to CR 16				

B. Project Description

Proposed Work	Roundabout Construction at Four Corridor Intersections		
Project Cost*	$6,147,500	**Installation Year**	2024
Project Service Life	20 years	**Traffic Growth Factor**	2.0%

** exclude Right of Way from Project Cost*

C. Crash Modification Factor

0.16	**Fatal (K) Crashes**	**Reference**	Multiple CMF Calculation
0.09	**Serious Injury (A) Crashes**		
0.09	**Moderate Injury (B) Crashes**	**Crash Type**	All Types
0.09	**Possible Injury (C) Crashes**		
0.24	**Property Damage Only Crashes**		www.CMFclearinghouse.org

D. Crash Modification Factor (optional second CMF)

	Fatal (K) Crashes	**Reference**	
	Serious Injury (A) Crashes		
	Moderate Injury (B) Crashes	**Crash Type**	
	Possible Injury (C) Crashes		
	Property Damage Only Crashes		www.CMFclearinghouse.org

E. Crash Data

Begin Date	1/1/2016	**End Date**	12/31/2018	3 years
Data Source	MnDOT			

Crash Severity	**All Types**	**< optional 2nd CMF >**
K crashes	0	
A crashes	0	
B crashes	3	
C crashes	4	
PDO crashes	10	

F. Benefit-Cost Calculation

$7,658,645	**Benefit (present value)**	**B/C Ratio = 1.25**
$6,147,500	**Cost**	

Proposed project expected to reduce 5 crashes annually, 0 of which involving fatality or serious injury.

F. Analysis Assumptions

Crash Severity	Crash Cost
K crashes	$1,360,000
A crashes	$680,000
B crashes	$210,000
C crashes	$110,000
PDO crashes	$12,000

Link: mndot.gov/planning/program/appendix_a.html

Real Discount Rate 1.2%

Traffic Growth Rate 2.0%

Project Service Life 20 years

G. Annual Benefit

Crash Severity	Crash Reduction	Annual Reduction	Annual Benefit
K crashes	0.00	0.00	$0
A crashes	0.00	0.00	$0
B crashes	2.73	0.91	$191,100
C crashes	3.64	1.21	$133,467
PDO crashes	7.60	2.53	$30,400
			$354,967

H. Amortized Benefit

Year	Crash Benefits	Present Value
2024	$354,967	$354,967
2025	$362,066	$357,773
2026	$369,307	$360,601
2027	$376,693	$363,452
2028	$384,227	$366,325
2029	$391,912	$369,221
2030	$399,750	$372,139
2031	$407,745	$375,081
2032	$415,900	$378,046
2033	$424,218	$381,035
2034	$432,702	$384,047
2035	$441,356	$387,083
2036	$450,184	$390,143
2037	$459,187	$393,227
2038	$468,371	$396,335
2039	$477,738	$399,468
2040	$487,293	$402,626
2041	$497,039	$405,809
2042	$506,980	$409,017
2043	$517,119	$412,250
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0
0	$0	$0

Total = $7,658,645

Multiple CMF Calculation - Roundabout Intersections

Crash Modification Factor - Installation of Single-Lane Roundabouts

0.28	**Fatal (K) Crashes**	**Reference**	http://www.cmfclearinghouse.org/detail.cfm?facid=210
0.12	**Serious Injury (A) Crashes**		
0.12	**Moderate Injury (B) Crashes**	**Crash Type**	All
0.12	**Possible Injury (C) Crashes**		
0.28	**Property Damage Only Crashes**		

Crash Modification Factor - Corridor Speed Reduction

0.56	**Fatal (K) Crashes**	**Reference**	http://www.cmfclearinghouse.org/detail.cfm?facid=148
0.78	**Serious Injury (A) Crashes**		
0.78	**Moderate Injury (B) Crashes**	**Crash Type**	All
0.78	**Possible Injury (C) Crashes**		
0.85	**Property Damage Only Crashes**		

Multiple CMF Calculation

CMF (K) = CMF 1 * CMF 2 = 0.28 * 0.56 = 0.1568	0.16	**Fatal (K) Crashes**
CMF (A) = CMF 1 * CMF 2 = 0.12 * 0.78 = 0.0936	0.09	**Serious Injury (A) Crashes**
CMF (B) = CMF 1 * CMF 2 = 0.12 * 0.78 = 0.0936	0.09	**Moderate Injury (B) Crashes**
CMF (C) = CMF 1 * CMF 2 = 0.12 * 0.78 = 0.0926	0.09	**Possible Injury (C) Crashes**
CMF (PDO) = CMF 1 * CMF 2 = 0.28 * 0.85 = 0.238	0.24	**Property Damage Only Crashes**

▼ Countermeasure: Conversion of stop-controlled intersection into single-lane roundabout

Compare	CMF	CRF(%)	Quality	Crash Type	Crash Severity	Area Type	Reference	Comments
☐	0.28	72	★★★★☆	All	All	Urban	PERSAUD ET AL., 2001	
☐	0.42	58	★★★★☆	All	All	Rural	PERSAUD ET AL., 2001	
☐	0.12	88	★★★★☆	All	Serious injury,Minor injury	Urban	PERSAUD ET AL., 2001	
☐	0.18	82	★★★★☆	All	Serious injury,Minor injury	Rural	PERSAUD ET AL., 2001	

Compare Reset Compare

*NOTE: You can compare CMFs across countermeasures, subcategories, and categories.

▼ Countermeasure: 15% reduction in mean speed

Compare	CMF	CRF(%)	Quality	Crash Type	Crash Severity	Area Type	Reference	Comments
☐	0.56	44	★★★★☆	All	Fatal	All	ELVIK ET AL., 2004	
☐	0.78	22	★★★★☆	All	Serious injury,Minor injury	All	ELVIK ET AL., 2004	
☐	0.85	15	★★★☆☆	All	Property Damage Only (PDO)	All	ELVIK ET AL., 2004	

Compare Reset Compare

*NOTE: You can compare CMFs across countermeasures, subcategories, and categories.

CR 15 (Marystown Road) @ CR 16 (2016-2018)

objectid	Incident ID	Date and Time	Year	Hour	Crash Severity	Number Ki	Number of
1824445	665879	12/5/2018, 2:35 PM	2018	14	Property Damage Only Crash	0	2
2394489	674321	12/31/2018, 2:13 PM	2018	14	Property Damage Only Crash	0	2
2417107	647778	9/27/2018, 10:55 AM	2018	10	Minor Injury Crash	0	2
2455583	635101	9/15/2018, 11:26 PM	2018	23	Possible Injury Crash	0	2

Officer Narrative
UNIT 1 was Southbound on Marystown Road following the roadway (had right of way). UNIT 2 was proceeding Westbound on 17th Avenue West (Co Rd 16) crossing over Marystown Road. UNIT 2 failed right of way to UNIT 1.
Vehicle #1 was traveling south on Co. Rd 15 approaching the intersection with 17th Ave. and attempted to turn east on 17th Ave. Vehicle #2 was north on Co. Rd 15 and was continuing north on 15. Driver #1 stated that he began to turn, slowed for the NB ve
D#2 stated she was NB Marystown, approaching 17th Ave. D#2 stated as she reached the intersection, V#1 pulled out on front of her, failing to yield. D#2 stated she had attempted evasive maneuvers, which were unsuccessful. D#2 stated she hit V#1. D#1 stated he did not recall what had happened, and did not know where he was coming from or going. D#1 and P#2 had no information. W1, 2, and 3, all had same account as D#2.
the intersection. V1 entered the intersection attempting to go straight thru the intersection. V1 was struck by V2 as it was crossing Marystown Road. D2 complained of minor injuries, and said she hit her head. both drivers declined medical care. D2 did not remember much of the crash. 17th Avenue is

Constructio	County	City	Township	Route Type	Route ID	Route Mea	Roadway N	Divided Ro	Intersectio	Manner of	First Harmf	Relative Tr
M	SCOTT	Shakopee		Municipal S	050002395	0.009594	MARYSTOV	South	16	Angle	Motor Veh	On Roadwa
M	SCOTT	Shakopee		County Sta	040000659	0.005501	17TH AVE E			Angle	Motor Veh	On Roadwa
M	SCOTT		Jackson	County Sta	040000659	18.34727	MARYSTOWN RD		17TH AVE E	Front to Fr	Motor Veh	On Roadwa
M	SCOTT		Jackson	County Sta	040000659	0.000105	17TH AVE E	West	MARYSTOV	Angle	Motor Veh	On Roadwa

Lighting Co	Road Circu	road_circu	Road Circu	road_circu	Relative Int	Traffic Con	Weather P	Weather Se	Surface Co	Work Zone	Work Zone	Work Zone
Daylight	None				Intersectio	No Control	Clear		Dry	2		NOT APPLI
Daylight	None				Four-Way I	Stop Sign	Clear		Dry	2		NOT APPLI
Daylight	None				Four-Way I	Stop Sign	Clear		Dry	2		NOT APPLI
Dark (No St	None				Four-Way I	Stop Sign	Clear		Dry	1	After the E	Other

Workers Pr	Unit1 Type	Unit1 Vehic	Unit1 Direc	Unit1 Factc	Unit1 Factc	Unit1 Most	Unit1 Vehic	Unit1 Traff	Unit1 Poste	Unit1 Horiz	Unit1 Road	Unit1 Nonr
CABLE	Motor Veh	Sport Utilit	Southboun	No Clear Contributing A		Motor Veh	Moving For	Two-Way, I	55	Straight	Level	
CABLE	Motor Veh	Passenger (	Southboun	Operated Motor Vehic		Motor Veh	Turning Lef	Two-Way, I	45	Straight	Level	
CABLE	Motor Veh	Sport Utilit	Westbound	Failure to Yield Right-o		Motor Veh	Moving For	Two-Way, I	35	Straight	Level	
No	Motor Veh	Passenger (	Westbound	No Clear Contributing A		Motor Veh	Entering Tr	Two-Way, I	45	Straight	Level	

Unit1 Injur	Unit1 Phys	Unit1 Age	Unit1 Sex	Unit2 Type	Unit2 Vehic	Unit2 Direc	Unit2 Facto	Unit2 Facto	Unit2 Most	Unit2 Vehic	Unit2 Nonr	Unit2 Injur
No Appare	Apparently	41	Female	Motor Veh	Passenger	Westbound	Failure to Yield Right-o		Motor Veh	Moving Forward		No Appare
No Appare	Apparently	23	Male	Motor Veh	Passenger	Southboun	Operated Motor Vehic		Motor Veh	Moving Forward		No Appare
Possible Inj	Other	84	Male	Motor Veh	Sport Utilit	Northboun	No Clear Contributing		Motor Veh	Moving Forward		Possible Inj
No Appare	Apparently	30	Female	Motor Veh	Passenger	Southboun	No Clear Contributing		Motor Veh	Moving Forward		Possible Inj

Unit2 Physi	Unit2 Age	Unit2 Sex	otst_inters	city_sectio	utmx	utmy	x	y
Apparently	21	Male	ADAMS ST RD AND AD		457199.9	4957682	457199.9	4957682
Apparently	17	Female	MARYSTOWN RD AND		457208.7	4957688	457208.7	4957688
Apparently	31	Female	MARYSTOWN RD AND		457193.5	4957675	457193.5	4957675
Apparently	43	Female	MARYSTOWN RD AND		457194.3	4957684	457194.3	4957684

Marystown Road @ US 169 North Ramp (2016-2018)

objectid	Incident ID	Date and Time	Year	Hour	Crash Severity	Number Ki	Number of
1837279	626598	8/9/2018, 4:35 PM	2018	16	Property Damage Only Crash	0	2
2287679	326981	2/2/2016, 1:46 PM	2016	13	Minor Injury Crash	0	2
2410339	453720	5/20/2017, 4:00 PM	2017	16	Property Damage Only Crash	0	2
2450001	489444	7/24/2017, 6:02 PM	2017	18	Possible Injury Crash	0	2
2606308	522147	12/5/2017, 3:34 PM	2017	15	Property Damage Only Crash	0	2

Officer Narrative
to a stop at the stop sign, but D1 did not see V2 approaching the intersection. V1 pulled in front of V2 and was struck by V2. There were no injuries. Both vehicles were disabled.
Blizzard conditions. Driver 1 slid through stop sign and crashed into driver 2. Another accident occurred at same intersection while investigating this crash.
unit 1 advised a northbound vehicle was in left turn lane to Tahpah park and obstructed his view of oncoming traffic. Unit 1 proceeded turning left as unit 2 approached intersection. Front of unit 2 collided with passenger side of unit 1.
TWO VEHICLE CRASH. LUISANA TURNING LEFT FROM PRIVATE DRIVE OF TAHPAH PARK ONTO NORTH ADAMS ST. SEAN SOUTH ON ADAMS ST IN RIGHT THROUGH LANE. SEAN SAID THERE WAS VEHICLE LARGER THAN HIS BESIDE HIM IN THE RIGHT TURN LANE FOR THE TAHPAH PARK PRIVATE DRIVE; SEAN SAID THIS VEHICLE MAY HAVE OBSTRUCTED LUISANA'S VIEW OF HIS VEHICLE. SEAN SAID WHEN HE NEARED THE PRIVATE DRIVE LUISANA SUDDENLY PULLED OUT IN FRONT OF HIM. SEAN SAID HE TRIED TO STOP AND SWERVE TO THE LEFT BUT WAS UNABLE TO AVOID THE COLLISION. LUISANA SAID SHE
Unit #1. The road conditions were snow / ice and slippery in some areas. Unit #2 driver said they put on brakes, but vehicle slid. Unit #2 attempted to stir to miss Unit #1. Unit #2's front passenger bumper collided with Unit #1's rear driver side bumper

Constructio	County	City	Township	Route Type	Route ID	Route Mea	Roadway N	Divided Ro	Intersectio	Manner of	First Harmf	Relative Tr
M	SCOTT	Shakopee		County Sta	040000659	18.79629	MARYSTOV	West	RAMP6	Angle	Motor Veh	On Roadwa
M	SCOTT	Shakopee		Ramp or Co	220000659	0.012987	RAMP6	South	CSAH 15	Angle	Motor Veh	On Roadwa
M	SCOTT	Shakopee		Ramp or Co	220000659	0.000227	RAMP244	East		Angle	Motor Veh	On Roadwa
M	SCOTT	Shakopee		Ramp or Co	220000659	0.000135	RAMP6	South		Angle	Motor Veh	On Roadwa
M	SCOTT	Shakopee		Ramp or Co	220000659	0.017506	RAMP541	West	RAMP657	Front to Re	Motor Veh	On Roadwa

Lighting Co	Road Circu	road_circu	Road Circu	road_circu	Relative Int	Traffic Con	Weather P	Weather Se	Surface Co	Work Zone	Work Zone	Work Zone
Daylight	None				T Intersecti	Stop Sign	Clear		Dry	2		NOT APPLI
Daylight	Road Surface Condition (wet, icy, snow, slush,				Four-Way I	Stop Sign	Snow	Blowing Sa	Snow	2		NOT APPLI
Daylight	Work Zone (construction/maintenance/utility				Entrance/E	No Control	Rain		Wet	1	Transition A	Work on Sh
Daylight	None				Four-Way I	No Control	Clear		Dry	2		NOT APPLI
Daylight	Road Surface Condition (wet, icy, snow, slush,				Four-Way I	Stop Sign	Blowing Sand/Soil/Dirt		Ice/Frost	2		NOT APPLI

Workers Pr	Unit1 Type	Unit1 Vehic	Unit1 Direc	Unit1 Factc	Unit1 Factc	Unit1 Most	Unit1 Vehic	Unit1 Traff	Unit1 Poste	Unit1 Horiz	Unit1 Road	Unit1 Nonr
CABLE	Motor Veh	Sport Utilit	Westbounc	Failure to Yield Right-o		Motor Veh	Turning Lef	Two-Way,	50	Straight	Level	
CABLE	Motor Veh	Sport Utilit	Southboun	Failure to Yield Right-o		Motor Veh	Moving For	Two-Way,	55	Straight	Hillcrest	
No	Motor Veh	Passenger (	Southboun	Failure to Yield Right-o		Motor Veh	Turning Lef	Two-Way,	45	Straight	Level	
CABLE	Motor Veh	Passenger (	Southboun	No Clear Contributing /		Motor Veh	Moving For	Two-Way,	35	Straight	Level	
CABLE	Motor Veh	Passenger (	Westbounc	No Clear Contributing /		Motor Veh	Vehicle Sto	Two-Way,	30	Straight	Level	

Unit1 Injur	Unit1 Phys	Unit1 Age	Unit1 Sex	Unit2 Type	Unit2 Vehic	Unit2 Direc	Unit2 Facto	Unit2 Facto	Unit2 Most	Unit2 Vehic	Unit2 Nonr	Unit2 Injur
No Appare	Apparently	21	Male	Motor Veh	Sport Utilit	Northboun	No Clear Contributing		Motor Veh	Moving Forward		No Appare
Suspected	Apparently	47	Male	Motor Veh	Sport Utilit	Northboun	No Clear Contributing		Motor Veh	Moving Forward		Possible Inj
No Appare	Apparently	27	Male	Motor Veh	Sport Utilit	Northboun	No Clear Contributing		Motor Veh	Moving Forward		No Appare
Possible Inj	Apparently	29	Male	Motor Veh	Sport Utilit	Eastbound	Failure to Yield Right-o		Motor Veh	Turning Left		Possible Inj
No Appare	Apparently	26	Male	Motor Veh	Passenger (	Westbound	Other Contributing Act		Motor Veh	Moving Forward		No Appare

Unit2 Physi	Unit2 Age	Unit2 Sex	interchang	otst_inters	city_sectio	utmx	utmy	x	y
Apparently	31	Female				457248.8	4958393	457248.8	4958393
Apparently	17	Female	USTH 169 / MARYSTOWN RD			457246.8	4958395	457246.8	4958395
Apparently	18	Male	USTH 169 / MARYSTOWN RD			457246.6	4958376	457246.6	4958376
Apparently	27	Female	USTH 169 / MARYSTOWN RD			457226.2	4958396	457226.2	4958396
Apparently	32	Male	USTH 169 / MARYSTOWN RD			457276.2	4958385	457276.2	4958385

Adams Street @ Vierling Drive (2016-2018)

objectid	Incident ID	Date and T	Year	Hour	Crash Severity	Number Ki	Number of Vehicles
1817562	584927	3/22/2018,	2018	8	Property Damage Only Crash	0	2
1882709	623325	7/25/2018,	2018	15	Possible Injury Crash	0	2
1959342	360919	7/1/2016, 1	2016	11	Property Damage Only Crash	0	1
2213814	526444	12/19/201	2017	15	Property Damage Only Crash	0	2
2342691	627618	8/14/2018,	2018	12	Property Damage Only Crash	0	2
2426102	525385	12/15/201	2017	17	Possible Injury Crash	0	2
2426658	526253	12/18/201	2017	18	Property Damage Only Crash	0	2
2551434	446289	4/19/2017,	2017	18	Minor Injury Crash	0	3

Officer Narrative
Vehicle one proceeded through intersection before vehicle two was clear. Both drivers said they stopped for the sign. Driver one said she was getting her hair out of her face and did not see driver two. MM29
intended to turn left out of Hy-Vee driveway onto west Vierling Dr. Carol pulled in front of Kimberly because she thought Kimberly intended to turn right into Hy-Vee.
UNIT 1 TRAVELING WB ON VIERLING APPROACHING ADAMS ST. A WITNESS STATED HE SAW UNIT 1 APPROACHING THE INTERSECTION SPEEDING. HE SAW THE DRIVER SLAM ON THE BRAKES AND STOP BUT STARTED AGAIN QUICKLY. THE WITNESS STATED HE SAW THE DRIVER OF UNIT 1 LOOKING AT HER CELL PHONE AS SHE MADE THE LEFT TURN AND HIT THE STOP SIGN AT THE INTERSECTION. THE DRIVER OF UNIT 1 STATED SHE WAS NOT ON HER PHONE. SHE STATED SHE HAD BAGS OF CLOTHES IN THE FRONT SEAT, WHEN SHE TURNED THE CLOTHES FELL OVER, SHE TOOK HER EYES OFF THE
Vehicle 1 was travelling East on Vierling, towards Adams, driving in the left lane. Vehicle 2 was leaving the stop sign on Quincy Circle, turning left on to Vierling, and did not see Vehicle 1. Vehicle 2's front end struck Vehicle 1's drivers side. Minor damage to both vehicles. No injuries. Nothing further. AK85
Unit #1 was driving east on Vierling Drive in the inside lane. Driver #1 said they stop for four way stop at intersection. Driver #1 said they were going straight through the intersection. Unit #2 was driving north on Adams Street and stopped for stop sign. Driver #1 said Unit #2 did not wait their turn and went through the intersection. Unit #2 made left turn onto Vierling Drive. Unit #2 collided with Unit #1 in the intersection of Adams Street and Vierling
Unit 1 was traveling eastbound on Vierling Drive W. Unit 1 stopped at the 4 way intersection of Vierling Drive W and Adams St S. Unit 2 was traveling northbound on Adams St S. Driver of unit 1 stated driver of unit 2 did not stop at the 4 way intersection. Witness said same. Driver of unit 2 stated they thought they stopped, looked, and cleared the intersection. Stated they did not see anyone going through the intersection and believed it was her turn
Unit 1 was stopped to make a left turn from Vierling Drive W into the Hyvee Grocery store parking lot. Unit 1 has facing westbound. Unit 2 was going westbound on Vierling Drive W and rear ended Unit 1. Unit 2 left the scene. Unit 2 called back and asked for an officer call. When requested back to the scene Unit 2 said he was unable to return to the scene because he opened a bottle of wine and had started to drink. Unit 2 denied being drunk at time of
Unit 1 was traveling northbound on Adams St approaching the 4 way stop at Vierling Dr. The intersection is controlled by stop signs in all 4 directions. Unit 2 was stopped at the stop sign westbound on Vierling Dr, first vehicle at the intersection. Unit 3 was stopped directly behind unit 2. Driver of unit 2 stated she saw unit 1 approaching the intersection at a moderate speed and expected unit 1 to stop for the stop sign. Unit 2 proceeded into the

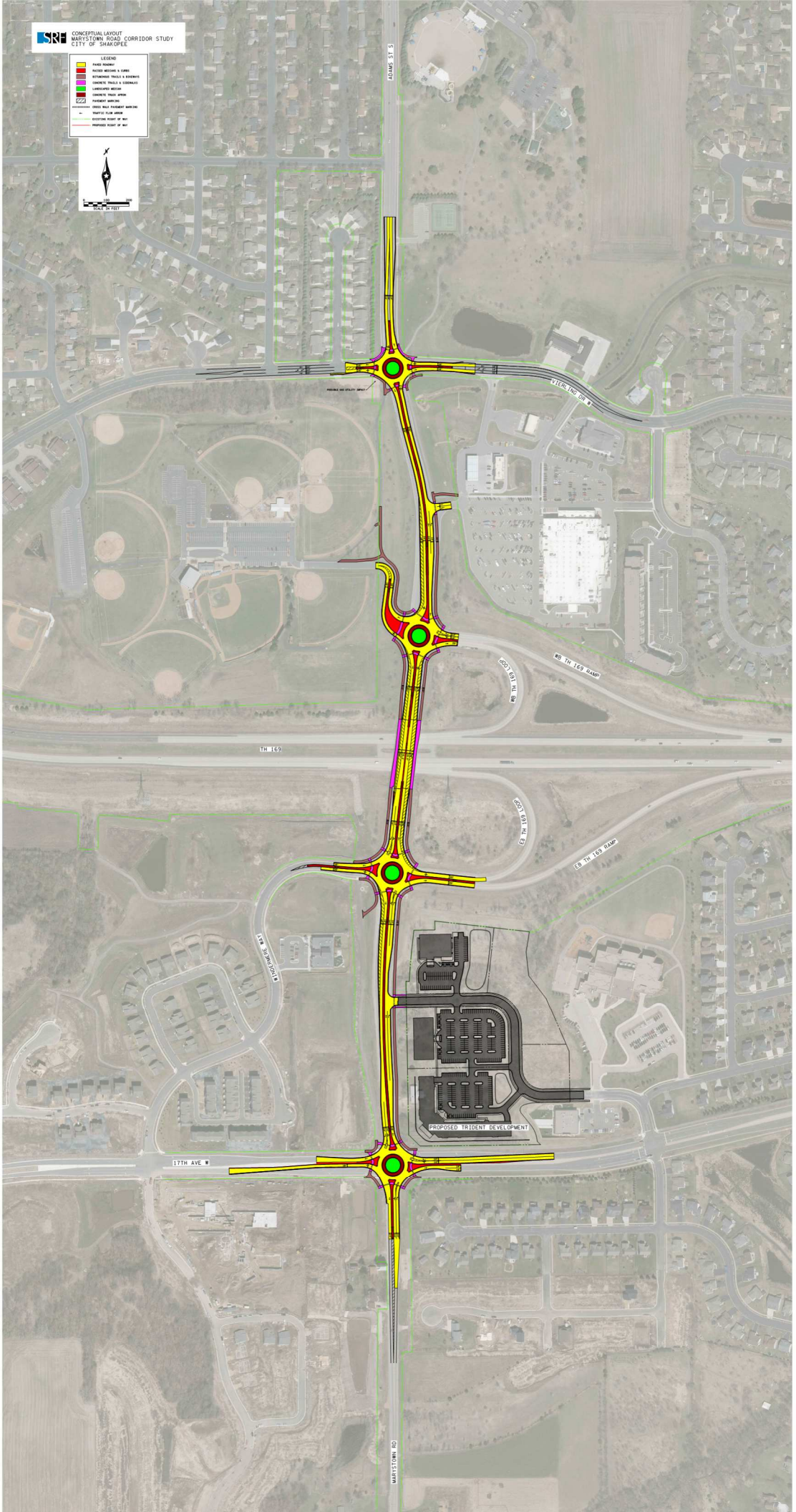
Constructio	County	City	Township	Route Type	Route ID	Route Mea	Roadway N	Divided Ro	Intersectio	Manner of	First Harmf	Relative Tr
M	SCOTT	Shakopee		County Sta	040000659	19.01763	MARYSTOV	Not Applica	VIERLING D	Angle	Motor Veh	On Roadwa
M	SCOTT	Shakopee		County Sta	040000659	19.02271	ADAMS ST	East	104	Angle	Motor Veh	On Roadwa
M	SCOTT	Shakopee		Municipal S	050002395	1.058272	VIERLING D	Not Applicable			Traffic Sign	On Shoulde
M	SCOTT	Shakopee		Municipal S	050002395	1.053365	VIERLING D	Not Applica	CSAH 15	Sideswipe -	Motor Veh	On Roadwa
M	SCOTT	Shakopee		Municipal S	050002395	1.060933	VIERLING D	Not Applica	ADAMS ST	Sideswipe -	Motor Veh	On Roadwa
M	SCOTT	Shakopee		County Sta	040000659	19.02159	CSAH 15	East		Angle	Motor Veh	On Roadwa
M	SCOTT	Shakopee		County Sta	040000659	19.02226	CSAH 15	West	104	Front to Re	Motor Veh	On Roadwa
M	SCOTT	Shakopee		County Sta	040000659	19.02395	CSAH 15	North		Angle	Motor Veh	On Roadwa

Lighting Co	Road Circu	road_circu	Road Circu	road_circu	Relative Int	Traffic Con	Weather P	Weather Se	Surface Co	Work Zone	Work Zone	Work Zone
Daylight	None				Four-Way I	Stop Sign	Cloudy		Dry	2		NOT APPLI
Daylight	None				Driveway A	No Control	Cloudy		Dry	2		NOT APPLI
Daylight	None				Four-Way I	Stop Sign	Clear		Dry	2		NOT APPLI
Daylight	None				T Intersecti	No Control	Clear		Dry	2		NOT APPLI
Daylight	None				Four-Way I	Stop Sign	Clear		Dry	2		NOT APPLI
Dark (Stree	None				Four-Way I	Stop Sign	Clear		Wet	2		NOT APPLI
Dark (Stree	None				Intersectio	No Control	Clear		Dry	2		NOT APPLI
Daylight	Road Surface Condition (wet, icy, snow, slush,				Four-Way I	Stop Sign	Rain		Wet	2		NOT APPLI

Workers Pr	Unit1 Type	Unit1 Vehic	Unit1 Direc	Unit1 Facto	Unit1 Facto	Unit1 Most	Unit1 Vehic	Unit1 Traff	Unit1 Poste	Unit1 Horiz	Unit1 Road	Unit1 Nonr
CABLE	Motor Veh	Passenger (	Northboun	Failure to Yield Right-o		Motor Veh	Moving For	Two-Way,	30	Straight	Level	
CABLE	Motor Veh	Sport Utilit	Eastbound	No Clear Contributing A		Motor Veh	Moving For	Two-Way,	30	Straight	Level	
CABLE	Motor Veh	Passenger (	Southboun	Driver Speeding		Traffic Sign	Turning Lef	Other	30	Straight	Level	
CABLE	Motor Veh	Passenger (	Eastbound	No Clear Contributing A		Motor Veh	Moving For	Two-Way,	30	Straight	Level	
CABLE	Motor Veh	Passenger (	Westbound	No Clear Contributing A		Motor Veh	Moving For	Two-Way,	30	Straight	Level	
CABLE	Motor Veh	Passenger (	Eastbound	No Clear Contributing A		Motor Veh	Moving For	Two-Way,	30	Straight	Level	
CABLE	Motor Veh	Sport Utilit	Westbound	No Clear Contributing A		Motor Veh	Turning Lef	Two-Way,	30	Straight	Level	
CABLE	Motor Veh	Pickup	Northboun	Driver Distracted		Motor Veh	Moving For	Two-Way,	45	Straight	Level	

Unit1 Injur	Unit1 Phys	Unit1 Age	Unit1 Sex	Unit2 Type	Unit2 Vehic	Unit2 Direc	Unit2 Facto	Unit2 Facto	Unit2 Most	Unit2 Vehic	Unit2 Nonr	Unit2 Injur
No Appare	Apparently	44	Female	Motor Veh	Passenger	Westbound	No Clear Contributing		Motor Veh	Moving Forward		No Appare
No Appare	Apparently	58	Female	Motor Veh	Passenger	Northboun	Failure to Yield Right-o		Motor Veh	Turning Left		Possible Inj
No Appare	Apparently	24	Female									
No Appare	Apparently	83	Female	Motor Veh	Passenger	Southboun	No Clear Contributing		Motor Veh	Turning Left		No Appare
No Appare	Apparently	57	Female	Motor Veh	Passenger	Eastbound	Failure to Yield Right-o		Motor Veh	Turning Left		No Appare
Possible Inj	Apparently	32	Female	Motor Veh	Passenger	Northboun	Ran Stop Sign		Motor Veh	Moving Forward		No Appare
No Appare	Apparently	53	Female	Motor Veh	Pickup	Westbound	Failure to Y	Driver Spee	Motor Veh	Moving Forward		No Appare
Suspected	Apparently	63	Female	Motor Veh	Passenger	Westbound	No Clear Contributing		Motor Veh	Moving Forward		Suspected

Unit2 Physi	Unit2 Age	Unit2 Sex	otst_inters	city_sectio	utmx	utmy	x	y
Apparently	56	Female	ADAMS ST	RD/MARYS	457201.2	4958738	457201.2	4958738
Apparently	37	Female	ADAMS ST	RD/MARYS	457201.7	4958747	457201.7	4958747
			ADAMS ST	RD/MARYS	457196	4958739	457196	4958739
Asleep or F	77	Female	ADAMS ST	RD/MARYS	457188.1	4958743	457188.1	4958743
Apparently	38	Female	ADAMS ST	RD/MARYS	457200.2	4958744	457200.2	4958744
Apparently	53	Female	ADAMS ST	RD/MARYS	457202.4	4958745	457202.4	4958745
Unknown	30	Male	ADAMS ST	RD/MARYS	457205	4958746	457205	4958746
Apparently	44	Female	ADAMS ST	RD/MARYS	457204.7	4958749	457204.7	4958749


CONCEPTUAL LAYOUT
MARYSTOWN ROAD CORRIDOR STUDY
CITY OF SHAKOPEE
LEGEND
PAVED ROADWAY
RAISED MEDIANS & CURBS
BITUMINOUS TRAILS & BIKEWAYS
CONCRETE TRAILS & SIDEWALKS
LANDSCAPED MEDIAN
CONCRETE TRUCK APRON
PAVEMENT MARKING
CROSS WALK PAVEMENT MARKING
TRAFFIC FLOW ARROW
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
0
150
300
SCALE IN FEET
ADAMS ST S
VIKING LND DR W
POSSIBLE MID UTILITY IMPACT
NB TH 169 RAMP
NB TH 169 LOOP
TH 169
EB TH 169 LOOP
EB TH 169 RAMP
FISCHER BLVD
PROPOSED TRIDENT DEVELOPMENT
17TH AVE W
MARYSTOWN RD

SRF Consulting Group, Inc. | Engineers Planners Designers

PROJECT: MARYSTOWN CORRIDOR STUDY

Concept Cost Estimate

Prepared By: SRF Consulting Group, Inc., 04/30/2020

				ROUNDABOUT #1 - ADAMS STREET/VIERLING DRIVE		ROUNDABOUT #2 - MARYSTOWN ROAD/US 169 NORTH RAMP		ROUNDABOUT #3 - MARYSTOWN ROAD/US 169 SOUTH RAMP		ROUNDABOUT #4 - CR 15/CR 16		TRIDENT DEVELOPMENT TURN LANE		TOTAL	
	ITEM DESCRIPTION	UNIT	UNIT PRICE	EST. QUANTITY	EST. AMOUNT	EST. QUANTITY	EST. AMOUNT	EST. QUANTITY	EST. AMOUNT	EST. QUANTITY	EST. AMOUNT	EST. QUANTITY	EST. AMOUNT	EST. QUANTITY	EST. AMOUNT
PAVING AND GRADING COSTS															
GrP 1a	2106 Excavation - common & subgrade	cu. yd.	$8.00	3,300	$26,400	4,000	$32,000	3,750	$30,000	4,650	$37,200	350	$2,800	16,050	$128,400
GrP 1d	2106 Subgrade Preparation	road sta.	$500.00	20.72	$10,360	28.27	$14,135	25.58	$12,790	30.23	$15,115	1.20	$600	106	$53,000
GrP 2e	2211 Aggregate Base Class 5 (CV)	cu. yd.	$15.00	1,800	$27,000	2,560	$38,400	2,300	$34,500	2,250	$33,750	190	$2,850	9,100	$136,500
GrP 3a	Mainline Pavement - 5" HMA	sq. yd.	$21.00	6,450	$135,450	7,525	$158,025	7,250	$152,250	7,650	$160,650	800	$16,800	29,675	$623,175
GrP 3b	Mainline - Truck Apron - 10" Concrete	sq. yd.	$100.00	350	$35,000	375	$37,500	375	$37,500	375	$37,500			1,475	$147,500
GrP 4a	Concrete Walk / Trail / Median	sq. yd.	$125.00	1,140	$142,500	1,760	$220,000	1,325	$165,625	1,775	$221,875	55	$6,875	6,055	$756,875
GrP 4b	Bituminous Walk / Trail	sq. yd.	$25.00			2,215	$55,375	1,780	$44,500	755	$18,875			4,750	$118,750
GrP 4c	ADA Pedestrian Curb Ramp - Truncated Domes	sq. ft.	$60.00	130	$7,800	144	$8,640	120	$7,200	130	$7,800	16	$960	540	$32,400
GrP 5	Concrete Curb and Gutter	lin. ft.	$21.00	5,177	$108,717	3,870	$81,270	3,553	$74,613	5,240	$110,040	110	$2,310	17,950	$376,950
GrP 8a	Removals - Pavement (Bituminous)	sq. yd.	$4.00	10,700	$42,800	11,850	$47,400	11,300	$45,200	15,650	$62,600			49,500	$198,000
GrP 8d	Removals - Pavement (Concrete)	sq. yd.	$18.00			300	$5,400	1,300	$23,400					1,600	$28,800
GrP 8e	Removals - Curb & Gutter	lin. ft.	$3.50	3,430	$12,005	2,300	$8,050	350	$1,225	2,420	$8,470			8,500	$29,750
GrP 8f	Removals - Concrete Walk	sq. ft.	$1.50	2,200	$3,300			150	$225	1,650	$2,475			4,000	$6,000
GrP 8g	Removals - Concrete Median	sq. ft.	$5.00	1,150	$5,750	12,525	$62,625	8,675	$43,375	5,350	$26,750			27,700	$138,500
GrP 8h	Removals - Bituminous Walk	sq. ft.	$1.00	1,575	$1,575			200	$200			1,125	$1,125	2,900	$2,900
	SUBTOTAL PAVING AND GRADING COSTS:				**$558,657**		**$768,820**		**$672,603**		**$743,100**		**$34,320**		**$2,777,500**
DRAINAGE, UTILITIES AND EROSION CONTROL															
Dr 5	Drainage - urban	lump sum	$476,000		$93,041		$126,974		$114,866		$135,724		$5,395	1	$476,000
Dr 7	Turf Establishment & Erosion Control	lump sum	$250,000		$48,866		$66,688		$60,329		$71,283		$2,834	1	$250,000
	SUBTOTAL DRAINAGE, UTILITIES AND EROSION CONTROL				**$141,907.000**		**$193,662.000**		**$175,195.000**		**$207,007.000**		**$8,229.000**		**$726,000**
BRIDGE COSTS															
Br 1	Bridge - No. 70011 Modification	lump sum	$900,000				$450,000		$450,000					1	$900,000
	SUBTOTAL BRIDGE COSTS:						**$450,000**		**$450,000**						**$900,000**
SIGNAL AND LIGHTING COSTS															
SGL 4	Mainline Lighting (permanent)	lump sum	$125,000		$24,433		$33,344		$30,164		$35,642		$1,417	1	$125,000
	SUBTOTAL SIGNAL AND LIGHTING COSTS:				**$24,433**		**$33,344**		**$30,164**		**$35,642**		**$1,417**		**$125,000**
SIGNING & STRIPING COSTS															
SGN 1	Mainline Signing (C&D)	lump sum	$84,000		$16,419		$22,407		$20,270		$23,952		$952	1	$84,000
SGN 2	Mainline Striping	lump sum													
	SUBTOTAL SIGNING & STRIPING COSTS:				**$16,419**		**$22,407**		**$20,270**		**$23,952**		**$952**		**$84,000**
	SUBTOTAL CONSTRUCTION COSTS:				**$741,416**		**$1,468,233**		**$1,348,232**		**$1,009,701**		**$44,918**		**$4,612,500**
MISCELLANEOUS COSTS															
M 1	Mobilization	4%	$190,000		$37,138		$50,683		$45,850		$54,176		$2,154	1	$190,000
M 2	Non Quantified Minor Items	20%	$700,000		$136,824		$186,726		$168,921		$199,594		$7,935	1	$700,000
M 8	Traffic Control	3%	$84,000		$16,419		$22,407		$20,270		$23,951		$952	1	$84,000
	SUBTOTAL MISCELLANEOUS COSTS:				**$190,381**		**$259,816**		**$235,041**		**$277,721**		**$11,041**		**$974,000**
ESTIMATED TOTAL CONSTRUCTION COSTS without Contingency:					**$931,797**		**$1,728,049**		**$1,583,273**		**$1,287,422**		**$55,959**		**$5,586,500**
1	Contingency or "risk"		10%		$94,000		$173,000		$159,000		$129,000		$6,000		**$561,000**
ESTIMATED TOTAL CONSTRUCTION COSTS PLUS CONTINGENCY:					**$1,025,797**		**$1,901,049**		**$1,742,273**		**$1,416,422**		**$61,959**		**$6,147,500**
	OTHER PROJECT COSTS:														
	DESIGN ENG. & CONSTRUCTION ADMIN.	Lump Sum	20%		$206,000		$381,000		$349,000		$284,000		$13,000		$1,233,000
	SUBTOTAL OTHER PROJECT COSTS				**$206,000**		**$381,000**		**$349,000**		**$284,000**		**$13,000**		**$1,233,000**
	TOTAL PROJECT COST				**$1,231,797**		**$2,282,049**		**$2,091,273**		**$1,700,422**		**$74,959**		**$7,380,500**

NOTES No right of way costs assumed.
Minimal impacts assumed to the the gas facility in the SW quadrant of the Adams St/Vierling Dr roundabout, therefore no cost estimate was included.
Assumed existing subbase would be able to be reused with minimal modifications. Assumed 5” of HMA to match as-built plans for the corridor.

SRF No. 0065653

FINAL MEMORANDUM

TO: Michael Leek, Community Development Director
City of Shakopee

FROM: Renae Cornelius, P.E., Senior Traffic Engineer

DATE: August 8, 2006

SUBJECT: TRAFFIC STUDY FOR THE PROPOSED BLUFFS AT MARYSTOWN RESIDENTIAL DEVELOPMENT - UPDATE

A traffic study was completed by SRF Consulting Group in March 2006 for the proposed Bluffs at Marystown Residential Development. This traffic analysis was incorporated into an Environmental Assessment Worksheet (EAW). As part of the review process for this document, the City of Shakopee requested that further analysis be performed for the following additional tasks:

- Additional operations analysis assuming existing geometrics (i.e. no interchange) at the intersection of Old Brick Yard Road (County Road 69)/TH 169, for 2015 build (one year after construction) and 2015 no build conditions.

- Additional operations analysis at the three intersections (CSAH 15/TH 169 north ramps, CSAH 15/TH 169 south ramps and CSAH 15/17th Avenue) that operate at poor levels of service under 2015 build conditions, to determine if installation of single or multi-lane roundabouts could maintain an acceptable level of service.

The purpose of this memorandum is to document the additional analysis requested.

Old Brick Yard Road/TH 169 Intersection

An operational analysis was previously completed for the intersection of Old Brick Yard Road/TH 169 for existing, 2015 build, and 2015 no build conditions. The 2015 build and no build scenarios assumed an interchange would be in place at this location. Additional analysis was completed at this intersection for future build and no build conditions to determine how well the existing at-grade intersection will operate under 2015 forecasts. It was assumed that the signal timing would be adjusted in the future to account for background traffic growth.

As shown in Table 1, the intersection of Old Brick Yard Road/TH 169 is expected to operate at acceptable levels of services in both the a.m. and p.m. peak hour, under 2015 build and 2015 no build conditions assuming existing geometrics. In the no build scenario, the intersection operates at an overall LOS C for both the a.m. and p.m. peak hours. In the future build scenario, the intersection operates at an overall LOS D in the a.m. and p.m. peak hours. As anticipated, the change in level of service between the no build and build scenarios is due to the higher traffic volumes from the south, generated by the Bluffs at Marystown Residential Development.

Table 1
2015 No Build and Build Peak Hour Capacity Analysis
Level of Service Results

Intersection	2015 No Build		2015 Future Build	
	A.M. Peak	P.M. Peak	A.M. Peak	P.M. Peak
Old Brick Yard Road and TH 169	C	C	D	D

Based on our results, no geometric improvements are recommended for year 2015 future build and no build scenarios, however, adjustments to the signal timing will be required to account for the change in future approach volumes.

Roundabout Analysis

Additional analysis at the north and south ramp intersections of CSAH 15/TH 169 and the intersection of CSAH 15/17th Avenue was completed to determine how a single or multi-lane roundabout would operate. Previous analysis at these intersections assumed existing geometrics and traffic control which resulted in poor levels of service, therefore, installation of traffic signals at these three intersections was recommended. The purpose of this analysis is to include roundabouts as another alternative to improve operation of these intersections.

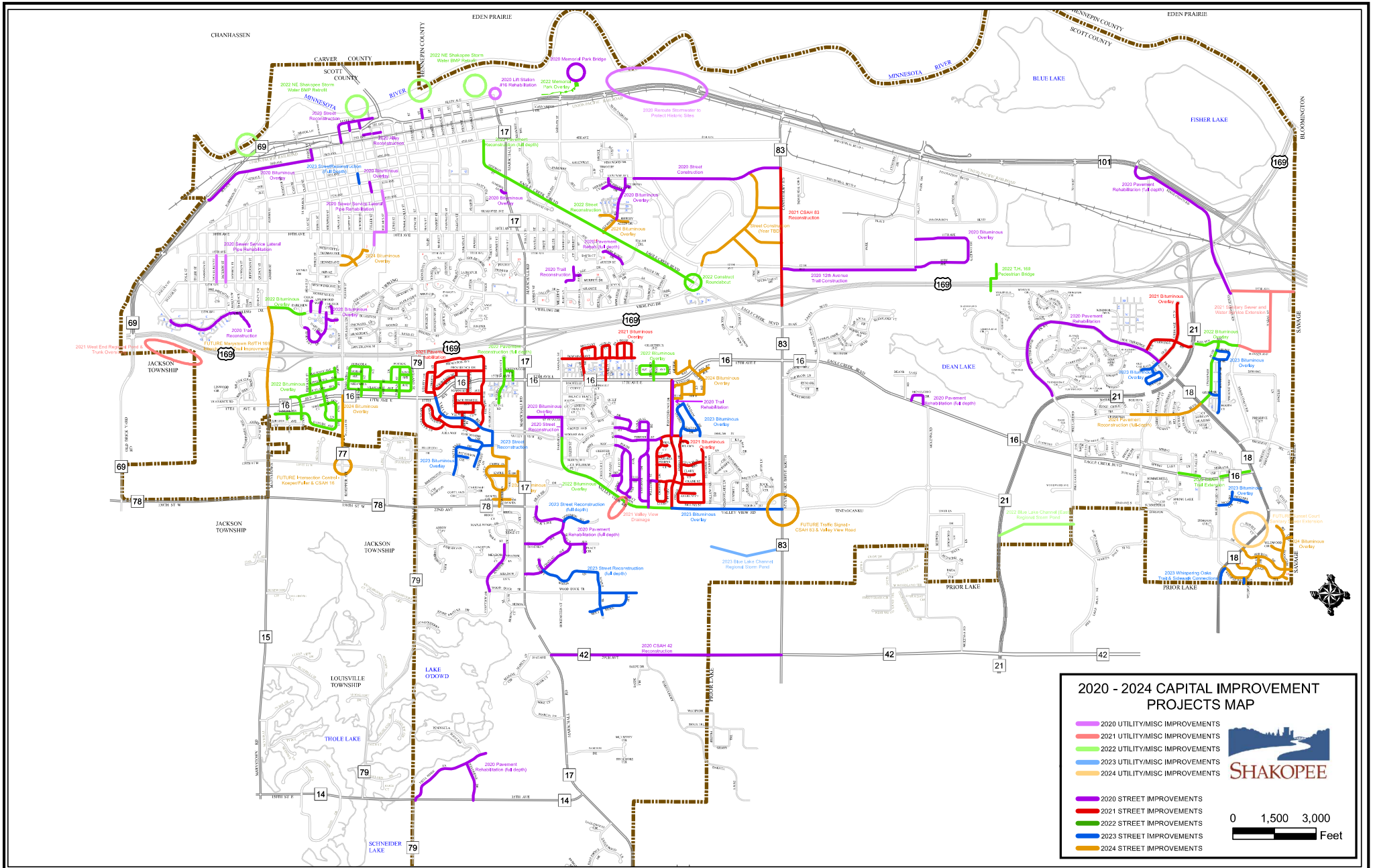
Roundabouts are a relatively new approach in solving traffic operational problems at intersections. They have received notability across the country in improving safety and efficiency. The analysis that we performed on these three intersections was derived from the methodology found in the manual "Roundabouts: An Informational Guide" written by the Federal Highway Administration.

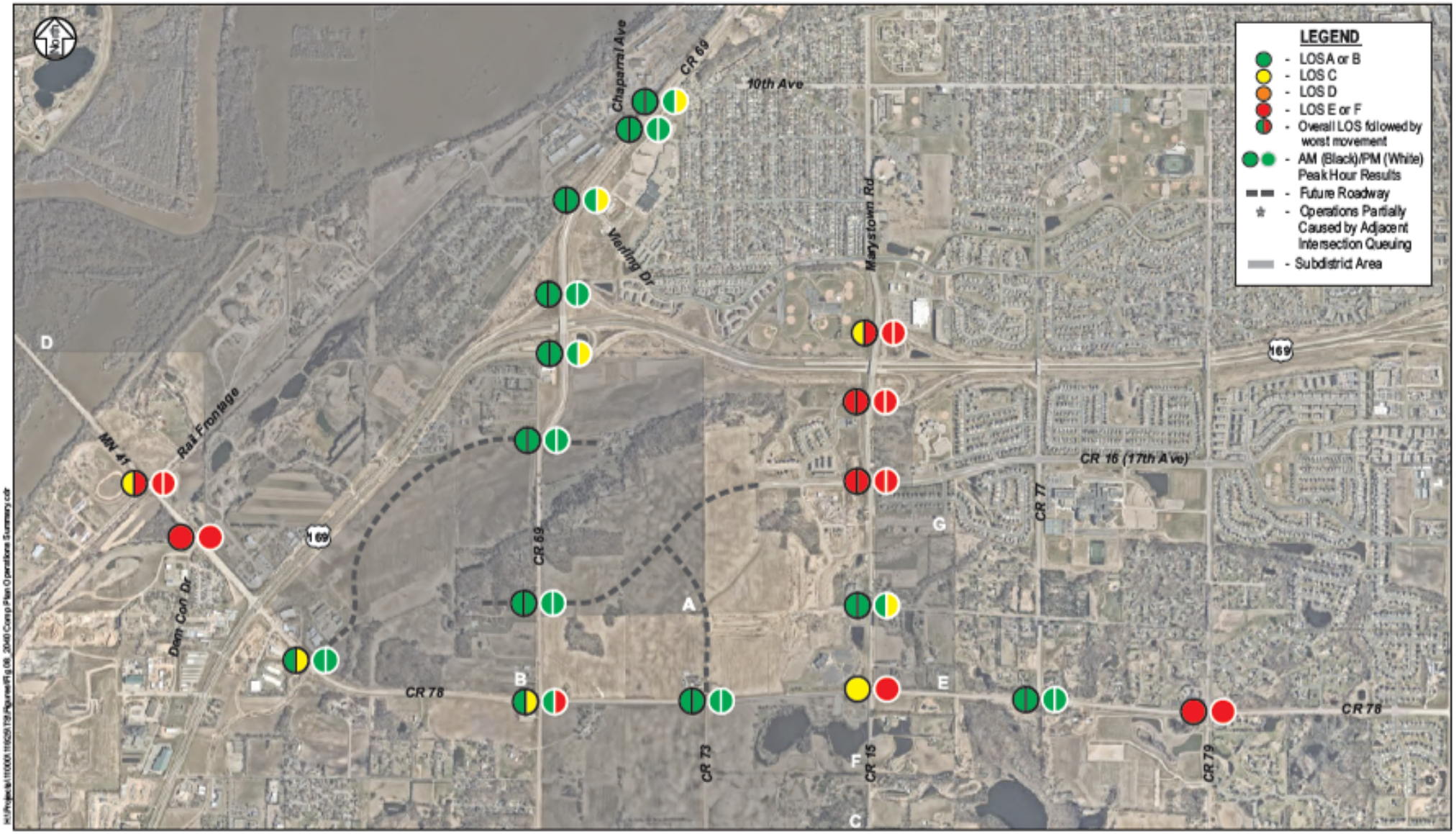
The north and south ramp intersections at the CSAH 15/TH 169 interchange were analyzed to determine how they would operate under a roundabout scenario. Based on the results of our analysis, we determined that a single-lane roundabout would operate acceptably at these intersections. However, since CSAH 15 at these intersections currently has two through lanes in each direction, it would be more practical to construct a two-lane roundabout at each intersection. Careful consideration should be given for a roundabout at these intersections, since the constructability of a two-lane roundabout at either location may not be cost affective due to their close proximity to the bridge and the grade changes on the ramps.

The intersection of CSAH 15/17th Avenue was also analyzed assuming a roundabout alternative. The results of the analysis indicate that a single-lane roundabout would be adequate at this location. However, since the analysis of this intersection used forecasted volumes only nine years out, it is recommended that the right-of-way be preserved for a potential expansion to a two-lane roundabout in the future.

Based on our analysis, installation of either a traffic signal or roundabout at any of these three intersections would be acceptable. The deciding factors should be based on the cost comparison and safety analysis of the two alternative improvements at each intersection.

The conclusions and recommendations from the additional analysis at the intersection of Old Brick Yard Road/TH 169 and the intersections of the CSAH 15/TH 169 ramps and CSAH 15/17th Avenue are consistent with the recommendations in the *Traffic Study for the Proposed Bluffs at Marystown Residential Development* dated March 27, 2006.


2020 - 2024 CAPITAL IMPROVEMENT PROJECTS MAP
2020 UTILITY/MISC IMPROVEMENTS
2021 UTILITY/MISC IMPROVEMENTS
2022 UTILITY/MISC IMPROVEMENTS
2023 UTILITY/MISC IMPROVEMENTS
2024 UTILITY/MISC IMPROVEMENTS
2020 STREET IMPROVEMENTS
2021 STREET IMPROVEMENTS
2022 STREET IMPROVEMENTS
2023 STREET IMPROVEMENTS
2024 STREET IMPROVEMENTS
SHAKOPEE
0 1,500 3,000
Feet
EDEN PRAIRIE
CHANHASSEN
CARVER COUNTY
SCOTT COUNTY
HENNEPIN COUNTY
MINNESOTA RIVER
BLUE LAKE
FISHER LAKE
DEAN LAKE
JACKSON TOWNSHIP
LOUISVILLE TOWNSHIP
LAKE O'DOWD
THOLE LAKE
SCHNEIDER LAKE
PRIOR LAKE
SAVAGE
BLOOMINGTON



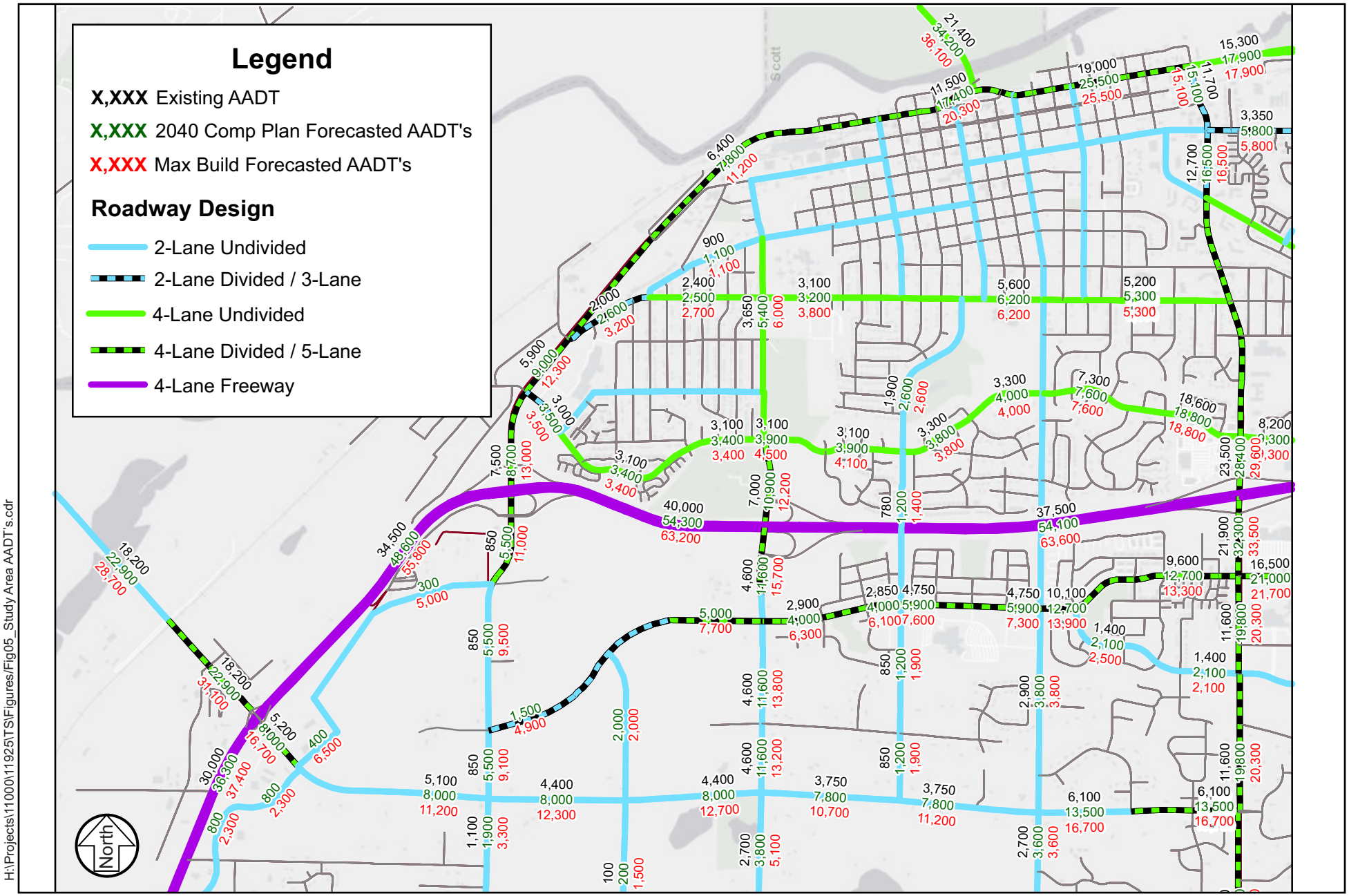
2040 Comp Plan Operations Summary

Shakopee AUAR Transportation Analysis

City of Shakopee

0011925
September 2019

Figure 8



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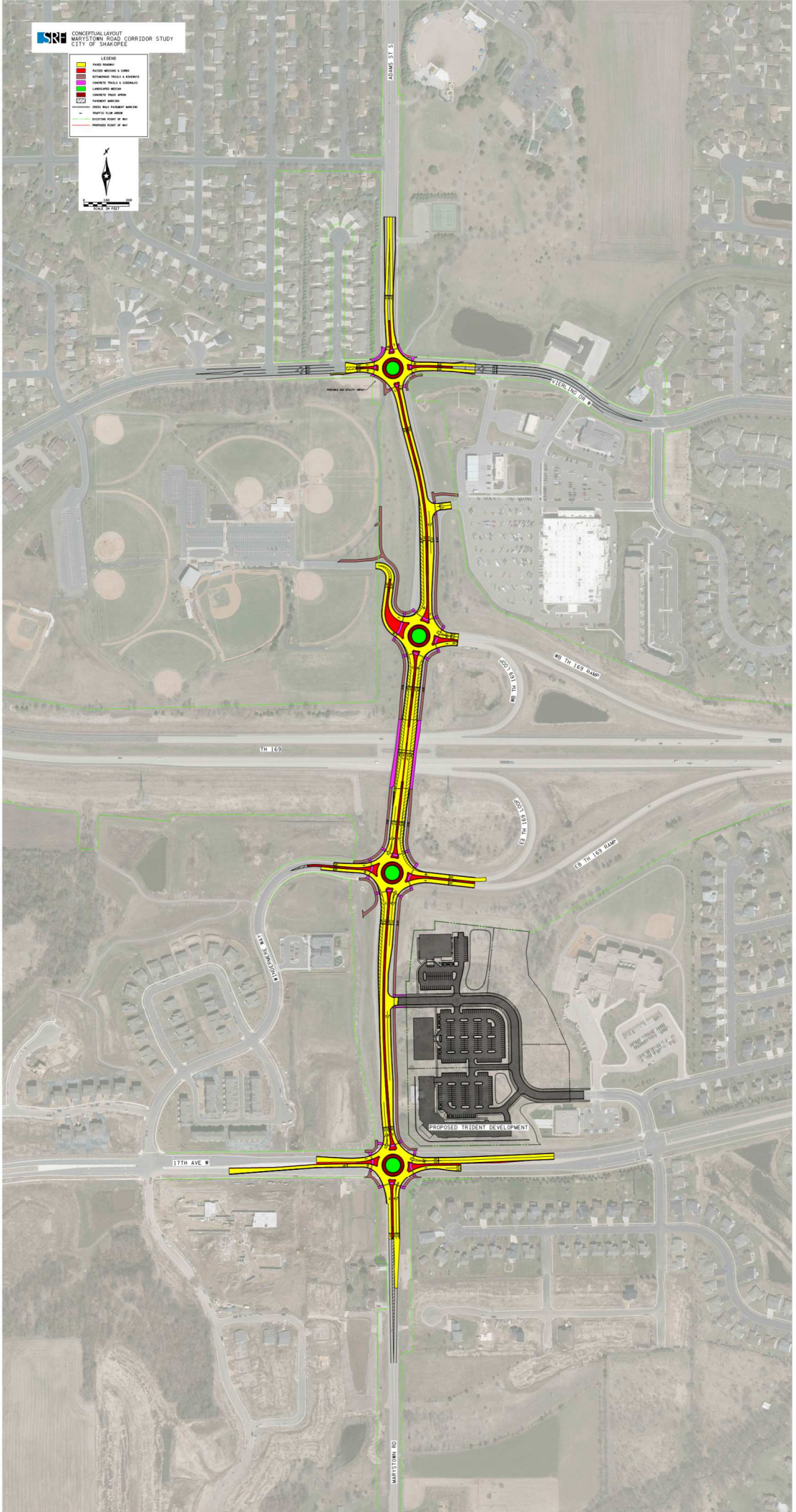
SRF Consulting Group, Inc.

Study Area AADT's

Shakopee AUAR Transportation Analysis
City of Shakopee

0011925
September 2019

Figure 5


CONCEPTUAL LAYOUT
MARYSTOWN ROAD CORRIDOR STUDY
CITY OF SHAKOPEE
LEGEND
PAVED ROADWAY
RAISED MEDIANS & CURBS
BITUMINOUS TRAILS & BIKEWAYS
CONCRETE TRAILS & SIDEWALKS
LANDSCAPED MEDIAN
CONCRETE TRUCK APRON
PAVEMENT MARKING
CROSS WALK PAVEMENT MARKING
TRAFFIC FLOW ARROW
EXISTING RIGHT OF WAY
PROPOSED RIGHT OF WAY
0
150
300
SCALE IN FEET
ADAMS ST S
VIKING LND DR W
POSSIBLE MID UTILITY IMPACT
NB TH 169 RAMP
NB TH 169 LOOP
TH 169
EB TH 169 LOOP
EB TH 169 RAMP
FISCHER BLVD
PROPOSED TRIDENT DEVELOPMENT
17TH AVE W
MARYSTOWN RD

SCOTT COUNTY TRANSPORTATION SERVICES DIVISION

COUNTY HIGHWAYS, MOBILITY MANAGMENT, FLEET
600 COUNTRY TRAIL EAST · JORDAN, MN 55352-9339
(952) 496-8346 · Fax: (952) 496-8365 · www.scottcountymn.gov

LISA J. FREESE
Transportation Services Director

ANTHONY J. WINIECKI, P.E.
County Engineer

TROY BEAM
Mobility Services/Fleet Mgr.

May 7, 2020

Mr. Steve Lillehaug, P.E.
Public Works Director/City Engineer
City of Shakopee
Shakopee, MN 55379

Re: Met Council Regional Solicitation Application – Reconstruction/Modernization
Marystown Road Corridor Improvements at TH 169 Interchange

Dear Mr. Lillehaug:

Scott County is aware of the City of Shakopee's application to the Metropolitan Council for Regional Solicitation – Reconstruction/Modernization program funding for the Marystown Road Corridor Improvements at the TH 169 Interchange.

The proposed corridor improvement project includes construction of a roundabout at the County Highway 15 and County Highway 16 intersection within the project limits. The County supports the City's pursuit to obtain federal funding and is committed to operate its facilities at this intersection if successful.

Please let me know if there is any additional information you need from us regarding this funding application.

Sincerely,

Anthony J. Winiecki, P.E.
County Engineer

C: Lisa Freese – Scott County, Transportation Division Director
Craig Jenson – Scott County, Planning Manager

SCOTT COUNTY TRANSPORTATION SERVICES DIVISION

COUNTY HIGHWAYS, MOBILITY MANAGMENT, FLEET
600 COUNTRY TRAIL EAST · JORDAN, MN 55352-9339
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LISA J. FREESE
Transportation Services Director

ANTHONY J. WINIECKI, P.E.
County Engineer

TROY BEAM
Mobility Services/Fleet Mgr.

November 2, 2017

Steve Lillehaug, PE
Public Works Director/City Engineer
City of Shakopee
485 Gorman Street
Shakopee, MN 55379

RE: Letter of Support for Marystown Road/Adams Street roundabouts at TH 169 Project 2017 Local Road Improvement Program (LRIP) Funding Application

Dear Mr. Lillehaug:

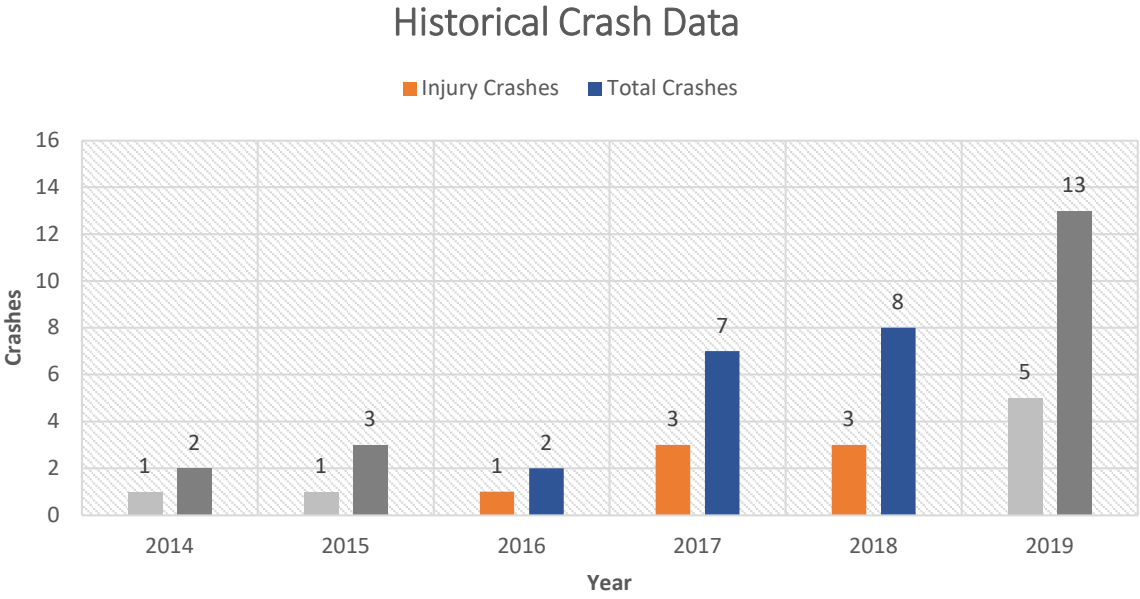
Scott County is aware the City of Shakopee is applying for bond funds, appropriated through the Minnesota Legislature to the Local Road Improvement Program and administered by the Minnesota Department of Transportation, for Marystown Road and Adams Street roundabout.

The project includes constructing a roundabout at the Marystown Road/Adams Street interchange with US Highway 169. Scott County is supportive of the City of Shakopee's Local Road Improvement Program application for this project.

Sincerely,

Lisa Freese

Lisa Freese
Scott County Transportation Services Director


Historical Crash Data
Injury Crashes
Total Crashes
Crashes
16
14
12
10
8
6
4
2
0
1
2
1
3
1
2
3
7
3
8
5
13
2014
2015
2016
2017
2018
2019
Year

RESOLUTION NO. 7937

A RESOLUTION IN SUPPORT OF AN APPLICATION FOR THE 2017 LOCAL ROAD IMPROVEMENT PROGRAM (LRIP) GRANT ADAMS STREET/MARYSTOWN ROAD (CSAH 15) AND TH 169 ROUNDABOUT

WHEREAS, the City of Shakopee is applying to the Commissioner of Transportation for a grant from the Minnesota State Transportation Fund for Local Road Improvement; and

WHEREAS, the Commissioner of Transportation has given notice that funding for this project is available and the LRIP has been established through Statute 174.52 to provide funding assistance to local agencies; and

WHEREAS, Adams Street/Marystown Road serve a connection between rural Scott County and the more urbanized City of Shakopee and has an interchange with US Highway 169 that is currently side street (ramp terminal) stop controlled; and

WHEREAS, severe crashes, including a fatality, have occurred at the interchange ramp intersections with Adams Street/Marystown Road; and

WHEREAS, the City of Shakopee is seeking to construct roundabouts at the Adams Street/Marystown Road intersections with the interchange ramps to improve safety and provide an efficient connection to US Highway 169; and

WHEREAS, the Local Road Improvement Program (LRIP) administered by the Minnesota Department of Transportation makes available up to $1,000,000 to provide funding assistance to local agencies towards local road projects that are regionally significant, result in safety improvements, and address transportation deficiencies

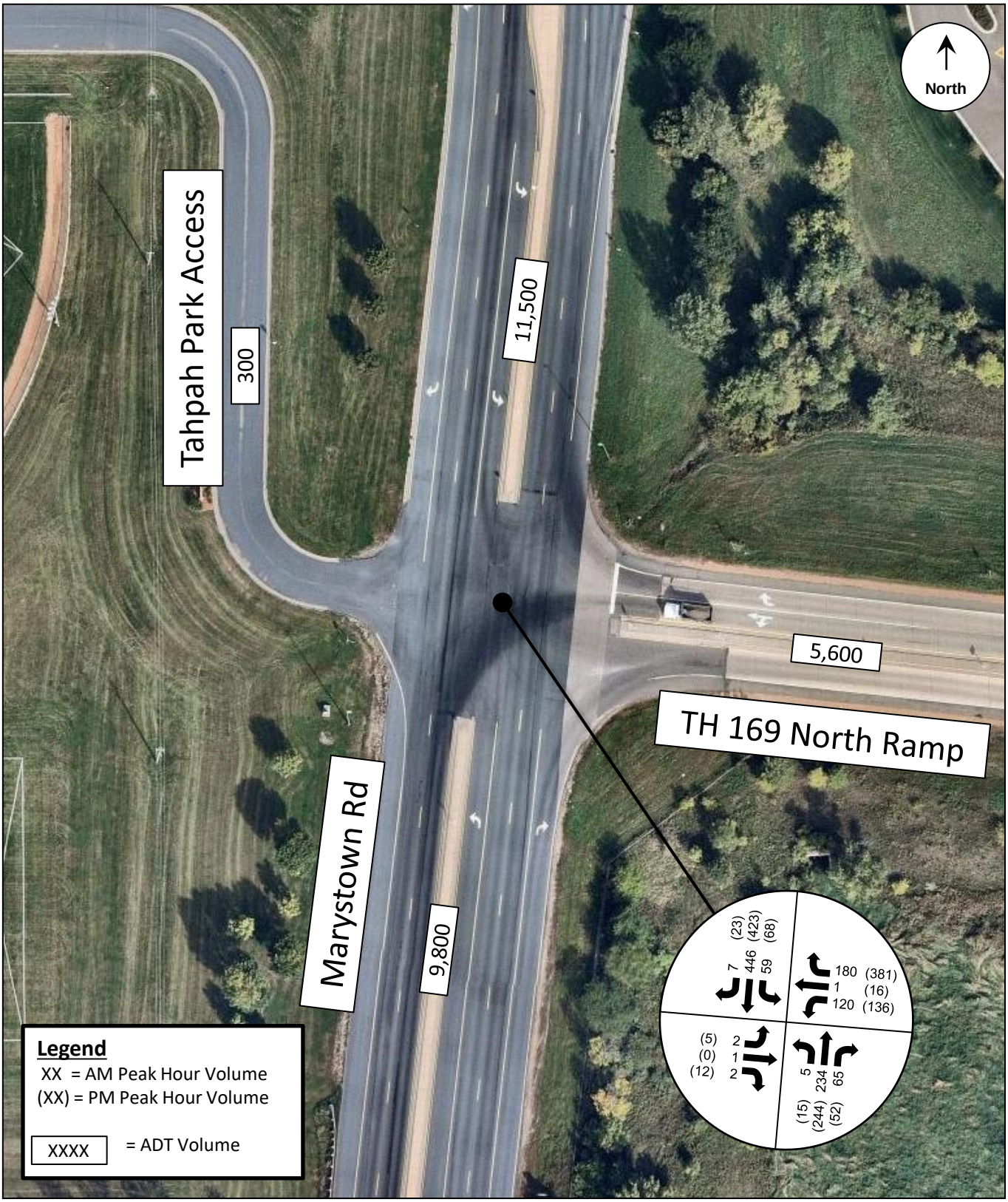
WHEREAS, the Adams Street/Marystown Road (CSAH 15) and TH 169 roundabout project needs additional funding to be implemented.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SHAKOPEE, MINNESOTA hereby supports the application of the LRIP Grant for the Adams Street/Marystown Road (CSAH 15) and TH 169 roundabout project, agrees to the terms and conditions of the grant consistent with Minnesota Statutes, section 174.50, subdivision 5, clause (3) and will pay any additional amount by which the cost exceeds the estimate, and will return to the Minnesota State Transportation Fund any amount appropriated for the roundabout project but not required.

Adopted in adjourned regular session of the City Council of the City of Shakopee, Minnesota held this 17th of October, 2017.

William Mars, Mayor
City of Shakopee

Lori Hensen, City Clerk
City of Shakopee

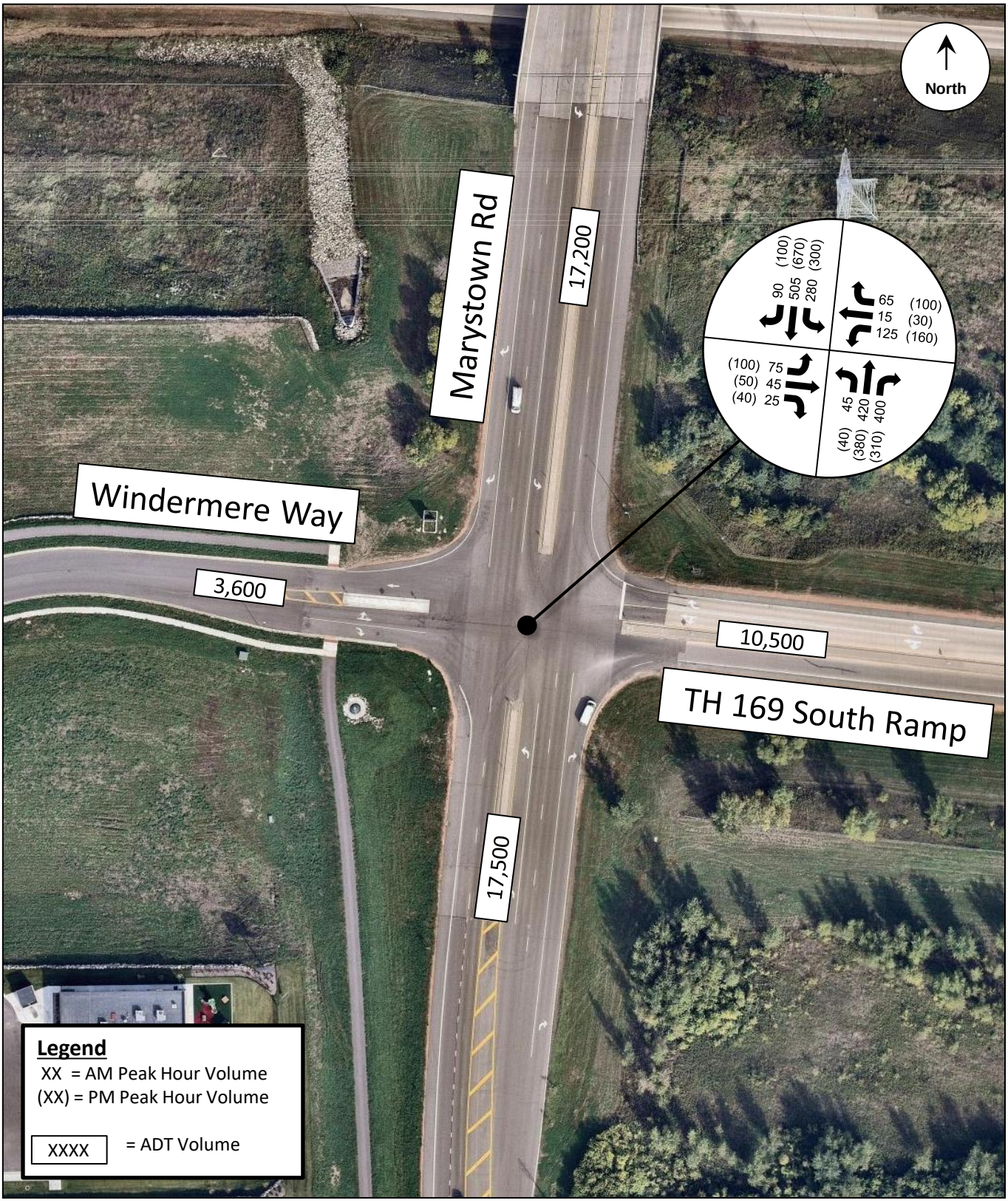


Existing Volumes

Figure 4

Intersection Control Evaluation
Marystown Road at North TH 169 Ramp
Shakopee, Minnesota

13195
April 2020



Forecast Year 2040 Volumes

Figure 6

Intersection Control Evaluation
Marystown Road at South TH 169 Ramps / Windermere Way
Shakopee, Minnesota

13195
April 2020

Project Summary

Project Name – Marystown Road Corridor **Applicant –** City of Shakopee
Total Project Cost – $ 6,147,500 **Requested Federal Dollars** - $4,918,000
Project Location – County State-Aid Highway System Road (CSAH) 15/Marystown Road/Adams Street from Vierling Drive to CSAH 16 (17th Avenue) in the City of Shakopee, Scott County

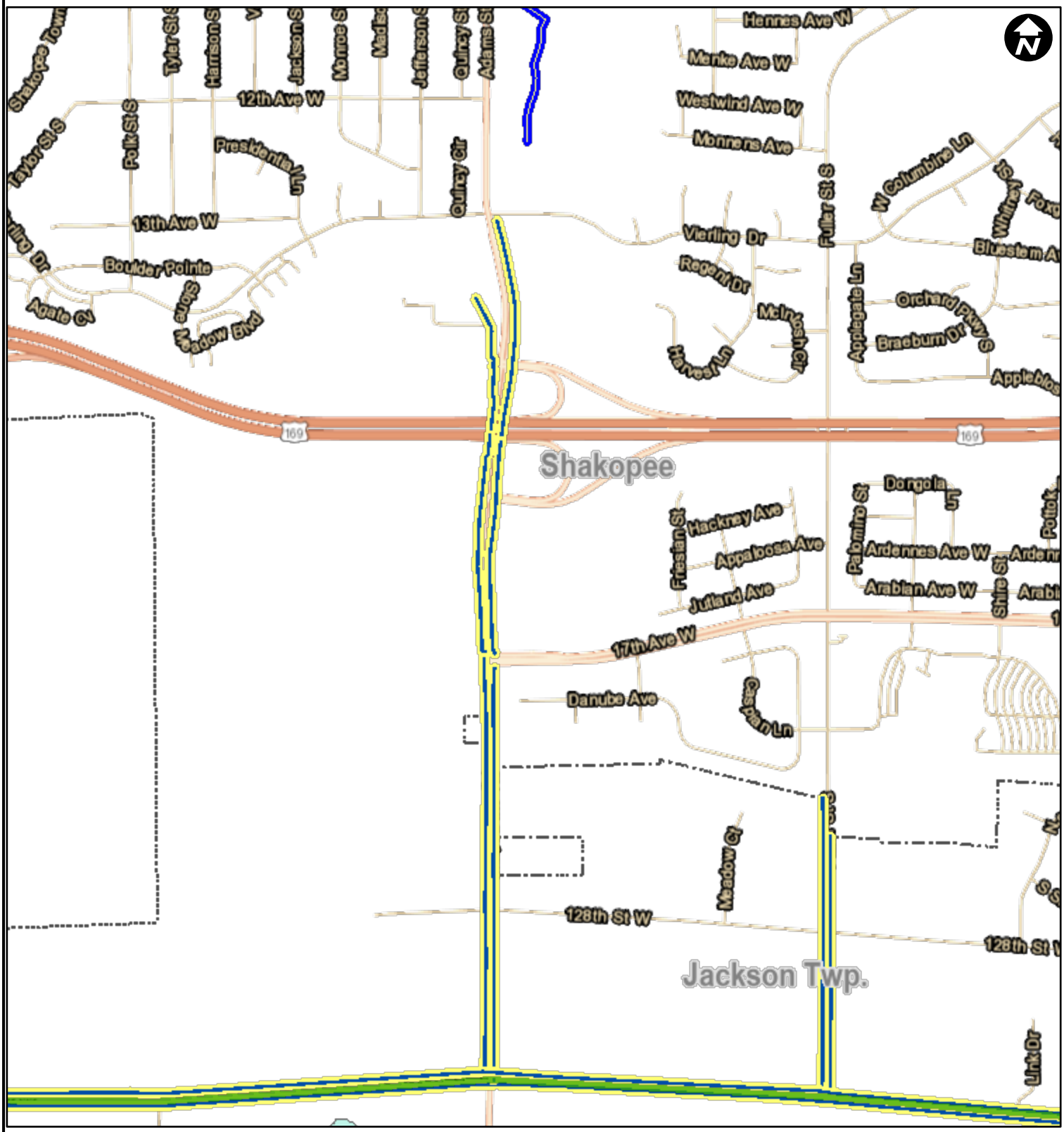
Project Description – CSAH 15/Marystown Road/Adams Street is a four-lane A-minor expander. The project reconstructs approximately 1.2 miles of roadway, replaces four existing stop-controlled intersections with roundabouts, and installs pedestrian and bicycle shared use paths and sidewalks that fill a regional system gap.

Traffic volumes will continue to rise as planned commercial and residential developments are constructed in the area. Current development includes over 1,600 housing units, and 1.1 million square feet of retail business, which is expected to bring in over 2,750 jobs into the area. Previous studies have indicated that increasing traffic volumes will cause worsening operations and level of service at intersections will fail by year 2025. Safety concerns along the corridor are on the rise. Crashes along the corridor have risen fivefold between the years of 2017-2019 and the corridor has seen numerous injuries.

Project Benefits – The Marystown Road Reconstruction project will provide the following benefits:

- The installation of roundabouts immediately improves intersection operations to level of service A, and accommodates max build out traffic volumes as the areas continues to grow
- Repurposing the TH 169 bridge to provides multiuse trail on both sides, thus connecting a gap in the trail system and enhancing safety and mobility for all users. The path connects to a Regional Bike Transportation Network (RBTN) Tier 2 alignment at 150th Street.
- Adds significantly more lighting on pedestrian network and at intersections
- Roundabouts will address severe and high-speed crashes
- Reduces posted speed limits and creates curb and gutter to delineate lanes and roadway for better vehicle guidance in inclement weather
- Provides for ADA compliant infrastructure throughout corridor
- Numerous access improvements to address current illegal maneuvers

Regn'l Bicycle Transportation Network



Tier 1 RBTN
- RBTN Tier 1 Corridors
- RBTN Tier 1 Corridor Centerlines
- RBTN Tier 1 Alignments

Tier 2 RBTN
- RBTN Tier 2 Corridors
- RBTN Tier 2 Corridor Centerline
- RBTN Tier 2 Alignments

Layers
- Lakes and Rivers
- City and Township Boundaries
- Minnesota State Trails (DNR)

Regional Bikeways Inventory
- Existing
- Planned
- Programmed

Destinations
- Job Centers
- Sports Ent Complex
- Hi Visit Reg Parks
- Higher Ed >2K
- Major High Schools

0 0.13 0.25 0.5 0.75 1 Miles

Created: 3/10/2020

METROPOLITAN COUNCIL

MnDOT Metro District
1500 West County Road B-2
Roseville, MN 55113

May 12, 2020

Steve Lillehaug, PE, PTOE
Public Works Director/City Engineer
City of Shakopee
129 Holmes St S
Shakopee, MN 55379

Re: MnDOT Letter for Shakopee
Metropolitan Council/Transportation Advisory Board 2020 Regional Solicitation Funding Request for Marystown Road/Adams Street at TH 169 interchange Project

Dear Steve Lillehaug,

This letter documents MnDOT Metro District's recognition for Shakopee to pursue funding for the Metropolitan Council/Transportation Advisory Board's (TAB) 2020 Regional Solicitation for the construction of bike and pedestrian facilities in MnDOT ROW along TH 169.

As proposed, this project impacts MnDOT right-of-way on TH 169. As the agency with jurisdiction over the highway, MnDOT will allow Shakopee to seek improvements proposed in the application for the pedestrian and bike trail and bridge project. If funded, details of any future maintenance agreement with Shakopee will need to be determined during project development to define how the improvements will be maintained for the project's useful life.

There is no funding from MnDOT currently planned or programmed for this project. Due to expected loss of future state and federal transportation revenues as a result of the COVID-19 pandemic, there is likely to be significant disruptions to the current MnDOT construction program that will surface in the next year. MnDOT does not anticipate partnering on local projects beyond current agreements.

In addition, the Metro District currently does not anticipate any significant discretionary funding in state fiscal years 2024 or 2025 that could fund project construction, nor do we have the resources to assist with MnDOT services such as the design or construction engineering of the project. If your project receives funding, continue to work with MnDOT Area staff to coordinate project development and to periodically review needs and opportunities for cooperation.

MnDOT Metro District looks forward to continued cooperation with Shakopee as this project moves forward and as we work together to improve safety and travel options within the Metro Area.

If you have questions or require additional information at this time, please reach out to Mark Lindeberg, South Area Manager, at mark.lindeberg@state.mn.us or 651-234-7729.

Sincerely,

Michael Barnes, PE
Metro District Engineer

CC: Mark Lindeberg, Metro District South Area Manager
Molly McCartney, Metro Program Director
Dan Erickson, Metro State Aid Engineer

Attachment 5

DEPARTMENT OF TRANSPORTATION

Metro District
1500 W. County Road B-2
Roseville, MN 55113

October 26, 2017

Steve Lillehaug, PE
Public Works Director/City Engineer
City of Shakopee
485 Gorman Street
Shakopee, MN 55379

RE: Letter of Support for the Adams Street/Marystown Road Roundabouts Project
2017 Local Road Improvement Program (LRIP) Funding Application

Dear Mr. Lillehaug,

Thank you for requesting a letter of support from the Minnesota Department of Transportation (MnDOT) for the 2017 for the Local Road Improvement Program (LRIP) funding application. The City of Shakopee's application for the proposed roundabout intersection improvements at the Adams Street/Marystown Road interchange impacts MnDOT right-of-way on US Highway 169.

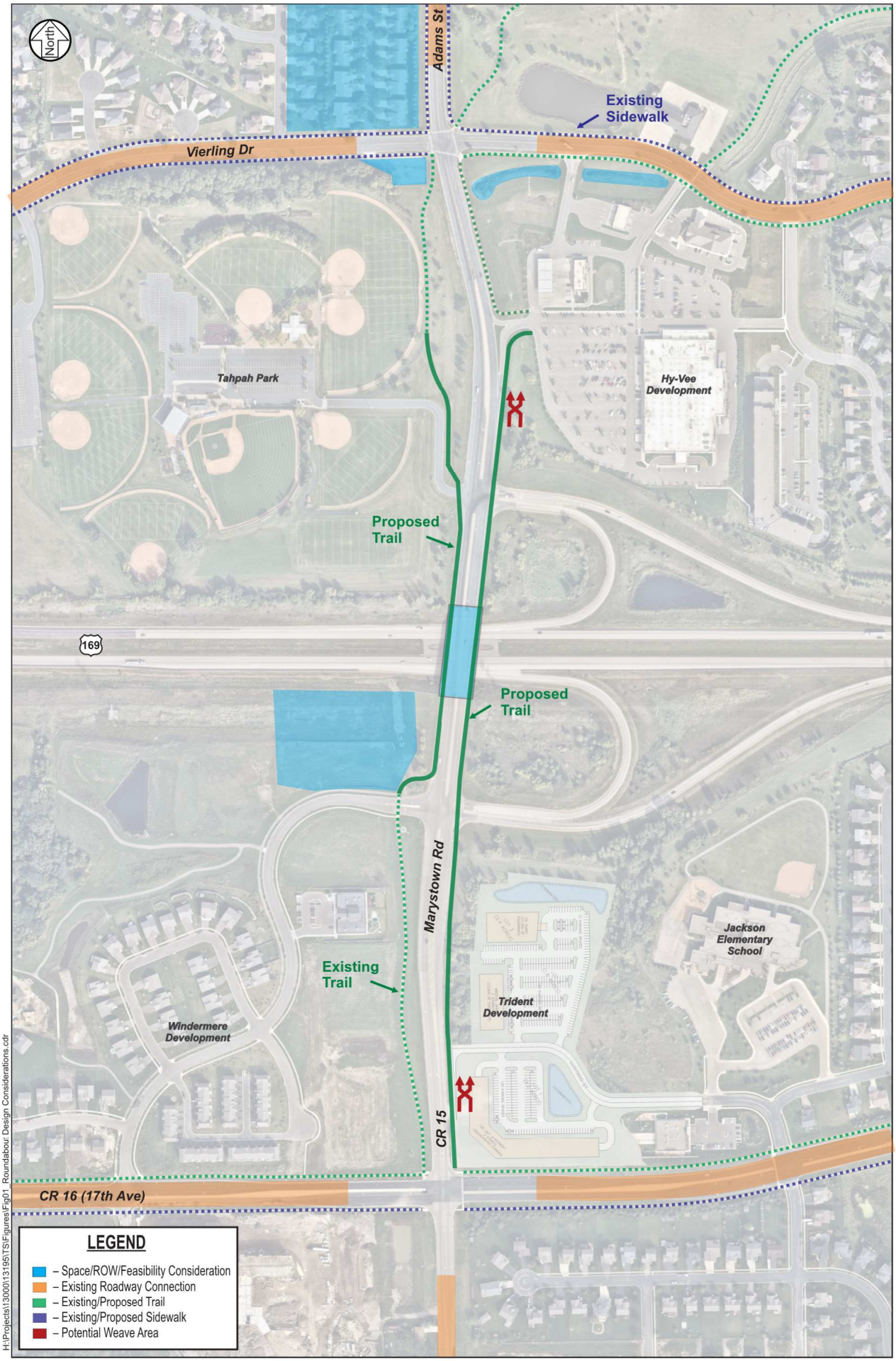
MnDOT, as the agency with jurisdiction over US 169, would allow the improvements included in the application. Details of a future maintenance agreement with the City would be determined during project development to define how the improvements will be maintained for the project's useful life. The proposed roundabouts will improve safety at the highway ramp intersections and accommodate non-motorized facilities to improve mobility across US Highway 169 for bicyclists and pedestrians.

MnDOT is supportive of the City of Shakopee in the proposed improvements to Adams Street/Marystown Road, serving as a route of regional significance and providing access to US Highway 169.

Sincerely,

Scott McBride, P.E.
Metro District Engineer

Cc: Jon Solberg, MnDOT Metro District – South Area Manager



H:\Projects\13000\13195\TS\Figures\Fig01_Roundabout Design Considerations.cdr

SRF Consulting Group, Inc.

Roundabout Design Considerations

Marystown Road Corridor Study

City of Shakopee

Figure 1

01913195
January 2020

RESOLUTION R2020-035

A RESOLUTION OF THE CITY OF SHAKOPEE, MINNESOTA AUTHORIZING THE CITY TO SUBMIT A 2020 FEDERAL ROADWAY MODERNIZATION GRANT APPLICATION.

WHEREAS, the City of Shakopee supports the application made to the Metropolitan Council for a 2020 Federal Roadway Modernization Grant, a part of the Highway Safety Improvement Program, and

WHEREAS, the application is to obtain funding for constructing safety improvements to the Marystown Road and HWY 169 area, Shakopee, and

WHEREAS, the Marystown Rd/TH 169 Interchange and Trail Imp. Project is in the city's 2020-2024 Capital Improvement Plan, and

WHEREAS, the City of Shakopee recognizes a 20% grant match is required.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SHAKOPEE, MINNESOTA, if the City of Shakopee is awarded a grant by the Metropolitan Council, the City of Shakopee agrees to accept the award and may enter into an agreement with the Metropolitan Council for the above referenced project. The City of Shakopee will comply with all applicable laws, requirements and regulations as stated in the grant agreement.

Adopted in adjourned regular session of the City Council of the City of Shakopee, Minnesota held this 7th day of April, 2020.

William Mars
Mayor of the City of Shakopee

ATTEST:

Lori Hensen
City Clerk

Shakopee PUBLIC SCHOOLS
EDUCATION FORWARD

Superintendent Mike Redmond

December 16, 2019

RE: Preliminary Plat Powers First Addition; NE Corner of CH 15 and CH 16

Honorable Mayor William Mars and Shakopee City Council Members:

I'm writing this letter on behalf of the Shakopee Public Schools in regards to the proposed Trident Development project adjacent to Jackson Elementary School. As I'm sure you know, understand, and support, my concern for student safety is paramount.

In a community that is growing and developing, it is certainly expected we will face situations from time to time that dictate we examine and compare the potential impact of various forms of development and related activities, such as transportation, on student safety. We are currently facing one of these situations in the form of access to the proposed Trident Development.

Having read the SRF Consulting 'Trident Development Transportation Study' completed December 4, 2019, it appears there are some clear advantages, when it comes to the impact on student safety, to locating the access, in the form of a 'right turn in and right turn out', to the proposed Trident Development on CR 15, rather than on CR 16.

From my perspective, the SRF study appears to be objective and thorough. The portion of the study examining the potential impact on the Jackson Elementary area seems to be very well done and a high quality representation of the current travel patterns in the area of Jackson Elementary School. SRF gave detailed consideration of school hours, access, circulation, pick-up/drop-off, and pedestrian crossing in their study.

I certainly understand there is no way to completely mitigate the impact of development and increased vehicle trips on the area near Jackson Elementary. But, it is clear from my review of the SRF study these impacts, especially in terms of the projected number of daily trips at the two primary pedestrian crossings to/from the school, are lessened with an access to the Trident Development located on CR 15. In light of this evidence, I would encourage you to place the access to the Trident Development on CR 15 and not on CR 16.

It is also clear from my review of this proposed development that I'm not alone in making sure we do our best to provide safe routes for our students and their families. I've seen first hand the commitment of City and County leaders, planners, and engineers in making transportation safety a top priority.

Thank you for your consideration.

Sincerely,

Mike Redmond

1200 Town Square, Shakopee, MN 55379
(952) 496-5006 • fax: (952) 496-5056
*Also a TTY number

Westwood

Traffic Impact Study for

Windermere

Shakopee, Minnesota

Prepared by:
Westwood Professional Services
7699 Anagram Drive
Eden Prairie, MN 55344
(952) 937-5150

Project Number R0000615.00
December 7, 2016

1.0 INTRODUCTION

Westwood Professional Services, Inc., has been contracted by D.R. Horton, Inc., to analyze the traffic impacts of their proposed retail and residential development called "Windermere" in the southwest quadrant of the intersection of Marystown Rd (CSAH 15) and US 169 in Shakopee, Minnesota (see Figure 1-1). This report will review the level of trip generation for the proposed project and determine the traffic impacts on the local study network that the development may cause.

The objectives of this study are to determine the traffic impacts of the proposed development on the surrounding study area and to identify any mitigation strategies.

2.0 EXISTING CONDITIONS

2.1 Site Location

The project location is the 76.58 acre site south of US 169 and west of Marystown Rd (CSAH 15) in Shakopee, MN. The site location is shown on Figure 1-1.

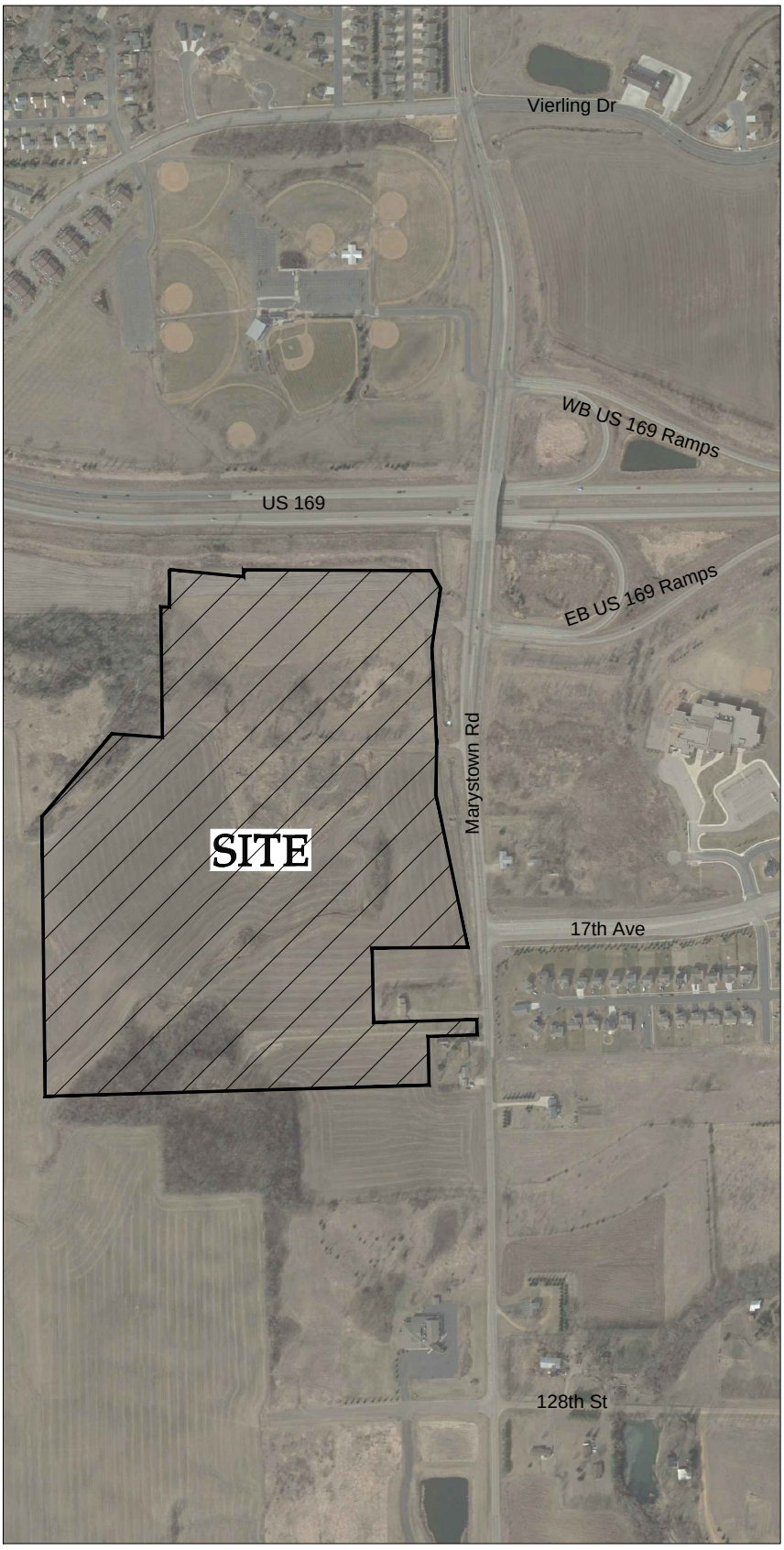
2.2 Land Use and Intensity

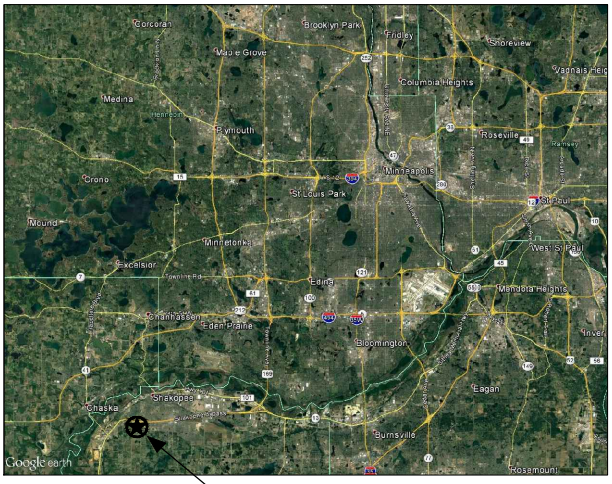
The parcel is currently zoned as "Highway Business" and "Medium Density Residential", which means, "The Purpose of the Highway Business zone is to provide an area for business uses fronting on or with immediate access to arterial and collector streets." and "The purpose of the Medium Density Residential zone is to provide an area which will allow five and one-one hundredth (5.01) to eight (8) residential dwellings per acre and also provide a transitional zone between single family residential areas and other land uses."[1] The commercial portion of the site currently does not have specific land uses, listed below are the known and assumed land uses. Figure 2-1 shows the current site plan.

Specific land uses proposed for the site include:

- 53 single family residential units
- 136 attached townhome units

[1] http://www.shakopeemn.gov/city-government/departments/planning-zoning/zoning-information





SITE LOCATION

N

0' 750' 1500'

Date: 12-7-2016

Windermere

Shakopee, MN

Site Location

Figure 1-1

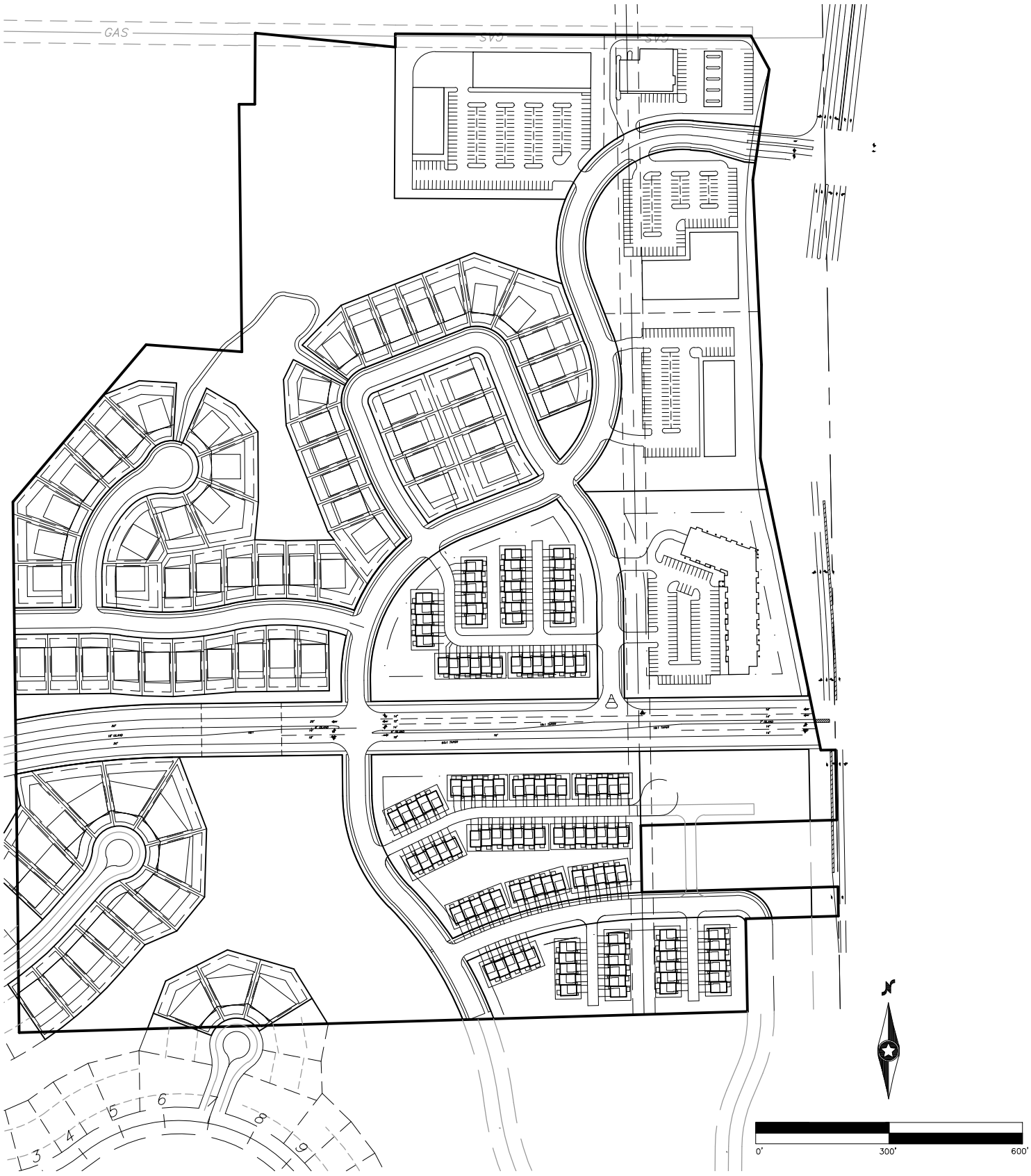
Westwood

Phone (952) 937-5150
Fax (952) 937-5822
Toll Free (888) 937-5150

7699 Anagram Drive
Eden Prairie, MN 55344
westwoodps.com

Westwood Professional Serv

Crew: .
Checked: .
Drawn: JAR
Record Drawing by/date: .



Date: 12-7-2016

Windermere

Shakopee, MN

Site Plan

Figure 2-1

Westwood

Phone (952) 937-5150
Fax (952) 937-5822
Toll Free (888) 937-5150

7699 Anagram Drive
Eden Prairie, MN 55344
westwoodps.com

Westwood Professional Serv

Crew: .
Checked: .
Drawn: JAR
Record Drawing by/date: .

Assumed land uses for the site include:

- 120 unit apartment building
- 30 ksf office building
- 10 ksf drug store/pharmacy
- 43 ksf shopping center

2.3 Existing Study Area Roadway Network

The following roadways have been reviewed in the study area:

A. Marystown Road (CSAH 81) is a 96-foot wide arterial roadway at the north entrance (US 169 EB ramp) with 6 lanes, a median, and a shoulder. It currently has dedicated left and right turn lanes into the site. These turn lanes are 180 ft. and 320 ft., respectively. It then tapers to a 36-foot wide roadway at the 17th Avenue (CSAH 16) entrance with one northbound lane and one southbound lane plus a passing lane. At 128th Street it is again a 36-foot wide road.

B. 17th Avenue (CSAH 16) is an 86-foot wide road with six lanes and a median. There are currently only 4 lanes being utilized; two lanes eastbound and designated right and left turn lanes westbound. The two additional lanes can be used for through movements westbound. The right and left turn lanes are 400 ft. and 280 ft. long respectively.

C. 128th Street West is a residential road that is 24 feet wide on the east side of Marystown Rd (CSAH 15) and 50 feet wide on the west side. There are no marked lanes.

D. Vierling Drive West is a 52-foot wide, four lane undivided roadway that runs east-west. The Vierling Dr and Marystown Rd (CSAH 15) intersection is all way stop controlled.

2.4 Existing Intersection Traffic Control

The following intersection traffic control has been identified:

- Vierling Dr and Marystown Rd (CSAH 15) – All way stop
- US 169 EB ramps and Marystown Rd (CSAH 15)–side street (169 ramp) stop
- US 169 WB ramps and Marystown Rd (CSAH 15)–side street (169 ramp) stop
- 17th Avenue (CSAH 16) and Marystown Rd (CSAH 15)–side street (17th Ave) stop
- 128th Street West and Marystown Rd (CSAH 15)–side street (128th St W) stop

2.5 Existing Speed Limits

The following prevailing speed limits include:

- Vierling Dr – 30 mph (posted)
- Marystown Rd (CSAH 15)– 55 mph (posted)
- 17th Avenue (CSAH 16)– 45 mph (posted)
- 128th Street West – 30 mph (statutory)

2.6 Transit Service

There is no scheduled transit service currently in this area.

2.7 Pedestrian/Bicycle Facilities

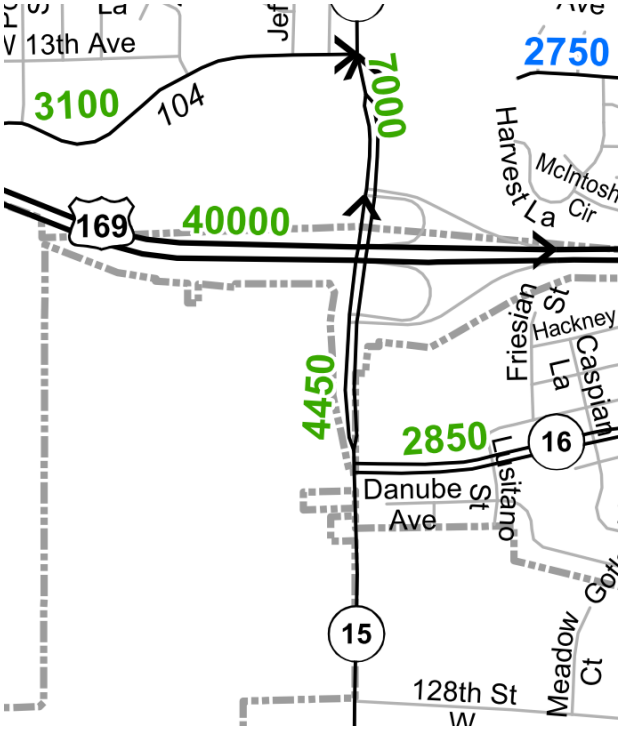
There are no sidewalks along Marystown Rd (CSAH 15) or the 169 ramps but there are sidewalks along both sides of 17th Avenue.

2.8 Existing Traffic Volumes

Daily traffic volumes have been recorded and published by MnDOT.[2] Westwood conducted a.m. and p.m. peak hour traffic counts at the study area intersections. Figure 2-2 shows the daily traffic volumes and Figure 2-3 shows the peak hour turning movement volumes in the study area.

[2] 2015 Publication Traffic Volumes Metro Street Series – 5C, Minnesota Department of Transportation Office of Transportation Data and Analysis, Traffic Volume Program, 2015 AADT Product, http://www.dot.state.mn.us/traffic/data/maps/indexmaps/2015/5C.pdf

Figure 2-2: Existing Daily Traffic Volumes



(Source: 2015 Publication Traffic Volumes Metro Street Series – 5C, MnDOT)

2.9 Level of Service

Traffic engineers quantify traffic operation and performance of intersections in terms of "Levels of Service" (or LOS). Traffic operations for the A.M. and P.M. peak hour conditions for intersections within the study area were analyzed using the industry-standard *Synchro/SimTraffic Version 9* software package, which uses the methodology contained in the 2010 Highway Capacity Manual (2010 HCM), published by the Transportation Research Board. The software model was calibrated to replicate existing conditions as accurately as possible before being used to assess future conditions. A full discussion of the methodology used to assess traffic operation appears in the Appendix of this report.

Westwood analyzed existing traffic conditions based on turning movement counts, existing lane geometrics and traffic control in the study area. Turning movement counts used in this analysis are from the Hy-Vee Development Traffic Impact Analysis prepared by Kimley Horn[3]. The operational analyses for Existing A.M. and P.M. peak hour conditions are summarized in Table 2-1.

[3] Hy-Vee Development – NE Corner of Trunk Highway 169 & Marystown Road, Kimley Horn, June 2016.

Table 2-1: Existing Peak Hour Traffic Operations

Intersection	Movement	Existing			
		AM		PM	
		Level of Service	95th %ile Queue (ft)	Level of Service	95th %ile Queue (ft)
Vierling Dr & Marystown Rd (CSAH 15)	EBLT	A	42	A	43
	EBTR	A	47	A	52
	WBLT	A	51	A	44
	WBTR	A	28	A	42
	NBLT	A	45	A	44
	NBTR	A	52	A	48
	SBTL	A	53	A	69
	SBTR	A	32	A	43
WB US 169 Ramps & Marystown Rd (CSAH 15)	EBLTR	-	-	-	-
	WBLT	A	29	A	59
	WBR	A	32	A	49
	NBL	-	-	-	-
	NBT	A	-	A	-
	NBR	A	-	A	-
	SBL	A	23	A	20
	SBT	A	-	A	-
	SBR	-	-	-	-
EB US 169 Ramps/Windermere Rd & Marystown Rd (CSAH 15)	EBLT	-	-	-	-
	EBR	-	-	-	-
	WBLT	A	47	A	32
	WBR	A	28	A	32
	NBL	-	-	-	-
	NBT	A	-	A	-
	NBR	A	11	A	7
	SBL	A	42	A	46
	SBT	A	-	A	-
	SBR	-	-	-	-
17th Ave (CSAH 16) & Marystown Rd (CSAH 15)	EBL	-	-	-	-
	EBTR	-	-	-	-
	WBL	A	28	A	44
	WBT	-	-	-	-
	WBR	A	50	A	35
	NBL	-	-	-	-
	NBT	A	-	A	-
	NBR	A	-	A	-
	SBL	A	48	A	33
	SBT	A	-	A	-
	SBR	-	-	-	-
128th St & Marystown Rd (CSAH 15)	EBLT	A	9	A	28
	EBR	A	-	A	10
	WBLTR	A	33	A	28
	NBLTR	A	-	A	-
	SBLT	A	-	A	12
	SBR	A	-	A	-

(Source: Westwood professional Services, December 2016)

The overall intersection operation for the existing condition is shown to be at acceptable levels with no queuing issues.

3.0 NO-BUILD CONDITION

In analyzing the traffic impacts of proposed development, it is important to model traffic conditions in the study area for future year(s) without the development. Prior to this study, it was agreed analysis would be conducted for one year after project build-out (2019) as well as for the horizon year (2029) to remain consistent with the previously mentioned Kimley Horn traffic study.

For this study the No-Build conditions assumed 1% growth rate per year as well as including the Hy-Vee development traffic from the Kimley Horn study.

Figure 3-1 shows the projected turning movements of the 2019 No-Build condition and Figure 3-2 shows the projected turning movements for the 2029 No-Build condition. Table 3-1 illustrates the traffic operational impacts for the 2019 and 2029 No-Build conditions. There is insufficient capacity at Vierling Dr & Marystown Rd (CSAH 15) for the westbound left turns in both the 2019 and 2029 conditions. Intersection operations should be monitored to determine if signal warrants are met at Vierling Dr & Marystown Rd (CSAH 15). Results for the remaining intersections indicate there remains sufficient capacity in the existing roadway geometrics to accommodate this growth in background traffic levels.

Table 3-1: 2019 and 2029 No Build Traffic Operations

Intersection	Movement	2019 No Build				2029 No Build			
		AM		PM		AM		PM	
		Level of Service	95th %ile Queue (ft)	Level of Service	95th %ile Queue (ft)	Level of Service	95th %ile Queue (ft)	Level of Service	95th %ile Queue (ft)
Vierling Dr & Marystown Rd (CSAH 15)	EBLT	A	47	B	48	A	44	B	59
	EBTR	A	51	A	49	A	59	A	59
	WBLT	A	87	E	276	A	91	F	719
	WBTR	A	38	C	194	A	37	C	542
	NBLT	A	37	B	75	A	46	B	82
	NBTR	A	59	A	88	A	61	A	99
	SBTL	B	75	B	111	B	70	C	155
	SBTR	A	33	A	48	A	34	C	77
WB US 169 Ramps & Marystown Rd (CSAH 15)	EBLTR	-	-	-	-	-	-	-	-
	WBLT	A	42	D	103	B	43	E	126
	WBR	A	44	A	126	A	61	A	144
	NBL	-	-	-	-	-	-	-	-
	NBT	A	-	A	-	A	-	A	-
	NBR	A	-	A	-	A	7	A	-
	SBL	A	33	A	44	A	35	A	46
	SBT	A	-	A	-	A	-	A	-
	SBR	-	-	-	-	-	-	-	-
EB US 169 Ramps/Windermere Rd & Marystown Rd (CSAH 15)	EBLT	-	-	-	-	-	-	-	-
	EBR	-	-	-	-	-	-	-	-
	WBLT	C	43	C	46	D	59	C	33
	WBR	A	31	A	40	A	38	A	42
	NBL	-	-	-	-	-	-	-	-
	NBT	A	-	A	-	A	-	A	-
	NBR	A	20	A	8	A	19	A	11
	SBL	A	75	A	76	A	84	A	70
	SBT	A	-	A	-	A	-	A	-
	SBR	-	-	-	-	-	-	-	-
17th Ave (CSAH 16) & Marystown Rd (CSAH 15)	EBL	-	-	-	-	-	-	-	-
	EBTR	-	-	-	-	-	-	-	-
	WBL	A	27	A	38	A	23	A	38
	WBT	-	-	-	-	-	-	-	-
	WBR	A	51	A	45	A	63	A	59
	NBL	-	-	-	-	-	-	-	-
	NBT	A	-	A	-	A	-	A	-
	NBR	A	-	A	-	A	-	A	-
	SBL	A	59	A	44	A	49	A	50
	SBT	A	-	A	-	A	-	A	-
	SBR	-	-	-	-	-	-	-	-
128th St & Marystown Rd (CSAH 15)	EBLT	A	9	A	24	A	9	A	23
	EBR	A	-	A	-	A	-	A	10
	WBLTR	A	37	A	26	A	35	A	23
	NBLTR	A	-	A	-	A	-	A	-
	SBLT	A	-	A	-	A	9	A	9
	SBR	A	-	A	-	A	-	A	-

(Source: Westwood professional Services, December 2016)

4.0 PROPOSED DEVELOPMENT

The project site is currently undeveloped. As the site develops, there will be a significant amount of pass-by and diverted trips for the proposed commercial uses, as well as the additional new trips to and from the proposed residential uses.

The proposed development of the site will include a 53 single family homes and 120 townhomes. It should be noted that the 16 additional townhomes may be developed if the property in the south west corner of Marystown Rd (CSAH 15) and 17th Ave (CSAH 16) is acquired. Therefore, these townhomes were included in this study for a total of 136. In addition, there is the potential for 16 single family homes in the south west corner of the site. However, these homes would be a part of a separate development and should be analyzed if/when that development occurs. The commercial portion of the site does not yet have specific land uses. It was assumed that it would include a 120 unit apartment building, a 30 ksf office building, a 10 ksf drug store/pharmacy, a 16 pump gas station, and 43 ksf of shopping center space.

The Windermere development is part of a larger 323 acre development called the West End. In the West Ends master plan the intensity of development on the 76 acre Windermere parcel is higher than the current proposed Windermere development[4]. Therefore, analysis of the West End traffic was not reviewed in this study as the initial West End study would represent a worst case scenario.

As presented earlier, Figure 1-2 illustrates the concept site plan for the development. Table 4-1 provides a land use comparison between existing and proposed uses on the site.

Table 4-1 – Land Use Comparison

Existing Use		Proposed Use	
open space	76.58 Acres	Single Family Housing	53 units
		Townhomes	136 units
		Apartments	120 units
		Office Building	30 ksf
		Drug Store/ Pharmacy	10 ksf
		Shopping Center	43 ksf
		Gas Station	16 pumps

(Source: Westwood Professional Services, 2016)

[4] http://destinyhosted.com/shakodocs/2016/CCREG/20160419_536/2706_West_End_Concept.pdf

4-1 Proposed Trip Generation

The Institute of Transportation Engineers' Trip Generation Manual, Ninth Edition, was used to estimate the numbers of trips that would be generated by this development.[5] Table 4-2 summarizes the trip generation of the proposed land uses minus the internal trips (i.e., trips from one internal land use to another). Therefore, these are the trips to be assigned and distributed throughout the background traffic for each design year.

Table 4-2 – Trip Generation

Land Use	ITE	Size		Weekday		AM peak		PM Peak	
				Enter	Exit	Enter	Exit	Enter	Exit
Single Family Housing	210	53	units	213	213	9	27	24	15
Condominium/Townhouse	230	136	units	334	334	9	46	34	17
Apartment	220	120	units	338	338	11	45	35	19
General Office Building	710.2	30	k.s.f.	140	140	37	5	6	27
Gas/Service w/ Conv & Wash	946	16	fuel pos.	1,034	1,034	88	85	82	79
Pharmacy - No Drive Thru	880	10	k.s.f.	381	381	17	9	30	31
Shopping Center	820	43	k.s.f.	777	777	24	15	56	60
TOTAL				**3,217**	**3,217**	**195**	**232**	**267**	**248**
				6,434		**427**		**515**	

(Source: ITE Trip Generation Manual, Ninth Edition, 2012; Westwood Professional Services, 2016)

4-2 Trip Assignment

It is projected the development trips will distribute in generally the same pattern that background traffic travels to and from the area today. Westwood used the calculated inbound and outbound flow of the background traffic on the roadway system based on the traffic counts taken in the area. Trip assignment in and out of the site was determined based on the land uses and their proximity to each entrance/exit. The trip assignment is shown on Figure 4-1.

4-3 Traffic Volume Comparisons and Operational Performance

Figure 4-2 shows the 2019 Build condition turning movement volumes and Figure 4-3 shows the 2029 Build condition turning movement volumes.

Table 4-3 shows the operational performance of the 2019 and 2029 Build Condition. In the 2019 Build condition it was assumed that both ramp intersections on Marystown Rd (CSAH 15) would be all way stop controlled. In the 2029 Build condition it was assumed that both ramp intersections on Marystown Rd (CSAH 15) and Vierling Dr & Marystown Rd (CSAH 15) would be signalized. With these geometric improvements, traffic operations are acceptable.

[5] Trip Generation Manual, Ninth Edition, Institute of Transportation Engineers, Washington DC, 2012

Table 4-3: 2019 and 2029 Build Traffic Operations

Intersection	Movement	2019 Build				2029 Build			
		AM		PM		AM		PM	
		Level of Service	95th %ile Queue (ft)	Level of Service	95th %ile Queue (ft)	Level of Service	95th %ile Queue (ft)	Level of Service	95th %ile Queue (ft)
Vierling Dr & Marystown Rd (CSAH 15)	EBLT	A	49	B	40	C	42	C	30
	EBTR	A	61	A	40	D	140	D	118
	WBLT	A	102	E	310	C	217	C	314
	WBTR	A	44	C	212	C	56	C	96
	NBLT	A	53	B	95	A	66	B	117
	NBTR	A	65	B	109	A	86	A	123
	SBTL	B	72	C	172	B	126	C	200
	SBTR	A	42	C	89	B	64	C	114
WB US 169 Ramps & Marystown Rd (CSAH 15)	EBLTR	-	-	-	-	-	-	-	-
	WBLT	A	36	A	69	D	88	C	154
	WBR	A	52	A	120	A	66	A	117
	NBL	-	-	A	10	-	-	A	8
	NBT	B	57	B	63	A	52	A	79
	NBR	A	40	A	42	A	44	A	43
	SBL	A	46	B	59	A	56	B	95
	SBT	B	74	B	72	A	21	A	102
	SBR	-	-	-	-	-	-	-	-
EB US 169 Ramps/Windermere Rd & Marystown Rd (CSAH 15)	EBLT	A	54	A	62	D	139	D	142
	EBR	A	36	A	40	A	30	A	56
	WBLT	A	38	A	42	C	63	C	73
	WBR	A	46	A	43	A	46	A	56
	NBL	A	53	A	39	A	55	A	54
	NBT	A	39	A	41	A	62	A	64
	NBR	A	49	A	25	A	51	A	33
	SBL	B	68	B	63	A	115	A	91
	SBT	B	68	B	74	A	47	A	44
	SBR	A	17	A	21	A	20	A	10
17th Ave (CSAH 16) & Marystown Rd (CSAH 15)	EBL	B	43	A	30	B	50	C	29
	EBTR	A	40	B	28	B	41	B	30
	WBL	A	27	A	42	A	28	A	37
	WBT	B	15	A	23	C	16	B	28
	WBR	A	63	A	39	A	88	A	48
	NBL	A	-	A	-	A	-	A	17
	NBT	A	-	A	-	A	-	A	-
	NBR	A	-	A	-	A	-	A	-
	SBL	A	49	A	42	A	68	A	50
	SBT	A	-	A	-	A	-	A	-
	SBR	A	-	A	-	A	-	A	-
128th St & Marystown Rd (CSAH 15)	EBLT	A	12	A	30	A	0	A	26
	EBR	A	-	A	10	A	-	A	-
	WBLTR	A	29	A	29	A	40	A	23
	NBLTR	A	-	A	-	A	-	A	-
	SBLT	A	-	A	9	A	-	A	21
	SBR	A	-	A	-	A	-	A	-

(Source: Westwood Professional Services, December 2016)

5.0 FINDINGS AND RECOMMENDATIONS

5-1 Findings

Trip generation of the proposed Windermere development does impact traffic in the study area. There are 427 total trips projected by the site for the A.M. Peak and 515 trips projected in the P.M. Peak Hour. Traffic is projected to be 54% outbound and 46% inbound during the A.M. Peak Hour, while the P.M. Peak Hour is 52% inbound and 48% outbound.

The principal findings of the analysis included:

- After internal trip reduction and pass-by reduction the A.M. Peak Hour has 255 projected new trips and the P.M. Peak Hour has 298 projected new trips.
- Intersections will operate at Level of Service D (LOS-D) or better in the 2019 & 2029 No-Build conditions. However, the westbound left turn at Vierling Dr & Marystown Rd will be over capacity.
- The intersection of Marystown Road (CSAH 15) and US 169 EB ramp/ Windermere Way experienced excessive delays without mitigation in the 2019 and 2029 Build conditions.
- Due to the existing capacity of Marystown Road (CSAH 15) and 17th Avenue (CSAH 16) no expansion is necessary.
- The Windermere development is less intense than the projection for this land area in the West End master plan study therefore no additional analysis including the West End traffic was included in the report.

5-2 Recommendations

Recommendations include the following:

- Marystown Road (CSAH 15) & US 169 EB Ramps/Windermere Way and Marystown Road (CSAH 15) & US 169 WB Ramps should be all-way stop controlled after full build out and should be reanalyzed in the future to determine if it meets signal warrants.

- The new Windermere Way access onto Marystown Rd (CSAH 15) geometry should have a left/thru turn lane and a dedicated right turn lane.

- Institute side-street stop control on the proposed Windermere Way and 17th Avenue (CSAH 16), Windermere Way would then stop for traffic on 17th Avenue (CSAH 16).

- Build dedicated right and left turn lanes on Marystown Road (CSAH 15) southbound at 17th Avenue (CSAH 16).

- Re-mark westbound 17th Avenue (CSAH 16) at Marystown Rd (CSAH 15) to accommodate two through lanes and dedicated left & right turn lanes.

- Institute a speed limit of 45 mph for Future 17th Avenue (CSAH 16) connection.