Application

01968 - 2014 Roadway Reconstruction/Modernization

01987 - CSAH 13 Reconstruction

Regional Solicitation - Roadways Including Multimodal Elements

| | |
|---|---|
| Status: | Submitted |
| Submitted Date: | 12/01/2014 2:20 PM |

## Primary Contact

| | | | | |
|---|---|---|---|---|
| **Name:*** | | Kate | | Miner |
| | Salutation | First Name | Middle Name | Last Name |
| **Title:** | Transportation Manager | | | |
| **Department:** | Public Works | | | |
| **Email:** | kminer@co.carver.mn.us | | | |
| **Address:** | 11360 Highway 212 | | | |
| | Suite 1 | | | |
| * | Cologne | Minnesota | 55322 | |
| | City | State/Province | Postal Code/Zip | |
| **Phone:*** | 952-466-5208 | | | |
| | Phone | | Ext. | |
| **Fax:** | 952-466-5223 | | | |
| **What Grant Programs are you most interested in?** | Regional Solicitation - Roadways Including Multimodal Elements | | | |

## Organization Information

| | |
|---|---|
| **Name:** | CARVER COUNTY |

**Jurisdictional Agency (if different):**

**Organization Type:** County Government

**Organization Website:**

**Address:** PUBLIC WORKS

11360 HWY 212 W #1

| * | | | |
|---|---|---|---|
| | COLOGNE | Minnesota | 55322-9133 |
| | City | State/Province | Postal Code/Zip |

**County:** Carver

**Phone:*** Ext.

**Fax:**

**PeopleSoft Vendor Number** 0000026790A12

## Project Information

**Project Name** Carver County CSAH 13 Reconstruction

**Primary County where the Project is Located** Carver

**Jurisdictional Agency (If Different than the Applicant):**

**Brief Project Description (Limit 2,800 characters; approximately 400 words)**

The proposed project will expand County State-Aid Highway (CSAH) 13, for approximately one mile between TH 5 and TH 7 in the City of Victoria. Please see Figure 1 for a map of the project area. This segment of road is currently a two-lane undivided A-Minor Expander and will be reconstructed to an urban three-lane roadway with a center left turn lane and right turn lanes at local streets. The project will also include curb and gutter, drainage and ponding infrastructure, and the completion of a paved multi-use trail on the east side of the roadway.

This segment of CSAH 13 is unique in that it provides a vital north-south connection between TH 5 (A Minor Expander) and TH 7 (Principal Arterial). The corridor as a whole also provides direct access to TH 41 (A Minor Expander) and TH 212 (Principal Arterial). Because of its regional connections to the trunk highway system, CSAH 13 carries large volumes of commuter and freight traffic, as well as travelers bound for one of the areas regional destinations: the Minnesota Landscape Arboretum (315,000 annual visitors), Carver Park Reserve, and downtown Victoria.

Travel demand on CSAH 13 will continue to increase as the City of Victoria expects to nearly quadruple its population from 7,345 people in 2010 to 28,000 people in 2030. Though employment is also expected to grow from approximately 2,000 to 5,100 by 2030, the large majority of people living in Victoria will be commuting to jobs outside of the city via TH 5 and TH 7, placing an enormous importance on the CSAH 13 connection between these corridors. It is also important to recognize that there are limited north-south connections between TH 5 and TH 7, as the areas lakes and natural features constrain the placement of roadways. The closest north-south arterials to

CSAH 13 are 5.6 miles to the west and 2.7 miles to the east.

Consistent with Carver Countys policy of developing and linking trails as roads are upgraded, this project includes construction of a multi-use trail along the east side of CSAH 13. The trail will provide a safer environment for bicyclists and pedestrians and directly connect users to a recently opened trail to the Landscape Arboretum, as well as to the Lake Minnetonka LRT Regional Trail, which links downtown Victoria to the Carver Park Reserve, the cities of Excelsior, Minnetonka, and Hopkins and the broader regional trail system. Finally, the trail will also connect to a planned trail along TH 5 to downtown Victoria.

*Include location, road name/functional class, type of improvement, etc.*

**Project Length (Miles)** 1.16

***Connection to Local Planning:***
*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 MnDOT and the Metropolitan Council], or other official plan or program of the applicant agency [includes Safe Routes to School Plans] that the project is included in and/or a transportation problem/need that the project addresses. List the applicable documents and pages.*

**Connection to Local Planning**

Carver County Roadway Systems Plan Chapter 3 page 25 (roadway);
City of Victoria Comprehensive Plan page 77 (trail)

## Project Funding

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

**If yes, please identify the source(s)**

**Federal Amount** $5,396,000.00

**Match Amount** $1,349,000.00

*Minimum of 20% of project total*

**Project Total** $6,745,000.00

**Match Percentage** 20.0%

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

**Source of Match Funds** Carver County, City of Victoria

**Preferred Program Year**

| | |
|---|---|
| **Select one:** | 2017 (Roadway Projects Only) |

## MnDOT State Aid Project Information: Roadway Projects

| | |
|---|---|
| **County, City, or Lead Agency** | Carver County |
| **Functional Class of Road** | A Minor Expander |
| **Road System**<br>*TH, CSAH, MSAS, CO. RD., TWP. RD., CITY STREET* | CSAH |
| **Name of Road**<br>*Example; 1st ST., MAIN AVE* | CSAH 13 |
| **Zip Code where Majority of Work is Being Performed** | 55331 |
| **(Approximate) Begin Construction Date** | 06/01/2017 |
| **(Approximate) End Construction Date** | 06/01/2018 |

**LOCATION**

| | |
|---|---|
| **From:**<br>**(Intersection or Address)**<br>*Do not include legal description;*<br>*Include name of roadway if majority of facility runs adjacent to a single corridor.* | TH 7 |
| **To:**<br>**(Intersection or Address)** | TH 5 |
| **Type of Work**<br>*Examples: grading, aggregate base, bituminous base, bituminous surface, sidewalk, signals, lighting, guardrail, bicycle path, ped ramps, bridge, Park & Ride, etc.)* | Roadway Aggregates and Paving, Grading, Storm Sewer, Traffic Signals |
| **Old Bridge/Culvert?** | No |
| **New Bridge/Culvert?** | No |
| **Structure is Over/Under**<br>**(Bridge or culvert name):** | |

## Specific Roadway Elements

| CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES | Cost |
|---|---|
| Mobilization (approx. 5% of total cost) | $300,000.00 |
| Removals (approx. 5% of total cost) | $300,000.00 |
| Roadway (grading, borrow, etc.) | $1,480,000.00 |
| Roadway (aggregates and paving) | $2,210,000.00 |

| | |
|---|---|
| Subgrade Correction (muck) | $165,000.00 |
| Storm Sewer | $1,250,000.00 |
| Ponds | $100,000.00 |
| Concrete Items (curb & gutter, sidewalks, median barriers) | $190,000.00 |
| Traffic Control | $100,000.00 |
| Striping | $20,000.00 |
| Signing | $30,000.00 |
| Lighting | $0.00 |
| Turf - Erosion & Landscaping | $120,000.00 |
| Bridge | $0.00 |
| Retaining Walls | $175,000.00 |
| Noise Wall | $0.00 |
| Traffic Signals | $250,000.00 |
| 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** | **$6,690,000.00** |

## Specific Bicycle and Pedestrian Elements

| **CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES** | **Cost** |
|---|---|
| Path/Trail Construction | $27,000.00 |
| Sidewalk Construction | $0.00 |
| On-Street Bicycle Facility Construction | $0.00 |
| Right-of-Way | $0.00 |
| Pedestrian Curb Ramps (ADA) | $28,000.00 |
| 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** | **$55,000.00** |

## 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 |
| Transit and TDM Contingencies | $0.00 |
| Other Transit and TDM Elements | $0.00 |
| **Totals** | **$0.00** |

## Transit Operating Costs

| OPERATING COSTS | Cost |
|---|---|
| Transit Operating Costs | $0.00 |
| **Totals** | **$0.00** |

## Totals

| | |
|---|---|
| **Total Cost** | $6,745,000.00 |
| **Construction Cost Total** | $6,745,000.00 |
| **Transit Operating Cost Total** | $0.00 |

## 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 2030 Transportation Policy Plan (amended 2013), the 2030 Regional Parks Policy Plan (amended 2013), and the 2030 Water Resources Management Policy Plan (2005).*

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

*2.Applicants that are not 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

*3.Applicants must not submit an application for the same project in more than one funding sub-category.*

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

*4.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. Expansion, reconstruction/modernization, and bridges must be between $1,000,000 and $7,000,000. Roadway system management must be between $250,000 and $7,000,000.*

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

*5.The project must comply with the Americans with Disabilities Act.*

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

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

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

*7.The owner/operator of the facility must operate and maintain the project for the useful life of the improvement.*

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

*8.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

*9.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

*10.The project applicant must send written notification regarding the proposed projected to all affected communities and other levels and units of government prior to submitting the application.*

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

## Requirements - Roadways Including Multimodal Elements

### Expansion and Reconstruction/Modernization Projects Only

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

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

*2.Federal funds are available for roadway construction and reconstruction on new alignments or within existing right-of-way, including associated construction and excavation, bridges, or installation of traffic signals, signs, utilities, bikeway or walkway components and transit components.*
*The project must exclude costs for right-of-way, studies, preliminary engineering, design, or construction engineering. Noise barriers, drainage projects, fences, landscaping, etc., are not eligible for funding unless included as part of a larger project, which is otherwise eligible.*

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

### Bridge Projects Only

*3.The bridge project 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.**

*4.Bridges selected in previous Bridge Improvement and Replacement solicitations (1994  2011) are not eligible. A previously selected project is not eligible unless it has been withdrawn or sunset prior to the deadline for proposals in this solicitation.*

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

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

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

*6.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 sub-categories. Rail-only bridges are ineligible for funding.*

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

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

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

*8.Project limits for bridge projects are limited from abutment to abutment.*

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

*9.The project must exclude costs for studies, preliminary engineering, design, construction engineering, and right-of-way.*

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

### Bridge Replacement Projects Only

*10.The bridge must have a sufficienty rating less than 50. Additionally, it must also be classified as structurally deficient or functionally obsolete.*

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

### Bridge Rehabilitiation Projects Only

*11.The bridge must have a sufficienty rating less than 80. Additionally, it must also be classified as structurally deficient or functionally obsolete.*

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

## Other Attachments

| File Name | Description | File Size |
|---|---|---|
| Figure1_CSAH13_Reconstruction.pdf | Project Area Map | 830 KB |
| Victoria Letter of Support.pdf | Letter of Support City of Victoria | 308 KB |

## Reliever: Freeway Facility or

**Facility being relieved**

| | |
|---|---|
| **Number of hours per day volume exceeds capacity (based on the Congestion Report)** | 0 |

## Reliever: Non-Freeway Facility or

**Facility being relieved**

| | |
|---|---|
| **Number of hours per day volume exceeds capacity (based on the table below)** | 0 |

## Non-Freeway Facility Volume/Capacity Table

| Hour | NB/EB Volume | SB/WB Volume | Capacity | Volume exceeds capacity |
|---|---|---|---|---|
| 12:00am - 1:00am | | | | |
| 1:00am - 2:00am | | | | |
| 2:00am - 3:00am | | | | |
| 3:00am - 4:00am | | | | |
| 4:00am - 5:00am | | | | |
| 5:00am - 6:00am | | | | |
| 6:00am - 7:00am | | | | |
| 7:00am - 8:00am | | | | |
| 8:00am - 9:00am | | | | |
| 9:00am - 10:00am | | | | |
| 10:00am - 11:00am | | | | |
| 11:00am - 12:00pm | | | | |
| 12:00pm - 1:00pm | | | | |
| 1:00pm - 2:00pm | | | | |
| 2:00pm - 3:00pm | | | | |
| 3:00pm - 4:00pm | | | | |
| 4:00pm - 5:00pm | | | | |
| 5:00pm - 6:00pm | | | | |
| 6:00pm - 7:00pm | | | | |
| 7:00pm - 8:00pm | | | | |
| 8:00pm - 9:00pm | | | | |
| 9:00pm - 10:00pm | | | | |
| 10:00pm - 11:00pm | | | | |
| 11:00pm - 12:00am | | | | |

## Expander/Connector/Augmentor/Non-Freeway Principal Arterial

| | |
|---|---|
| **Select one:** | Expander |
| **Area** | 8.54 |

| | |
|---|---|
| **Project Length** | 1.16 |
| **Average Distance** | 7.3621 |
| **Upload Map** | Roadway Area Definition Map.pdf |

## Measure B: Current Heavy Commercial Traffic

| | |
|---|---|
| **Location** | CSAH 13 north of TH 5 |
| **Current daily heavy commercial traffic volume** | 1324.0 |

## Measure C: Project Location Relative to Jobs, Manufacturing, and Education

**Select all that apply**

| | |
|---|---|
| **Direct connection to or within a mile of a Job Concentration** | |
| **Direct connection to or within a mile of a Manufacturing/Distribution Location** | |
| **Direct connection to or within a mile of an Educational Institution** | |
| **Project provides a direct connection to or within a mile of an existing local activity center identified in an adopted county or city plan** | Yes |
| **County or City Plan Reference (Limit 700 characters; approximately 100 words)** | CSAH 13 is a critical connection to two regional assets: the Minnesota Landscape Arboretum and the Carver County Park Reserve, both of which are identified in the Carver County and City of Victoria Comprehensive Plans. The Arboretum is one of the top tourist attractions in the state with over 315,000 visitors annually, and Carver Park Reserve boasts 3,700 acres of woodland and lakes. With their miles of trails and natural areas, these destinations are magnets for hikers, bikers, and outdoor enthusiasts. While CSAH 13 provides access to these regional attractions for all modes, it also serves as an important north-south connection between TH 5 and TH 7 for commuters and freight haulers. |
| **Upload Map** | Regional Economy Map.pdf |

## Measure A: Current Daily Person Throughput

| | |
|---|---|
| **Location** | CSAH 13 just north of TH 5 |

| | |
|---|---|
| **Current AADT Volume** | 9200.0 |
| **Existing Transit Routes on the Project** | N/A |

## Response: Current Daily Person Throughput

| | |
|---|---|
| **Average Annual Daily Transit Ridership** | 0 |
| **Current Daily Person Throughput** | 11960.0 |

## Measure B: 2030 Forecast ADT

| | |
|---|---|
| **Use Metropolitan Council model to determine forecast (2030) ADT volume** | |
| **METC Staff - Forecast (2030) ADT volume** | 0 |
| **OR** | |
| **Approved county or city travel demand model to determine forecast (2030) ADT volume** | Yes |
| **Forecast (2030) ADT volume** | 9900.0 |

## Measure A: Project Location and Impact to Disadvantaged Populations

**Select one:**

| | |
|---|---|
| **Project located in Racially Concentrated Area of Poverty** | |
| **Project located in Concentrated Area of Poverty** | |
| **Projects census tracts are above the regional average for population in poverty or population of color** | |
| **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.** | Yes |

While all users will benefit from the new trail constructed as part of the proposed project, off-road facilities are especially ideal for people who are new to cycling and need the safety and security of riding their bicycles on facilities that offer minimal contact with automobile traffic. As nearly 35 percent of people living in the project area are children, the trails will have an enormous benefit on the nearby population. The trail will enable families to walk or cycle to the nearby Landscape Arboretum or Carver Park Reserve where there are a range of family and kid-friendly recreational options.

**Response (Limit 1,400 characters; approximately 200 words)**

The proposed project will also be good for business. CSAH 13 is heavily used by commuters and freight haulers as it offers the shortest route between TH 5 and TH 7. As the City of Victoria has grown from a small village to a large town and added residential neighborhoods in the CSAH 13 area, new streets have been built that connect to the roadway and create points of conflict. Reconstruction of the roadway will improve access management and safety for users of all modes in the corridor, and transition the roadway from a rural to an urban facility with curb, gutter, and ADA-compliant features that will enable safe travel for individuals with disabilities (5 percent) and the elderly (8 percent) traveling in the corridor.

**Upload Map**

Socio-Economic Conditions Map.pdf

## Measure B: Affordable Housing

| City/Township | Segment Length (Miles) |
|---|---|
| City of Victoria | 1.16 |
| | **1** |

## Total Project Length

**Total Project Length** 1.16

## Affordable Housing Scoring - To Be Completed By Metropolitan Council Staff

| City/Township | Segment Length (Miles) | Total Length (Miles) | Score | Segment Length/Total Length | Housing Score Multiplied by Segment percent |
|---|---|---|---|---|---|
| City of Victoria | 1.16 | 1.16 | 50.0 | 1.0 | 50.0 |
| | | **1** | **50** | **1** | **50** |

## Affordable Housing Scoring - To Be Completed By Metropolitan Council Staff

| | |
|---|---|
| **Total Project Length (Miles)** | 1.16 |
| **Total Housing Score** | 50.0 |

## Measure A: Year of Roadway Construction

| Year of Original Roadway Construction or Most Recent Reconstruction | Roadway Segment Length (Miles) | Calculation | Calculation 2 |
|---|---|---|---|
| 1957.0 | 1.16 | 2270.12 | 1957.0 |
| | **1** | **2270** | **1957** |

## Average Construction Year

| | |
|---|---|
| **Weighted Year** | 1957.0 |

## Total Segment Length (Miles)

| | |
|---|---|
| **Total Segment Length** | 1.16 |

## Measure B: Geometric, Structural, or Infrastructure Improvements

| | |
|---|---|
| **Response (Limit 1,400 characters; approximately 200 words)** | Built in 1957, CSAH 13 is beyond its useful life of 50 years. Reconstruction of the roadway will update this two-lane, undivided, 57-year-old facility to a modern roadway in the following ways:<br>Addition of a 13-foot center left turn lane for the length of CSAH 13 between TH 5 and TH 7, reducing rear-end crashes<br>Addition of 12-foot right turn lanes at each local street, to manage access for recently developed neighborhoods in the area<br><br>Completion of the paved local off-road trail system along CSAH 13 with direct links to nearby regional trails<br><br>Provision of paved shoulders that improve safety for vehicular traffic and provide an opportunity for use by commuter bicyclists, who prefer to travel on roadways at higher speeds<br>Construction of curbs, gutters, and a stormwater treatment pond that will improve stormwater management in this ecologically sensitive area |

## Measure A: Cost Effectiveness of Vehicle Delay Reduction

| | |
|---|---|
| **Total Project Cost from Cost Sheet** | $6,745,000.00 |
| **Total Peak Hour Vehicle Delay Without The Project** | 68968.0 |
| **Total Peak Hour Vehicle Delay With The Project** | 65240.0 |
| **Total Peak Hour Vehicle Delay Reduced by Project** | 3728.0 |
| **Cost Effectiveness** | $1,809.28 |
| **Synchro or HCM Reports** | CSAH 13 at TH7-Synchro Results-Existing & Improved.pdf |

## Measure B: Cost Effectiveness of Emissions Reduction

| | |
|---|---|
| **Total Project Cost from Cost Sheet** | $6,745,000.00 |
| **Total Peak Hour Kilograms Reduced by Project** | 1.28 |
| **Cost Effectiveness** | $5,269,531.25 |
| **Synchro or HCM Reports** | CSAH 13 at TH7-Synchro Results-Existing & Improved.pdf |

## Measure A: Benefit/Cost of Crash Reduction

| | |
|---|---|
| **Project Benefit/Cost Ratio** | 0.15 |
| **Worksheet Attachment** | CSAH 13 Benefit-Cost Analysis.pdf |

## Measure A: Transit Connections

| | |
|---|---|
| **Existing Routes Directly Connected to the Project** | N/A |
| **Planned Transitways directly connected to the project (alignment and mode determined and identified in the 2030 TPP)** | N/A |
| **Upload Map** | Transit Connections Map.pdf |

## Response

*Met Council Staff Data Entry Only*

| | |
|---|---|
| **Route Ridership** | 0 |
| **Transitway Ridership** | 0 |

## Measure B: Bicycle and Pedestrian Connections

**Response (Limit 1,400 characters; approximately 200 words)**

The proposed project will implement a missing link in the local trail system by constructing a seven-foot wide multi-use trail on the east side of CSAH 13. This will provide a complete trail link from neighborhoods to the north and west to the Lake Minnetonka LRT Regional Trail, the recently-constructed TH 5 Trail, and the trail underpass to the Minnesota Landscape Arboretum. The project will connect to the many outdoor exploration options in Carver Park Reserve and the Landscape Arboretum, as well as to the downtowns of Victoria, Excelsior, and Hopkins. The value of the diversity of recreational, educational, and employment opportunities along the Regional Trail is recognized in the City of Victoria Parks and Trails Master Plan, as it recommends full connection of trails along the east side of CSAH 13 to the Regional Trail.

Today, pedestrians and cyclists trying to access these regional destinations via CSAH 13 are forced to walk or cycle on the roadways narrow shoulder alongside high volumes of freight and commuter traffic. In addition to the trail connection, the expansion of CSAH 13 will include construction of shoulders that can accommodate on-road bike commuters, who may choose to take a more direct path at faster speeds.

Finally, the project will link to the planned TH 5 Trail to downtown Victoria called for in the 2030 Carver County Comprehensive Plan.

## Measure C: Multimodal Facilities

Transit is not incorporated into the CSAH 13 expansion project because there are no existing transit routes that use the facility. However, the proposed project will improve access for commuters to two nearby park and ride facilities at Excelsior City Hall near TH 7, and at Chanhassen Transit Station, near TH 5. Both park and ride facilities are served by peak period express service to downtown Minneapolis. The lack of transit service is consistent with the project areas designation as a Transit Market Area IV by the Metropolitan Council (i.e. an area that only supports dial-a-ride and peak period express/commuter service).

**Response (Limit 1,400 characters; approximately 200 words)**

The projects multimodal elements include the completion of a critical gap in the trail system and when finished, will provide a paved off-road trail for pedestrians and bicyclists along the CSAH 13 between TH 5 and TH 7. In turn, this will provide direct access to the Lake Minnetonka LRT Regional Trail and will help facilitate safer routes to the Carver Park Reserve and the Minnesota Landscape Arboretum. More importantly, access to the Lake Minnetonka LRT Regional Trail will expand options for bicycle commuters in the area who may choose to bike to the park-and-ride at Excelsior City Hall (approx. 5 miles to downtown Excelsior). Finally, all new facilities will be ADA compliant, enabling use of the trail by elderly people and people with disabilities.

## Transit Projects Not Requiring Construction

*If the applicant is completing a transit or TDM application, only Park-and-Ride and other construction projects require completion of the Risk Assessment below. Check the box below if the project does not require the Risk Assessment fields, and do not complete the remainder of the form. These projects will receive full points for the Risk Assessment.*

**Check Here if Your Transit Project Does Not Require Construction**

# Measure A: Risk Assessment

## 1)Project Scope (5 Percent of Points)

**Meetings or contacts with stakeholders have occurred**

*100%*

**Stakeholders have been identified** Yes

*40%*

**Stakeholders have not been identified or contacted**

*0%*

## 2)Layout or Preliminary Plan (5 Percent of Points)

**Layout or Preliminary Plan completed** Yes

*100%*

**Layout or Preliminary Plan started**

*50%*

**Layout or Preliminary Plan has not been started**

*0%*

**Anticipated date or date of completion**

## 3)Environmental Documentation (10 Percent of Points)

**EIS**

**EA** Yes

**PM**

### Document Status:

**Document approved (include copy of signed cover sheet)**

100%

**Document submitted to State Aid for review**

75%

**Document in progress; environmental impacts identified**

*50%*

**Document not started** Yes

*0%*

**Anticipated date or date of completion/approval** 02/01/2016

## 4)Review of Section 106 Historic Resources (15 Percent of Points)

**No known potential for archaeological resources, no historic resources known to be eligible for/listed on the National Register of Historic Places located in the project area, and project is not located on an identified historic bridge**

*100%*

**Historic/archeological review under way; determination of no historic properties affected or no adverse effect anticipated**

*80%*

**Historic/archaeological review under way; determination of adverse effect anticipated**

*40%*

**Unknown impacts to historic/archaeological resources** Yes

*0%*

**Anticipated date or date of completion of historic/archeological review:** 12/01/2015

**Project is located on an identified historic bridge**

### 5)Review of Section 4f/6f Resources (15 Percent of Points)

*(4f is publicly owned parks, recreation areas, historic sites, wildlife or waterfowl refuges; 6f is outdoor recreation lands where Land and Water Conservation Funds were used for planning, acquisition, or development of the property)*

**No Section 4f/6f resources located in the project area** Yes

*100%*

**Project is an independent bikeway/walkway project covered by the bikeway/walkway Negative Declaration statement; letter of support received**

*100%*

**Section 4f resources present within the project area, but no known adverse effects**

*80%*

**Adverse effects (land conversion) to Section 4f/6f resources likely**

*30%*

**Unknown impacts to Section 4f/6f resources in the project area**

*0%*

### 6)Right-of-Way (15 Percent of Points)

**Right-of-way or easements not required**

*100%*

**Right-of-way or easements has/have been acquired**

*100%*

**Right-of-way or easements required, offers made**

*75%*

**Right-of-way or easements required, appraisals made**

*50%*

**Right-of-way or easements required, parcels identified** Yes

*25%*

**Right-of-way or easements required, parcels not identified**

*0%*

**Right-of-way or easements identification has not been completed**

*0%*

**Anticipated date or date of acquisition**

## 7)Railroad Involvement (25 Percent of Points)

**No railroad involvement on project** Yes

*100%*

**Railroad Right-of-Way Agreement is executed (include signature page)** 100%

**Railroad Right-of-Way Agreement required; Agreement has been initiated**

*60%*

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

*40%*

**Railroad Right-of-Way Agreement required; negotiations not begun**

*0%*

**Anticipated date or date of executed Agreement**

## 8)Construction Documents/Plan (10 Percent of Points)

**Construction plans completed/approved (include signed title sheet)**

*100%*

**Construction plans submitted to State Aid for review**

*75%*

**Construction plans in progress; at least 30% completion**

*50%*

**Construction plans have not been started** Yes

*0%*

**Anticipated date or date of completion** 11/01/2016

## 9)Letting

**Anticipated Letting Date** 02/01/2017


**Project Limits**

CSAH 13 Roadway Reconstruction from TH 5 to TH 7

Carver County, MN

**Figure 1**

**City of Victoria**
Ph. 952.443.4210
Fax 952.443.2110

December 1, 2014

Ms. Elaine Koutsoukos, TAB Coordinator
Metropolitan Council
390 North Robert Street
Saint Paul, MN 55101

SUBJECT: APPLICATION FOR REGIONAL SOLICITATION FUNDS FOR CSAH 13 RECONSTRUCTION

Dear Ms. Koutsoukos:

The City of Victoria has been notified that Carver County is submitting an application for regional solicitation funding for the proposed CSAH 13 reconstruction between TH5 and TH 7, which travels through the City of Victoria. The proposed project will reconstruct the existing roadway from a 2-lane section to an urban 3-lane section with a multiuse trail to improve bicycle and pedestrian safety, provide better access management, and correct existing safety issues. The road provides a vital north-south connection between TH 5 and TH 7.

The project is supported in City and Carver County planning documents, and is significant to the Minneapolis/St. Paul Metropolitan region. Therefore, we strongly support funding to be granted to help this important project move forward. The City acknowledges Carver County's Cost participation polity and understands the City would be responsible for providing a portion of the local match funds for this project if Carver County is successful in securing regional solicitation funding from the Metropolitan Council.

If you should have any questions, feel free to contact our City Manager, Laurie Hokkanen at 952.443.4211 or lhokkanen@ci.victoria.mn.us.

Sincerely,

Tom O'Connor
Mayor

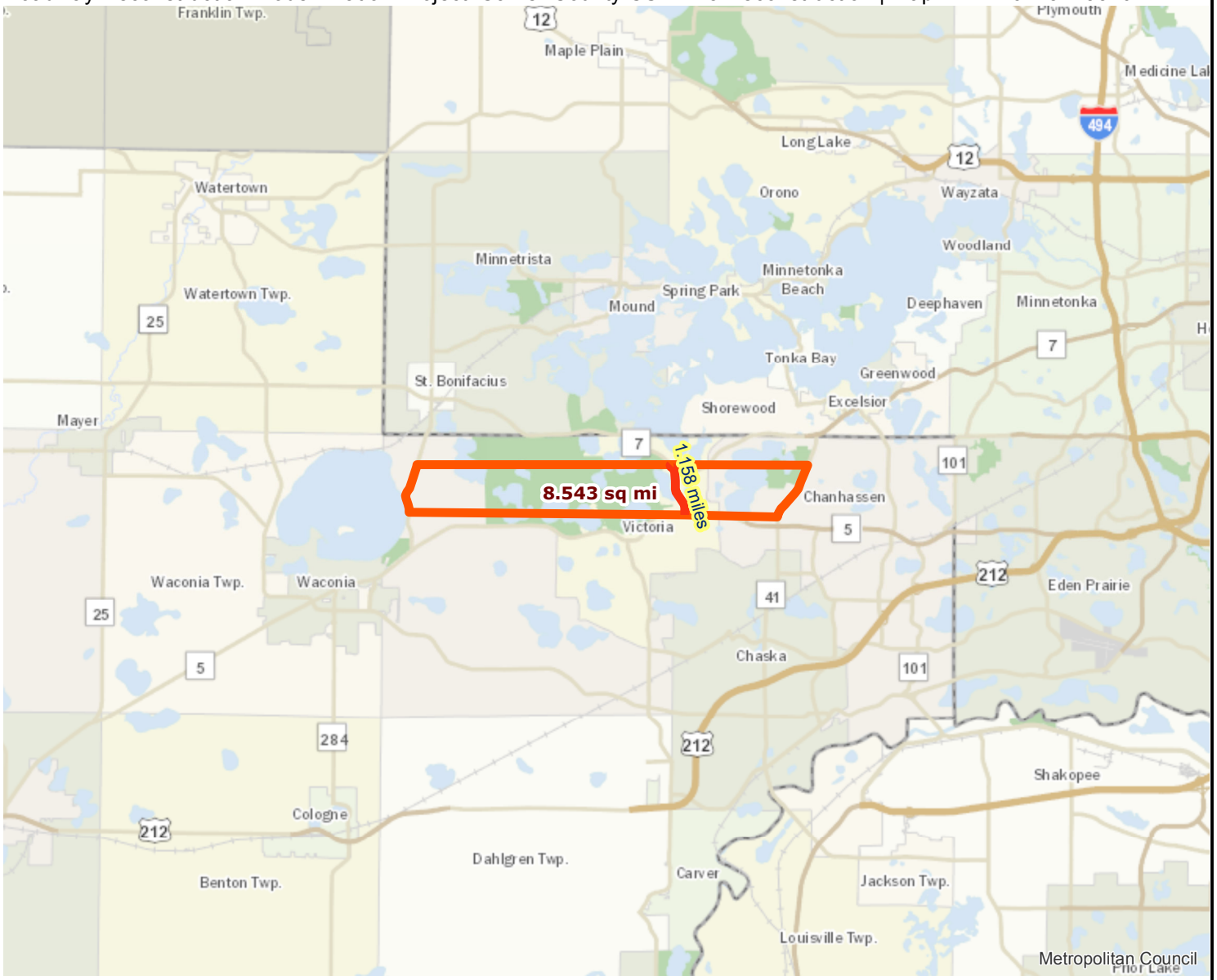
# Roadway Area Definition

Roadway Reconstruction/Modernization Project: Carver County CSAH 13 Reconstruction | Map ID: 1416245225310

## Results

Project Length: 1.158 miles

Project Area: 8.543 sq mi




Project

Project Area

0 2 4 8 12 16 Miles

Created: 11/17/2014
LandscapeRSA1

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

METROPOLITAN COUNCIL

# Regional Economy

Roadway Reconstruction/Modernization Project: Carver County CSAH 13 Reconstruction | Map ID: 1416245225310

## Results

Project **NOT IN** area of Job Concentration.

Project **NOT IN** to area of Manufacturing and Distribution.

Project **NOT CONNECTED** to area of Education Institutions.


Project

Project Area

0 2 4 8 12 16 Miles

Created: 11/17/2014
LandscapeRSA5

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

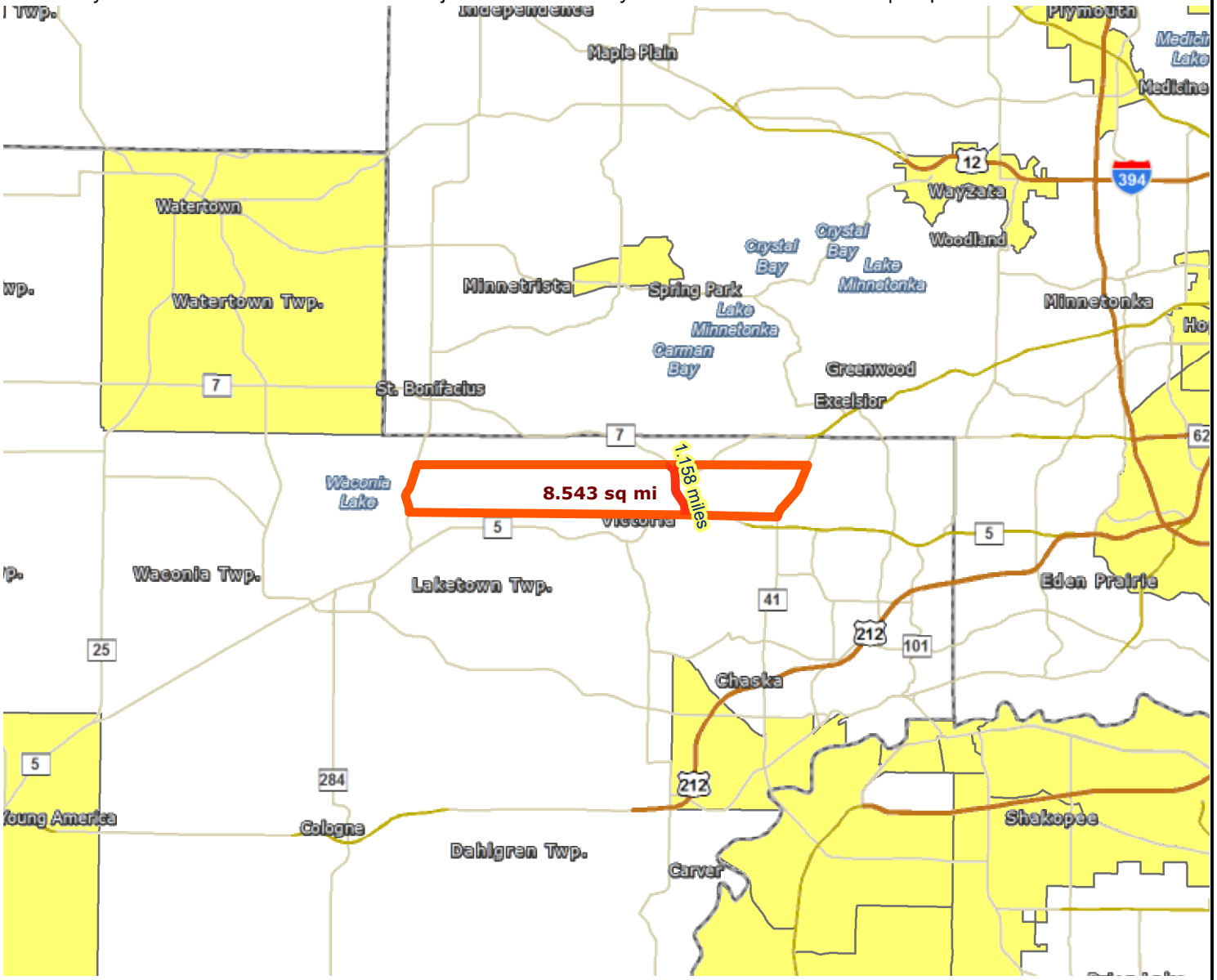
METROPOLITAN COUNCIL

# Socio-Economic Conditions

Roadway Reconstruction/Modernization Project: Carver County CSAH 13 Reconstruction | Map ID: 1416245225310

Results

Project **NOT IN** any area of concentrated poverty.




Project
Project Area
Racially concentrated area of poverty
Concentrated area of poverty
Above reg'l avg conc of race/poverty

0 2 4 8 12 16 Miles

Created: 11/17/2014
LandscapeRSA2

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

METROPOLITAN COUNCIL

## 3: CSAH 13/Smithtown Rd & Hwy 7

| Direction | All |
|---|---|
| Volume (vph) | 1864 |
| Total Delay / Veh (s/v) | 37 |
| CO Emissions (kg) | 3.27 |
| NOx Emissions (kg) | 0.64 |
| VOC Emissions (kg) | 0.76 |

## 3: CSAH 13/Smithtown Rd & Hwy 7

| Direction | All |
|---|---|
| Volume (vph) | 1864 |
| Total Delay / Veh (s/v) | 35 |
| CO Emissions (kg) | 2.38 |
| NOx Emissions (kg) | 0.46 |
| VOC Emissions (kg) | 0.55 |

## 3: CSAH 13/Smithtown Rd & Hwy 7

| Direction | All |
|---|---|
| Volume (vph) | 1864 |
| Total Delay / Veh (s/v) | 37 |
| CO Emissions (kg) | 3.27 |
| NOx Emissions (kg) | 0.64 |
| VOC Emissions (kg) | 0.76 |

## 3: CSAH 13/Smithtown Rd & Hwy 7

| Direction | All |
|---|---|
| Volume (vph) | 1864 |
| Total Delay / Veh (s/v) | 35 |
| CO Emissions (kg) | 2.38 |
| NOx Emissions (kg) | 0.46 |
| VOC Emissions (kg) | 0.55 |

# 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 |
|---|---|---|---|---|---|---|---|
| | CSAH 13 | From TH 5 to TH 7 | | | Carver | 1/1/2011 | 12/31/2013 |

**Description of Proposed Work:** Construct a 3-lane urban section with TWLTL and Right Turn Lanes at all local roads

| | | 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** | | | | | | | | | |
| | Personal Injury (PI) **B** | | | | | | | | | |
| | Personal Injury (PI) **C** | 2 | | | | | | | | 2 |
| | Property Damage **PD** | 3 | 1 | | | 3 | 1 | | | 8 |
| **% Change in Crashes** *Use Crash Modification Factors Clearinghouse | Fatal **F** | | | | | | | | | |
| | PI **A** | | | | | | | | | |
| | PI **B** | | | | | | | | | |
| | PI **C** | -84% | | | | | | | | |
| | Property Damage **PD** | -84% | -62% | | | -62% | -62% | | | |
| **Change in Crashes** = No. of crashes **X** % change in crashes | Fatal **F** | | | | | | | | | |
| | PI **A** | | | | | | | | | |
| | PI **B** | | | | | | | | | |
| | PI **C** | **-1.68** | | | | | | | | **-1.68** |
| | Property Damage **PD** | **-2.52** | **-0.62** | | | **-1.86** | **-0.62** | | | **-5.62** |

**Year** (Safety Improvement Construction): **2018**

| | | Type of Crash | Study Period: Change in Crashes | Annual Change in Crashes | Cost per Crash | Annual Benefit |
|---|---|---|---|---|---|---|
| **Project Cost** (exclude Right of Way) | **$ 6,745,000** | | | | | |
| **Right of Way Costs** (optional) | | **F** | | | **$ 1,100,000** | |
| **Traffic Growth Factor** | **3%** | **A** | | | **$ 550,000** | |
| **Capital Recovery** | | **B** | | | **$ 160,000** | |
| **1. Discount Rate** | **4.5%** | **C** | **-1.68** | **-0.56** | **$ 81,000** | **$ 45,360** |
| **2. Project Service Life (n)** | **20** | **PD** | **-5.62** | **-1.87** | **$ 7,400** | **$ 13,863** |
| | | **Total** | | | | **$ 59,223** |

**B/C= 0.15**

*Using present worth values,*

**B= $ 1,036,036**

**C= $ 11,725,000**

*See "Calculations" sheet for amortization.*

**Office of Traffic, Safety and Technology** **September 2014**

## CSAH 13 - created on 10-31-2014 by imsd1jac

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

| SYS | NUM | REF_POINT | GIS_ROUTE | GIS_TM | RD_DIR | ELEM | RELY | INV | R_U |
|---|---|---|---|---|---|---|---|---|---|
| ~~04~~ | ~~10000013~~ | ~~000+00.760~~ | ~~0410000013~~ | ~~0.760~~ | ~~Z~~ | ~~—~~ | ~~1~~ | ~~2~~ | ~~U~~ |
| ~~04~~ | ~~10000013~~ | ~~000+00.760~~ | ~~0410000013~~ | ~~0.760~~ | ~~Z~~ | ~~—~~ | ~~1~~ | ~~2~~ | ~~U~~ |
| ~~04~~ | ~~10000013~~ | ~~000+00.761~~ | ~~0410000013~~ | ~~0.761~~ | ~~Z~~ | ~~—~~ | ~~A~~ | ~~2~~ | ~~U~~ |
| 04 | 10000013 | 000+00.789 | 0410000013 | 0.789 | Z | | 1 | 2 | U |
| 04 | 10000013 | 000+00.860 | 0410000013 | 0.860 | Z | | 2 | 2 | U |
| 04 | 10000013 | 001+00.060 | 0410000013 | 1.060 | Z | | 2 | 2 | U |
| 04 | 10000013 | 001+00.165 | 0410000013 | 1.165 | Z | | 2 | 2 | U |
| 04 | 10000013 | 001+00.185 | 0410000013 | 1.185 | Z | | 1 | 2 | U |
| 04 | 10000013 | 001+00.207 | 0410000013 | 1.207 | Z | | 2 | 2 | U |
| 04 | 10000013 | 001+00.315 | 0410000013 | 1.315 | Z | | 3 | 2 | U |
| 04 | 10000013 | 001+00.436 | 0410000013 | 1.436 | Z | | 1 | 2 | U |
| 04 | 10000013 | 001+00.545 | 0410000013 | 1.545 | Z | | 1 | 2 | U |
| 04 | 10000013 | 001+00.866 | 0410000013 | 1.866 | Z | | 1 | 0 | U |
| ~~04~~ | ~~10000013~~ | ~~001+00.930~~ | ~~0410000013~~ | ~~1.930~~ | ~~Z~~ | ~~—~~ | ~~A~~ | ~~2~~ | ~~U~~ |
| ~~04~~ | ~~10000013~~ | ~~001+00.930~~ | ~~0410000013~~ | ~~1.930~~ | ~~Z~~ | ~~—~~ | ~~A~~ | ~~2~~ | ~~U~~ |

| ATP | CO | CITY | DOW | MONTH | DAY | YEAR | TIME | SEV |
|---|---|---|---|---|---|---|---|---|
| ~~UNIT #2 ATTEMPTED TO MAKE A UTURN ON CR 13 JUST NORTH OF HWY.5. UNIT #1 STARTED TO PASS UNIT #2 AND~~ | ~~10~~ | ~~3895~~ | ~~4-Wed~~ | ~~7~~ | ~~20~~ | ~~2011~~ | ~~1910~~ | ~~N~~ |
| ~~UNIT 1 WAS E/B ON HWY 5 APPROACHING AN AREA OF CONSTRUCTION THAT HAD A FLAG PERSON STOPPING TRAFFIC~~ | ~~10~~ | ~~3895~~ | ~~3-Tue~~ | ~~9~~ | ~~18~~ | ~~2012~~ | ~~1630~~ | ~~N~~ |
| ~~DRIVER OF VEH1 S/B ON CSAH 13. DRIVER CLAIMED THAT~~ | ~~10~~ | ~~3895~~ | ~~6-Fri~~ | ~~1~~ | ~~7~~ | ~~2011~~ | ~~0635~~ | ~~N~~ |
| UNIT #1 WAS MAKING A LEFT TURN AND WAS FOLLOWED BY UNIT #2. AS UNIT #2 SLOWED FOR UNIT #1 OT MAKE | 10 | 3895 | 4-Wed | 9 | 12 | 2012 | 1736 | N |
| VEH 1, 2, AND 3 WERE SOUTHBOUND ON CO RD 13, APPROACHING A TRAFFIC LIGHT. VEH #3 AND 2 SLOWED WITH | 10 | 3895 | 2-Mon | 11 | 18 | 2013 | 0752 | C |
| #1 DRIVER STATED HE WAS DRIVING NORTH ON CSAH 13 AT 40 MPH. #1 DRIVER STATED HE LOOKED LEFT AT SOM | 10 | 3895 | 6-Fri | 4 | 8 | 2011 | 0708 | N |
| VEH #2 WAS SB ON CO RD 13. AS VEH #2 APPROACHED THE CROSSWALK FOR THE LRT TRAIL, DRIVER #2 STATED S | 10 | 3895 | 3-Tue | 7 | 23 | 2013 | 1522 | N |
| VEHICLE 1 AND VEHICLE 2 WERE DRIVING WEST BOUND ON STATE HWY 5 AND WERE PASSING EACH OTHER AND GIVI | 10 | 3895 | 1-Sun | 3 | 18 | 2012 | 1603 | N |
| UNIT 1 STOPPED AT A MARKED TRAIL CROSSING TO ALLOW EITHER A PEDESTRIAN OR BIKER TO CROSS. UNIT 2 D | 10 | 3895 | 6-Fri | 9 | 14 | 2012 | 1048 | C |
| VEHICLE 1 TRAVELING NB CO RD 13/ROLLING ACRES RD. VEHICLE 2 TRAVELING NB CO RD 13/ROLLING ACRES RD | 10 | 3895 | 4-Wed | 7 | 10 | 2013 | 1915 | N |
| UNIT 1 WAS TRAVELING NORHT BOUND ON ROLLING ACRES. UNIT 2 WAS TRAVELING SOUTH BOUND ON ROLLING ACR | 10 | 3895 | 2-Mon | 2 | 20 | 2012 | 2130 | N |
| UNIT 1 WAS N/B ON ROLLING ACRES ROAD AND BEGIN TO FISHTAIL ON THE ICE COVERED ROADWAY. DRIVER STAT | 10 | 3895 | 6-Fri | 3 | 15 | 2013 | 2259 | N |
| | 10 | 3895 | 7-Sat | 3 | 16 | 2013 | 0900 | N |
| ~~UNIT 1 WAS STOPPED TO TURN RIGHT ON RED FROM N/B 1~~ | ~~10~~ | ~~3895~~ | ~~4-Wed~~ | ~~7~~ | ~~18~~ | ~~2012~~ | ~~0901~~ | ~~N~~ |
| ~~VEHICLE #1 WAS MERGING ONTO HWY 7 FROM ROLLING ACR~~ | ~~10~~ | ~~3895~~ | ~~3-Tue~~ | ~~11~~ | ~~13~~ | ~~2012~~ | ~~0730~~ | ~~N~~ |

| | | | | | | | | | | | | | | | PERSON1 | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| NUM_KILLED | NUM_VEH | JUNC | SL | TYPE | DIAG | LOC1 | TCD | LIT | WTHR1 | WTHR2 | SURF | CHAR | DESGN | ACC_NUM | VTYPE | DIR | ACT |
| ~~0~~ | ~~2~~ | ~~1~~ | ~~45~~ | ~~1~~ | ~~2~~ | ~~1~~ | ~~98~~ | ~~1~~ | ~~1~~ | ~~0~~ | ~~1~~ | ~~1~~ | ~~8~~ | ~~112030629~~ | ~~1~~ | ~~1~~ | ~~1~~ |
| ~~0~~ | ~~2~~ | ~~1~~ | ~~55~~ | ~~1~~ | ~~1~~ | ~~1~~ | ~~6~~ | ~~1~~ | ~~1~~ | ~~0~~ | ~~1~~ | ~~1~~ | ~~8~~ | ~~122630064~~ | ~~3~~ | ~~3~~ | ~~11~~ |
| ~~0~~ | ~~2~~ | ~~4~~ | ~~55~~ | ~~1~~ | ~~3~~ | ~~1~~ | ~~1~~ | ~~4~~ | ~~2~~ | ~~0~~ | ~~2~~ | ~~1~~ | ~~5~~ | ~~110070104~~ | ~~3~~ | ~~1~~ | ~~1~~ |
| 0 | 3 | 1 | 45 | 1 | 1 | 1 | 9 | 1 | 1 | 0 | 1 | 1 | 8 | 122590006 | 1 | 1 | 1 |
| 0 | 3 | 1 | 45 | 1 | 1 | 1 | 98 | 1 | 1 | 0 | 1 | 1 | 8 | 133220059 | 38 | 5 | 1 |
| 0 | 1 | 1 | 45 | 30 | 7 | 1 | 98 | 1 | 2 | 2 | 1 | 5 | 8 | 110980081 | 3 | 1 | 1 |
| 0 | 2 | 11 | 45 | 1 | 1 | 1 | 98 | 1 | 1 | 0 | 1 | 1 | 8 | 132060061 | 1 | 5 | 1 |
| 0 | 2 | 1 | 45 | 1 | 2 | 1 | 9 | 1 | 1 | 0 | 1 | 2 | 8 | 120800088 | 2 | 1 | 15 |
| 0 | 2 | 90 | 45 | 1 | 1 | 1 | 98 | 1 | 1 | 0 | 1 | 1 | 8 | 122580115 | 3 | 1 | 1 |
| 0 | 2 | 11 | 40 | 1 | 1 | 1 | 98 | 1 | 1 | 1 | 1 | 1 | 1 | 131920017 | 1 | 1 | 10 |
| 0 | 2 | 1 | 45 | 1 | 8 | 1 | 98 | 4 | 4 | 90 | 5 | 6 | 8 | 120520029 | 1 | 1 | 1 |
| 0 | 1 | 8 | 45 | 30 | 4 | 2 | 98 | 6 | 5 | 0 | 5 | 1 | 8 | 130750046 | 1 | 1 | 1 |
| 0 | 1 | 0 | 45 | 26 | 7 | 0 | 98 | 1 | 2 | 0 | 5 | 0 | 0 | 131090078 | 1 | 5 | 1 |
| ~~0~~ | ~~2~~ | ~~7~~ | ~~45~~ | ~~1~~ | ~~1~~ | ~~1~~ | ~~1~~ | ~~1~~ | ~~2~~ | ~~0~~ | ~~1~~ | ~~2~~ | ~~8~~ | ~~122000092~~ | ~~1~~ | ~~2~~ | ~~3~~ |
| ~~0~~ | ~~2~~ | ~~7~~ | ~~55~~ | ~~1~~ | ~~1~~ | ~~1~~ | ~~1~~ | ~~1~~ | ~~1~~ | ~~0~~ | ~~1~~ | ~~5~~ | ~~8~~ | ~~123180070~~ | ~~1~~ | ~~2~~ | ~~16~~ |

▾ Countermeasure: Introduce TWLTL (two-way left turn lanes) on rural two lane roads

| CMF | CRF(%) | Quality | Crash Type | Crash Severity | Area Type | Reference | Comments |
|---|---|---|---|---|---|---|---|
| 0.64 | 36 | ★★★★★ | All | All | Rural | Persaud et al., 2008 | |
| 0.53 | 47 | ★★★★★ | Rear end | All | Rural | Persaud et al., 2008 | |
| 0.65 | 35 | ★★★★☆ | All | Serious injury,Minor injury | Rural | Persaud et al., 2008 | |

- Countermeasure: Install TWLTL (two-way left turn lane) on two lane road

| CMF | CRF(%) | Quality | Crash Type | Crash Severity | Area Type | Reference | Comments |
|---|---|---|---|---|---|---|---|
| 0.797 | 20.3 | ★★★★★ | All | All | All | Lyon et al., 2008 | |

-

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0.739 | 26.1 | ★★★★★ | All | Fatal,Serious injury,Minor injury | All | Lyon et al., 2008 | |

-

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0.613 | 38.7 | ★★★★★ | Rear end | All | All | Lyon et al., 2008 | |

-

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0.775 | 22.5 | ★★★★☆ | All | All | All | Lyon et al., 2008 | |

-

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0.686 | 31.4 | ★★★★☆ | All | All | All | Lyon et al., 2008 | |

-

- Countermeasure: Improve pavement friction (increase skid resistance)

| CMF | CRF(%) | Quality | Crash Type | Crash Severity | Area Type | Reference | Comments |
|---|---|---|---|---|---|---|---|
| 0.799 | 20.1 | ★★★★☆ | All | All | All | Lyon and Persaud, 2008 | |

- 

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0.667 | 33.3 | ★★★★☆ | All | All | All | Lyon and Persaud, 2008 | |

- 

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0.819 | 18.1 | ★★★★☆ | All | All | All | Lyon and Persaud, 2008 | |

- 

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0.797 | 20.3 | ★★★★☆ | All | All | All | Lyon and Persaud, 2008 | |

- 

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1.271 | -27.1 | ★★★★☆ | All | All | All | Lyon and Persaud, 2008 | |

- 

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0.426 | 57.4 | ★★★★☆ | Wet road | All | All | Lyon and Persaud, 2008 | |

- 

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 0.372 | 62.8 | ★★★★☆ | Wet road | All | All | Lyon and Persaud, | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 0.575 | 42.5 | ★★★★☆ | Rear end,Wet road | All | | Lyon and Persaud, 2008 |
| 0.59 | 41 | ★★★☆☆ | All | All | All | Lyon and Persaud, 2008 |
| 0.589 | 41.1 | ★★★☆☆ | All | All | All | Lyon and Persaud, 2008 |
| 0.361 | 63.9 | ★★★☆☆ | Wet road | All | All | Lyon and Persaud, 2008 |
| 0.304 | 69.6 | ★★★☆☆ | Rear end | All | All | Lyon and Persaud, 2008 |
| 0.943 | 5.7 | ★★★☆☆ | Rear end | All | All | Lyon and Persaud, 2008 |
| 0.504 | 49.6 | ★★★☆☆ | Rear end | All | All | Lyon and Persaud, 2008 |

Dual CRF for CSAH 13 between TH 5 and TH 7

Improvements include a 2 lane to 3 lane conversion with installation of a two way left-turn lane. The intersection of CSAH 13/TH 7 adds a NBL turn lane, and the CSAH 13/TH 5 intersection adds a SBR turn lane. Determined that the two factors below give best result for B/C.

CR1=Introduce TWLTL
CR2=Improve Pavement Friction

CR=1 – (1-CR1)*(1-CR2)

All = CR = 1 – (1-.36)*(1-.41)= .62
Rear End: CR=1 – (1-.47)*(1-.70) = .84

# Transit Connections

Roadway Reconstruction/Modernization Project: Carver County CSAH 13 Reconstruction | Map ID: 1416245225310

## Results

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

**indicates Planned Alignments*


Project
Project Area
**Planned Alignments**
Light Rail, Green Line Extension
Arterial BRT

0 2 4 8 12 16 Miles

Created: 11/17/2014
LandscapeRSA3



METROPOLITAN COUNCIL