

01967 - 2014 Roadway Expansion

02089 - CSAH 13/Radio Drive/Inwood Avenue Pedestrian Crossing of I-94, Bridge and Road Improvements

Regional Solicitation - Roadways Including Multimodal Elements

Status: Submitted

Submitted Date: 12/01/2014 1:41 PM

Primary Contact

Pung-Ann Mary Terwedo Name:* Middle Name Last Name Salutation First Name Senior Planner Title: Public Works **Department:** Email: ann.pung-terwedo@co.washington.mn.us Address: 11660 Myeron Road North Stillwater Minnesota 55082 State/Province Postal Code/Zip 651-430-4362 Phone:* Phone Ext. Fax: 651-430-4300 Regional Solicitation - Roadways Including Multimodal What Grant Programs are you most interested in? Elements

Organization Information

Name:	WASHINGTON CTY	,	
Jurisdictional Agency (if different):			
Organization Type:			
Organization Website:			
Address:	PUBLIC WORKS		
	11660 MYERON RD		
*	STILLWATER	Minnesota	55082
	City	State/Province	Postal Code/Zip
County:	Washington		
Phone:*	651-430-4325		
		Ext.	
Fax:			

Project Information

PeopleSoft Vendor Number

Project Name

Washington County CSAH 13 Expansion & Multi-Modal

Improvements

0000028637A10

Primary County where the Project is Located Washington

Jurisdictional Agency (If Different than the Applicant):

The proposed project is located on CSAH 13 (Radio Drive/Inwood Avenue), a four-lane divided A-Minor Expander in the cities of Woodbury and Oakdale in Washington County. The project will use existing roadway infrastructure more efficiently while improving connections to bus service at the Guardian Angels Park and Ride and a planned Gateway BRT station by linking the bicycle and pedestrian networks in Woodbury and Oakdale. (Note: Gateway BRT is included in the 2040 Transportation Policy Plan currently under review by Met. Council.)

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

As part of the project, the pedestrian and bicycle trail on the CSAH 13 bridge over I-94 will be converted to a third travel lane to align with an existing third travel lane to the south of the bridge. A new pedestrian and bicycle bridge will be built over I-94 parallel to the roadway and connect to existing trails north and south of the bridge. New crossings and a refuge at the I-94 south ramps will be added to facilitate connections to planned trails on the east side of CSAH 13. The new bicycle and pedestrian bridge will be a major improvement on the existing facilities, which are not up to design standards and include a five-foot trail sandwiched between a jersey barrier and a high chain-link fence. Please see Figures 1, 2, and 3 for a map and layout of the project area and an example image of the proposed trail bridge.

The project is in the heart of Woodburys Places to Shop area, and provides access from I-94 to regional shopping centers such as Tamarack Village, Woodbury Lakes, and Oakdale Village. Furthermore, the immediate project area is experiencing major growth; an 85,000 square foot Cabelas opened in 2014, and construction is underway for City Place, 770,000 square feet of new retail, hotel, restaurant, medical and office

uses. Employment and residential growth is also occurring in Lake Elmo at the Eagle Point Business Park and in adjacent neighborhoods to the north and east. CSAH 13 is the primary connection from I-94 to all of these destinations. The roadway currently has an AADT of 36,000 vehicles (2011) which is forecast to grow to 48,000 vehicles by 2030 as development continues in the project area.

As a result of this truly multi-modal project, pedestrians and bicyclists will enjoy a seamless connection between city trail systems. These improvements are critical to reducing the perceived distance from destinations in Woodbury to the planned Gateway BRT station immediately adjacent to the project on 4th Street in Oakdale, and increasing its use by people arriving via all modes. Commuters, freight haulers, and express bus riders will also benefit from the project as it will reduce congestion and delay at the intersection of the I-94 south ramps and CSAH 13.

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

Project Length (Miles)

0.33

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

Washington County Capital Improvement Program 2015-2019, page 90

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
 \$2,636,800.00

 Match Amount
 \$659,200.00

Minimum of 20% of project total

Project Total \$3,296,000.00

Match Percentage 20.0%

Minimum of 20%

Compute the match percentage by dividing the match amount by the project total

Source of Match Funds Washington County

Preferred Program Year

Select one: 2019

MnDOT State Aid Project Information: Roadway Projects

County, City, or Lead Agency Washington County

Functional Class of Road A-Minor Expander

Road System CSAH

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

Name of Road CSAH 13 (Radio Drive/Inwood Avenue)

Example; 1st ST., MAIN AVE

Zip Code where Majority of Work is Being Performed 55125

(Approximate) Begin Construction Date 03/01/2019 12/01/2019 (Approximate) End Construction Date

LOCATION

From:

Just south of 3rd Street in Oakdale (Intersection or Address)

Do not include legal description;

Include name of roadway if majority of facility runs adjacent to a single corridor.

Midway between I-94 south ramps and Hudson Road in To:

(Intersection or Address) Woodbury

Type of Work bicycle and pedestrian bridge, grading, paving

Examples: grading, aggregate base, bituminous base, bituminous surface, sidewalk, signals, lighting, guardrail, bicycle path, ped ramps, bridge,

Park & Ride, etc.)

Old Bridge/Culvert? Yes

New Bridge/Culvert?

Structure is Over/Under Southbound CSAH 13 bridge over I-94 #82843 (Bridge or culvert name):

Specific Roadway Elements

CONSTRUCTION PROJECT ELEMENTS/COST ESTIMATES

Mobilization (approx. 5% of total cost)	\$100,000.00
Removals (approx. 5% of total cost)	\$100,000.00
Roadway (grading, borrow, etc.)	\$90,000.00
Roadway (aggregates and paving)	\$125,000.00
Subgrade Correction (muck)	\$0.00
Storm Sewer	\$80,000.00
Ponds	\$0.00
Concrete Items (curb & gutter, sidewalks, median barriers)	\$30,000.00
Traffic Control	\$60,000.00
Striping	\$5,000.00
Signing	\$10,000.00
Lighting	\$0.00
Turf - Erosion & Landscaping	\$35,000.00
Bridge	\$0.00
Retaining Walls	\$0.00
Noise Wall	\$0.00
Traffic Signals	\$75,000.00
Wetland Mitigation	\$0.00
Other Natural and Cultural Resource Protection	\$0.00
RR Crossing	\$0.00
Roadway Contingencies	\$750,000.00
Other Roadway Elements	\$400,000.00
Totals	\$1,860,000.00

Specific Bicycle and Pedestrian Elements

CONSTRUCTION PROJECT ELEMENTS/COST

ESTIMATES	Cost
Path/Trail Construction	\$1,430,000.00
Sidewalk Construction	\$0.00
On-Street Bicycle Facility Construction	\$0.00
Right-of-Way	\$0.00
Pedestrian Curb Ramps (ADA)	\$6,000.00
Crossing Aids (e.g., Audible Pedestrian Signals, HAWK)	\$0.00
Pedestrian-scale Lighting	\$0.00
Streetscaping	\$0.00

Totals	\$1,436,000.00
Other Bicycle and Pedestrian Elements	\$0.00
Bicycle and Pedestrian Contingencies	\$0.00
Wayfinding	\$0.00

Specific Transit and TDM Elements

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 \$3,296,000.00

Construction Cost Total \$3,296,000.00

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), and the 2030 Water Resources Management Policy Plan (2005).

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
2014 11 21 Map Packet_Final.pdf	Figure 1: Project Area Map; Figure 2: Project Limits Map; Figure 3: Pedestrian & Bicycle Bridge Example	4.4 MB
Letterof SupportRadio Drive (CSAH 13) over I-94.pdf	Letter of Support, MnDOT	38 KB
Letters of Support-Woodbury & Oakdale.pdf	Letters of Support from the Cities of Woodbury and Oakdale	1015 KB
Resolution of Support-Washington County & CIP Documentation.pdf	Local match resolution; Project documentation in Washington County CIP	354 KB

Reliever: Freeway Facility or

Facility being relieved

Number of hours per day volume exceeds capacity (based on the Congestion Report)

Reliever: Non-Freeway Facility or

Facility being relieved

Number of hours per day volume exceeds capacity (based on the table below)

Non-Freeway Facility Volume/Capacity Table

Hour	NB/EB Volume	SB/WB Volume	Capacity	Volume exceeds capacity
12:00am - 1:00am			0	
1:00am - 2:00am			0	
2:00am - 3:00am			0	
3:00am - 4:00am			0	
4:00am - 5:00am			0	
5:00am - 6:00am			0	
6:00am - 7:00am			0	
7:00am - 8:00am			0	
8:00am - 9:00am			0	
9:00am - 10:00am			0	
10:00am - 11:00am			0	
11:00am - 12:00pm			0	
12:00pm - 1:00pm			0	
1:00pm - 2:00pm			0	
2:00pm - 3:00pm			0	
3:00pm - 4:00pm			0	
4:00pm - 5:00pm			0	
5:00pm - 6:00pm			0	
6:00pm - 7:00pm			0	
7:00pm - 8:00pm			0	
8:00pm - 9:00pm			0	

9:00pm - 10:00pm 0
10:00pm - 11:00pm 0
11:00pm - 12:00am 0

Expander/Augmentor/Non-Freeway Principal Arterial

Select one: Expander

Area 0.89
Project Length 0.33
Average Distance 2.697

Upload Map Roadway Area Definition.pdf

Measure B: Current Heavy Commercial Traffic

Location CSAH 13 at I-94 south ramps

Current daily heavy commercial traffic volume 250.0

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 Yes

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)

Comprehensive Plan, Tamarack Village and Woodbury Lakes are local activity centers within one mile of the project. There are also two post-secondary educational institutions in the project

As noted in the City of Woodburys 2030

area: Globe University and Rasmussen College.

Upload Map Regional Economy.pdf

Measure A: Current Daily Person Throughput

Location CSAH 13 at I-94 south ramps

Current AADT Volume 36000.0

Response: Current Daily Person Throughput

Average Annual Daily Transit Ridership 365.0

Current Daily Person Throughput 47165.0

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 48000.0

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

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.

Yes

The proposed project is located at the nexus of four census tracts in Oakdale, Woodbury, and Lake Elmo. The project will benefit a diverse group of residents: two tracts have a higher percentage of minority populations (32.9 percent and 24.7 percent) than the regional average (23.7 percent); people with disabilities compose 10.8 percent of one tract, more than the regional average of 9 percent; and two tracts have 15.3 percent and 11.4 percent elderly people, higher than the regional average of 10.8 percent.

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

The new bicycle and pedestrian bridge will be separated from car traffic, ADA-compliant, and wide enough to allow for comfortable bidirectional use. This trail upgrade is critical for people with disabilities or elderly people, who may have compromised balance or use motorized wheelchairs to navigate the area. Transit-dependent households in the area will benefit, as the project will improve connections to the current park and ride and planned Gateway BRT station. Express bus riders will also notice faster trips to work as a result of congestion relief in the intersection.

To avoid travel disruption, the project will be staged so that the existing trail can be used until the new bridge is open. Noise and dust mitigation will also be incorporated, though many of these impacts will be avoided because the project is not immediately adjacent to residences or businesses.

Upload Map

Socio-Economic Conditions.pdf

Measure B: Affordable Housing

City/Township

Segment Length (Miles)

City of Woodbury 0.25

City of Oakdale 0.08

To	otal	Pro	ject	Len	ath

Total Project Length 0.33

Affordable Housing Scoring - To Be Completed By Metropolitan Council Staff

City/Township	Segment Length (Miles)	Total Length (Miles)	Score	Segment Length/Total Length	Multiplied by Segment percent
City of Oakdale	0.08	0.33	74.0	0.242	17.939
City of Woodbury	0.25	0.33	78.0	0.758	59.091
		1	152	1	77

Affordable Housing Scoring - To Be Completed By Metropolitan Council Staff

0.33

Total Project Length (Miles)

Total Housing Score 77.03

Measure A: Year of Roadway Construction

Year of Original

Roadway Construction or Most Recent Length (Miles)
Reconstruction

1983.0 0.33 654.39 1983.0

0 654 1983

Average Construction Year

Weighted Year 1983.0

Total Segment Length (Miles)

Total Segment Length 0.33

Measure A: Cost Effectiveness of Vehicle Delay Reduction

Total Project Cost from Cost Sheet \$3,296,000.00

Total Peak Hour Vehicle Delay Without The Project 55706.0

Total Peak Hour Vehicle Delay With The Project 51727.0

Total Peak Hour Vehicle Delay Reduced by Project 3979.0

Cost Effectiveness \$828.35

Synchro or HCM Reports CSAH 13 and South 94 Ramps Existing & Improved Synchro

Results.pdf

Measure B: Cost Effectiveness of Emissions Reduction

Total Project Cost from Cost Sheet \$3,296,000.00

Total Peak Hour Kilograms Reduced by Project 0.16

Cost Effectiveness \$20,600,000.00

Synchro or HCM Reports

CSAH 13 and South 94 Ramps Existing & Improved Synchro

Results.pdf

Measure A: Benefit/Cost of Crash Reduction

Project Benefit/Cost Ratio 0.39

Worksheet Attachment CSAH 13 Cost-Benefit Analysis.pdf

Measure A: Transit Connections

Existing Routes Directly Connected to the Project 351, 375

Planned Transitways directly connected to the project (alignment

and mode determined and identified in the 2030 TPP)

N/A

Upload Map Transit Connections.pdf

Response

Met Council Staff Data Entry Only

Route Ridership 275240.0

Transitway Ridership 0

Measure B: Bicycle and Pedestrian Connections

To the north, users will seamlessly access the Guardian Angels Park and Ride, the planned Gateway BRT station, and the network of paved multi-use trails in Oakdale that extend the length of the city and connect to the Gateway Regional Trail. To the south, users will link to a paved multi-use trail that parallels CSAH 13 and connects to Woodburys 100 mile-network of off-street trails, as well as Afton Bluffs Regional Trail.

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

As noted in the City of Woodbury 2030
Comprehensive Plan, Tamarack Village is a regional shopping center with approximately 60 shops, services, and restaurants. The project provides a direct connection to this high pedestrian traffic area, as well as Cabelas and Oakdale Village. Completion of City Place will also add 770,000 square feet of new retail, restaurants, medical, and office space to the immediate area.

According to the City of Woodburys Preliminary Report for City Place Public Improvements, the developer will construct a paved multi-use trail on the east side of CSAH 13 from Hudson Road to the I-94 south ramps. City Place improvements will be completed during the 2015 construction season and will connect to the proposed bicycle and pedestrian bridge by new at-grade striped crossings of CSAH 13 and the I-94 east bound on-ramp. Intersection improvements will include countdown indicators and ADA-compliant pedestrian ramps and push-button systems.

The proposed project includes a new bicycle and pedestrian bridge with an eight-foot wide trail. This represents a major improvement over the narrow path on the CSAH 13 bridge, which crowds pedestrian and bicyclists onto a five-foot trail between a jersey barrier and a chain link fence overlooking I-94. The new bridge will offer a welcome separation from roadway traffic, resulting in a safer more secure crossing over I-94. The wider trail will be suitable for the bidirectional movement of its diverse users (pedestrians, runners, bicyclists, in-line skaters, and people using motorized wheelchairs).

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

Existing bicycle and pedestrian accommodations include a multi-use trail that runs along CSAH 13 throughout the project area. The 435-space Guardian Angels Park and Ride is adjacent to the project area and express bus routes 351 and 375 use CSAH 13 to access the park and ride from I-94. Transit riders will benefit from reduced congestion in the area, resulting in faster, more reliable trip times.

The proposed improvements will change the intersection from an auto-only space with only one available crossing, to one that pedestrians can navigate safely in multiple directions. When the planned Gateway BRT station opens just 0.2 miles away, bicyclists and pedestrians coming from the station will enjoy a direct connection to shopping, office, and medical destinations in Woodbury.

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

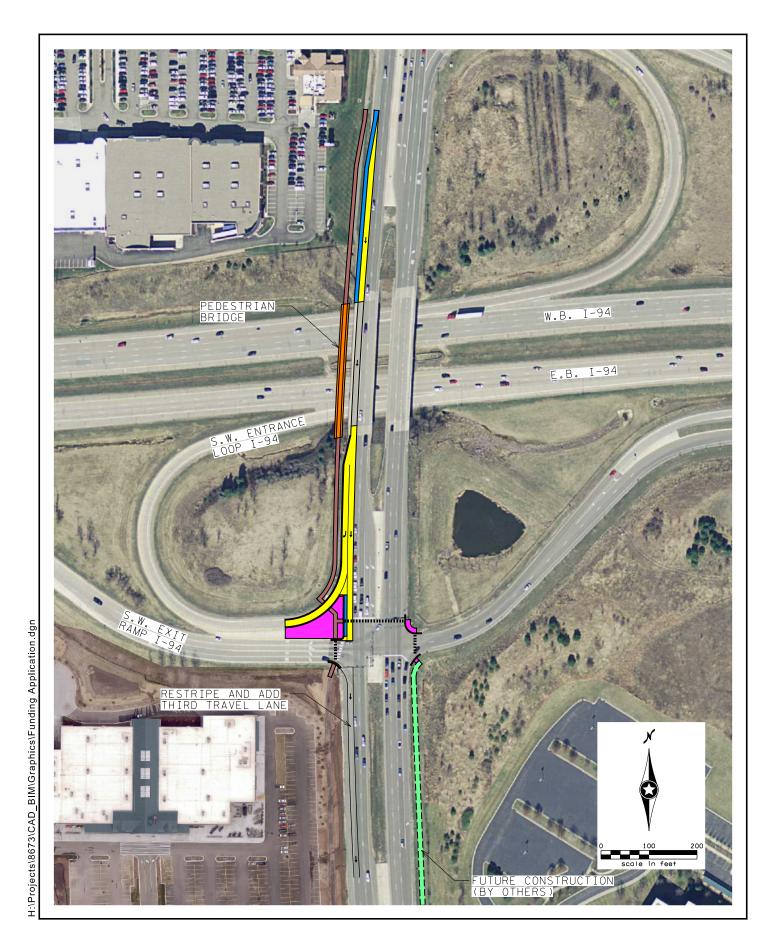
1)Project Scope (5 Percent of Points)	
Meetings or contacts with stakeholders have occurred	Yes
100%	
Stakeholders have been identified	
40%	
Stakeholders have not been identified or contacted	
0%	
2)Layout or Preliminary Plan (5 Percent of Points)	
Layout or Preliminary Plan completed	Yes
100%	
Layout 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	
PM	Yes
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	12/01/2015
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	Yes

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	
0%	
Anticipated date or date of completion of historic/archeological review:	
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 wa Conservation Funds were used for planning, acquisition, or development	
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	Yes
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	
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	11/01/2018
9)Letting	
Anticipated Letting Date	02/01/2019







Washington County CSAH 13 Pedestrian and Bicycle Bridge Example



November 25, 2014

Ann Pung-Terwedo Washington County 11660 Myeron Road North Stillwater MN 55082

RE: Regional Solicitation Application for improvements to Radio Drive (CSAH 13) over I-94

Dear Ms. Pung-Terwedo,

Thank you for requesting a letter of support from MnDOT for the Metropolitan Council's 2014 Regional Solicitation. Your application for the project for improvements to Radio Drive (CSAH 13) over I-94 impacts MnDOT right of way on I-94.

MnDOT, as the agency with jurisdiction over I-94, supports the application for improvements to Radio Drive (CSAH 13) over I-94 to add an additional lane to the southbound bridge and the construction of a separate pedestrian bridge. Maintenance responsibilities would likely remain unchanged for the Radio Drive interchange and the Radio Drive bridge over I-94; however, the new pedestrian bridge will have to be owned and maintained by the County.

This project currently has no funding from MnDOT.

Sincerely,

Scott McBride, P.E. Metro District Engineer

Cc: Elaine Koustsoukos, Metropolitan Council

Adam Josephson, MnDOT Metro District – East Area Manager







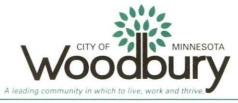












8301 Valley Creek Road • Woodbury, Minnesota 55125-2320 • www.ci.woodbury.mn.us 651/714-3500 • TDD 651/714-3568 • FAX 651/714-3501

November 15, 2014

Wayne Sandberg Washington County Engineer 11660 Myeron Road North Stillwater, MN 55082

Subject:

Support for Reconstruction/Modernization of CSAH 13/Radio Drive /Inwood

Avenue in the cities of Woodbury and Oakdale.

Dear Mr. Sandberg,

The City of Woodbury supports construction of a pedestrian bridge over Interstate (I) 94 and expansion of the CSAH 13 roadway bridge and other road improvements in the Cities of Woodbury and Oakdale. This project has regional significance and therefore Washington County's application for Federal Surface Transportation Program funds through the Regional Solicitation should be granted to help this important project move forward.

This roadway provides an important regional transportation connection, and is the busiest corridor in the Washington County area. Reconstruction and modernization of this roadway will provide the necessary safety and management improvements for development and redevelopment, increased traffic and truck volumes, while addressing safety concerns related to pedestrian crossings, and turning movements to and from the local street network.

Thank you for your consideration on this matter. If you have any questions, comments, or concerns, please do not hesitate to contact me

Regards.

Klayton Eckles

Engineering and Public Works Director

c: Ann Pung-Terwedo, Washington County Senior Planner



CITY OF OAKDALE

1584 Hadley Avenue North Oakdale, MN 55128 651-730-2730 FAX: 651-730-2830

www.ci.oakdale.mn.us

November 18, 2014

Mr. Wayne Sandberg Washington County Engineer WASHINGTON COUNTY PUBLIC WORKS 11660 Myeron Road North Stillwater, MN 55082

RE: SUPPORT FOR RECONSTRUCTION/MODERNIZATION OF CSAH 13/RADIO DRIVE/INWOOD AVENUE IN THE CITIES OF WOODBURY AND OAKDALE

Dear Mr. Sandberg:

The City of Oakdale City Council strongly supports Washington County's application for Federal Surface Transportation Program funds through the Regional Solicitation for construction of a pedestrian bridge over Interstate (I) 94 and expansion of the roadway bridge and other road improvements in the cities of Woodbury and Oakdale.

Development and redevelopment, increased traffic and truck volumes along this stretch of roadway is straining the capacity of CSAH 13. Safety concerns are increasing which include pedestrian crossings, and turning movements to and from the local street network. This roadway provides an important regional transportation connection so reconstruction and modernization of this roadway will provide the necessary safety and management improvements for the future.

City of Oakdale Resolution No. 2014-113 is enclosed showing our support for this funding. Thank you for your consideration on this matter. If you have any questions, comments, or concerns, please do not hesitate to contact me.

Sincerely,

CITY OF OAKDALE

Brian Bachmeier

PUBLIC WORKS DIRECTOR/CITY ENGINEER

Encl: Resolution No. 2014-113

S:\Engineering\Washington County\Ltr to Wayne Sandberg re Supporting Washington County's Application 11-07-14.doc

WASHINGTON COUNTY

NOV 2 0 2014

PUBLIC WORKS

RESOLUTION NO. 2014-113

RESOLUTION OF SUPPORT FOR WASHINGTON COUNTY REGARDING THEIR APPLICATION FOR FEDERAL SURFACE TRANSPORTATION PROGRAM FUNDS THROUGH THE REGIONAL SOLICITATION FOR CONSTRUCTION OF A PEDESTRIAN BRUDGE OVER I-94 AS WELL AS THE EXPANSION OF THE INWOOD AVENUE (CSAH 13) ROADWAY BRIDGE AND OTHER ROAD IMPROVEMENTS IN THE CITY OF OAKDALE.

At a regular meeting of the City Council of the City of Oakdale held on Monday, November 10, 2014 at the Oakdale Municipal Building, 1584 Hadley Avenue North, Oakdale, Minnesota, with the following members present: Mayor Carmen Sarrack, Councilmembers Kent Dotas, Stan Karwoski, Lori Pulkrabek and Paul Reinke, and the following absent: None; the Oakdale City Council resolved:

WHEREAS, the City of Oakdale strongly supports Washington County's application for Federal Surface Transportation Program funding through the Regional Solicitation for construction of a pedestrian bridge over I-94 and expansion of the Inwood Avenue (CSAH 13) southbound bridge lanes, as well as other road improvements in the City of Oakdale, and

WHEREAS, to advance and support Washington County in their application for funding for these projects,

NOW, THEREFORE, BE IT RESOLVED that the City of Oakdale supports Washington County's efforts to apply for Federal Surface Transportation Program funding through the Regional Solicitation for construction of a pedestrian bridge over I-94 and the expansion of the Inwood Avenue (CSAH 13) southbound roadway bridge and other road improvements.

VOTING IN FAVOR:

Mayor Sarrack, Councilmembers Dotas, Karwoski,

Pulkrabek and Reinke

VOTING AGAINST:

None

Resolution duly seconded and passed this 10th day of November, 2014.

Mayor Carmen Sarrack

Attest:

Susan Barry, City Clerk

BOARD OF COUNTY COMMISSIONERS

RESOLUTION NO. 2014-128

		WASHING	TON COUNTY, MINNESULA	RESOLUTION NO.
DATE	October 14, 201	14	DEPARTMENT	Public Works
MOTION BY COM	N MMISSIONER	Weik	SECONDED BY COMMISSIONER	Miron
RI			F APPLICATIONS TO THI POLITAN COUNCIL REGI	E METROPOLITAN COUNCIL FOR DNAL SOLICITATION
	EAS , the Regional acy Act (ISTEA) in 1		d with the passage of the li	ntermodal Surface Transportation
the 21s Transp	t Century (MAP-21 ortation Program (), projects will be selected	for funding as part of three	nding act, Moving Ahead for Progress in e federal programs: Surface nent (CMAQ) Program, and
federal	grants for a project	t shall submit an applicatio		pible project sponsors wishing to receive Metropolitan Planning Organization ram (TIP); and
			portation Advisory Board (T ional Solicitation for federal	AB) act as the MPO for the seven transportation funds; and
WHER	EAS, the Metropoli	tan Council provides staffi	ng to the TAB and facilitate	s the Regional Solicitation process; and
WHER	EAS, Washington (County is an eligible projec	ct sponsor for Regional Soli	citation funds; and
		County is proposing to sub ne following projects:	omit grant applications to M	etropolitan Council as part of the 2014
1.			ite Aid Highway (CSAH) 19 rive and 80 th Street in the 0	/ Keats Avenue South (Central City of Cottage Grove.
2.	Construction of ar City of Grant.	า underpass structure alon	g the Gateway State Trail ι	under CSAH 9/Jamaca Avenue in the
3.	Off road trail deve CSAH 38 in the C		ons and a pedestrian refuge	e along CSAH 20(18)/Bailey Road and
4.	A pedestrian bridg Drive in the City o		94, bridge lane and roadw	ay improvements along CSAH 13/Radio
5.		itural Resources for the G		nhway 36 with support of the Minnesota nel under CSAH 35/Hadley Avenue in
6.	Reconstruction of Townships.	CSAH 21/Stagecoach Tra	ill from 22 nd Street to CSAH	l 14 in West Lakeland and Baytown
		T RESOLVED, that the Worker for funding under the 20		Commissioners authorizes submittal of
ATTES	т: ТМ	100		YES NO
	COUNTY ADMINIS	us blog	KRI	ARTH X ESEL X IRKE X ON

WEIK

Project#

RB-2587

Project Name Radio Drive Pedestrian Bridge over I-94

Location Woodbury

Department Capital Road & Bridge Project

Contact W. Sandberg

Type Construction

Useful Life 5+ years

Category Road & Bridge

Priority

Description

This project will add a pedestrian bridge over Intersate (I) 94, adjacent to the Radio Drive bridge.

Currently, pedstrians and cyclists cross I-94 in this area via a narrow section of the existing Radio Drive Bridge. This section does not meet current design standards for two-way trail traffic, and the approaches do not meet Americans with Disablities Act standards.

A new pedestrian bridge will accommodate all trail users, and will also provide the ability to re-purpose the space on the Radio Drive bridge to allow for a third Southbound travel lane. Traffic studies indicate this third lane will be needed in the near future.

Expenditures		2015	2016	2017	2018	2019	Total
Planning / Design			200,000	110 110			200,000
Land Acquisition				50,000			50,000
Construction			140	2,000,000			2,000,000
	Total		200,000	2,050,000	(II. 10/24 (A. 17. 1550) AND		2,250,000
Funding Sources		2015	2016	2017	2018	2019	Total
State Aid			200,000	2,050,000			2,250,000
	Total		200,000	2,050,000			2,250,000

Budget Impact/Other

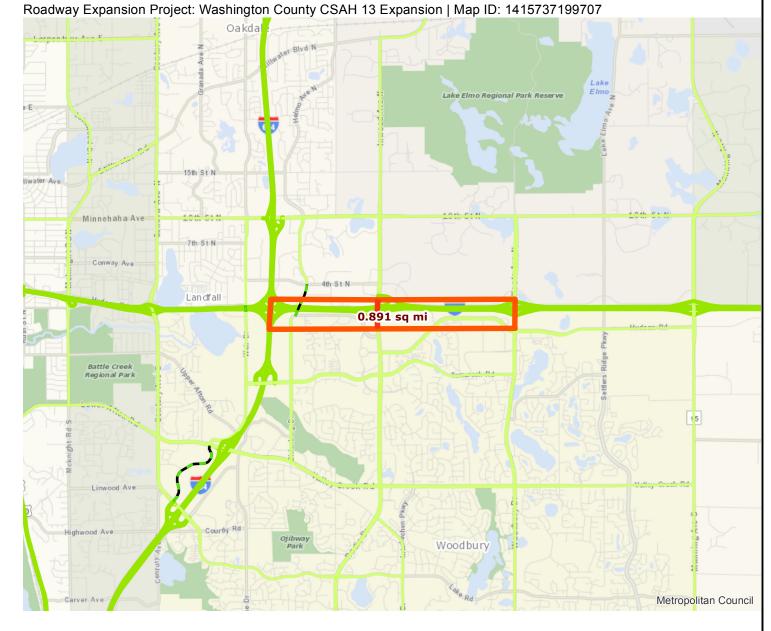
The pedestrian bridge will improve the accessibility and provide an upgraded facility for pedestrians and bicyclists. This project will allow repurposing of the existing space on the I-94 bridge to accommodate three southbound lanes, thereby providing additional capacity of the roadway.

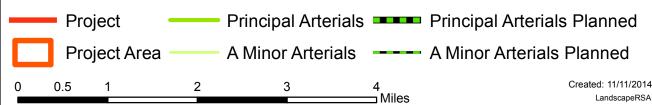
Roadway Area Definition

Results

Project Length: 0.326 miles

Project Area: 0.891 sq mi

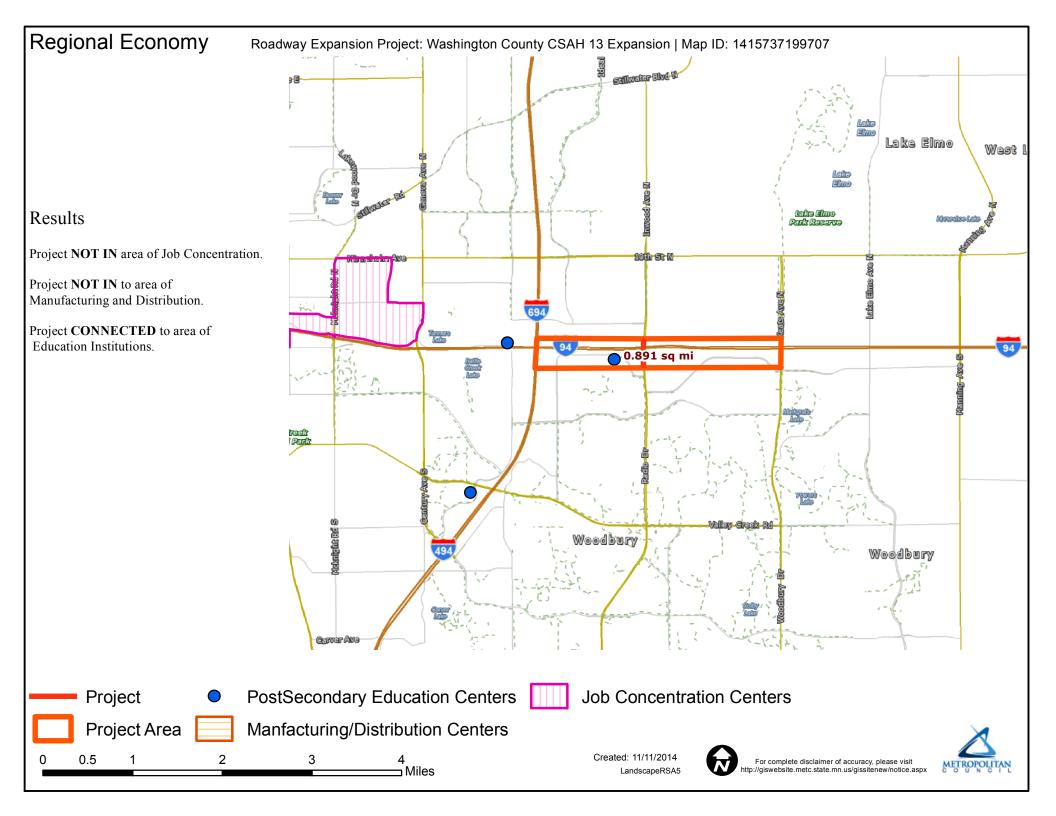


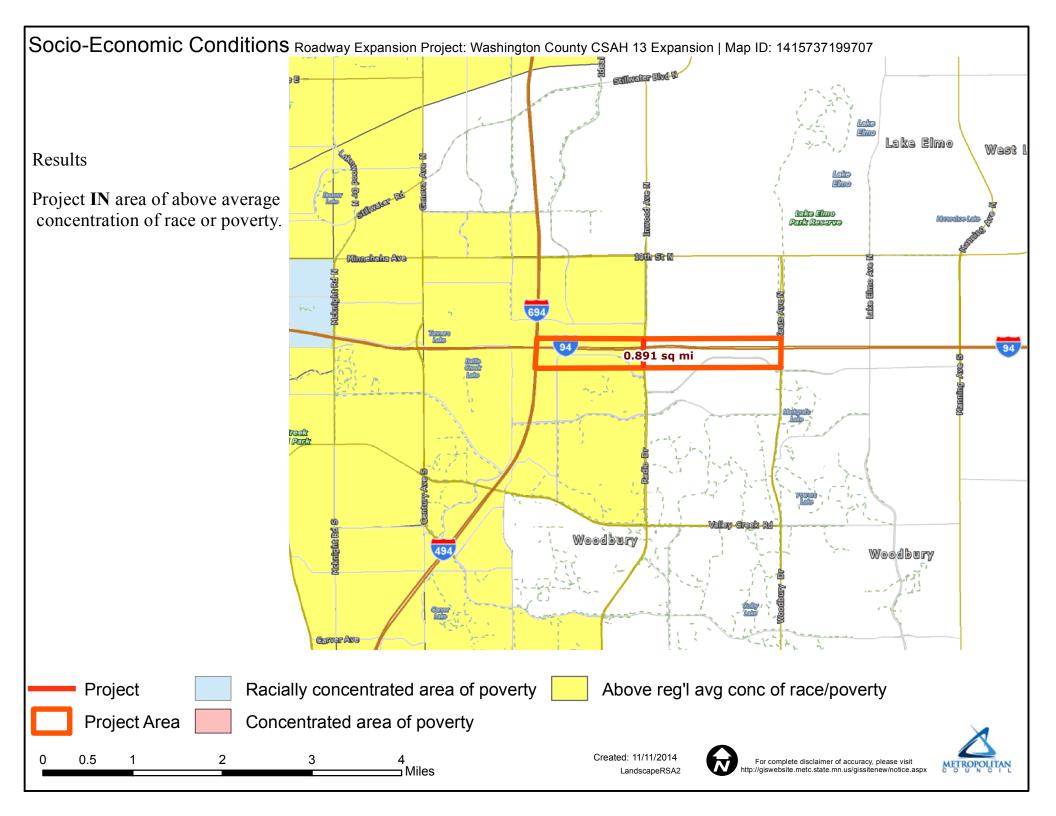


LandscapeRSA1

For complete disclaimer of accuracy, please visit







Direction	All	
Volume (vph)	3979	
Total Delay / Veh (s/v)	14	
CO Emissions (kg)	3.35	
NOx Emissions (kg)	0.65	
VOC Emissions (kg)	0.78	

Direction	All	
Volume (vph)	3979	
Total Delay / Veh (s/v)	13	
CO Emissions (kg)	3.24	
NOx Emissions (kg)	0.63	
VOC Emissions (kg)	0.75	

Direction	All	
Volume (vph)	3979	
Total Delay / Veh (s/v)	14	
CO Emissions (kg)	3.35	
NOx Emissions (kg)	0.65	
VOC Emissions (kg)	0.78	

Direction	All	
Volume (vph)	3979	
Total Delay / Veh (s/v)	13	
CO Emissions (kg)	3.24	
NOx Emissions (kg)	0.63	
VOC Emissions (kg)	0.75	

HS:			Control Section	T.H. / Roadway		Location	ı			Beginning Ref. Pt.	Ending Ref. Pt.	State, County, City or Township	Study Period Begins	Study Period Ends			
WULKSI	ileei				From the South I-	94 Ramp	to just south o	f the North I-	94 R	Ramp		Washington County	1/1/2011	12/31/2013			
			Descripti Proposed		Adding a southbo	und throu	gh lane										
Accide			1 Rear End		2 Sideswipe Same Direction		n Main Line	5 Right Angle	4,7 I	Ran off Road	8, 9 Head On/ Sideswipe -		6, 90, 99				
	\	/	-	>-	→	_9	←				Opposite Direction	Pedestrian	Other	Total			
	Fatal	F															
	. (PI)	A															
Study Period:	Personal Injury (PI)	В															
Number of Crashes		C		3				1						4			
	Property Damage	PD		9	2					3			2	16			
% Change	Fatal	F															
in Crashes	rashes A																
	ΡΙ	В															
*Use Crash Modification		С		-52%				-45%									
<u>Factors</u> <u>Clearinghouse</u>	Property Damage	PD		-52%	-44%					-44%			-31%				
	Fatal I	F		0270	1.70								0170				
	I	A															
Change in Crashes	ΡΙ	В															
= No. of		С		-1.56				-0.45						-2.01			
crashes X % change in	perty																
crashes	P. D.			-4.68	-0.88					-1.32			-0.62	-7.50			
Year (Safety In	nprove	emen	t Constructi	ion)	2019		C4 J					1					
Project Cost (exclud	de Ri	ght of Way))	\$ 3,296,000	Type of Crash	Study Period: Change in Crashes	Annual Change in Crashes	1	Cost per Crash	Annual Benefit		B/C=	0.39			
Right of Way	Cost	s (opt	ional)			F			\$	1,100,000		Using present	worth value	s,			
Traffic Growt	th Fa	ctor			3%	A			\$	550,000		B =		1,273,032			
Capital Recov	ery					В			\$	160,000		C=	\$	3,296,000			
1. Discount	Rate	:			4.5%	С	-2.01	-0.67	\$	81,000	\$ 54,270	See "Calculations" sheet for amortizati					
2. Project S	ervic	e Lif	e (n)		20	PD	-7.50	-2.50	\$	7,400	\$ 18,500						
						Total State of Traffic, Safety and Technology September 2014											

YS	NUM	REF_POINT	GIS_ROUTE	GIS_TM	RD_DIR	ELEM	RELY	INV	R_U	ATP	CO	CITY	DOW	MONTH	DAY
)4	82000013	007+00.042	0482000013	7.042	Z		1	0	U		82	4173	4-Wed	3	2
)4	82000013	007+00.137	0482000013	7.137	S		1	3	U	UNIT TWO WAS EASTBOUND, TO TURN NORTHBOUND WITH GREEN LIGHT. UNIT ONE WAS SOUTHBOUND IN OUTSIDE LAN	82	4173	2-Mon	1	30
)4	82000013	007+00.137	0482000013	7.137	N	352	1	1	U	V1 WAS SB ON INWOOD TO THE CLOVERLEAF RAMP TO WB 94. D1 SAID HE HAD A GREEN LIGHT. I INQUIRED THR	82	4173	7-Sat	3	3
)4	82000013	007+00.061	0482000013	7.061	S		2	3	U	UNIT #1 WAS DRIVING WI/GIGEM SOUTHBOUND 200 INWOOD AVE WHEN TRAFFIC STOPPED AND HE WAS REAR ENDED.	82	4173	6-Fri	12	23
4	82000013	007+00.137	0482000013	7.137	S	351	1	3	U	UNIT 1 WAS E/B ON THE INTERSTATE 94 OFF RAMP AT RADIO DR. UNIT 2 WAS E/B ON THE INTERSTATE 94 OFF R	82	4173	6-Fri	1	14
ļ	82000013	007+00.137	0482000013	7.137	S	409	2	3	U	VEH1 STOPPED IN TRAFFIC AT RED LIGHT WHEN IT WAS REAR-ENDED BY VEH2. DRIVER OF VEH2 STATED THAT SHE	82	4173	6-Fri	12	23
	82000013	007+00.137	0482000013	7.137	S	409	2	3	U	DRIVER 1 REPORTED DRIVING SOUTHBOUND ON INWOOD AVE. BEHIND UNIT 2 WHEN DRIVER 2 STOPPED ABRUPTLY. D	82	4173	7-Sat	4	28
	82000013	007+00.137	0482000013	7.137	S		1	3	U	VEH 1 STOPPING IN TRAFFIC S/B RADIO DRIVE, NORTH OF I 94 OVERPASS. VEH 2 DIRECTLY BEHIND VEH 1, FAI	82	4173	5-Thu	8	30
	82000013	007+00.137	0482000013	7.137	S	352	1	3	U	UNIT 2 WAS STOPPED AT STOPLIGHT WHEN UNIT 1 REARENDED UNIT 2. DRIVER OF UNIT 1 SAID SHE THOUGHT TH	82	4173	6-Fri	11	9
	82000013	007+00.137	0482000013	7.137	S	352	1	3	U	UNIT 1 WAS STOPPED IN TURN LANE ON SB INWOOD AVE FOR WB I-94. UNIT 2 SLID INTO THE BACK OF UNIT 1,	82	4173	2-Mon	11	12
	82000013	007+00.142	0482000013	7.142	E	352	Α	1	U	REPORT TAKEN BY PHONE. BOTH VEHICLES WERE ON THE R	82	4173	5-Thu	7	26
	82000013	007+00.142	0482000013	7.142	Z	352	1	3	U	DRIVER #1 REARENDED DRIVER #2 WHO WAS STOPPED IN TRAFFIC AT SEMAPHORE AND WAS PUSHED INTO DRIVER #3	82	4173	6-Fri	8	2
	82000013	007+00.142	0482000013	7.142	Z	352	1	3	U	SCHNEIDER AND WEIDA WERE ON THE RADIO DR EXIT RAM FROM 194 EAST. SCHNEIDER AND WEIDA WERE IN THE RI	82	4173	5-Thu	12	12
	82000013	007+00.142	0482000013	7.142	S	351	1	3	U	UNIT 1 WAS BEHIND UNIT 2 EXITING FROM EASTBOUND I-94 TO SOUTHBOUND RADIO DRIVE. UNIT 2 SLOWED TO Y	82	4173	5-Thu	6	27
	82000013	007+00.142	0482000013	7.142	E	351	1	3	U	VEH 1 STOPPED TO WAIT FOR TRAFFIC BEFORE TURNING. VEH 2 THOUGHT VEH 1 PROCEEDED TO TURN AND ENDED	82	4173	3-Tue	12	17
	82000013	007+00.042	0482000013	7.042	E		1	1	U	UNIT 1 WAS ON THE RAMP FROM EASTBOUND INTERSTATE 94 TO RADIO DRIVE. IT WAS SLEETING/FREEZING RAIN	82	4173	1-Sun	1	27
	82000013	007+00.042	0482000013	7.042	S		1	3	U	UNIT 1 WAS SOUTHBOUND COUNT RD 13 (RADIO DR) ON THE BRIDGE OVER INTERSTATE HWY 94(194). THE BRIDGE	82	4173	4-Wed	4	20
	82000013	007+00.137	0482000013	7.137	N		1	3	U	VEH 1 WAS ENTERED ONTO 194 E/B VIA N/B RADIO DR RAMP. VEH 1 SPUN OUT AND STRUCK A FENCE BETWEEN TH	82	4173	5-Thu	4	18
	82000013	007+00.137	0482000013	7.137	Z	_	1	0	U	<u> </u>	82	4173	7 Sat	9	17
	82000013	007+00.042	0482000013	7.042	Е		1	1	U	V1 EASTBOUND 194 RAMP TO NORTH BOUND RADIO DR IN THE RIGHT LANE. V2 CAME UP ALONG SIDE V1 FROM BEHI	82	4173	4-Wed	1	9
	82000013	007+00.137	0482000013	7.137	Е	C14	1	1	U	BOTH VEHICLES HAD ENTERED 194 EASTBOUND FROM RADIO DRV. VEHICLE 1 QUICKLY MOVED TO THE LEFT. VEHICL	82	4173	3-Tue	11	13
	82000013	007+00.038	0482000013	7.038	Н	_	1	3	Ĥ	VEH 1 WAS N/B RADIO DR THE STOP LIGHT AT RADIO/194 WAS RED SO VEH 1 WAS STOPPED. VEH 2 WAS STOPP	82	4173	6-Fri	4	13
	82000013	007+00.042	0482000013	7.042	N	_	4	3	U	ON 5/17/11 THE LISTED VEHICLES WERE INVOLVED IN A PROPERTY DAMAGE ACCIDENT. VEHICLE 1 WAS NORTHBOU	82	4173	3 Tue	5	4
	82000013	007+00.047	0482000013	7.047	N	_	4	3	H	VEH 1 AND VEH 2 WERE BOTH NB RADIO DR APPROACHING THE ENTRANCE RAMP TO EB 194. VEH 2 WAS BEHIND VEH	82	4173	4 Wed	4	4
	82000013	007+00.121	0482000013	7.121	Z	_	4	2	<u>.</u>	VEHICLE 1 WAS NB RADIO DR IN THE CENTER LANE APPRAOCHING WOODBURY LAKES RD/I 94 RAMP ON A GREEN LIG	82	4173	3 Tue	2	7
	82000013	007+00.137	0482000013	7.137	_ N	351	4	2	<u>.</u>	BOTH VEHICLES. OWNED BY THE SAME FAMILY UNDER THE SAME INSURANCE ACCOUNT (MARRIED COUPLE GOING TO A	<u>82</u>	4173	4 Wed	2	Q
	82000013	007+00.137	0482000013	7.137	N	309	4	2	<u>.</u>	UNIT 3 WAS IN THE RIGHT LANE N/B RADIO DR AT INTERSTATE 94. STOPPED FOR A RED LIGHT. UNIT 2 WAS TRA	82	4173	5 Thu	4	2.
	82000013	007+00.137	0482000013	7.137 7.137	z	351	1	3	п	REDDING WAS STOPPED IN TRAFFIC NB RADIO SOUTH OF 1-94 RAMP LINDAHL WAS STOPPED BEHIND HIM. LINDAHL	82	4173	6-Fri	4	6
	82000013	007+00.137	0482000013	7.137	N.	351 351	1	2	П	UNIT2 AND UNIT3 SLOWING FOR STOPPED TRAFFIC AT LOCAITON. TRAFFIC BACKED UP DUE TO HEAVY CONGESTION	82	4173	5-Thu	5	10
	82000013	007+00.137	0482000013	7.137	z	D14	1	1	П	BOTH VEHICLES WERE MAKING RIGHT TURNS FROM INWOOD AVENUE TO GO WEST ON 1.94. VEHICLE 2 WAS STOPPED	82	4173	3 Tue	10	4
	82000013	007+00.137	0482000013	7.137	7	352	2	1	<u> </u>	VEHICLES ONE AND TWO WERE NORTH BOUND ON RADIO DRIVE TAKING RAMP. TO GO TO WEST BOUND ISTH 94. DRIV	82	4173	3 Tue	6	4
	32000013	007+00.137	0482000013	7.137	7	351	1	2	0	UNIT 1 WAS GOING NB RADIO FROM THE EB I 94 EXIT RAMP WITH A GREEN ARROW. UNIT 2 WAS NB RADIO IN THE	92	4173	2 Mon	1	4
	82000013- 82000013-	007+00.137	0482000013	7.137	7	352	1	2	0	D 1 WAS STOPPED FOR THE RED LIGHT ON 3RD STREET. D 1 WAS ALSO STOPPED FOR THE RED LIGHT ON 3RD STR	82	4173	5 Thu	1	2
	82000013 82000013	007+00.137 007+00.137	0482000013	7.137 7.137	= 7	552 D14	1	1	0	ROTH VEHICLES WERE AT THE TOP OF THE RAMP FROM NORTHROLIND RADIO DRIVE TO GO WESTROLIND ON INTERSTATE	or	4173 4173	2 Mon	11	19
	82000013 82000013	007+00.137	0482000013		±		1	1	0	VEHICLE 1 WAS NORTH ON CR 13 AND ENTERED THE INTERSECTION ON A RED LIGHT, VEHICLE 2 WAS TRAVELING	82	4173 4173	2 Mon 6-Fri	1	1/
	02000010		0.02000015	7.137	₩ -	352	±	± 1	U		04			±	41
	82000013	007+00.142	0482000013	7.142	± N	351	4	±	U	VEHICLE 1 WAS TRAVELING NORTH ON INWOOD AVENUE. V	82	4173	4 Wed	0	4
	82000013	007+00.142	0482000013	7.142	N N	351	±	5	U	UNIT 1 STOPPED AT RED LIGHT TO GO N/B RADIO DR AT HUDSON RD. UNIT 2 WAS APPROACHING THE INTERSECTIO	82	4173	1 Sun	8	4
	82000013	007+00.142	0482000013	7.142	N	309	±	2	U	UNIT 1 WAS STOPPED AT TRAFFIC SIGNAL, WITH UNIT 2 STOPPED AT SAME SIGNAL BEHIND UNIT 1. DRIVER OF U	82	4173	6 Fri	12	6
	82000013	007+00.142	0482000013	7.142	≟	352	± .	±	U	DVR V1 STATED SHE WAS SLOWING FOR TRAFFIC IN FRONT OF HER WHEN SHE WAS REAR ENDED BY V2. DVR V2 ST	82	41/3	6 Fri	12	6
	82000013	007+00.142	0482000013	7.142	N	352	±	5	U	VEH 1 N/B RADIO DR APPROACHING I 94. VEH 2 FOLLOWING BEHIND AND REAR ENDED VEH 1 AS TRAFFIC SLOWED.	82	4173	1 Sun	12	+
	82000013	007+00.142	0482000013	7.142	-	352	1	1	Ĥ	BOTH VEHICLES WERE ATTEMPTING TO ENTER 194 WESTBOUND FROM RADIO DR ON THE NORTH SIDE OF THE INTERS	82	4173	3-Tue	8	€
	82000013	007+00.142	0482000013	7.142	Z	352	4	3	U	THE ABOVE LISTED DRIVERS AND VEHICLES WERE INVOLVED IN A PERSONAL INJURY ACCIDENT AT RADIO DRIVE AN	82	4173	4 Wed	9	4
	82000013	007+00.142	0482000013	7.142	S	352	4	2	Ð	UNIT 1 WAS SB INWOOD AV N GOING THROUGH A GREEN LIGHT TURNING LEFT TO GET ON THE RAMP TO GO WB 194.	82	4173	7 Sat	7	1
	82000013	007+00.142	0482000013	7.142	S	351	1	3	Ð	DRIVER WAS WITHIN HIS RESTRICTIONS. DRIVER 2 SHOWED NO SIGNS OF IMPAIRMENT BUT STATED HE HADNT BE	82	4173	6 Fri	8	3(
	82000013	007+00.190	0482000013	7.190	Z	_	2	2	U	VEH 1 WAS N/B ON INWOOD AV N SLOWING DOWN TO MAKE A RIGHT HAND TURN ONTO W/B I 94. THE ROADS WERE I	82	2100	2 Mon	3	4
	82000013	007+00.286	0482000013	7.286	E	_	2	3	U	MN 941BVG WAS STOPPED AT A RED LIGHT WHEN MN SBW456 REARENDED HIM. DRIVER OF MN SBW456 WAS CITED F	82	2100	3 Tue	11	8
	82000013	007+00.293	0482000013	7.293	E	_	1	3	Ĥ	ON 12/14/2011 AT ABOUT 0641 HRS WOODBURY POLICE WERE DISPATCHED TO LOCATION FOR A PERSONAL INJURY C	82	2100	4 -Wed	12	1/
	82000013	007+00.312	0482000013	7.312	N	_	4	2	U	VEH1 NB INWOOD AV STOPPED AT RED SEMAPHORE WAITING TO GO LEFT ONTO 3RD ST N. VEH2 WAS BEHIND VEH1	82	2100	4 Wed	3	7
	82000013	007+00.315	0482000013	7.315	N	_	1	3	U	DRIVER 1 WAS NORTHBOUND ON INWOOD AVE AT THE INTERSECTION OF 3RD ST. DRIVER 1 WAS IN THE LEFT TURN	82	2100	7 Sat	5	14
	82000013	007+00.315	0482000013	7.315	Ζ	_	4	2	U	UNIT 1 WI/LIC 774DZG WAS W/B 3RD ST TURNING LEFT TO S/B INWOOD, THE M/V WAS STOPPED AT THE TRIFFIC-	82	2100	4 Wed	7	43
	82000013	007+00.315	0482000013	7.315	N	_	4	2	U	MN LIC 473EEC, UNIT 1, WAS N/B INWOOD IN LEFT LANE AND MOVED TO RIGHT LANE TO AVOID HITTING VEHICLE	82	2100	7 Sat	6	30
	82000013	007+00.315	0482000013	7.315	N	_	1	3	U	DISPATCHED TO A TWO VEHICLE ACCIDENT WITH INJURIES. AGRIMSON DRIVING MN/635KAC NORTH BOUND INWOOD A	82	2100	3 Tue	11	43
	82000013	007+00.315	0482000013	7.315	Z	_	1	2	Ħ	UNIT 1 DRIVER SAID HE WAS TRAVELING NORTHBOUND ON INWOOD AV APPROACHING 3RD ST. N TRAFFIC LIGHT. UN	82	2100	5-Thu	6	<u>21</u>
	82000013	007+00.315	0482000013	7.315	Z	_	1	0	Ħ	BOTH VEHICLES WERE STOPPED AT A RED LIGHT FOR A RIGHT TURN FROM 3RD ST. N. ONTO THE SOUTHBOUND LANE	82	2100	6-Fri	5	2
	82000013	007+00.315	0482000013	7.315	Z	_	1	3	U	UNIT 1 WAS STOPPED AT RED LIGHT BEHIND SEVERAL OTHER VEHICLES WHEN UNIT 2 REAR ENDED UNIT 1. DRIVE	82	2100	4 Wed	3	43
	82000013	007+00.447	0482000013	7.447	S	_	1	3	U	UNIT #1 WAS TRAVELING SOUTH ON INWOOD AND FAILED TO STOP FOR A SNOW COVERED RED SEMAPHORE, STRIKING	82	2100	3 Tue	4	23
	82000013	007+00.448	0482000013	7.448	S	_	1	3	U	UNIT 1 TRAVELING SOUTH ON INWOOD AV APPROACHING STOP LIGHT SLID ON WET, SLIPPERY SNOW COVERED ROADS	82	2100	7 Sat	12	3
	82000013	007+00.449	0482000013	7.449	<u>\$</u>	_	4	3	U	VEHICLE 1 WAS STOPPED FOR THE RED LIGHT AT SOUTHBOUND INWOOD AT 4TH STREET. VEHICLE 2 REAR ENDED V	82	2100	6 Fri	6	15

																			PERSON1						
YEAR	TIME	SEV	NUM KILLED	NUM VEH	JUNC	SL	TYPE	Туре	DIAG	LOC1	TCD	LIT	WTHR1	WTHR2	SURF	CHAR	DESGN	ACC_NUM	VTYPE	DIR	ACT	FAC1	FAC2	POSN	INJ
2011	1840	N	0	2	0	0	1	Other	90	0	1	7	1	0	1	0	0	110910225	1	3	11	0	0	1	N
2012	1215	N	0	2	4	45	1	Other	90	1	1	1	1	1	1	1	3	120300112	1	5	1	5	2	1	N
2012	1228	C	0	2	4	40	1	RA	5	1	1	1	1	0	1	1	3	120670242	2	5	4	5	15	1	N
2012	1407	C	0	2	1	40	1	RE	1	1	98	1	2	0	2	1	3	113570122	1	5	1	1	0	1	C
			0	2	4		1		1			1	2	0					2		-	-		_	C NI
2011	1014	N	-	2	4	55	1	RE	1	1	1	1	2	0	2	5	2	110150060	3	3	5	15	0	1	N
2011	1320	N	0	2	1	50	1	RE	1	1	98	1	1	0	1	1	7	113620068	3	5	1	1	0	1	N
2012	1200	N	0	2	1	45	1	RE	1	1	98	1	3	0	2	1	3	121190076	1	5	1	1	0	1	N
2012	1221	С	0	2	1	45	1	Re	1	1	98	1	1	0	1	1	3	122430121	3	5	10	15	0	1	N
2012	1759	N	0	2	4	45	1	Re	1	1	1	4	1	0	1	1	3	123140139	1	5	1	15	0	1	N
2012	0850	N	0	2	7	55	1	RE	1	1	1	1	1	4	5	1	5	123180050	2	5	57	1	0	1	N
2012	1747	N	0	2	20	55	1	RE	1	1	5	1	2	0	1	5	2	122260225	1	3	1	4	15	1	N
2013	1811	N	0	3	7	30	1	RE	1	1	1	1	1	0	1	2	5	132150108	4	3	11	1	0	1	N
2013	1218	С	0	2	21	30	1	RE	1	1	1	1	1	0	5	2	2	133460180	1	3	3	15	0	1	N
2013	1428	N	0	2	4	50	1	RE	1	1	1	1	1	1	1	1	6	131780116	4	4	3	4	0	1	N
2013	1411	N	0	2	4	65	1	RE	1	1	1	1	1	0	4	3	2	133510287	1	4	11	1	0	1	N
2013	1257	N	0	1	21	55	35	ROR	7	1	98	1	5	0	5	6	2	130280274	1	3	1	3	0	1	N
2011	0537	N	0	1	1	45	34	ROR	7	1	98	2	1	2	5	1	3	111120002	2	5	1	3	46	1	N
2013	1301	N	0	1	1	30	35	ROR	4	4	99	1	5	0	4	6	90	131080117	4	4	1	3	61	1	N
2011	0915	E	Δ	1	Δ	A	6	SSO	Ω	θ	4	1	1	Δ	1	A	0	112970127	53	98	56	Ð	Δ	25	<u>_</u>
2013	1337	N	0	2	2	35	1	SSS	2	1	1	1	1	0	1	2	2	130250185	1	3	11	1	0	1	N
2013	1700	N	0	2	1	65	1	SSS	2	1	98	4	1	0	1	1	1	123350143	1	3	1	15	0	1	N
2012 2012	1700 1350	C	<u>о</u>	2	7	4 0	1	333	1	1	- 1 - 1	1	2	Δ	2	1	3	123330143 121040066	1	<u>1</u>	11	1	Δ	1	C
		-	0	2	4		4		± -	± 1	_	4	± 1	90	± 1	2		111370147	4	_		±	_	± 1	N
2011	1352	N	0	*	-	50	± 4		5	1	3	±	±	30	±	2	2		± 1	2	3	2	7	±	1-V
2012	1845	N	₩	*	5	50	±		±	±	4	4	2	0	±	2	3	120050087	±	1	±	15	4	±	14
2012	1734	N	0	_	4	50	±		±	1	1	+	±	±	+	±	5	122200129	±	1	10	1	0	±	N
2011	1032	N	0	2	4	55	1		1	4	1	1	1	0	1	1	5 -	110410210	3	1	1	4	0	1	N
2011	1725	N	0	3	4	50	1		1	4	1	1	1	0	1	1	5	111110148	1	1	4	15	4	1	N
2012	1200	C	0	2	4	45	1		1	1	1	4	1	0	1	1	3	120970076	2	4	9	9	15	1	N
2012	1511	N	0	3	1	45	1		1	4	98	1	1	0	4	4	5	121310136	1	1	1	15	0	1	И
2011	1558	E	0	2	20	55	4		4	4	5	4	4	0	4	6	2	112780258	1	2	11	4	0	4	E
2012	0654	N	0	2	20	45	4		1	4	5	4	4	0	4	5	2	121730216	3	2	11	4	0	4	N
2011	1026	e	0	2	7	50	4		3	4	4	4	2	4	3	4	3	110170136	1	3	6	4	0	4	E
2011	1550	N	0	2	4	55	4		6	4	4	4	2	3	2	1	3	111180152	1	3	3	4	0	1	N
2012	1730	N	Ð	2	20	40	4		1	4	5	4	4	0	1	5	2	123280206	1	3	9	15	0	4	N
2011	1546	C	0	5	7	45	1		<u>5</u>	4	1	4	4	0	3	1	<u>2</u>	110250012	<u>1</u>	5	4	5	3	1	И
2012	1758	E	0	2	4	50	4		3	4	4	4	4	0	1	4	5	121730177	1	1	4	5	0	1	E
2013	1702	N	Đ	2	4	45	4		1	4	4	4	4	θ	4	4	5	132160064	3	1	11	4	θ	4	N
2013	1800	e	Ð	2	4	45	4		4	4	4	4	4	4	4	4	5	133450005	4	4	11	50	50	4	N
2013	1548	E	θ.	2	20	30	4		4	4	<u> </u>	4	4	- θ	5	-	2	133450373	4	4	10	4	θ	4	N
2013	1722	N	Ð	2	2	45	1		1	1	1	4	1	Δ	2	1	- 5	133500052	2	1	4	<u>.</u>	Ð	1	N
2013 2013	2014	N.	Δ	2	, Z	50	1		1	1	5	⊿	2	Δ	2	5	2	132250244	1	2	16	15	Δ	1	N
2013	1321	€	θ	2	4	30	1		1	4	5	1	1	Ð	1	6	2	132470125	1	2	53	4	0	1	
2013	1621	0	θ	2	4	55	4		2	4	4	4	4	Δ	1	9	- 5	131950130	2	3	55	5	Δ	1	N
2013 2013			Φ	2	4	55			1	1	_	1	1	0	4	_	5	132420075	2	5	-		0	1	N.
	1141	N	O .	±	4		1		±	±	1	±	±	₩ -	±	1			5	3	11	1	U	±	14
2013	1011	N	0	±	1	4 5	25		4	4	98	+	4	/	5	4	5	130770183	5	±	4	46	61	±	N
2011	1312	E	0	2	2	30	1		1	4	1	1	2	2	1	1	5	113120187	3	3	11	21	0	4	€
2011	0641	C	0	2	20	45	1		1	4	1	4	6	2	2	5	2	113480090	1	3	10	4	0	1	Ç
2012	1452	E	0	2	4	40	1		1	4	4	4	1	0	1	4	5	120670143	2	1	4	0	0	4	E
2011	1708	N	0	2	4	45	1		1	4	4	4	3	2	2	4	5	111340100	1	1	6	4	0	4	N
2011	1642	E	0	3	4	55	1		8	4	1	1	1	4	4	4	7	111940137	3	1	4	2	5	4	E
2012	1519	N	θ	2	4	45	1		1	4	4	4	4	0	4	4	5	121820141	4	1	4	4	0	4	N
2012	1209	E	0	2	4	40	1		8	4	4	4	1	0	4	2	5	123190152	1	1	4	4	0	4	E
2012	1843	N	0	2	4	40	1		3	4	1	1	1	0	1	1	5	121730154	3	2	6	99	0	1	N
2011	1815	N	0	2	0	30	1		1	0	1	1	3	0	2	0	0	111470288	1	3	57	0	0	1	N
2013	1317	e	θ	2	4	45	1		1	4	4	4	1	1	4	4	5	130720147	3	5	1	4	1	1	N
2013	0953	E	0	2	4	45	1		5	4	1	4	4	0	2	1	5	131130142	1	5	1	5	0	1	E
2011	2243	N	0	4	4	45	22		4	2	4	4	4	0	3	4	5	113370335	4	5	57	46	61	4	N
2012	1428	€	0	- 2	4	55	4		4	4	4	4	2	0	4	4	3	121700049	7	5	4	4	15	- 1	N N
	2.20	_	3	_	•	33	-		-	_	-	-	_	•	-	-	3	111,00013	•		-	•		_	

				PERSON2											PERSON3											PERSON4	
EQP	PHYS	AGE	SEX	VTYPE	DIR	ACT	FAC1	FAC2	POSN	INJ	EQP	PHYS	AGE	SEX	VTYPE	DIR	ACT	FAC1	FAC2	POSN	INJ	EQP	PHYS	AGE	SEX	VTYPE	DIR
4	0	51	F	1	3	3	0	0	1	N	0	0	61	F													
4	1	17 56	M	1	3	1	1	1 0	1	N	4	1	29 40	М													
4	1 1	56 62	M M	3 1	5	1 1	2	0	1	N C	4 4	1 1	40 20	F													
99	1	50	M	3	3	5	1	0	1	N	99	1	60	M													
4	1	73	М	1	5	1	15	0	1	N	4	1	22	F													
4	1	56	M	1	5	1	61	0	1	N	4	1	30	M													
4	1	44	F	1	5	10	1	0	1	С	4	1	46	F													
4	1	59	F	3	5	11	1	0	1	N	4	1	16	М													
4	1 99	34 25	M	1 1	5 3	1 11	61 1	46 0	1 1	N N	4 4	1 1	22 21	M													
3	1	48	F	3	3	1	15	21	1	N	4	1	66	M	1	3											
4	1	54	M	1	3	3	0	0	1	C	4	1	61	F	_	J											
4	1	46	F	1	4	3	1	0	1	N	4	1	70	M													
4	1	19	F	4	4	3	15	0	1	N	4	1	55	M													
4	1	55	F																								
4	1	51	F																								
4 00	1 98	46 899	F ₩	3	θ	θ	θ	0	4	N	0	θ	42	₩													
4	1	49	F	3	3	1	8	15	1	N	4	1	72	F													
4	1	33	М	1	3	16	1	0	1	N	4	1	31	M													
4	1	4 9	M	1	1	9	15	0	1	N	4	1	29	E													
4	98	27	F	1	4	6	1	1	4	N	4	98	49	F													
4	1	23	M	1	1	1	1	0	1	N	4	1	21	M													
4	1 1	28 38	-	3 1	1 1	10 1	15 1	0 1	1 1	N N	4 4	1 1	30 38	₩													
4	1	19	F	1	4	4	1	0	<u>1</u>	N	4	4	89	₩	<u> 1</u>	4											
4	1	16	M	3	1	11	1	0	1	C	4	1	67	M													
4	1	26	Ę	3	1	10	1	0	1	N	4	1	41	M	2	1											
4	1	50	F	1	2	9	4	15	1	N	4	4	28	F													
4	1	37	-	3	2	1	3	4	1	N	4	1	41	M													
4	1 1	35 52	-	1 1	± 3	1 3	5 1	2 0	1 1	N	4 4	1 1	77 44														
4	1	30	F	3	3	11	1	0	<u>1</u>	N	4	4	38	į.													
4	1	22	Ę	<u>1</u>	7	11	1	0	1	C	4	1	59	M	4	3											
4	1	51	M	3	4	6	1	0	4	N	4	4	29	F													
4	1	41	M	1	4	4	15	0	1	N	4	2	30	F													
4	1	4 3	M	1	1	11	21	21	1	N C	4	1	53	F .													
4	1 4	25 39	+ E	1 4	± 1	10 4	1 4	0 Д	1 1	€ ₩	4	1 4	38 33	<u>+</u>													
4	± 1	27	₩	± 1	1 2	10	1	0	1	14	4	1	26	M													
4	4	59	F	3	2	5	4	θ	4	N	4	4	41	M													
4	1	66	F	1	4	4	5	0	4	N	4	4	21	M													
4	1	25	F	1	5	10	15	0	4	N	4	4	26	₩													
4 4	1 1	59 41	M ₩	1	2	4	15	21	1	N	4	1	27	-													
4	± 1	41 44	IVI	1 3	3 3	± 38	15 4	21 9	1 1	И Н	4 4	1 1	27 25	F F													
4	1	40	₩	1	1	θ	1 21	9	1	E	4	1	60	₩													
4	1	21	F	3	4	6	1	0	1	N	4	4	57	F													
4	1	30	M	3	3	4	1	1	4	N	4	4	56	M	1	7											
4	1	23	M	1	4	4	1	0	4	1 4	4	4	20	F													
4	1	21	F F	3 1	4 1	6 1	1 99	0 0	1 1	€ ₩	4 4	1 98	60 19	M M													
1 4	98 0	35 4 9	+ ₩	±	±	±	33	₩	+	**	4	30	+3	***													
4	1	51	M	1	5	4	15	θ	4	€	4	4	28	₩													
4	1	68	F	3	7	1 6	15 1	0 0	1 1	€ ₩	4 4	1 1	28 57	F													
4	4	20	F																								
4	4	50	F	2	5	11	4	0	4	€	4	4	53	M													

Desktop Reference for Crash Reduction Factors

Countermeasure(s)							Effectiveness	888		
	Crash Type	Crash Severity	Area Type	Road Type	Daily Traffic Volume	Ref	Crash Reduction Factor	Std	Range	Study Type
					(veh/day)		/ Function	Error	Low High	
	All	W			<5,000/lane	15	20			
	W	All			>5,000/lane	15	(31)			
	₩ W	All				15	10			
	₩ W	All				15	20			
	₩ W	All				15	22			
	₩ W	All				15	25			
	₩ W	All				15	25			
	₩	All				15	25			
	W	Fatal				15	39			
	W	Injury				15	23			
	W	PDO				15	27			
He	Head-on	All			<5,000/lane	15	38			
He	Head-on	All			>5,000/lane	15	44			
He	Head-on	All				15	53			
	Head-on	All				15	53			
se number of	Head-on	PDO				15	20			
lanes	Left-turn	All				15	71			
P	Left-turn	PDO				15	29			
<u>.</u>	ROR	All				15	(44)			
	ROR	All				15	26			
	ROR	All				15	44			
	ROR	All				15	44			
	ROR	PDO				15	50			
Ó	Overturn	All			<5,000/lane	15	42			
Ó	Overturn	All			>5,000/lane	15	52			
Re	Rear-end	All			<5,000/lane	15	42			
Re	Rear-end	All			>5,000/lane	15	(52)			
Re	Rear-end	All				15	32			
Re	Rear-end	All				15	32			
Re	Rear-end	All				15	40			
Re	Rear-end	All				15	53			
Re	Rear-end	PDO				15	53			

Page 61

Factors
Reduction
r Crash
oe fo
Reference
Desktop

Desktop Reference for Crash Reduction Factors	r Crash Re	duction F	actors					Roadway Departure Crashes	arture Crasl	səu
					Doily, Troffic		Effectiveness	SSS		
Countermeasure(s)	Crash Type	Crash Severity	Area Type	Road Type	Volume	Ref	Crash Reduction Factor	Std Range	e Study Type	ype
	;	`			(ven/day)		/ Function	Error Low H	High	
	Right- angle	All			<5,000/lane	15	35			
	Right- angle	All			>5,000/lane	15	45			
	Right- angle	All				15	15			
Increase number of lanes (cont'd)	Right- angle	PDO				15	46			
(53,00) 00,00	Sideswipe	All			<5,000/lane	15	38			
	Sideswipe	All			>5,000/lane	15	(44)			
	Sideswipe	All				15	30			
	Sideswipe	All				15	30			
	Sideswipe	All				15	35			
	Sideswipe	PDO				15	64			
Increase vertical grade by 1%	All	All	Rural	2-lane		23	-1.6P; P=percent grade (absolute value)	bsolute value)		
	All	All				15	26			
	All	All	All	All		~	10			
	All	All				15	10			
	All	All				15	10			
Install acceleration/	All	All				15	10			
deceleration lanes	All	All				15	25			
	All	All				15	75			
	Rear-end	All				15	75			
	Sideswipe	All				15	75			
	Ψ	All				15	29			
Install channelized lane	All	PDO				15	62			
	Rear-end	All				15	93			
Install climbing lane (where large difference between car and truck speed)	All	Fatal/ Injury	Rural	2-lane		38	33			

