



Application

13860 - 2020 Roadway Expansion

14333 - Sand Creek Township U.S. 169 Overpass Improvement Project

Regional Solicitation - Roadways Including Multimodal Elements

Status: Submitted
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Primary Contact

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***** Jordan Minnesota 55352
City State/Province Postal Code/Zip

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Phone Ext.

Fax:

What Grant Programs are you most interested in? Regional Solicitation - Bicycle and Pedestrian Facilities

Organization Information

Name: SCOTT COUNTY

Jurisdictional Agency (if different):

Organization Type: County Government
Organization Website:
Address: 600 COUNTRY TRAIL E

* JORDAN Minnesota 55352
City State/Province Postal Code/Zip
County: Scott
Phone:* 612-496-8355
Ext.
Fax:
PeopleSoft Vendor Number 0000024262A3

Project Information

Project Name Sand Creek Township Overpass Improvement Project
Primary County where the Project is Located Scott
Cities or Townships where the Project is Located: Sand Creek Township
Jurisdictional Agency (If Different than the Applicant): Sand Creek Township

Brief Project Description (Include location, road name/functional class, type of improvement, etc.)
The project will construct overpass located at the intersection of Trunk Highway 169 and 1,800 ft south of 166th Street in Sand Creek Township, Minnesota. The overpass will include will be built over Trunk Highway 169, which is a principal arterial and connect to the existing roadway network at Jordan Avenue to the west and Berkshire Lane to the east. The overpass will be built with bike and pedestrian accommodations. A median closure at Bluff Drive and TH 169 is also included as part of the project.

(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. Sand Creek Township TH 169 Overpass and Improvements
Project Length (Miles) 0.37
to the nearest one-tenth of a mile

Project Funding

Are you applying for competitive funds from another source(s) to implement this project? No

If yes, please identify the source(s)

Federal Amount \$2,087,036.00

Match Amount \$521,759.00

Minimum of 20% of project total

Project Total \$2,608,795.00

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 Local

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:

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

Project Information-Roadways

County, City, or Lead Agency Sand Creek Township

Functional Class of Road Principal Arterial

Road System TH 169

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

Road/Route No. 169

i.e., 53 for CSAH 53

Name of Road Trunk Highway 169

Example; 1st ST., MAIN AVE

Zip Code where Majority of Work is Being Performed 55352

(Approximate) Begin Construction Date 03/18/2024

(Approximate) End Construction Date 11/03/2025

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

From:
(Intersection or Address) Jordan Avenue

To:
(Intersection or Address) Bluff Drive

DO NOT INCLUDE LEGAL DESCRIPTION

Or At

Miles of Sidewalk (nearest 0.1 miles) 0

Miles of Trail (nearest 0.1 miles) 0

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

Primary Types of Work Bridge, median closure, sidewalk/trail, bituminous trail, excavation

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

BRIDGE/CULVERT PROJECTS (IF APPLICABLE)

Old Bridge/Culvert No.:

New Bridge/Culvert No.:

Structure is Over/Under (Bridge or culvert name):

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:

Goal: Safety and Security, Objective A; (p.60-61); Strategy B3, (p. 2.21), Strategy B6, (p.2.23)
Goal: Competitive Economy, Objective C; p.64-65; Strategy D3 (p.2.39)
Goal: Access to Destinations, Objective A, Objective B; p.62-63; Strategy C1 (p.2.24), C7 (p.2.30), Strategy C16 (p.2.36)

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.

This project is documented in the TH169 Corridor Study completed in 2019 by Stantec for the Sand Creek Township, Scott County, and MnDOT. Additionally, this proposal is identified in the Transportation section of the Scott County 2040 Comprehensive Plan (Chapter VI Page 76). The intersection of TH 169 and Bluff Drive has also been identified as a proposed interchange improvement project in the 2040 Scott County Comprehensive Plan (Chapter VI Page 73)

List the applicable documents and pages:

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: 10/16/2018

Link to plan:

<https://www.scottcountymn.gov/DocumentCenter/View/12076/Scott-County-ADA-Transit-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 MnDOT's 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. Yes

Requirements - Roadways Including Multimodal Elements

Specific Roadway Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Mobilization (approx. 5% of total cost)	\$120,000.00
Removals (approx. 5% of total cost)	\$100,000.00
Roadway (grading, borrow, etc.)	\$35,780.00
Roadway (aggregates and paving)	\$201,015.00
Subgrade Correction (muck)	\$0.00
Storm Sewer	\$0.00
Ponds	\$0.00
Concrete Items (curb & gutter, sidewalks, median barriers)	\$0.00
Traffic Control	\$40,000.00
Striping	\$0.00
Signing	\$0.00
Lighting	\$0.00
Turf - Erosion & Landscaping	\$0.00
Bridge	\$2,112,000.00
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	\$0.00
Other Roadway Elements	\$0.00
Totals	\$2,608,795.00

Specific Bicycle and Pedestrian Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES	Cost
Path/Trail Construction	\$0.00
Sidewalk Construction	\$0.00
On-Street Bicycle Facility Construction	\$0.00
Right-of-Way	\$0.00
Pedestrian Curb Ramps (ADA)	\$0.00
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	\$0.00

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	\$2,608,795.00
Construction Cost Total	\$2,608,795.00
Transit Operating Cost Total	\$0.00

Congestion within Project Area:

The measure will analyze the level of congestion within the project area. Council staff will provide travel speed data on the "Level of Congestion" map. The analysis will compare the peak hour travel speed within the project area to free-flow conditions.

Free-Flow Travel Speed:	65
Peak Hour Travel Speed:	62
Percentage Decrease in Travel Speed in Peak Hour compared to Free-Flow:	4.62%
Upload Level of Congestion map:	1589522039628_Level of Congestion.pdf

Congestion on adjacent Parallel Routes:

Adjacent Parallel Corridor	CH 14
Adjacent Parallel Corridor Start and End Points:	
Start Point:	US 169
End Point:	Louisville Road
Free-Flow Travel Speed:	52
<i>The Free-Flow Travel Speed is black number.</i>	
Peak Hour Travel Speed:	41
<i>The Peak Hour Travel Speed is red number.</i>	
Percentage Decrease in Travel Speed in Peak Hour Compared to Free-Flow:	21.15%
Upload Level of Congestion Map:	1589562146179_CR 14 map.pdf

Principal Arterial Intersection Conversion Study:

Proposed interchange or at-grade project that reduces delay at a High Priority Intersection:

(80 Points)

Proposed at-grade project that reduces delay at a Medium Priority Intersection:

(60 Points)

Proposed at-grade project that reduces delay at a Low Priority Intersection:

(50 Points)

Proposed interchange project that reduces delay at a Medium Priority Intersection:

(40 Points)

Proposed interchange project that reduces delay at a Low Priority Intersection: Yes

(0 Points)

Not listed as a priority in the study:

(0 Points)

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

Existing Employment within 1 Mile:	579
Existing Manufacturing/Distribution-Related Employment within 1 Mile:	210
Existing Post-Secondary Students within 1 Mile:	0
Upload Map	1589522146089_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: Yes

Miles: 0.1

(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:

None of the tiers:

Measure A: Current Daily Person Throughput

Location	TH 169 and 1/4 mile north of 173rd Street
Current AADT Volume	29000
Existing Transit Routes on the Project	Other
Upload Transit Connections Map	1589522261096_Transit Connections.pdf

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

Please upload attachment in PDF form.

Response: Current Daily Person Throughput

Average Annual Daily Transit Ridership	0
Current Daily Person Throughput	37700.0

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 Travel Demand Model

Forecast (2040) ADT volume

36200

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 1/2 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 township conducted a grassroots effort in 2018 to review the TH 169 corridor between 173rd Street and Bluff Drive. The study looked at safety and accessibility for all residents and businesses in this area. The project is within census tracts with the percent of the population in poverty or population of color above the regional average percent. There are no housing concentrations as being a rural area, however, there is a campground near the project area that is home to migratory workers during the growing season. The township engaged the campground residents to participate in the open house meetings held for the study. Concerns heard by township residents in the area were primarily safety and delay related to TH 169. The township developed a layout to provide an overpass and key frontage road connections to address both safety and delay experienced by residents.

As construction plans are proposed, public information meetings will be held to inform the public, collect input, and to have a dialogue on ideas and potential conflicts. Sand Creek Township and Scott County will be committed to working with residents including those of low-income, disabled, people of color and youth populations once the design process commences.

(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.

The overpass project is located in an area above the regional average for race or poverty. In Sand Creek Township, 11.7 percent of the population is living with a disability (2010 U.S. Census). Approximately 6.5 percent of the population in Sand Creek is living below the poverty level according to the Poverty Status for Individuals computation from the U.S. Census Bureau, 2018 American Community Survey 5-Year Estimate. Additionally, 17 percent of the population is over the age of 65. The project will include an overpass over US 169 with pedestrian amenities, resulting in a safer crossing for bicyclists and pedestrians compared to the existing crossings located to the south at the intersection of US 169, TH 282, and CSAH 9 in Jordan and TH 41 in Jackson Township to the North.

Response:

This overpass is envisioned to accommodate a wide range of user groups with varying abilities and offers access to many populations. The project will provide paved ADA access over US 169 which does not exist today, benefiting people with disabilities and the elderly with access to something that they did not have access to before. The overpass eliminates the need to cross over the high speed, high volume TH 169 at grade. For older drivers and vehicles like school buses, this is important as it will limit the decisions there are needed for ingress and egress off of TH 169. Additionally, this project will provide a healthy and safe TH 169 crossing alternative for all residents of Scott County helping achieve the goal of Scott County 2020-2025 Strategic Plan; to provide Safe, Healthy, Livable Communities. Ensuring that efficient and safe opportunities are affordable and accessible (by various modes of transportation) to all citizens. The Minnesota Valley Wildlife refuge and Minnesota River resources can be accessed more easily and safely by the township residents who live primarily on the east side of TH 169 in the

Bluff Drive area.

(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

Response:

No known impacts to low-income populations, people of color, children, people with disabilities or the elderly will be created by the project as the project area is primarily surrounded by commercial and industrial businesses or undeveloped land. There will be some minor delay experienced on TH 169 during construction for residents traveling on the corridor due to lane restrictions on TH 169.

(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.

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
Sand Creek Township	0.39	1.0	12.0	12.0

Total Project Length

Total Project Length 0.37

Project length entered on the Project Information - General form.

Housing Performance Score

Total Project Length (Miles) or Population 0.39

Total Housing Score 12.0

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.

Response:

The project located in a commercial and industrial business zone of the township/Scott county. The area is currently zoned for commercial and industrial business development and expansion. The project is intended to enhance and further the economic development of the area and provide primarily industrial, manufacturing, farming, and mining jobs. These livable wage job opportunities are critical for citizens in living in affordable housing. There is little to no housing located near the project and thus there is no affordable housing within 0.5 miles of the project. It should be noted that since this is a rural area, affordable housing is nearby along the corridor. Valleyview Assisted Living is located just under a mile from the project area. Residents and employees of this 24/7 care facility could utilize the overpass for recreational use. There are also 4 manufactured home parks with close proximity of this industrial area (with a 7-minute travel shed) and travel patterns of those residents indicate a number of them are known to work in this industrial area.

Scott County has an Economic Development Association (CDA) that provides tenant-based assistance. Tennant base assistance (Section 8 Housing) helps low-income households afford a rental on the private marketplace, directly with a landlord from the inventory of market-rate rental units. If a housing option is or becomes available for a Section 8 participant, near the project area an alternative crossing of US Hwy 169 for pedestrians and bicyclists will be available for residents to utilize to access amenities/businesses in Scott County or transit services.

(Limit 2,100 characters; approximately 300 words)

Upload map:

1589523690199_Affordable housing.pdf

Measure A: Infrastructure Age

0.38 0.4 -0.02 12190 11952 -243.8 -239.04

A capacity analysis was performed for the intersections along US 169 using 2040 forecasted No-Build (without improvements) and Build (with improvements). Overall intersection delay was calculated for each intersection. The overall intersection volume was applied to the intersection delay to calculate the total delay for each intersection. The total delay was summed for all intersections. The total delay per vehicle was then calculated by dividing the total delay by

158952386
2457_Sand
Creek
Overpass
5A Synchro
Reports.pdf

the total number of vehicles at all intersections. Synchro was used. Summary table is attached along with the analysis reports.

-239

Vehicle Delay Reduced

Total Peak Hour Delay Reduced	-243.8
Total Peak Hour Delay Reduced	-239.04

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):
0	0	0

Total

Total Emissions Reduced:	0
Upload Synchro Report	1589524042787_Sand Creek Overpass 5B Synchro Reports.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):
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0	0	0
0.24	0.3	-0.06
0	0	0

Total Parallel Roadway

Emissions Reduced on Parallel Roadways -0.06

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:	29.0
Vehicle miles traveled with the project:	121.0
Total delay in hours with the project:	0.14
Total stops in vehicles per hour with the project:	0.34
Fuel consumption in gallons:	5.17
Total (CO, NOX, and VOC) Peak Hour Emissions Reduced or Produced on New Roadway (Kilograms):	0.515

EXPLANATION of methodology and assumptions used:(Limit 1,400 characters; approximately 200 words)

Total emissions were calculated at the study intersections along US 169 and the new proposed frontage roads using 2040 forecasted No-Build (without improvements) and Build (with improvements). Emissions were calculated by intersection and summed to determine the total emissions without the project and with the project. Subsection B was completed since the proposed improvements include new roadways. Synchro was used. A summary table is attached along with the analysis reports.

Total (CO, NOX, and VOC) Peak Hour Emissions Reduced by the Project (Kilograms): -0.575

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: Benefit of Crash Reduction

Crash Modification Factor Used:

Two crash modification factors were applied at two separate locations in the project. A crash modification factor of 0.0 was used for closing the median at the intersection of TH 169 & Bluff Dr. A crash modification factor of 0.0 was assumed for closing the east leg of the intersection of TH 169 & W 166th St.

(Limit 700 Characters; approximately 100 words)

Closing Median at the intersection of TH 169 & Bluff Dr (Logical Assumption)

-This CMF was assumed because crossing or left turn angle crashes will no longer be possible when the median is closed. These were the only types of crashes observed at the intersection from 2016 to 2018.

Rationale for Crash Modification Selected:

Closing East leg of TH 169 & W 166th St Intersection (Logical Assumption)

-This CMF was assumed because left turns to/from the east leg of the intersection of TH 169 & W 166th St will no longer be possible when that leg of the intersection is closed. Additionally, rear end crashes involving motorists traveling NB on TH 169 and motorists turning right onto NB TH 169 from W 166th St at the intersection will no longer be possible. These were the only types of crashes observed at the intersection from 2016 to 2018.

(Limit 1400 Characters; approximately 200 words)

Project Benefit (\$) from B/C Ratio:	\$5,015,031.00
Total Fatal (K) Crashes:	0
Total Serious Injury (A) Crashes:	0
Total Non-Motorized Fatal and Serious Injury Crashes:	0
Total Crashes:	7
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:	71
Worksheet Attachment	1589575216392_Worksheets Combine.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

This project provides significant safety benefits as it provides an additional opportunity to safely cross TH 169 in Sand Creek Township. For a pedestrian to cross TH 169, they would need to use the newly constructed TH 14 bridge which is 2.3 miles north of the proposed project or the at grade intersection of TH 169, Th 282, and CSAH 9 which is 3.5 miles south of the proposed project. The newly constructed TH 14 bridge which opened in late 2019 has bike/ pedestrian accommodations. However, the US 169, TH 282, CR 9 intersection requires the pedestrian or bicyclist to cross US 169 at grade.

Response:

This project does provide a barrier-separated pedestrian/bike accommodation on one side of the overpass of TH 169. Also, future pedestrian and bike accommodations will be constructed on the shoulder of the roadway for all users. The project is in an industrial and commercial zone in the Township where there is a lack of bike or pedestrian accommodations. The proposed improvements are meant to primarily solve transportation challenges facing the freight generating businesses located in the area. This multi-use trail/overpass will allow residents and KOA campground residents (migrant workers) located on the east side of TH 169 in the Bluff Drive area to access the Minnesota Wildlife refuge trailhead on the west side of TH 169 without having to traverse across high speed 65 mph traffic on TH 169 to get to this area. Scott County has adopted a goal to establish and maintain healthy communities. The overpass with bike and pedestrian accommodations can be utilized by employees and residents for fitness, breaks, or mental well-being. The overpass will also provide an additional safe crossing of US 169 for users to connect to an identified Metropolitan Council Regional Bicycle Transportation Network Tier 2 Corridor. Currently,

the Tier 2 corridor has been identified on TH 14, 2 miles north of the project area.

(Limit 2,800 characters; approximately 400 words)

Measure A: Multimodal Elements and Existing Connections

Response:

The TH 169 overpass will provide a safe and relatively flat paved segregated crossing over TH 169. There is no fixed route transit in the immediate project area; however, TransitLink dial a ride service in Scott County can drop off or pick up riders to the project area. TransitLink also assists residents and business owners/employees by providing last-mile connections to and from the Minnesota Valley Transit Authority (MVTA) park and rides. MVTA provides from those facilities fixed and express transit service to the Downtown Minneapolis, University of Minnesota, Mall of American and Mystic Lake Hotel and Casino via the Marshcall Road Transit Station in Shakopee. The Marschall Road Transit Station is located less than 15 miles north of the project area. TransitLink is ADA compliant and available for anyone to utilize. Land To Air Express, an 5311f, intercity bus service offers daily bus service connecting communities along the Highway 169 corridor. Scheduled daily trips connect Mankato and Minneapolis w/ stops in St. Peter, Le Sueur, Belle Plaine, Jordan & Shakopee. Land to Air also offers service to/from Mankato to/from the Mall of America and the Minneapolis-St. Paul International Airport. TransitLink users could connect to this service at the Marschall Road Transit Station in Shakopee or Jordan, MN less than 5 miles south of the project area.

This is a rural area but often times there are visitors in the area that come to the farms, orchards, and campgrounds primarily on the east side of TH 169. The area also has overnight guests at the SCALE Regional Training Facility (RTF) which is very close to this proposed project. The RTF serves over 10,038 overnight room accommodations per year. Often these visitors are looking for ways to get across TH 169 to go over to the Minnesota Valley Wildlife Refuge trailhead on Valley View Drive less than 1,000 feet from the proposed overpass. This

project will provide visitors and users an opportunity to access the above amenities and local businesses without having to physically drive, which is not possible today given the context of TH 169 in this area.

(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.

100%

Attach Layout

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. Yes

50%

Attach Layout

1589562831194_Sand Creek Overpass Layout.pdf

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

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

Yes

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)

100%

Signature Page

Please upload attachment in PDF form.

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

Yes

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: 06/06/2018

Meeting with partner agencies: 09/13/2018

Targeted online/mail outreach: 02/04/2019

Number of respondents: 20

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

100%

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

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%

There have been several open houses and public meetings conducted during public involvement efforts. A public open house was held on 6/13/18 and an open house aimed at the project area adjacent businesses and property owners was held on 6/6/18. There have been numerous meetings with partner agencies regarding the project. The latest meetings include those held on 5/9/2018; 8/1/2018; 8/6/2018; and 9/13/2018. The project website is hosted by Scott County and provides information that is easily accessible to the public.

Sand Creek Township conducted a grassroots public outreach effort in 2018 to study the TH 169 corridor between 173rd street and Bluff Drive. The study looked at safety and accessibility for all residents and businesses in this area. The project is located in census tracts where the percent of the population living at or below the poverty level, and the percent of the population that is historically disadvantaged is above the regional average.

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

There are no housing subdivisions in the area, however, there is a campground near the project. The campground can be home to migratory workers during the agricultural growing season. Sand Creek Township engaged the campground to participate in the open house meetings held in 2018. Concerns expressed by residents were safety and delay on Trunk Highway 169. Sand Creek Township has developed a plan to provide an overpass and key frontage road connections to address both safety concerns and delay experienced by residents.

As construction plans are proposed, public information meetings will be held to inform the public, solicit collective input, and to elicit a dialogue on ideas and potential conflicts. Sand Creek Township and Scott County are committed to working with all residents; especially low-income,

disabled, historically disadvantaged, people of color, youth, and senior populations once the design process commences.

Measure A: Cost Effectiveness

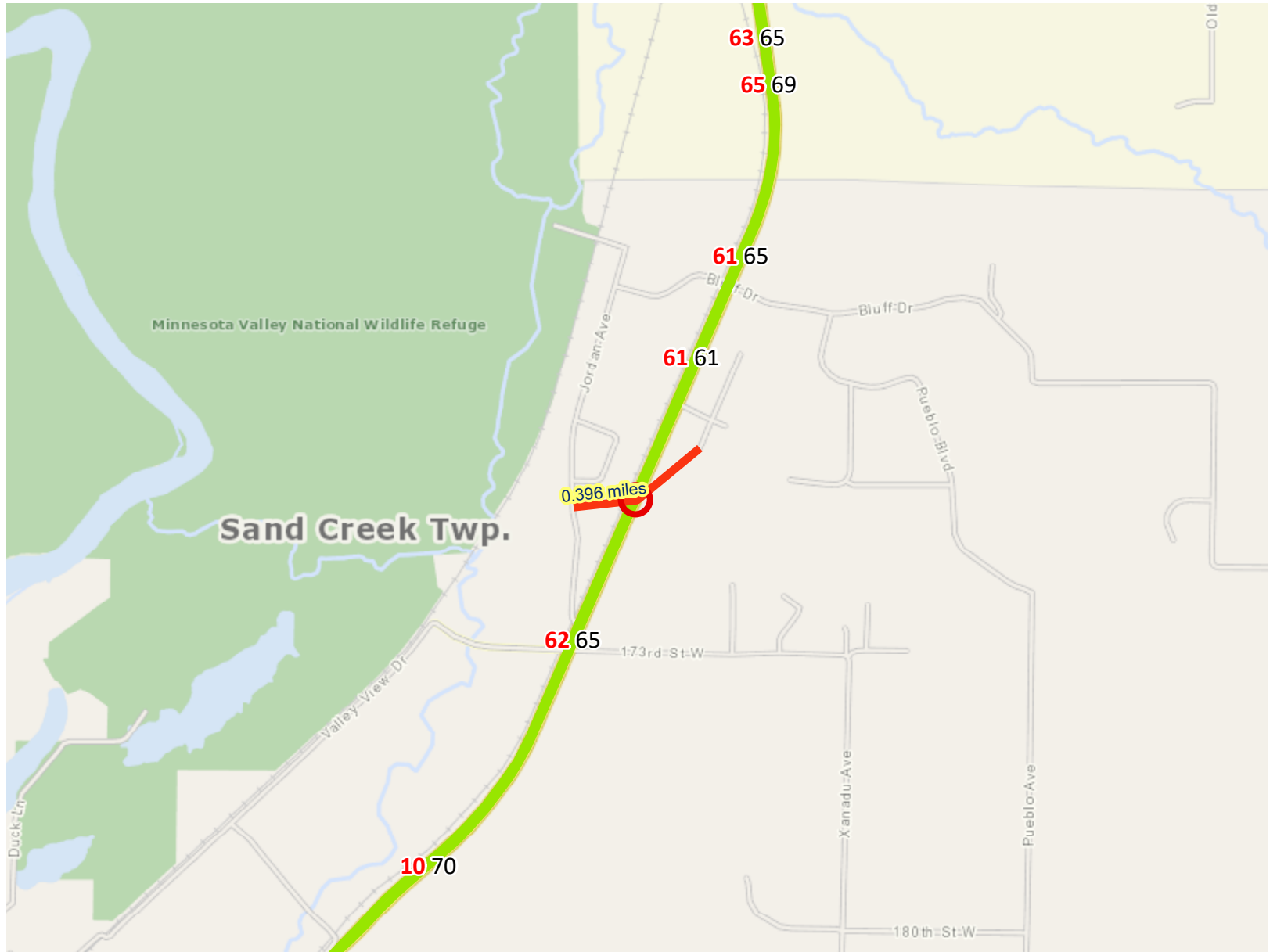
Total Project Cost (entered in Project Cost Form):	\$2,608,795.00
Enter Amount of the Noise Walls:	\$0.00
Total Project Cost subtract the amount of the noise walls:	\$2,608,795.00
Enter amount of any outside, competitive funding:	\$0.00
Attach documentation of award:	
Points Awarded in Previous Criteria	
Cost Effectiveness	\$0.00

Other Attachments

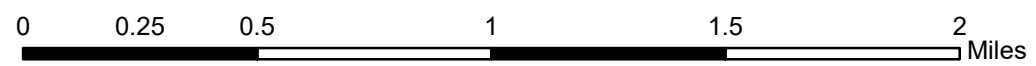
File Name	Description	File Size
1 pager final.pdf	Existing Conditons	368 KB
282_169_land to air response.pdf	Section 2A Response: Usage: Transit Current Daily Person Throughput	49 KB
Raw Crash Data.pdf	Raw Crash Data	208 KB
Regional Solicitation Resolution-169 Overpass 5-7-2020.pdf	Sand Creek Township Resolution	607 KB
Sand Creek Overpass Collision Diagrams (2016-2018).pdf	Collision Diagrams	232 KB
sandcreekoverpass_ onpagesummary_5_14.pdf	1-page summary	1.1 MB
sandcreeksponsor.pdf	Scott County Sponsorship Letter	107 KB
Scott Co 169-Bluff Dr letter.pdf	MnDOT Support Letter	539 KB
Scott County Board Resolution.pdf	Scott County Board Resolution	602 KB

Level of Congestion

Roadway Expansion Project: Sand Creek Overpass | Map ID: 1589222838469



- Project Points
- Principal Arterials
- Principal Arterials Planned
- Project
- A Minor Arterials
- A Minor Arterials Planned



Created: 5/11/2020
LandscapeRSA1

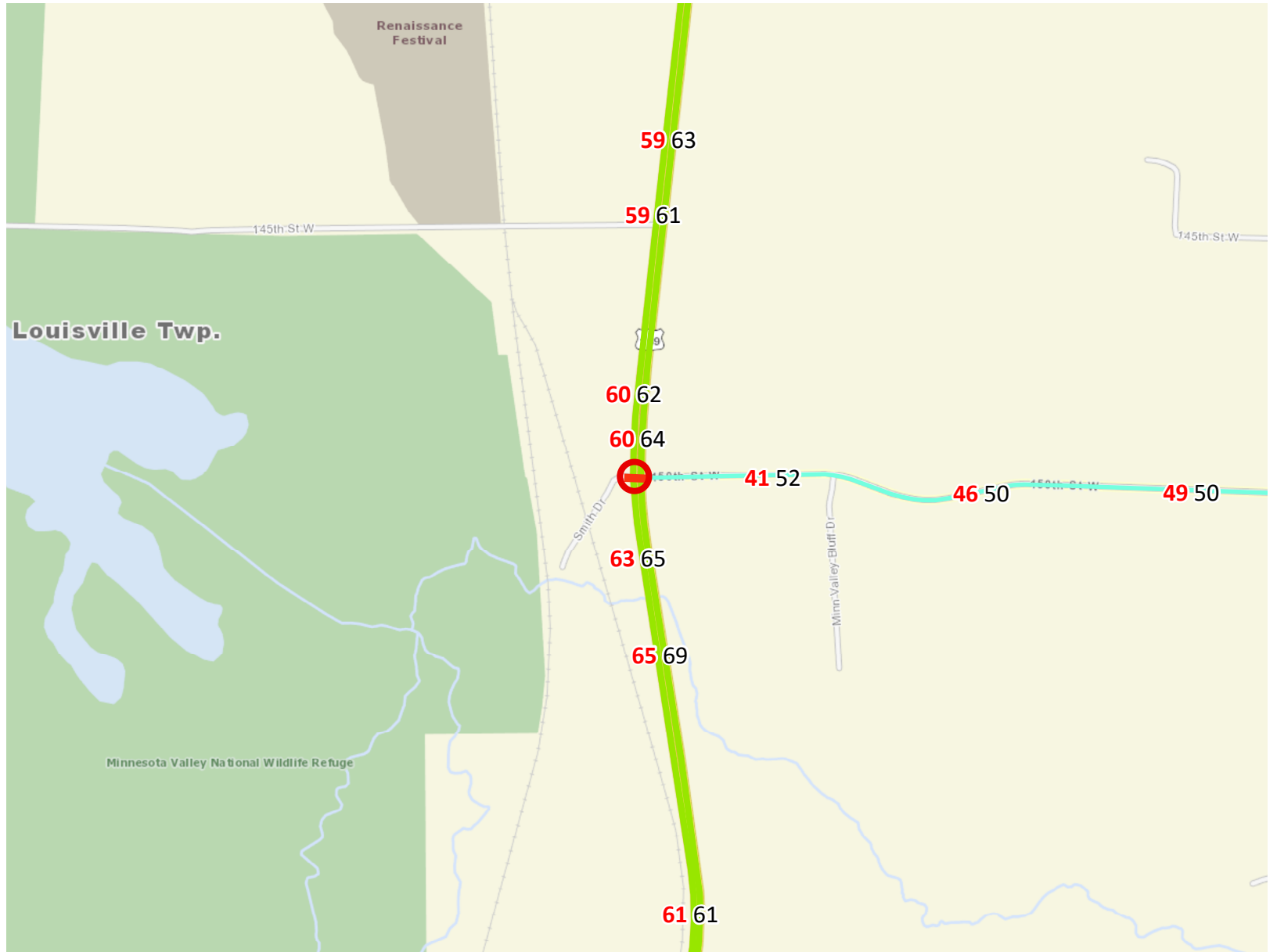


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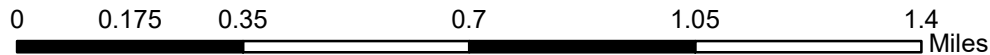
Level of Congestion

Roadway Expansion Project: Level of Congestion: CR 14 | Map ID: 1589560456906



 Project Points  Principal Arterials  Principal Arterials Planned

 Project  A Minor Arterials  A Minor Arterials Planned



Created: 5/15/2020
LandscapeRSA1



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Regional Economy

Roadway Expansion Project: Sand Creek Overpass | Map ID: 1589222838469

Results

WITHIN ONE MI of project:
Postsecondary Students: 0

Totals by City:

Louisville Twp.

Population: 328

Employment: 157

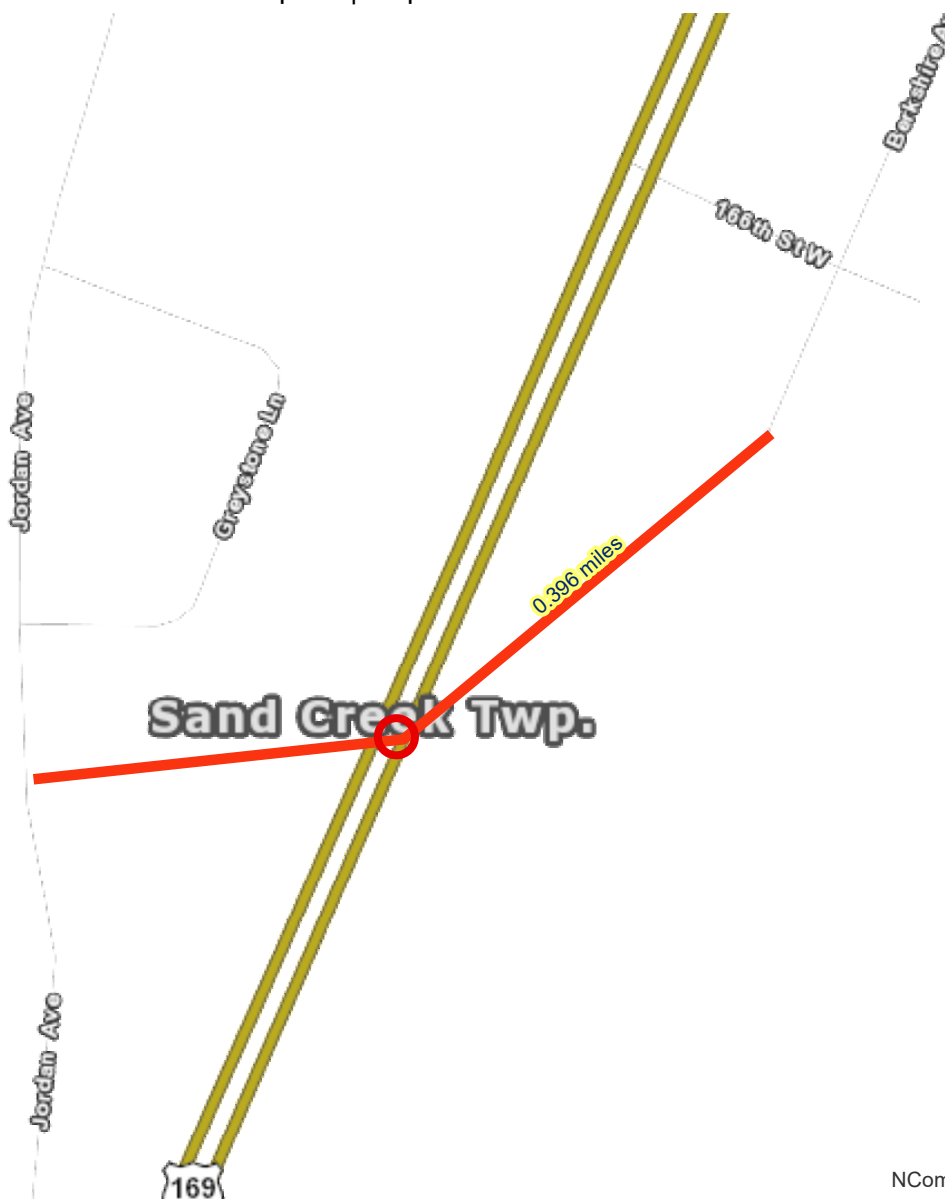
Mfg and Dist Employment: 12

Sand Creek Twp.



Population: 1615

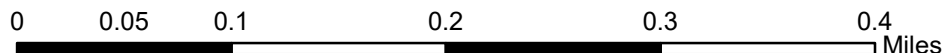
Employment: 422

Mfg and Dist Employment: 198



NCompass Technologies

-  Project Points
-  Project
-  Manufacturing/Distribution Centers
-  Job Concentration Centers



Created: 5/11/2020
LandscapeRSA5



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<http://giswebsite.metc.state.mn.us/gissitenew/notice.aspx>



Transit Connections

Roadway Expansion Project: Sand Creek Overpass | Map ID: 1589222838469

Results

Transit with a Direct Connection to project:
-- NONE --

**indicates Planned Alignments*

Transit Market areas: 5

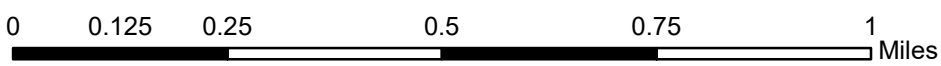


NCompass Technologies

○ Project Points • Active Stop

— Project

□ Project Area



Created: 5/11/2020
LandscapeRSA3



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<https://giswebsite.metc.state.mn.us/gisite/notice.aspx>



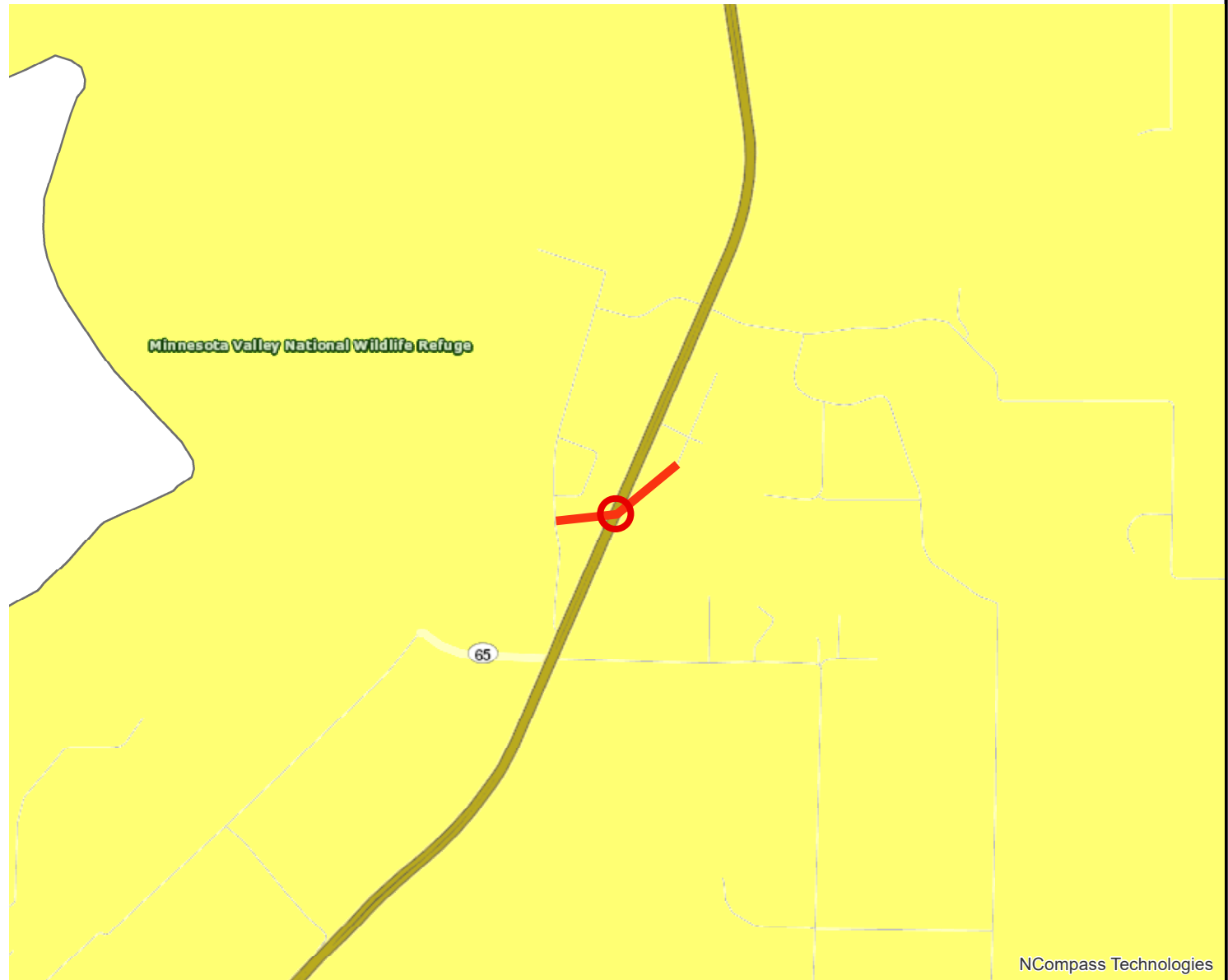
Socio-Economic Conditions

Roadway Expansion Project: Sand Creek Overpass | Map ID: 1589222838469

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:
80800



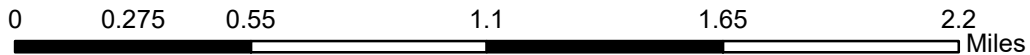
○ Points

— Lines

□ Area of Concentrated Poverty > 50% residents of color

□ Area of Concentrated Poverty

□ Above reg'l avg conc of race/poverty



Created: 5/11/2020
LandscapeRSA2



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



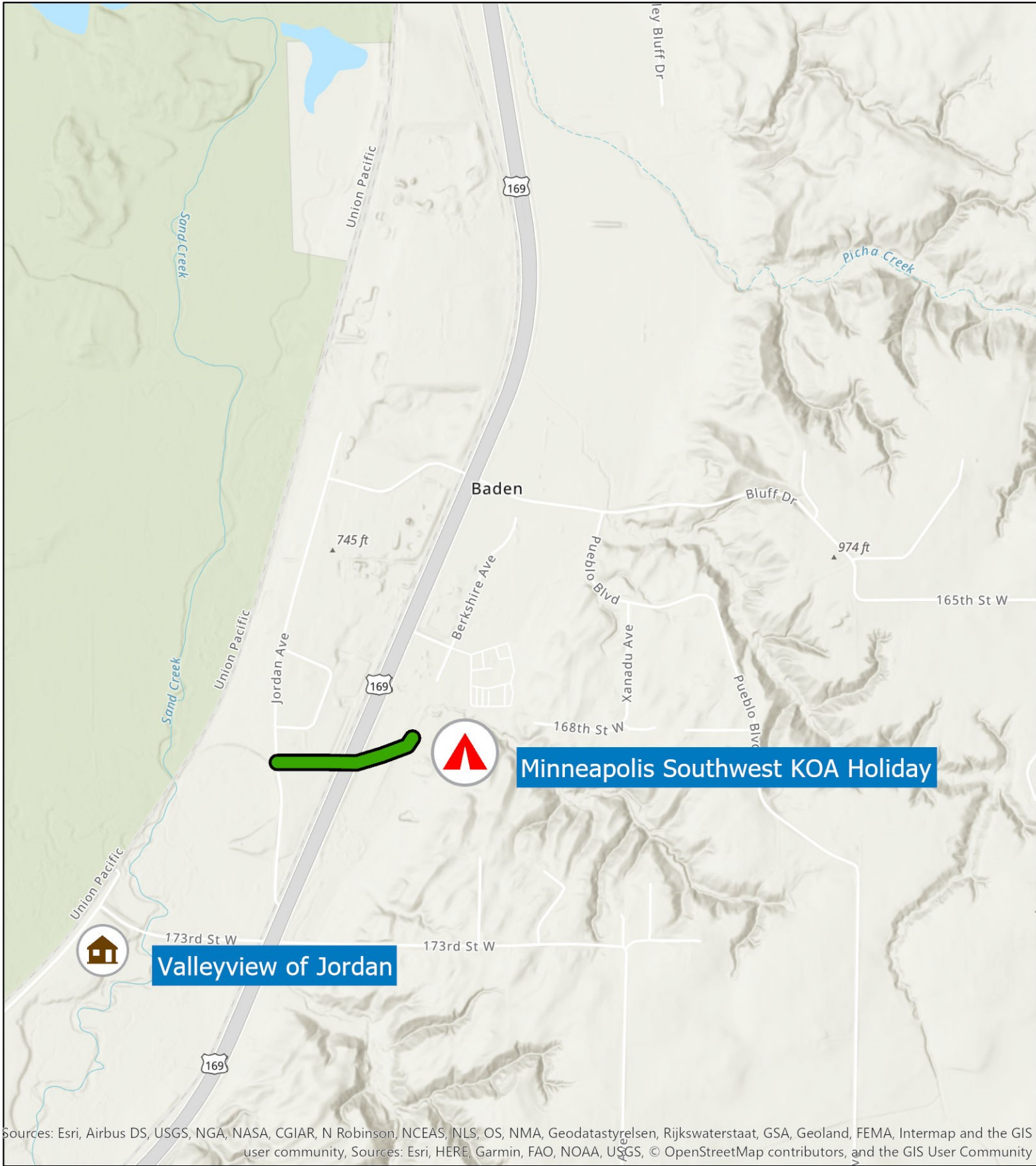


SOCIO-ECONOMIC EQUITY MAP

 PROPOSED PROJECT



0 0.07 0.15 0.3 Miles



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community, Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

AFFORDABLE HOUSING MAP

 PROPOSED PROJECT



0 0.15 0.3 0.6 Miles

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↻			↻					↻	↻↻	
Traffic Vol, veh/h	0	3	5	26	3	0	0	0	0	32	1434	1
Future Vol, veh/h	0	3	5	26	3	0	0	0	0	32	1434	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Yield	Yield	Yield	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	280	-	-
Veh in Median Storage, #	-	0	-	-	-	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	33	40	12	0	0	2	10	2	41	10	0
Mvmt Flow	0	4	6	32	4	0	0	0	0	41	1829	1

Major/Minor	Minor2			Major2			
Conflicting Flow All	-	1911	915		0	0	0
Stage 1	-	1911	-		-	-	-
Stage 2	-	0	-		-	-	-
Critical Hdwy	-	7.16	7.7		4.92	-	-
Critical Hdwy Stg 1	-	6.16	-		-	-	-
Critical Hdwy Stg 2	-	-	-		-	-	-
Follow-up Hdwy	-	4.33	3.7		2.61	-	-
Pot Cap-1 Maneuver	0	47	212		-	-	-
Stage 1	0	81	-		-	-	-
Stage 2	0	-	-		-	-	-
Platoon blocked, %						-	-
Mov Cap-1 Maneuver	-	0	212		-	-	-
Mov Cap-2 Maneuver	-	0	-		-	-	-
Stage 1	-	0	-		-	-	-
Stage 2	-	0	-		-	-	-

Approach	EB	SB
HCM Control Delay, s	22.8	
HCM LOS	C	

Minor Lane/Major Mvmt	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	212	-	-	-
HCM Lane V/C Ratio	0.046	-	-	-
HCM Control Delay (s)	22.8	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.1	-	-	-

HCM 2010 TWSC
 2: TH TH 169 NB/TH 169 NB & W 166th Street

05/12/2020

Intersection												
Int Delay, s/veh	0.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔↔	↔			
Traffic Vol, veh/h	2	33	0	0	29	29	0	1105	18	0	0	0
Future Vol, veh/h	2	33	0	0	29	29	0	1105	18	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Yield	Yield	Yield	Stop	Stop	Stop	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	290	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	42	0	0	10	17	0	10	11	2	10	2
Mvmt Flow	2	40	0	0	36	36	0	1409	23	0	0	0

Major/Minor	Minor1		Major1		
Conflicting Flow All	-	1409	705	0	0
Stage 1	-	1409	-	-	-
Stage 2	-	0	-	-	-
Critical Hdwy	-	6.7	7.24	4.1	-
Critical Hdwy Stg 1	-	5.7	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	4.1	3.47	2.2	-
Pot Cap-1 Maneuver	0	128	346	-	-
Stage 1	0	189	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	0	346	-	-
Mov Cap-2 Maneuver	-	0	-	-	-
Stage 1	-	0	-	-	-
Stage 2	-	0	-	-	-

Approach	WB	NB
HCM Control Delay, s	18.1	0
HCM LOS	C	

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1
Capacity (veh/h)	-	-	346
HCM Lane V/C Ratio	-	-	0.205
HCM Control Delay (s)	0	-	18.1
HCM Lane LOS	A	-	C
HCM 95th %tile Q(veh)	-	-	0.8

Intersection												
Int Delay, s/veh	0.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↻			↻					↻	↻↻	↻
Traffic Vol, veh/h	0	27	17	3	11	0	0	0	0	12	1447	30
Future Vol, veh/h	0	27	17	3	11	0	0	0	0	12	1447	30
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Yield	Yield	Yield	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	310	-	280
Veh in Median Storage, #	-	0	-	-	-	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	2	19	18	0	73	0	2	10	2	0	10	63
Mvmt Flow	0	33	21	4	13	0	0	0	0	15	1846	38

Major/Minor	Minor2		Major2				
Conflicting Flow All	-	1876	923		0	0	0
Stage 1	-	1876	-		-	-	-
Stage 2	-	0	-		-	-	-
Critical Hdwy	-	6.88	7.26		4.1	-	-
Critical Hdwy Stg 1	-	5.88	-		-	-	-
Critical Hdwy Stg 2	-	-	-		-	-	-
Follow-up Hdwy	-	4.19	3.48		2.2	-	-
Pot Cap-1 Maneuver	0	59	243		-	-	-
Stage 1	0	99	-		-	-	-
Stage 2	0	-	-		-	-	-
Platoon blocked, %						-	-
Mov Cap-1 Maneuver	-	0	243		-	-	-
Mov Cap-2 Maneuver	-	0	-		-	-	-
Stage 1	-	0	-		-	-	-
Stage 2	-	0	-		-	-	-

Approach	EB	SB
HCM Control Delay, s	24	
HCM LOS	C	

Minor Lane/Major Mvmt	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	243	-	-	-
HCM Lane V/C Ratio	0.222	-	-	-
HCM Control Delay (s)	24	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.8	-	-	-

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔		↔	↕	↕	↕		
Traffic Vol, veh/h	28	11	0	0	3	9	11	1119	6	0	0	0
Future Vol, veh/h	28	11	0	0	3	9	11	1119	6	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Yield	Yield	Yield	Stop	Stop	Stop	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	280	-	240	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	18	0	2	0	0	0	73	10	0	2	2	2
Mvmt Flow	34	13	0	0	4	11	14	1427	8	0	0	0

Major/Minor	Minor1	Major1			
Conflicting Flow All	-	1455	714	0	0
Stage 1	-	1455	-	-	-
Stage 2	-	0	-	-	-
Critical Hdwy	-	6.5	6.9	5.56	-
Critical Hdwy Stg 1	-	5.5	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	4	3.3	2.93	-
Pot Cap-1 Maneuver	0	131	378	-	-
Stage 1	0	197	-	-	-
Stage 2	0	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	-	0	378	-	-
Mov Cap-2 Maneuver	-	0	-	-	-
Stage 1	-	0	-	-	-
Stage 2	-	0	-	-	-

Approach	WB	NB
HCM Control Delay, s	14.9	
HCM LOS	B	

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1
Capacity (veh/h)	-	-	378
HCM Lane V/C Ratio	-	-	0.039
HCM Control Delay (s)	-	-	14.9
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗			↖↖↖	↗
Traffic Vol, veh/h	0	18	0	0	1465	0
Future Vol, veh/h	0	18	0	0	1465	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	20
Veh in Median Storage, #	0	-	-	-	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	11	2	10	10	0
Mvmt Flow	0	22	0	0	1869	0

Major/Minor	Minor2		Major2	
Conflicting Flow All	-	934	-	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	7.32	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	4.01	-	-
Pot Cap-1 Maneuver	0	216	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	-	216	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	SB
HCM Control Delay, s	23.6	0
HCM LOS	C	

Minor Lane/Major Mvmt	EBLn1	SBT	SBR
Capacity (veh/h)	216	-	-
HCM Lane V/C Ratio	0.102	-	-
HCM Control Delay (s)	23.6	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.3	-	-

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕				↗	↖	↕	↗			
Traffic Vol, veh/h	1	13	0	0	0	5	7	1117	4	0	0	0
Future Vol, veh/h	1	13	0	0	0	5	7	1117	4	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Yield	Yield	Yield	Stop	Stop	Stop	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	540	-	320	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	0	10	0	2	10	2
Mvmt Flow	1	16	0	0	0	6	9	1425	5	0	0	0

Major/Minor	Minor1	Major1
Conflicting Flow All	-	- 712 0 0 0
Stage 1	-	- - - - -
Stage 2	-	- - - - -
Critical Hdwy	-	- 6.9 4.1 - -
Critical Hdwy Stg 1	-	- - - - -
Critical Hdwy Stg 2	-	- - - - -
Follow-up Hdwy	-	- 3.3 2.2 - -
Pot Cap-1 Maneuver	0	0 379 - - -
Stage 1	0	0 - - - -
Stage 2	0	0 - - - -
Platoon blocked, %		- - -
Mov Cap-1 Maneuver	-	0 379 - - -
Mov Cap-2 Maneuver	-	0 - - - -
Stage 1	-	0 - - - -
Stage 2	-	0 - - - -

Approach	WB	NB
HCM Control Delay, s	14.7	
HCM LOS	B	

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1
Capacity (veh/h)	-	-	- 379
HCM Lane V/C Ratio	-	-	- 0.016
HCM Control Delay (s)	-	-	- 14.7
HCM Lane LOS	-	-	- B
HCM 95th %tile Q(veh)	-	-	- 0

Intersection												
Int Delay, s/veh	0.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗		↖					↗	↖	↗
Traffic Vol, veh/h	0	0	31	4	3	0	0	0	0	14	1448	21
Future Vol, veh/h	0	0	31	4	3	0	0	0	0	14	1448	21
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Yield	Yield	Yield	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	0	-	0
Veh in Median Storage, #	-	0	-	-	-	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	2	10	2	0	10	0
Mvmt Flow	0	0	38	5	4	0	0	0	0	18	1847	27

Major/Minor	Minor2			Major2				
Conflicting Flow All	-	-	923			0	0	0
Stage 1	-	-	-			-	-	-
Stage 2	-	-	-			-	-	-
Critical Hdwy	-	-	6.9			4.1	-	-
Critical Hdwy Stg 1	-	-	-			-	-	-
Critical Hdwy Stg 2	-	-	-			-	-	-
Follow-up Hdwy	-	-	3.3			2.2	-	-
Pot Cap-1 Maneuver	0	0	276			-	-	-
Stage 1	0	0	-			-	-	-
Stage 2	0	0	-			-	-	-
Platoon blocked, %							-	-
Mov Cap-1 Maneuver	-	0	276			-	-	-
Mov Cap-2 Maneuver	-	0	-			-	-	-
Stage 1	-	0	-			-	-	-
Stage 2	-	0	-			-	-	-

Approach	EB	SB
HCM Control Delay, s	20.1	
HCM LOS	C	

Minor Lane/Major Mvmt	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	276	-	-	-
HCM Lane V/C Ratio	0.138	-	-	-
HCM Control Delay (s)	20.1	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	0.5	-	-	-

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗			↗↗	
Traffic Vol, veh/h	0	0	0	0	1465	0
Future Vol, veh/h	0	0	0	0	1465	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	2	2	10	10	0
Mvmt Flow	0	0	0	0	1869	0

Major/Minor	Minor2	Major2
Conflicting Flow All	- 934	- 0
Stage 1	- -	- -
Stage 2	- -	- -
Critical Hdwy	- 6.94	- -
Critical Hdwy Stg 1	- -	- -
Critical Hdwy Stg 2	- -	- -
Follow-up Hdwy	- 3.32	- -
Pot Cap-1 Maneuver	0 267	- 0
Stage 1	0 -	- 0
Stage 2	0 -	- 0
Platoon blocked, %		-
Mov Cap-1 Maneuver	- 267	- -
Mov Cap-2 Maneuver	- -	- -
Stage 1	- -	- -
Stage 2	- -	- -

Approach	EB	SB
HCM Control Delay, s	0	0
HCM LOS	A	

Minor Lane/Major Mvmt	EBLn1	SBT
Capacity (veh/h)	-	-
HCM Lane V/C Ratio	-	-
HCM Control Delay (s)	0	-
HCM Lane LOS	A	-
HCM 95th %tile Q(veh)	-	-

Intersection

Int Delay, s/veh 0.1

Movement EBL EBR NBL NBT SBT SBR

Lane Configurations		↗			↕↗	
Traffic Vol, veh/h	0	8	0	0	1434	4
Future Vol, veh/h	0	8	0	0	1434	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	-	-	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	38	2	10	10	0
Mvmt Flow	0	10	0	0	1829	5

Major/Minor Minor2 Major2

Conflicting Flow All	-	917	-	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	7.66	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.68	-	-
Pot Cap-1 Maneuver	0	214	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	-	214	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach EB SB

HCM Control Delay, s	22.6	0
HCM LOS	C	

Minor Lane/Major Mvmt EBLn1 SBT SBR

Capacity (veh/h)	214	-	-
HCM Lane V/C Ratio	0.046	-	-
HCM Control Delay (s)	22.6	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.1	-	-

Intersection						
Int Delay, s/veh	7.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	71	3	0	20	3	0
Future Vol, veh/h	71	3	0	20	3	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	45	0	2	15	0	0
Mvmt Flow	87	4	0	24	4	0

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	19	12	0	0	24
Stage 1	12	-	-	-	-
Stage 2	7	-	-	-	-
Critical Hdwy	6.85	6.2	-	-	4.1
Critical Hdwy Stg 1	5.85	-	-	-	-
Critical Hdwy Stg 2	5.85	-	-	-	-
Follow-up Hdwy	3.905	3.3	-	-	2.2
Pot Cap-1 Maneuver	898	1074	-	-	1604
Stage 1	910	-	-	-	-
Stage 2	915	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	896	1074	-	-	1604
Mov Cap-2 Maneuver	896	-	-	-	-
Stage 1	910	-	-	-	-
Stage 2	913	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.4	0	7.3
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	902	1604
HCM Lane V/C Ratio	-	-	0.1	0.002
HCM Control Delay (s)	-	-	9.4	7.2
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0

Intersection

Int Delay, s/veh 0.3

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations		↗			↗↗	↗
Traffic Vol, veh/h	0	23	0	0	1415	74
Future Vol, veh/h	0	23	0	0	1415	74
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	280
Veh in Median Storage, #	0	-	-	-	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	2	13	2	10	10	43
Mvmt Flow	0	28	0	0	1805	91

Major/Minor

	Minor2	Major2
Conflicting Flow All	- 902	- 0
Stage 1	- -	- -
Stage 2	- -	- -
Critical Hdwy	- 7.16	- -
Critical Hdwy Stg 1	- -	- -
Critical Hdwy Stg 2	- -	- -
Follow-up Hdwy	- 3.43	- -
Pot Cap-1 Maneuver	0 260	- -
Stage 1	0 -	- -
Stage 2	0 -	- -
Platoon blocked, %		- -
Mov Cap-1 Maneuver	- 260	- -
Mov Cap-2 Maneuver	- -	- -
Stage 1	- -	- -
Stage 2	- -	- -

Approach

HCM Control Delay, s 20.5 0
 HCM LOS C

Minor Lane/Major Mvmt

	EBLn1	SBT	SBR
Capacity (veh/h)	260	-	-
HCM Lane V/C Ratio	0.108	-	-
HCM Control Delay (s)	20.5	-	-
HCM Lane LOS	C	-	-
HCM 95th %tile Q(veh)	0.4	-	-

Intersection

Int Delay, s/veh 1

Movement WBL WBR NBT NBR SBL SBT

Lane Configurations		↗	↗↗	↗		
Traffic Vol, veh/h	0	68	1088	35	0	0
Future Vol, veh/h	0	68	1088	35	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	240	-	-
Veh in Median Storage, #	0	-	0	-	-	-
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	7	10	29	2	10
Mvmt Flow	0	83	1388	45	0	0

Major/Minor Minor1 Major1

Conflicting Flow All	-	694	0	0
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	-	7.04	-	-
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	-	3.37	-	-
Pot Cap-1 Maneuver	0	374	-	-
Stage 1	0	-	-	-
Stage 2	0	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	-	374	-	-
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach WB NB

HCM Control Delay, s	17.4	0
HCM LOS	C	

Minor Lane/Major Mvmt NBT NBRWBLn1

Capacity (veh/h)	-	-	374
HCM Lane V/C Ratio	-	-	0.223
HCM Control Delay (s)	-	-	17.4
HCM Lane LOS	-	-	C
HCM 95th %tile Q(veh)	-	-	0.8

Intersection						
Int Delay, s/veh	5.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	6	29	3	9	59	10
Future Vol, veh/h	6	29	3	9	59	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	34	0	0	8	0
Mvmt Flow	7	36	4	11	72	12

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	43	0	43 25
Stage 1	-	-	-	-	25 -
Stage 2	-	-	-	-	18 -
Critical Hdwy	-	-	4.1	-	6.48 6.2
Critical Hdwy Stg 1	-	-	-	-	5.48 -
Critical Hdwy Stg 2	-	-	-	-	5.48 -
Follow-up Hdwy	-	-	2.2	-	3.572 3.3
Pot Cap-1 Maneuver	-	-	1579	-	953 1057
Stage 1	-	-	-	-	982 -
Stage 2	-	-	-	-	989 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1579	-	950 1057
Mov Cap-2 Maneuver	-	-	-	-	950 -
Stage 1	-	-	-	-	982 -
Stage 2	-	-	-	-	986 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1.8	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	964	-	-	1579	-
HCM Lane V/C Ratio	0.088	-	-	0.002	-
HCM Control Delay (s)	9.1	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Intersection						
Int Delay, s/veh	8.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	26	17	0	3	70	0
Future Vol, veh/h	26	17	0	3	70	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	12	47	2	33	19	0
Mvmt Flow	32	21	0	4	86	0

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	173	2	0	0	4
Stage 1	2	-	-	-	-
Stage 2	171	-	-	-	-
Critical Hdwy	6.52	6.67	-	-	4.29
Critical Hdwy Stg 1	5.52	-	-	-	-
Critical Hdwy Stg 2	5.52	-	-	-	-
Follow-up Hdwy	3.608	3.723	-	-	2.371
Pot Cap-1 Maneuver	794	964	-	-	1513
Stage 1	996	-	-	-	-
Stage 2	835	-	-	-	-
Platoon blocked, %					
Mov Cap-1 Maneuver	749	964	-	-	1513
Mov Cap-2 Maneuver	749	-	-	-	-
Stage 1	996	-	-	-	-
Stage 2	787	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.7	0	7.5
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	821	1513
HCM Lane V/C Ratio	-	-	0.064	0.057
HCM Control Delay (s)	-	-	9.7	7.5
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.2

Intersection												
Int Delay, s/veh	0.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕				↗	↖	↕	↗			
Traffic Vol, veh/h	1	13	0	0	0	5	7	1117	4	0	0	0
Future Vol, veh/h	1	13	0	0	0	5	7	1117	4	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Yield	Yield	Yield	Stop	Stop	Stop	Free	Free	Free	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	0	540	-	320	-	-	-
Veh in Median Storage, #	-	-	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	0	0	0	0	10	0	2	10	2
Mvmt Flow	1	16	0	0	0	6	9	1425	5	0	0	0

Major/Minor	Minor1	Major1
Conflicting Flow All	-	- 712 0 0 0
Stage 1	-	- - - -
Stage 2	-	- - - -
Critical Hdwy	-	- 6.9 4.1 - -
Critical Hdwy Stg 1	-	- - - -
Critical Hdwy Stg 2	-	- - - -
Follow-up Hdwy	-	- 3.3 2.2 - -
Pot Cap-1 Maneuver	0	0 379 - - -
Stage 1	0	0 - - - -
Stage 2	0	0 - - - -
Platoon blocked, %		- - -
Mov Cap-1 Maneuver	-	0 379 - - -
Mov Cap-2 Maneuver	-	0 - - - -
Stage 1	-	0 - - - -
Stage 2	-	0 - - - -

Approach	WB	NB
HCM Control Delay, s	14.7	
HCM LOS	B	

Minor Lane/Major Mvmt	NBL	NBT	NBRWBLn1
Capacity (veh/h)	-	-	- 379
HCM Lane V/C Ratio	-	-	- 0.016
HCM Control Delay (s)	-	-	- 14.7
HCM Lane LOS	-	-	- B
HCM 95th %tile Q(veh)	-	-	- 0

Intersection												
Int Delay, s/veh	1.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations			↗		↖					↗	↖	↗
Traffic Vol, veh/h	0	0	75	4	3	0	0	0	0	14	1404	24
Future Vol, veh/h	0	0	75	4	3	0	0	0	0	14	1404	24
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Yield	Yield	Yield	Stop	Stop	Stop	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	0	-	-	-	-	-	-	470	-	370
Veh in Median Storage, #	-	0	-	-	-	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	0	0	7	0	0	0	2	10	2	0	10	4
Mvmt Flow	0	0	92	5	4	0	0	0	0	18	1791	31

Major/Minor	Minor2			Major2				
Conflicting Flow All	-	-	895			0	0	0
Stage 1	-	-	-			-	-	-
Stage 2	-	-	-			-	-	-
Critical Hdwy	-	-	7.04			4.1	-	-
Critical Hdwy Stg 1	-	-	-			-	-	-
Critical Hdwy Stg 2	-	-	-			-	-	-
Follow-up Hdwy	-	-	3.37			2.2	-	-
Pot Cap-1 Maneuver	0	0	274			-	-	-
Stage 1	0	0	-			-	-	-
Stage 2	0	0	-			-	-	-
Platoon blocked, %							-	-
Mov Cap-1 Maneuver	-	0	274			-	-	-
Mov Cap-2 Maneuver	-	0	-			-	-	-
Stage 1	-	0	-			-	-	-
Stage 2	-	0	-			-	-	-

Approach	EB	SB
HCM Control Delay, s	24.6	
HCM LOS	C	

Minor Lane/Major Mvmt	EBLn1	SBL	SBT	SBR
Capacity (veh/h)	274	-	-	-
HCM Lane V/C Ratio	0.335	-	-	-
HCM Control Delay (s)	24.6	-	-	-
HCM Lane LOS	C	-	-	-
HCM 95th %tile Q(veh)	1.4	-	-	-

Intersection

Int Delay, s/veh 4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↶	↷		↶	
Traffic Vol, veh/h	0	31	24	3	44	0
Future Vol, veh/h	0	31	24	3	44	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	98	98	98	98	98	98
Heavy Vehicles, %	0	0	0	33	11	0
Mvmt Flow	0	38	29	4	54	0

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	33	0	69
Stage 1	-	-	31
Stage 2	-	-	38
Critical Hdwy	4.1	-	6.51
Critical Hdwy Stg 1	-	-	5.51
Critical Hdwy Stg 2	-	-	5.51
Follow-up Hdwy	2.2	-	3.599
Pot Cap-1 Maneuver	1592	-	914
Stage 1	-	-	969
Stage 2	-	-	962
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	1592	-	914
Mov Cap-2 Maneuver	-	-	914
Stage 1	-	-	969
Stage 2	-	-	962

Approach	EB	WB	SB
HCM Control Delay, s	0	0	9.2
HCM LOS			A

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1592	-	-	-	914
HCM Lane V/C Ratio	-	-	-	-	0.059
HCM Control Delay (s)	0	-	-	-	9.2
HCM Lane LOS	A	-	-	-	A
HCM 95th %tile Q(veh)	0	-	-	-	0.2

Intersection

Int Delay, s/veh 3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	6	0	6	15	0	15	7	58	17	10	20	4
Future Vol, veh/h	6	0	6	15	0	15	7	58	17	10	20	4
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	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	98	98	98	98	98	98	98	98	98	98	98	98
Heavy Vehicles, %	83	0	50	20	0	0	0	24	0	100	40	0
Mvmt Flow	7	0	7	18	0	18	9	71	21	12	24	5

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	159	160	27	154	153	81	29	0	0	92	0	0
Stage 1	51	51	-	99	99	-	-	-	-	-	-	-
Stage 2	108	109	-	55	54	-	-	-	-	-	-	-
Critical Hdwy	7.93	6.5	6.7	7.3	6.5	6.2	4.1	-	-	5.1	-	-
Critical Hdwy Stg 1	6.93	5.5	-	6.3	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.93	5.5	-	6.3	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	4.247	4	3.75	3.68	4	3.3	2.2	-	-	3.1	-	-
Pot Cap-1 Maneuver	655	736	926	774	742	985	1597	-	-	1060	-	-
Stage 1	792	856	-	865	817	-	-	-	-	-	-	-
Stage 2	733	809	-	914	854	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	634	723	926	757	729	985	1597	-	-	1060	-	-
Mov Cap-2 Maneuver	634	723	-	757	729	-	-	-	-	-	-	-
Stage 1	787	846	-	860	812	-	-	-	-	-	-	-
Stage 2	715	804	-	896	844	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9.9		9.4		0.6		2.5	
HCM LOS	A		A					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1597	-	-	753	856	1060	-	-
HCM Lane V/C Ratio	0.005	-	-	0.02	0.043	0.012	-	-
HCM Control Delay (s)	7.3	0	-	9.9	9.4	8.4	0	-
HCM Lane LOS	A	A	-	A	A	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.1	0.1	0	-	-

1: W 166th Street & TH 169 SB

Direction	EB	WB	SB	All
Future Volume (vph)	10	35	1833	1878
CO Emissions (kg)	0.01	0.01	1.62	1.63
NOx Emissions (kg)	0.00	0.00	0.31	0.32
VOC Emissions (kg)	0.00	0.00	0.38	0.38

2: TH TH 169 NB/TH 169 NB & W 166th Street

Direction	EB	WB	NB	All
Future Volume (vph)	41	71	1404	1516
CO Emissions (kg)	0.01	0.05	2.56	2.61
NOx Emissions (kg)	0.00	0.01	0.50	0.51
VOC Emissions (kg)	0.00	0.01	0.59	0.61

13: TH 169 SB & Bluff Drive

Direction	EB	WB	SB	All
Future Volume (vph)	53	17	1861	1931
CO Emissions (kg)	0.04	0.00	2.47	2.52
NOx Emissions (kg)	0.01	0.00	0.48	0.49
VOC Emissions (kg)	0.01	0.00	0.57	0.58

14: TH 169 NB & Bluff Drive

Direction	EB	WB	NB	All
Future Volume (vph)	46	15	1420	1481
CO Emissions (kg)	0.01	0.01	1.26	1.28
NOx Emissions (kg)	0.00	0.00	0.24	0.25
VOC Emissions (kg)	0.00	0.00	0.29	0.30

21: TH 169 SB

Direction	EB	SB	All
Future Volume (vph)	22	1832	1854
CO Emissions (kg)	0.02	0.36	0.38
NOx Emissions (kg)	0.00	0.07	0.07
VOC Emissions (kg)	0.00	0.08	0.09

24: TH 169 NB/TH TH 169 NB & 173rd Street W

Direction	EB	WB	NB	All
Future Volume (vph)	17	6	1410	1433
CO Emissions (kg)	0.00	0.01	2.91	2.92
NOx Emissions (kg)	0.00	0.00	0.57	0.57
VOC Emissions (kg)	0.00	0.00	0.67	0.68

25: 173rd Street W & TH 169 SB

Direction	EB	WB	SB	All
Future Volume (vph)	37	9	1854	1900
CO Emissions (kg)	0.04	0.00	0.35	0.39
NOx Emissions (kg)	0.01	0.00	0.07	0.08
VOC Emissions (kg)	0.01	0.00	0.08	0.09

28: TH 169 SB

Direction	SB	All
Future Volume (vph)	1832	1832
CO Emissions (kg)	2.66	2.66
NOx Emissions (kg)	0.52	0.52
VOC Emissions (kg)	0.62	0.62

Network Totals

Number of Intersections	8
CO Emissions (kg)	14.39
NOx Emissions (kg)	2.80
VOC Emissions (kg)	3.34
Performance Index	0.9

1: TH 169 SB & W 166th Street

Direction	EB	SB	All
Future Volume (vph)	10	1797	1807
CO Emissions (kg)	0.01	1.59	1.59
NOx Emissions (kg)	0.00	0.31	0.31
VOC Emissions (kg)	0.00	0.37	0.37

2: Jordan Ave SE & Bluff Drive

Direction	WB	NB	SB	All
Future Volume (vph)	89	24	4	117
CO Emissions (kg)	0.13	0.04	0.00	0.17
NOx Emissions (kg)	0.03	0.01	0.00	0.03
VOC Emissions (kg)	0.03	0.01	0.00	0.04

13: TH 169 SB & Bluff Drive

Direction	EB	SB	All
Future Volume (vph)	27	1858	1885
CO Emissions (kg)	0.04	2.47	2.51
NOx Emissions (kg)	0.01	0.48	0.49
VOC Emissions (kg)	0.01	0.57	0.58

14: TH 169 NB & Bluff Drive

Direction	WB	NB	All
Future Volume (vph)	81	1404	1485
CO Emissions (kg)	0.06	3.80	3.85
NOx Emissions (kg)	0.01	0.74	0.75
VOC Emissions (kg)	0.01	0.88	0.89

16: Berkshire Ave & Bluff Drive

Direction	EB	WB	NB	All
Future Volume (vph)	42	15	82	139
CO Emissions (kg)	0.01	0.01	0.13	0.15
NOx Emissions (kg)	0.00	0.00	0.02	0.03
VOC Emissions (kg)	0.00	0.00	0.03	0.03

22: Jordan Ave SE & Berkshire Ave

Direction	WB	NB	SB	All
Future Volume (vph)	52	4	84	140
CO Emissions (kg)	0.11	0.01	0.15	0.26
NOx Emissions (kg)	0.02	0.00	0.03	0.05
VOC Emissions (kg)	0.02	0.00	0.04	0.06

24: TH 169 NB & 173rd Street W

Direction	EB	WB	NB	All
Future Volume (vph)	17	6	1410	1433
CO Emissions (kg)	0.00	0.01	2.91	2.92
NOx Emissions (kg)	0.00	0.00	0.57	0.57
VOC Emissions (kg)	0.00	0.00	0.67	0.68

25: TH 169 SB & 173rd Street W

Direction	EB	WB	SB	All
Future Volume (vph)	90	9	1803	1902
CO Emissions (kg)	0.08	0.00	3.31	3.39
NOx Emissions (kg)	0.01	0.00	0.64	0.66
VOC Emissions (kg)	0.02	0.00	0.77	0.79

26: 173rd Street W & Jordan Ave SE

Direction	EB	WB	SB	All
Future Volume (vph)	37	32	53	122
CO Emissions (kg)	0.02	0.01	0.10	0.14
NOx Emissions (kg)	0.00	0.00	0.02	0.03
VOC Emissions (kg)	0.01	0.00	0.02	0.03

31: Berkshire Ave & W 166th Street

Direction	EB	WB	NB	SB	All
Future Volume (vph)	14	35	99	40	188
CO Emissions (kg)	0.01	0.03	0.15	0.05	0.24
NOx Emissions (kg)	0.00	0.00	0.03	0.01	0.05
VOC Emissions (kg)	0.00	0.01	0.04	0.01	0.06

Network Totals

Number of Intersections	10
CO Emissions (kg)	15.23
NOx Emissions (kg)	2.96
VOC Emissions (kg)	3.53
Performance Index	2.5

31: Berkshire Ave

Direction	WB	NB	SB	All
Future Volume (vph)	35	90	35	160
Control Delay / Veh (s/v)	9	0	2	2
Queue Delay / Veh (s/v)	0	0	0	0
Total Delay / Veh (s/v)	9	0	2	2
Total Delay (hr)	0	0	0	0
Stops / Veh	1.00	0.00	0.40	0.31
Stops (#)	35	0	14	49
Average Speed (mph)	14	30	29	29
Total Travel Time (hr)	0	3	0	4
Distance Traveled (mi)	2	102	13	118
Fuel Consumed (gal)	0	4	1	5
Fuel Economy (mpg)	NA	24.3	NA	22.7
CO Emissions (kg)	0.03	0.29	0.04	0.36
NOx Emissions (kg)	0.00	0.06	0.01	0.07
VOC Emissions (kg)	0.01	0.07	0.01	0.08
Unserviced Vehicles (#)	0	0	0	0
Vehicles in dilemma zone (#)	0	0	0	0

Network Totals






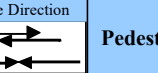
Number of Intersections	9
Control Delay / Veh (s/v)	0
Queue Delay / Veh (s/v)	0
Total Delay / Veh (s/v)	0
Total Delay (hr)	1
Stops / Veh	0.05
Stops (#)	450
Average Speed (mph)	61
Total Travel Time (hr)	78
Distance Traveled (mi)	4706
Fuel Consumed (gal)	172
Fuel Economy (mpg)	27.3
CO Emissions (kg)	12.03
NOx Emissions (kg)	2.34
VOC Emissions (kg)	2.79
Unserviced Vehicles (#)	0
Vehicles in dilemma zone (#)	0
Performance Index	1.8

Project Cost		
\$ 2,608,795.00	B/C	1.92

Project Benefit		
169 & Bluff Dr	\$ 3,599,826.32	
169 & 166th	\$ 1,415,205.10	
Total	\$ 5,015,031.42	

Crashes Prevented		
169 & Bluff Dr	50.1	
169 & 166th	20.1	
Total	71	

HSIP worksheet

Control Section		T.H. / Roadway	Location				Beginning Ref. Pt.	Ending Ref. Pt.	State, County, City or Township	Study Period Begins	Study Period Ends
		TH 169	Bluff Dr							1/1/2016	12/31/2018
Description of Proposed Work		Median Closure/Overpass									
Accident Diagram Codes	1 Rear End	2 Sideswipe Same Direction	3 Left Turn Main Line	5 Right Angle	4,7 Ran off Road	8, 9 Head On/ Sideswipe - Opposite Direction	Pedestrian		6, 90, 99	Other	Total
											
Study Period: Number of Crashes	Fatal	F									
	Personal Injury (PI)	A									
		B				2					2
		C			1						1
Property Damage	PD			1	1					2	
% Change in Crashes <small>*Use Desktop Reference for Crash Reduction Factors</small>	Fatal	F									
	PI	A									
		B				-100%					
		C			-100%						
Property Damage	PD			-100%	-100%						
Change in Crashes <small>= No. of crashes X % change in crashes</small>	Fatal	F									
	PI	A									
		B				-2.00					-2.00
		C			-1.00						-1.00
Property Damage	PD			-1.00	-1.00					-2.00	
Year (Safety Improvement Construction)		2024									
Project Cost (exclude Right of Way)		\$ 2,608,795	Type of Crash	Study Period: Change in Crashes	Annual Change in Crashes	Cost per Crash	Annual Benefit	<div style="border: 1px solid black; padding: 5px; display: inline-block;">B/C= 1.38</div> Using present worth values, B= \$ 3,599,826 C= \$ 2,608,795 See "Calculations" sheet for amortization.			
Right of Way Costs (optional)			F			\$ 1,180,000					
Traffic Growth Factor		0.5%	A			\$ 590,000					
Capital Recovery			B	-2.00	-0.67	\$ 170,000	\$ 113,333				
1. Discount Rate		2%	C	-1.00	-0.33	\$ 87,000	\$ 29,000				
2. Project Service Life (n)		30	PD	-2.00	-0.67	\$ 7,800	\$ 5,200				
			Total				\$ 147,533				

Amortizing...

Year	Crash Benefits	Present Worth Benefits	Present Worth Costs
2024	\$ 147,533	\$ 147,533	\$ 2,608,795
2025	\$ 148,271	\$ 145,364	
2026	\$ 149,012	\$ 143,226	
2027	\$ 149,757	\$ 141,120	
2028	\$ 150,506	\$ 139,044	
2029	\$ 151,259	\$ 137,000	
2030	\$ 152,015	\$ 134,985	
2031	\$ 152,775	\$ 133,000	
2032	\$ 153,539	\$ 131,044	
2033	\$ 154,307	\$ 129,117	
2034	\$ 155,078	\$ 127,218	
2035	\$ 155,854	\$ 125,347	
2036	\$ 156,633	\$ 123,504	
2037	\$ 157,416	\$ 121,688	
2038	\$ 158,203	\$ 119,898	
2039	\$ 158,994	\$ 118,135	
2040	\$ 159,789	\$ 116,398	
2041	\$ 160,588	\$ 114,686	
2042	\$ 161,391	\$ 112,999	
2043	\$ 162,198	\$ 111,338	
2044	\$ 163,009	\$ 109,700	
2045	\$ 163,824	\$ 108,087	
2046	\$ 164,643	\$ 106,498	
2047	\$ 165,466	\$ 104,931	
2048	\$ 166,294	\$ 103,388	
2049	\$ 167,125	\$ 101,868	
2050	\$ 167,961	\$ 100,370	
2051	\$ 168,801	\$ 98,894	
2052	\$ 169,645	\$ 97,440	
2053	\$ 170,493	\$ 96,007	
0	\$ -	\$ -	

Totals = \$ 3,599,826 \$ 2,608,795
(B) **(C)**

year (n)= 1, 2, 3,....
discount rate (i) = 7%






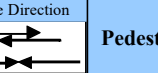
$$\text{Crash Benefits (@ year n)} = (\text{Crash Benefits})_{n-1} \times (1 + \text{Traffic Growth Factor})$$

$$\text{Present Worth Benefits (@ year n)} = (\text{Crash Benefits})_n \times 1/(1 + \text{Discount Rate})^n$$

Type of Crash	Crash Severity	Cost per Crash
Fatal	K	\$ 1,140,000
Personal Injury	A Incapacitating	\$ 570,000
	B Non-Incapacitating	\$ 170,000
	C Possible	\$ 83,000
Property Damage	PDO or N	\$ 7,600

Source: MnDOT Office of Transportation System Management
(July 2015)

HSIP worksheet

Control Section		T.H. / Roadway	Location				Beginning Ref. Pt.	Ending Ref. Pt.	State, County, City or Township	Study Period Begins	Study Period Ends
		TH 169	Bluff Dr							1/1/2016	12/31/2018
Description of Proposed Work		Median Closure/Overpass									
Accident Diagram Codes	1 Rear End	2 Sideswipe Same Direction	3 Left Turn Main Line	5 Right Angle	4,7 Ran off Road	8, 9 Head On/ Sideswipe - Opposite Direction	Pedestrian		6, 90, 99	Other	Total
											
Study Period: Number of Crashes	Fatal	F									
	Personal Injury (PI)	A									
		B									
		C	1		1						2
Property Damage	PD										
% Change in Crashes <small>*Use Desktop Reference for Crash Reduction Factors</small>	Fatal	F									
	PI	A									
		B									
		C	-100%		-100%						
Property Damage	PD										
Change in Crashes <small>= No. of crashes X % change in crashes</small>	Fatal	F									
	PI	A									
		B									
		C	-1.00		-1.00						-2.00
Property Damage	PD										
Year (Safety Improvement Construction)		2024									
Project Cost (exclude Right of Way)		\$ 2,608,795	Type of Crash	Study Period: Change in Crashes	Annual Change in Crashes	Cost per Crash	Annual Benefit	<div style="border: 1px solid black; padding: 5px; display: inline-block; background-color: #fce4ec;">B/C= 0.54</div> <i>Using present worth values,</i> B= \$ 1,415,205 C= \$ 2,608,795 <i>See "Calculations" sheet for amortization.</i>			
Right of Way Costs (optional)			F			\$ 1,180,000					
Traffic Growth Factor		0.5%	A			\$ 590,000					
Capital Recovery			B			\$ 170,000					
1. Discount Rate		2%	C	-2.00	-0.67	\$ 87,000	\$ 58,000				
2. Project Service Life (n)		30	PD			\$ 7,800					
			Total			\$ 58,000					

Type of Crash	Crash Severity	Cost per Crash
Fatal	K	\$ 1,140,000
Personal Injury	A Incapacitating	\$ 570,000
	B Non-Incapacitating	\$ 170,000
	C Possible	\$ 83,000
Property Damage	PDO or N	\$ 7,600

Source: MnDOT Office of Transportation System Management
(July 2015)

Amortizing...

Year	Crash Benefits	Present Worth Benefits	Present Worth Costs
2024	\$ 58,000	\$ 58,000	\$ 2,608,795
2025	\$ 58,290	\$ 57,147	
2026	\$ 58,581	\$ 56,307	
2027	\$ 58,874	\$ 55,479	
2028	\$ 59,169	\$ 54,663	
2029	\$ 59,465	\$ 53,859	
2030	\$ 59,762	\$ 53,067	
2031	\$ 60,061	\$ 52,286	
2032	\$ 60,361	\$ 51,518	
2033	\$ 60,663	\$ 50,760	
2034	\$ 60,966	\$ 50,013	
2035	\$ 61,271	\$ 49,278	
2036	\$ 61,577	\$ 48,553	
2037	\$ 61,885	\$ 47,839	
2038	\$ 62,195	\$ 47,136	
2039	\$ 62,506	\$ 46,443	
2040	\$ 62,818	\$ 45,760	
2041	\$ 63,132	\$ 45,087	
2042	\$ 63,448	\$ 44,424	
2043	\$ 63,765	\$ 43,770	
2044	\$ 64,084	\$ 43,127	
2045	\$ 64,404	\$ 42,492	
2046	\$ 64,726	\$ 41,868	
2047	\$ 65,050	\$ 41,252	
2048	\$ 65,375	\$ 40,645	
2049	\$ 65,702	\$ 40,047	
2050	\$ 66,031	\$ 39,459	
2051	\$ 66,361	\$ 38,878	
2052	\$ 66,693	\$ 38,307	
2053	\$ 67,026	\$ 37,743	
0	\$ -	\$ -	

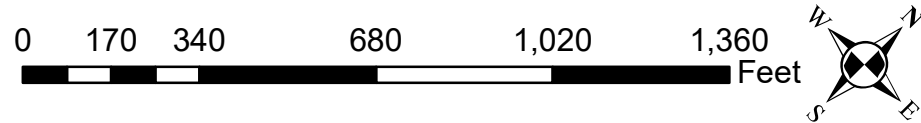
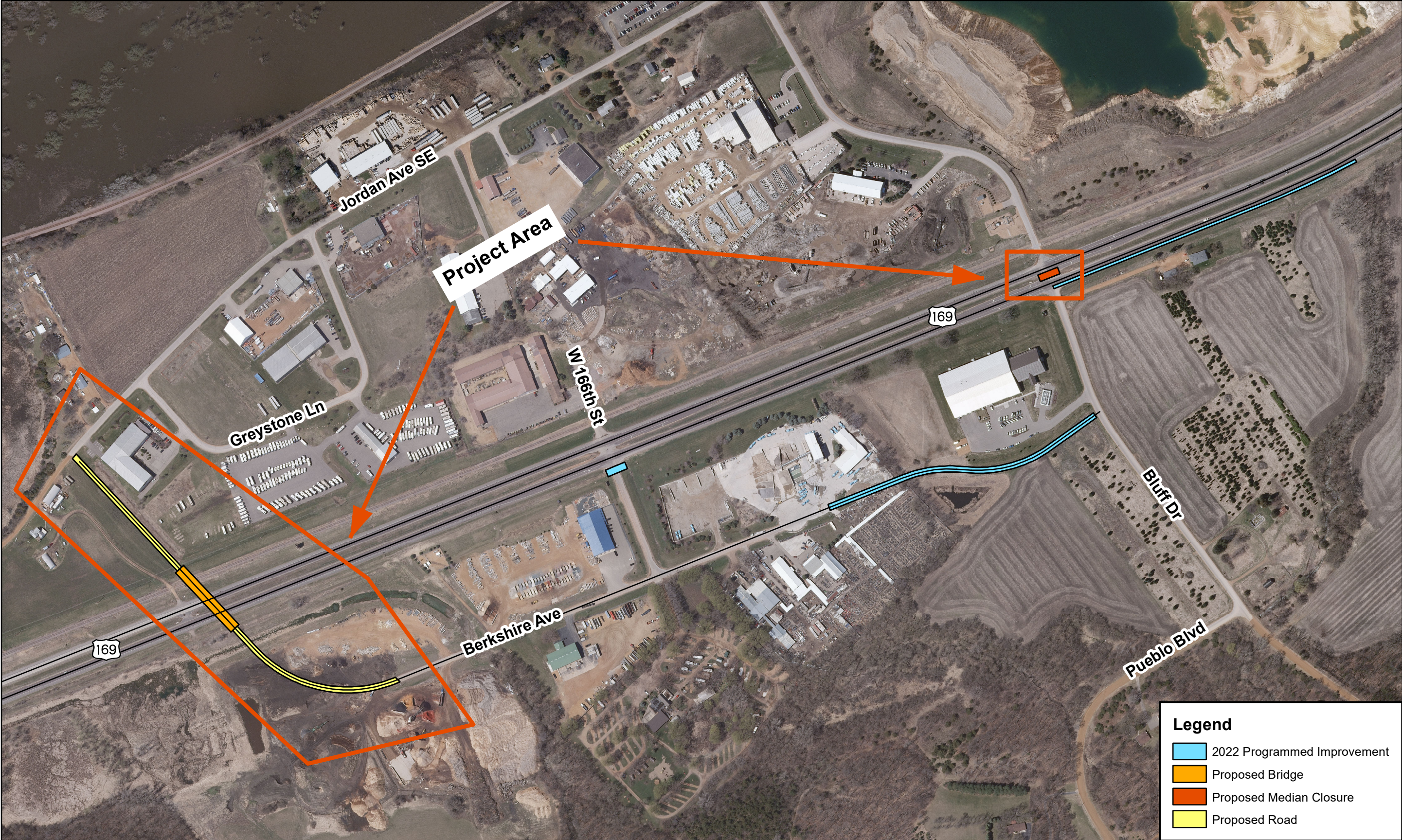
Totals = \$ 1,415,205 \$ 2,608,795
(B) **(C)**

year (n)= 1, 2, 3,....
discount rate (i) = 7%

$$\text{Crash Benefits (@ year n)} = (\text{Crash Benefits})_{n-1} \times (1 + \text{Traffic Growth Factor})$$

$$\text{Present Worth Benefits (@ year n)} = (\text{Crash Benefits})_n \times 1/(1 + \text{Discount Rate})^n$$

Sand Creek Overpass Layout



Sand Creek Overpass Existing Conditions



Section 2A: Usage: Transit Current Daily Person Throughput

“Other” response:

Land to Air Express is an inter-city regional transit service with two routes that serve the region. These routes are funded by the Federal Transit Administration through the Federal Grants for Rural Areas-5311 program.

The Minneapolis Airport Shuttle route is provided by Jefferson Lines which provides daily shuttle bus service between the cities of Mankato and St. Peter and the Minneapolis-St. Paul International Airport.

The Highway 169 Connection route offers daily bus service which connects cities located along Highway 169. Two daily trips connect: Mankato, MNSU, MSU, Gustavus, St. Peter, Le Sueur, Belle Plaine, Jordan, and Shakopee to the Mall of America, the St. Paul Union Depot, the Minneapolis Bus Depot, and the Minneapolis-St. Paul International Airport.

Land to Air contact information: bonnieb@jeffersonlines.com

objectid	Incident ID	Date and T	Year	Hour	Crash Seve	Number Ki	Number of Officer	Nar Constructi	County	City	Township
1790704	383202	10/1/2016	2016	6	Possible In	0	3 V1 was noi	M	Scott		Sand Creek
2072075	469791	6/14/2017	2017	15	Minor Inju	0	2 S/B USTH 1M		Scott		Sand Creek
2135888	513738	10/31/201	2017	15	Minor Inju	0	2 crossing	M	Scott		Sand Creek
2136419	530139	12/13/201	2017	16	Property D	0	2 OCCURRE	M	Scott		Sand Creek
2164316	506246	9/28/2017	2017	10	Possible In	0	2 Vehicle tw	M	Scott		Sand Creek
2480384	598121	5/18/2018	2018	17	Property D	0	2 OCCURRE	M	Scott		Louisville
2583379	605161	6/18/2018	2018	9	Possible In	0	2 150	M	Scott		Sand Creek

Route Type	Route ID	Route Measure	Roadway	Divided	Ro	Intersection	Manner of First Harm	Relative Tr	Lighting	Cc	Road Circu	road_circu	Road Circu
U.S. Trunk	02000000	101.6173	USTH 169	North			Angle	Motor Veh On Roadw	Dark (No S	None			
U.S. Trunk	02000000	100.7419	USTH 169	South			Angle	Motor Veh On Roadw	Daylight	None			
U.S. Trunk	02000000	101.9846	USTH 169	South			Sideswipe	Motor Veh On Roadw	Daylight	None			
U.S. Trunk	02000000	102.1024	USTH 169	South			Angle	Motor Veh On Roadw	Dark (No S	None			
U.S. Trunk	02000000	101.6387	USTH 169	North			Front to R	Motor Veh On Roadw	Daylight	None			
U.S. Trunk	02000000	102.5394	USTH 169	North			Angle	Motor Veh On Roadw	Daylight	None			
U.S. Trunk	02000000	101.9961	N/B USTH	North			Angle	Motor Veh On Roadw	Daylight	None			

road_circu	Relative In	Traffic Con	Weather P	Weather S	Surface Co	Work Zone	Work Zone	Work Zone	Workers P	Unit1 Type	Unit1 Vehi	Unit1 Direc
Four-Way No Control	Clear			Dry		1	Activity Ar	Work on SI	No	Motor Veh	Passenger	Northbour
Four-Way Stop Sign	Clear			Dry		2		NOT APPLICABLE		Motor Veh	Passenger	Eastbound
Driveway / No Control	Clear			Dry		2		NOT APPLICABLE		Motor Veh	Passenger	Eastbound
Four-Way Stop Sign	Cloudy			Dry		2		NOT APPLICABLE		Motor Veh	Passenger	Southboun
Four-Way Stop Sign	Clear			Dry		2		NOT APPLICABLE		Motor Veh	Passenger	Northboun
Four-Way Yield Sign	Clear			Dry		2		NOT APPLICABLE		Motor Veh	Passenger	Eastbound
Four-Way Yield Sign	Rain		Cloudy	Wet		2		NOT APPLICABLE		Motor Veh	Pickup	Southboun

Unit1 Fact	Unit1 Fact	Unit1 Mos	Unit1 Vehi	Unit1 Traff	Unit1 Post	Unit1 Hori	Unit1 Roac	Unit1 Noni	Unit1 Injur	Unit1 Phys	Unit1 Age	Unit1 Sex
Following Too Closely	Motor Veh	Moving Fo	Two-Way,	65	Straight	Level		No Appare	Apparently		49	Male
Failure to Yield Right-of-Way	Motor Veh	Moving Fo	Two-Way,	65	Straight	Level		Suspected	Apparently		24	Male
Failure to Yield Right-of-Way	Motor Veh	Moving Fo	Two-Way,	65	Straight	Level		Suspected	Apparently		40	Male
Operated Motor Vehicle in Careless Manner	Motor Veh	Moving Fo	Two-Way,	65	Straight	Level		No Appare	Apparently		63	Female
Other Contributing Factors	Motor Veh	Moving Fo	Two-Way,	65	Straight	Level		Possible In	Apparently		31	Male
Failure to Yield Right-of-Way	Motor Veh	Moving Fo	Two-Way,	65	Straight	Level		No Appare	Apparently		79	Female
Failure to Yield Right-of-Way	Motor Veh	Turning Le	Two-Way,	65	Straight	Level		Possible In	Apparently		37	Female

Unit2 Type	Unit2 Vehi	Unit2 Direc	Unit2 Fact	Unit2 Fact	Unit2 Mos	Unit2 Vehi	Unit2 Noni	Unit2 Injur	Unit2 Phys	Unit2 Age	Unit2 Sex	Unit3 Type
Motor Veh Passenger	Northbour	Failed to Keep in Prop	Motor Veh Moving Forward					Possible In	Apparently	52	Male	Motor Veh
Motor Veh Medium /	Eastbound	No Clear Contributing Action	Moving Forward					Possible In	Apparently	61	Male	
Motor Veh Passenger	Southboun	No Clear Contributing Action	Moving Forward					Possible In	Apparently	30	Female	
Motor Veh Pickup	Southboun	No Clear Contributing	Motor Veh Moving Forward					No Appare	Apparently	28	Male	
Motor Veh Medium /	Northbour	No Clear Contributing	Motor Veh Moving Forward					Possible In	Apparently	62	Male	
Motor Veh Sport Utilit	Eastbound	No Clear Contributing Action	Moving Forward					No Appare	Apparently	52	Male	
Motor Veh Passenger	Northbour	No Clear Contributing	Motor Veh Moving Forward					Possible In	Apparently	58	Male	

Unit3 Vehi	Unit3 Direc	Unit3 Fact	Unit3 Fact	Unit3 Mos	Unit3 Vehi	Unit3 Noni	Unit3 Injur	Unit3 Phys	Unit3 Age	Unit3 Sex	Unit4 Type	Unit4 Vehi
Limousine	Eastbound	Failure to Yield	Right-of-Way	Motor Veh	Turning Left		No Appare	Apparently	43	Male		

Unit4 Direc Unit4 Fact Unit4 Fact Unit4 Mos Unit4 Vehi Unit4 Noni Unit4 Injur Unit4 Phys Unit4 Age Unit4 Sex interchang otst_inters city_sectio

US169 Froi

US169 Froi

US169 Froi

US169 To f

USTH 169 , US169 Froi

US169 To f

USTH 169 , US169 Froi

utm_x	utm_y	x	y
453160.2	4950828	453160.2	4950828
452582.3	4949544	452582.3	4949544
453369.7	4951394	453369.7	4951394
453445.9	4951567	453445.9	4951567
453168.7	4950862	453168.7	4950862
453547.5	4952219	453547.5	4952219
453388.8	4951368	453388.8	4951368

**TOWNSHIP OF SAND CREEK
SCOTT COUNTY, MINNESOTA
RESOLUTION 2020-04**

WHEREAS, the Transportation Advisory Board (TAB) is requesting project submittals for federal funding under the Surface Transportation Block Grant Program (STBGP), the Transportation Alternatives Program (TAP), and the Congestions Mitigation and Air Quality Program (CMAQ); and

WHEREAS, funding is available in the 2023-2024 federal fiscal years; and

WHEREAS, funding provides up to 80 percent of project construction costs; and

WHEREAS, this federal funding of projects reduces the burden on local taxpayers for regional improvements; and

WHEREAS, Sand Creek Township has identified projects that improve the safety and transportation system of the region; and

WHEREAS, Scott County's has agreed to sponsor Sand Creek Township's submittal of the Sand Creek US 169 Overpass Improvement Project by Scott County Board Resolution No. 2020-083.

NOW, THEREFORE BE IT RESOLVED, that the Town Board of Sand Creek Township hereby authorizes submittal of the US 169 Overpass Improvement Project to the Transportation Advisory Board for consideration in the 2020 Regional Solicitation Process.

Passed and Adopted by the Town Board of Sand Creek Township on the 7th day of May, 2020.


Chad Sandey, Board Chair

ATTEST:


Maggie Gallentine, Clerk

Collision Diagram

Location: US 169 & Bluff Dr

Time Period: JAN 01, 2016 to DEC 31, 2018 Date: APR 21, 2020

Prepared By: JWR

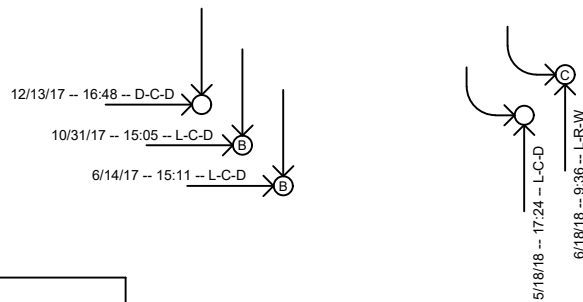


NORTH

No. of Crashes

Fatal =	0
A Injury =	0
B Injury =	2
C Injury =	1
Injury Total =	3
Property Damage =	2
Total Crashes =	5

Bluff Dr



US 169

KEY

	Motor Vehicle Backing Up		Sideswipe
	Motor Vehicle Out of Control		Rear End - PDO
	Motor Vehicle Ahead		Right Angle - B Injury
	Details Unclear		
	Pedestrian		
	Fixed Object		
	Fatal Crash		
	A Injury Crash		
	B Injury Crash		
	C Injury Crash		
	Property Damage Crash (PDO)		

NOTES

2016: 0 2017: 3 2018: 2		
Light: L = Daylight (1) DN = Dawn (2) R = Rain (3) S = Snow or Sleet (4, 5) DL = Dark, Lighted (4) DO = Dark, Lights Off (5) D = Dark (6) X = Unknown (0, 90, 99)	Weather: C = Clear or Cloudy (1, 2) R = Rain (3) S = Snow or Sleet (4, 5) F = Fog, Smog, Smoke (6) B = Blowing Sand/Dust (7) W = Severe Crosswinds (8) X = Other/Unknown (0, 90, 99)	Surface: D = Dry (1) W = Wet or Water (2, 3) S = Snow, Slush, Ice (4, 5, 6) M = Muddy (7) D = Debris (8) O = Oily (9) X = Other/Unknown (0, 90, 99)
Other Vehicle [Date] -- [Time (hrs)] -- [Light-Weather-Surface]		



Existing Crash Diagram
US 169 & Bluff Dr

Collision Diagram

Location: US 169 & W 166th St

Time Period: JAN 01, 2016 to DEC 31, 2018 Date: MAY 05, 2020

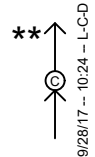
Prepared By: JWR

No. of Crashes

Fatal =	0
A Injury =	0
B Injury =	0
C Injury =	2
Injury Total =	2
Property Damage =	0
Total Crashes =	2



NORTH



W 166th St



US 169

KEY

- | | | |
|---------------------------------|--|------------------------|
| ←→ Motor Vehicle Backing Up | | Sideswipe |
| ∞→ Motor Vehicle Out of Control | | Rear End - PDO |
| → Motor Vehicle Ahead | | Right Angle - B Injury |
| △ Details Unclear | | |
| ♤ Pedestrian | | |
| □ Fixed Object | | |
| ● Fatal Crash | | |
| Ⓐ A Injury Crash | | |
| Ⓑ B Injury Crash | | |
| Ⓒ C Injury Crash | | |
| ○ Property Damage Crash (PDO) | | |

NOTES

2016: 1 **Leading motorist thought they had a
 2017: 1 safe distance to pull out onto 169 and
 was rear ended

Light: L = Daylight (1) DN = Dawn (2) R = Rain (3) DU = Dusk (3) DL = Dark, Lighted (4) DO = Dark, Lights Off (5) D = Dark (6) X = Unknown (0, 90, 99)	Weather: C = Clear or Cloudy (1, 2) R = Rain (3) S = Snow or Sleet (4, 5) F = Fog, Smog, Smoke (6) B = Blowing Sand/Dust (7) W = Severe Crosswinds (8) X = Other/Unknown (0, 90, 99)	Surface: D = Dry (1) W = Wet or Water (2, 3) S = Snow, Slush, Ice (4, 5, 6) M = Muddy (7) D = Debris (8) O = Oily (9) X = Other/Unknown (0, 90, 99)
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Existing Crash Diagram
US 169 & W 166th St

Sand Creek Township Overpass

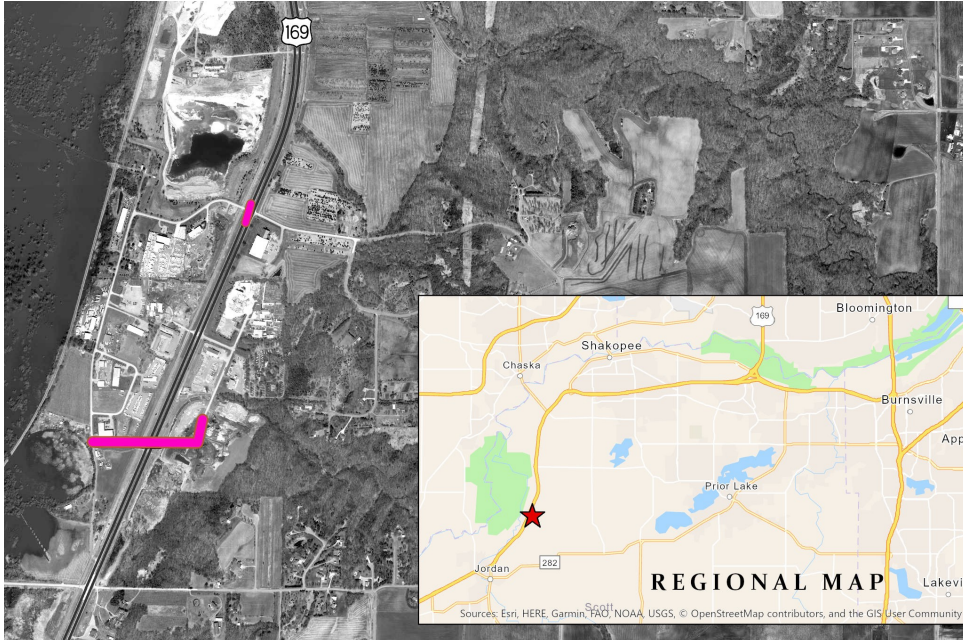
Applicant: Sand Creek Township

Location: Sand Creek Township

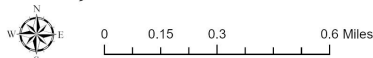
Counties where project is located: Scott

Requested award amount: \$2,087,036

Total project cost: \$2,608,795



PROJECT LOCATION MAP



Project Description

This project is a collaboration between Sand Creek Township and Scott County to reduce delay, and increase safety in Sand Creek Township. The project would create an overpass of local roadways over TH 169. Jordan Avenue on the west would connect with Berkshire Avenue on the east side, creating an overpass.

Benefits

- Project will decrease the number of conflict points and number of access points to increase safety for the businesses and residents utilizing TH 169.
- The TH 169 overpass will allow for consolidation of TH 169 access and will provide local connectivity.
- By 2020 TH 169 north of this segment will no longer have signalized intersections. Thus this project addresses the current inadequate gaps in the road network system. The road network in the project area is heavily utilized by commercial and industrial businesses.
- Freight truck traffic congestion and delay will be improved to support continued economic development of the



Sand Creek Township





SCOTT COUNTY TRANSPORTATION SERVICES

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

May 12, 2020

**RE: Project Sponsor
For Sand Creek Township Application**

To Whom It May Concern:

Sand Creek Township is submitting an application for the Regional Solicitation for the TH 169 Overpass project between Jordan Avenue and Berkshire Avenue. This application is under the Roadways Including Multimodal Elements Category. The Scott County Board has agreed to support and be the application's project sponsor per County Board May 5th Resolution.

If you have any questions, please feel free to contact me.

Sincerely,

Tony Winiacki, PE
County Engineer



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

May 14, 2020

Craig Jenson
Transportation Planning Manager
Scott County Highway Department
600 Country Trail East
Jordan, MN 55352

**Re: MnDOT Letter for Scott County
Metropolitan Council/Transportation Advisory Board 2020 Regional Solicitation Funding
Request for US 169/Bluff Drive overpass**

Dear Craig Jenson,

This letter documents MnDOT Metro District's recognition for Scott County to pursue funding for the Metropolitan Council/Transportation Advisory Board's (TAB) 2020 Regional Solicitation for the construction of US 169/Bluff Drive overpass in Scott County.

As proposed, this project impacts MnDOT right-of-way on US 169. As the agency with jurisdiction over this highway, MnDOT will allow Scott County to seek improvements proposed in the application for the US 169/Bluff Drive. If funded, details of any future maintenance agreement with Scott County 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 Scott County 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

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

Date:	May 5, 2020
Resolution No.:	2020-083
Motion by Commissioner:	Wolf
Seconded by Commissioner:	Weckman Brekke

**RESOLUTION NO. 2020-083; AUTHORIZING SUBMITTAL OF TRANSPORTATION PROJECTS
TO THE TRANSPORTATION ADVISORY BOARD FOR CONSIDERATION
IN THE 2020 REGIONAL SOLICITATION PROCESS**

WHEREAS, the Transportation Advisory Board (TAB) is requesting project submittals for federal funding under the Surface Transportation Block Grant Program (STBGP), the Transportation Alternatives Program (TAP), and the Congestions Mitigation and Air Quality Program (CMAQ); and

WHEREAS, funding is available in the 2023-2024 federal fiscal years; and

WHEREAS, funding provides up to 80 percent of project construction costs; and

WHEREAS, this federal funding of projects reduces the burden on local taxpayers for regional improvements; and

WHEREAS, Scott County has identified projects that improve the safety and transportation system of the region; and

WHEREAS, the projects are also consistent with the Scott County Transportation Plan and Scott County Parks Plan; and

WHEREAS, the Scott County Board of Commissioners desires to submit and support these projects:

1. Trunk Highway (TH) 282, County State Aid Highway 9, and TH 169 Interchange
2. 169 Overpass south of 166th Street (on behalf of Sand Creek Township)
3. Merriam Junction Trail.

NOW, THEREFORE BE IT RESOLVED, that the Scott County Board of Commissioners hereby supports the submittal of the above-named projects to the Transportation Advisory Board for consideration in the 2020 Regional Solicitation Process.

COMMISSIONERS	VOTE			
Weckman Brekke	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Absent	<input type="checkbox"/> Abstain
Wolf	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Absent	<input type="checkbox"/> Abstain
Beard	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Absent	<input type="checkbox"/> Abstain
Beer	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Absent	<input type="checkbox"/> Abstain
Ulrich	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	<input type="checkbox"/> Absent	<input type="checkbox"/> Abstain

State of Minnesota)
County of Scott)

I, Lezlie A. Vermillion, duly appointed qualified County Administrator for the County of Scott, State of Minnesota, do hereby certify that I have compared the foregoing copy of a resolution with the original minutes of the proceedings of the Board of County Commissioners, Scott County, Minnesota, at their session held on the 5th day of May, 2020 now on file in my office, and have found the same to be a true and correct copy thereof.

Witness my hand and official seal at Shakopee, Minnesota, this 5th day of May, 2020.

Shacy A. Cerwenka

County Administrator
Administrator's Designee