



Montana Department of Transportation

2701 Prospect Avenue
PO Box 201001
Helena MT 59620-1001

Jim Lynch, Director
Governor

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MONTANA DIVISION

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Janice W. Brown
Division Administrator
Federal Highway Administration
2880 Skyway Drive
Helena, MT 59602-1230

Subject: STPHS 15-5(106)280
2002 - Intersection Impvmt - GF
CN 5380 000

This is to request approval of this proposed project as a Categorical Exclusion (CE) under the provisions of 23 CFR 771.117(d), and the Programmatic Agreement as signed by the Montana Department of Transportation (MDT) and the FHWA on April 12, 2001. Copies of its Preliminary Field Review Report (1/13/06) and Project Location Map are attached. This proposed action also qualifies as a CE under ARM 18.2.261 (Sections 75-1-103 and 75-1-201, MCA).

The following form provides the documentation required to demonstrate that all of the conditions are satisfied to qualify for a Programmatic Categorical Exclusion Approval (PCE) as initially agreed by the (former) Montana Department of Highways (MDOH) and the FHWA on December 6, 1989. (Note: An "X" in the "N/A" column is "Not Applicable" to, while one in the "UNK" column is "Unknown" at the present time for this proposed project.)

NOTE: A response in a box will require additional documentation for a Categorical Exclusion request in accordance with 23 CFR 771.117(d).

Table with 4 columns: YES, NO, N/A, UNK. Rows include questions about environmental impact, unusual circumstances, and Right-of-Way requirements.

	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>UNK</u>
5. There are parks, recreational, or other properties acquired/improved under <i>Section 6(f)</i> of the <i>1965 National Land & Water Conservation Fund Act (16 USC 460L, et seq.)</i> on or adjacent to proposed the project area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The use of such <i>Section 6(f)</i> sites would be documented and compensated with the appropriate agencies. (e.g.: MDFWP, local entities, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Are there any sites either on, or eligible for the National Register of Historic Places with concurrence in determination of eligibility or effect under <i>Section 106</i> of the <i>National Historic Preservation Act (16 USC 470, et seq.)</i> by the State Historic Preservation Office (SHPO), which would be affected by this proposed project.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. There are parks, recreation sites, school grounds, wildlife refuges, historic sites, historic bridges, or irrigation that might be considered under <i>Section 4(f)</i> of the <i>1966 US DEPARTMENT OF TRANSPORTATION Act (49 USC 303)</i> on or adjacent to the project area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
a. "Nationwide" Programmatic <i>Section 4(f)</i> Evaluation forms for these sites are attached.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. This proposed project requires a full (i.e.: DRAFT & FINAL) <i>Section 4(f)</i> Evaluation.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
B. The activity would involve work in a streambed, wetland, and/or other waterbody(ies) considered as "waters of the United States" or similar (e.g.: "state waters").	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1. Conditions set forth in <i>Section 10</i> of the <i>Rivers and Harbors Act (33 USC 403)</i> and/or <i>Section 404</i> under <u>33 CFR Parts 320-330</u> of the <i>Clean Water Act</i> (33 USC 1251-1376) would be met.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Impacts in wetlands, including but not limited to those referenced under Executive Order (EO) #11990, and their proposed mitigation would be coordinated with the Montana Inter-Agency Wetland Group.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. A 124SPA Stream Protection permit would be obtained from the MDFWP?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. There is a delineated floodplain in the proposed project area under FEMA's Floodplain Management criteria.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The water surface at the 100-year flood limit elevation would exceed floodplain management criteria due to an encroachment by the proposed project.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Tribal Water Permit would be required.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Work would be required in, across, and/or adjacent to a river which is a component of, or proposed for inclusion in Montana's Wild and/or Scenic Rivers system as published by the US Department of Agriculture, or the US Department of the Interior.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>UNK</u>
The designated National Wild & Scenic River systems in Montana are:				
a. Middle Fork of the Flathead River (headwaters to South Fork confluence).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. North Fork of the Flathead River (Canadian Border to Middle Fork confluence).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. South Fork of the Flathead River (headwaters to Hungry Horse Reservoir).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. Missouri River (Fort Benton to Charles M. Russell National Wildlife Refuge).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
In accordance with <i>Section 7 of the Wild and Scenic Rivers Act (16 USC 1271 – 1287)</i> , this work would be coordinated and documented with either the Flathead National Forest (Flathead River), or US Bureau of Land Management (Missouri River).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C. This is a "Type I" action as defined under <u>23 CFR 772.5(h)</u> , which typically consists of highway construction on a new location or the physical alteration of an existing route which substantially changes its horizontal or vertical alignments or increases the number of through-traffic lanes.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1. If yes, are there potential noise impacts?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. A Noise Analysis would be completed.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. There would be compliance with the provisions of both <u>23 CFR 772</u> for FHWA's Noise Impact analyses and MDT's Noise Policy.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
D. There would be substantial changes in access control involved with this proposed project.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If yes, would they result in extensive economic and/or social impacts on the affected locations?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
E. The use of a temporary road, detour, or ramp closure having the following conditions when the action(s) associated with such facilities:				
1. Provisions would be made for access by local traffic, and be posted for same.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Adverse effects to through-traffic dependant businesses would be avoided or minimized.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Interference to local events(e.g.: festivals) would be minimized to all possible extent.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Substantial controversy associated with this pending action would be avoided.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
F. Hazardous wastes /substances, as defined by the US Environmental Protection Agency (EPA) and/or the Montana Department of Environmental Quality (MDEQ), and/or (a) listed "Superfund" (under CERCLA or CECRA) site(s) are currently on and/or adjacent to this proposed project.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	YES	NO	N/A	UNK
All reasonable measures would be taken to avoid and/or minimize substantial impacts from same.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
G. The Montana Pollutant Discharge Elimination System's conditions (ARM 16.20.1314), including temporary erosion control features for construction would be met.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
H. Permanent desirable vegetation with an approved seeding mixture would be established on exposed areas.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I. Documentation of an "invasive species" review to comply with both EO #13112 and the <i>County Noxious Weed Control Act</i> (7-22-21, MCA), including directions as specified by the county(ies) wherein its intended work would be done.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
J. There are "Prime" or "Prime if Irrigated" Farmlands designated by the Natural Resources Conservation Service on or adjacent to the proposed project area.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If the proposed work would affect Important Farmlands, then an AD-1006 Farmland Conversion Impact Rating form would be completed in accordance with the <i>Farmland Protection Policy Act</i> (7 USC 4201, et seq.).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
K. Features for the <i>Americans with Disabilities Act</i> (PL 101-336) compliance would be included.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
L. A written Public Involvement Plan, would be completed in accordance with MDT's Public Involvement Handbook.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. This proposed project complies with the <i>Clean Air Act's Section 176(c)</i> (42 USC 7521(a), as amended) under the provisions of <u>40 CFR 81.327</u> as it's either in a Montana air quality:				
A. "Unclassifiable"/attainment area. This proposed project is <u>not</u> covered under the EPA's September 15, 1997 Final Rule on air quality conformity.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
and/or				
B. "Nonattainment" area. However, this type of proposed project is either exempted from the conformity determination requirements (under EPA's September 15, 1997 Final Rule), or a conformity determination would be documented in coordination with the responsible agencies: (Metropolitan Planning Organizations, MDEQ's Air Quality Division, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
C. Is this proposed project in a "Class I Air Shed" (Indian Reservations) under <u>40 CFR 52.1382(c)(3)</u> ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Federally listed Threatened or Endangered (T/E) Species:				
A. There are recorded occurrences, and/or critical habitat in this proposed project's vicinity.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B. Would this proposed project result in a "jeopardy" opinion (under <u>50 CFR 402</u>) from the Fish & Wildlife Service on any Federally listed T/E Species?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

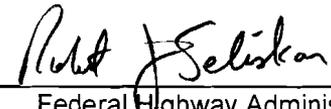
The proposed project would not induce significant land use changes, nor promote unplanned growth. There would be no significant effects on access to adjacent property, nor to present traffic patterns.

This proposed project would not create disproportionately high and/or adverse impacts on the health or environment of minority and/or low-income populations (EO #12898). It also complies with the provisions of *Title VI* of the *Civil Rights Act* of 1964 (**42 USC 2000d**) under the FHWA's regulations (23 CFR 200).

In accordance with the provisions of 23 CFR 771.117(a), this pending action would not cause any significant individual, secondary, or cumulative environmental impacts. Therefore, the FHWA's concurrence is requested that this proposed project is properly classified as a Categorical Exclusion.


_____, Date: 2/9/06
Tom Gocksch P.E. – Environmental Area Engineer
MDT Environmental Services Bureau

Concur 
_____, Date: 2/9/06
Tom Hansen, P.E. - Engineering Section Supervisor
Environmental Services Bureau

Concur 
_____, Date: 2/13/06
Federal Highway Administration

TLH:tgg: S:\PROJECTS\GREAT-FALLS\5380\5380ENCED001.DOC

Attachments

cc: Michael P. Johnson - District Administrator-Great Falls
Paul R. Ferry, P.E. - Highway Engineer
John H. Horton - MDT Right-of-Way Bureau Chief
Suzy Althof - MDT Contract Plans Section Supervisor
David W. Jensen, Supervisor - MDT Fiscal Programming Section
Jean A. Riley, P.E., Chief - Environmental Services Bureau
Tom Gocksch P.E. – Environmental Services Bureau
Environmental Quality Council

MDT attempts to provide accommodation for any known disability that may interfere with a person participating in any service, program or activity of the Dept. Alternative accessible formats of this information will be provided upon request. For further information, call 406-444-7228 or TTY (800-335-7592), or call Montana Relay at 711.



Montana Department of Transportation
 PO Box 201001
 Helena, MT 59620-1001

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Memorandum

To: Duane E. Williams, P.E.
 Traffic and Safety Engineer

From: Ivan B. Ulberg, P.E. *IBU*
 Traffic Project Engineer

Date: January 13, 2006

Subject: Project No. STPHS 15-5(106)280, U.P.N. 5380 000
 2002-Intersection Impvmt-GF
 Work Type 310 - Roadway and Roadside Safety Improvements

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We request that you approve the Preliminary Field Review Report for the subject project.

Approved *Duane E. Williams* Date *1-13-06*
 Duane E. Williams, P.E.
 Traffic and Safety Engineer

We are requesting comments from the following individuals who have also received a copy of the Report. We will assume their concurrence if no comments are received within three weeks of the approval date.

- M.P. Johnson - Great Falls - Admin.
- P.R. Ferry - Highways Engineer
- D. Krings - Helena - Road Design
- M.A. Goodman - Helena - Hydraulics
- D.C. Bolan - Helena - Traffic Engineer
- K.M. Barnes - Helena - Bridge
- P. Langve-Davis - Helena - Trans. Planning
- M. Strizich - Helena - Materials
- D.J. Blacker - Helena - Maintenance
- S.S. Straehl - Helena - Trans. Planning
- M.A. Wissinger - Helena - Construction
- L. Tribelhorn - Helena - Highways Design
- P.A. Jomini - Helena - Traffic-Safety Mgmt.
- D.W. Jensen - Helena - Fiscal Programming
- David Dobbs, City Engineer
 1025 25th Ave. NE
 Great Falls, MT 59404

- B.A. Larsen - Helena - Photogrammetry
- ~~J.A. Riley~~ - Helena - Environmental
- J.H. Horton - Helena - Right-of-Way
- S. Rowell - Helena - Engineering Info
- M. McArthur - Helena - Construction
- J.A. [unclear] - Helena - Reconstruction

RETURN TO	COMPLETED BY DATE	COMMENTS	INITIALS/DATE
		YES	NO
			<i>Bill</i>
			<i>02/03/06</i>
		X	<i>Jan 18</i>
		X	<i>1/18</i>
		X	<i>IBU</i>
		X	<i>BG-2-3-06</i>
		X	<i>1/23/06</i>

At location 2, if ADA facilities are present, they need to be permitted.

Cc: Traffic & Safety File

Preliminary Field Review Report

This report has been developed from information discussed at a preliminary field review and from input received since that review. The review was held on March 4, 2004 with the following personnel in attendance:

Mick Johnson, District Administrator, Great Falls-MDT
Christie McOmer, District Project Engineer, Great Falls-MDT
Cindy Callan, District Traffic Engineer, Great Falls-MDT
David Kelly, Maintenance Chief-Great Falls
Darrin Grenfell, FHWA-Helena
Jere Stoner, Road Design Section, Helena-MDT
Tom Gocksch, Environmental Services, Helena-MDT
Tom Hanek, Traffic-Safety Management Section, Helena-MDT
Danielle Bolan, Assistant Traffic Engineer, Helena-MDT
Stan Brelin, Traffic-Engineering Section, Helena-MDT
Sandie Stiffler, Traffic-Engineering Section-Safety, Helena-MDT
James Cornell, Traffic-Engineering Section-Signing, Helena-MDT
Allen Levens, Traffic-Engineering Section-Electrical, Helena-MDT

Proposed Scope of Work

Location 1:

The proposed scope of work is to move a luminaire pole on the southbound off-ramp of Emerson Interchange at Vaughn Road, and reduce the length of rail that is currently protecting the luminaire pole. The intent is to address an identified trend of right angle crashes by improving visibility for drivers turning onto Vaughn Road.

Location 2:

The proposed scope of work at this location is to modify the northbound I-15 off ramp at the intersection of Central Avenue and relocate the guardrail on the west side to improve visibility to the left of vehicles leaving the off-ramp. The modification will include the elimination of the island and narrowing of the intersection to eliminate the right turn pocket for off-ramp traffic. This will bring all traffic to a single file stop condition at the intersection of Central Avenue. The ramp will have to accommodate truck traffic, which will create the situation where a determined driver will still be able to slip around a left turning vehicle as before. To discourage this, a mountable truck apron will be used to accommodate some of the right-turning radius at the intersection. *At the field review semi-opaque screening was discussed as an optional treatment, but is not proposed at this time.*

Field observations indicate that vehicles using the northbound off ramp are mostly right turning vehicles, and that when two or more vehicles were in the queue to turn

right, the trailing vehicle's driver would look left for the gap as well as the lead driver. The trailing vehicle would use peripheral vision to observe the lead vehicle. When the lead vehicle would turn right so would the trailing vehicle. If the lead vehicle aborted the maneuver shortly after starting to go the trailing vehicle would not notice due to losing the lead vehicle from peripheral vision. The trailing vehicle would assume the lead vehicle was completing the maneuver and would then rear-end the lead vehicle. This phenomenon was noted in the crash reports as well.

Modification to the intersection will place drivers in the correct position perpendicular to the intersection and address the overdriving described above. Relocating the guardrail in this area will further enhance the sight distance to the left for these drivers.

The Traffic Section will be lead group for the project.

Project Location and Limits

Location 1:

This portion of the project is located at the intersection of the southbound I-15 off ramp (Emerson Interchange) and Vaughn Road in Great Falls in Cascade County. The interchange is at R.P. 0.0 on Vaughn Road (U-5206), R.P. 8.037 on Vaughn Road (X-07611), and R.P. 282.535 on I-15. The limits of the project are from R.P. 7.8 on X-07611 to R.P. 0.5 on U-5206.

Location 2:

This portion of the project is located at the intersection of the northbound I-15 off ramp (Central Avenue Interchange) and Central Avenue in Great Falls in Cascade County. The Central Avenue overpass structure is the beginning of U-5240 (R.P. 0.0) going west and is also the beginning of N-103 (R.P. 0.0) going east. The limits of the project are from R.P. 0.1 on U-5240 to R.P. 0.15 on N-103.

A map showing the two project locations is included on the last page of this report.

Physical Characteristics

Location 1:

The Emerson Interchange was built on project I 15-5(31)273 in 1967. Lighting was installed on project I 15-5(36)267 in 1968 and the interchange was last improved on project IR 15-5(77)283 in 1987. The interchange has only two ramps, one northbound on ramp, and one southbound off ramp. I-15 at this location is on level terrain and is functionally classified as interstate principle arterial. Vaughn Road is functionally classified as a principal arterial east of the interchange, including the intersection with the northbound on ramp. Vaughn Road is functionally classified as a minor arterial west of the interchange including the intersection with southbound off ramp.

Location 2:

The Central Avenue Interchange was constructed in 1967 under project I-IG 15-5(20)273. The intersection of the northbound off ramp and Central Avenue was revised in 2001 under project IM 15-5(95)274. I-15 at this location is on level terrain and is functionally classified as interstate principle arterial. Central Avenue is functionally classified as a principal arterial east of the southbound on/off ramps and as a collector west of the southbound on/off ramps.

Traffic Data

Following is traffic data for this project:

Location 1: On Vaughn Rd. (U-5206) east of Emerson Interchange

2003 ADT = 7,580 (Present)
2005 ADT = 7,730 (Letting)
2025 ADT = 9,430 (Future)
DHV = 940
T = 6.7%
EAL = 200
AGR = 1.0%

On I-15 south of Emerson Interchange

2003 ADT = 6,670 (Present)
2005 ADT = 6,800 (Letting)
2025 ADT = 8,300 (Future)
DHV = 870
T = 15.0%
EAL = 557
AGR = 1.0%

On I-15 north Emerson Interchange

2003 ADT = 9,890 (Present)
2005 ADT = 10,090 (Letting)
2025 ADT = 12,310 (Future)
DHV = 1,290
T = 10.1%
EAL = 532
AGR = 1.0%

Location 2: On Central Ave. east of Central Ave. Interchange

2003 ADT = 11,350 (Present)

2005 ADT = 11,580 (Letting)

2025 ADT = 14,130 (Future)

DHV = 1,340

T = 5.8%

EAL = 236

AGR = 1.0%

On Central Ave. (U-5240) west of Central Ave. Interchange

2003 ADT = 5,690 (Present)

2005 ADT = 5,810 (Letting)

2025 ADT = 7,080 (Future)

DHV = 780

T = 2.0%

EAL = 47

AGR = 1.0%

On I-15 south of Central Ave. Interchange

2003 ADT = 9,450 (Present)

2005 ADT = 9,660 (Letting)

2025 ADT = 12,020 (Future)

DHV = 1,260

T = 10.6%

EAL = 832

AGR = 1.1%

On I-15 north of Central Ave. Interchange

2003 ADT = 6,670 (Present)

2005 ADT = 6,800 (Letting)

2025 ADT = 8,300 (Future)

DHV = 870

T = 15.0%

EAL = 864

AGR = 1.0%

Accident History

Location 1:

For the period of January 1, 1992 through December 31, 2001 (10 years) there were 17 total crashes between I-15 RP 282.3 and RP 282.7, 12 of which are addressable with the proposed improvements. Of the 12 addressable crashes 4 were injury accidents, which resulted in a total of 5 injuries. There were no fatal accidents among the 12 addressable crashes and 8 crashes that involved property damage only. The

preliminary cost estimate as provided by the Safety Management section is \$6,525, which yields a benefit cost ratio of 67.17.

Location 2:

For the period of January 1, 1992 through December 31, 2001 (10 years) there were 65 total crashes between I-15 RP 280.1 and RP 280.563, 17 of which are addressable with the proposed improvements. Of the 17 addressable crashes 6 were injury accidents, which resulted in a total of 6 injuries. There were no fatal accidents among the 17 addressable crashes and 11 crashes that involved property damage only. The preliminary cost estimate as provided by the Safety Management section is \$6,600, which yields a benefit cost ratio of 80.19.

Major Design Features

Location 1:

Design Speed - Vaughn Road is functionally classified as a minor arterial at the southbound off ramp and the posted speed limit is 55 MPH. Based on Geometric Design Criteria for a Rural Minor Arterial in level terrain the design speed is 60 MPH.

Horizontal Alignment - There will be no changes to the existing horizontal alignment.

Vertical Alignment - There will be no changes to the existing vertical alignment.

Typical Section - The typical section for the southbound off ramp consists of a 24 ft surface width with one 14 ft travel lane, a 4 ft inside shoulder and a 6 ft outside shoulder. The typical section for Vaughn Road consists of a 30 ft surface width with two 12 ft travel lanes, and two 3 ft shoulders.

Hydraulics

There will be no involvement with a floodplain. If the guardrail is relocated, drainage may need to be modified at this location.

Road Design

There will be no road design involvement.

Bridge

There will be no bridge involvement.

Traffic

The luminaire pole in the northeast corner of the subject intersection will be moved away from Vaughn Road to improve visibility for drivers looking to the east. Location of the stop sign and stop line will be reviewed, and the guardrail will be reviewed to see if relocation of the guardrail to improve the visibility is feasible.

Geotechnical Considerations

There will be no geotechnical involvement.

Location 2:

Design Speed - Central Avenue is functionally classified as a principle arterial at the northbound I-15 off ramp and the posted speed limit is 40 MPH. Based on Geometric Design Criteria for an Urban Principle Arterial the design speed is 45 MPH.

Horizontal Alignment - There will be no changes to the existing horizontal alignment.

Vertical Alignment - There will be no changes to the existing vertical alignment.

Typical Section - The typical section for the northbound off ramp consists of a 24 ft surface width with one 14 ft travel lane, a 4 ft inside shoulder and a 6 ft outside shoulder. Central Avenue just west of the northbound off ramp has a width of 72 ft (back of curb to back of curb) and the typical section consists of sidewalk, curb and gutter, one eastbound travel lane, a left turn lane, raised median, two westbound travel lanes, curb and gutter, and sidewalk. Central Avenue just east of the northbound off ramp has a surface width of 89 ft (back of curb to back of curb) and the typical section consists of sidewalk, curb and gutter, one eastbound travel lane, raised median, two westbound travel lanes, curb and gutter, and sidewalk. Dimensions for travel lanes on Central Avenue is 12 ft, but dimensions for shoulders and the median cannot be stated with any certainty because of tapers and revisions already made at this location.

Hydraulics

There will be no hydraulics involvement or involvement with a floodplain.

Road Design

There will be no road design involvement.

Bridge

There will be no bridge involvement.

Traffic

Signing will be upgraded at this location. Geometrics will provide the design of the northbound off ramp approach to Central Avenue. Additional striping along the bridge rail in the eastbound direction on Central Avenue will be placed to further delineate the driving lane. There is a pull box in the intersection that will have to be relocated.

Geotechnical Considerations

There will be no geotechnical involvement.

Design Exceptions

No design exceptions are anticipated for either location.

Right-of-Way

No new right-of-way will be required at either location.

Utilities/Railroad

Location 1:

There will be no involvement with utilities. The Burlington Northern/Santa Fe railroad runs along the south side of Vaughn Road but no involvement is anticipated.

Location 2:

There will be no utilities or railroad involvement.

Environmental Considerations

No apparent significant environmental impacts or issues were identified at either location. We anticipate that a categorical exclusion will be prepared for this project.

Traffic Control

Traffic will be maintained through construction at both locations with appropriate signing, flagging, etc., in accordance with the Manual on Uniform Traffic Control Devices.

Survey

Location 1:

Survey will be requested at this intersection from 820 feet east of the off ramp to 200 feet west of the off ramp along Vaughn Road and 200 feet along the off ramp north of Vaughn Road.

Location 2:

Survey will be required for this intersection. As-built plans for the off-ramp exist, but do not necessarily reflect the location of the island at the intersection. As-builts show that Central Avenue has 12 ft travel lanes, but dimensions for shoulders and the median cannot be stated with any certainty because of tapers and revisions made at this location since the as-builts were prepared.

Public Involvement

Level A public involvement should be appropriate for both locations. A news release will be sent to the local media.

Construction Cost Estimate

Location 1: The preliminary cost estimate provided by Safety Management for moving the luminaire pole was \$6,525, which yielded a benefit cost ratio of 67.17.

Location 2: The preliminary cost estimate provided by Safety Management for revising curbing, signing and striping was \$6,600, which yielded a benefit cost ratio of 80.19.

New Estimate: The following is a rough estimate of what the improvements will cost. No actual design has been started, so these values are subject to change.

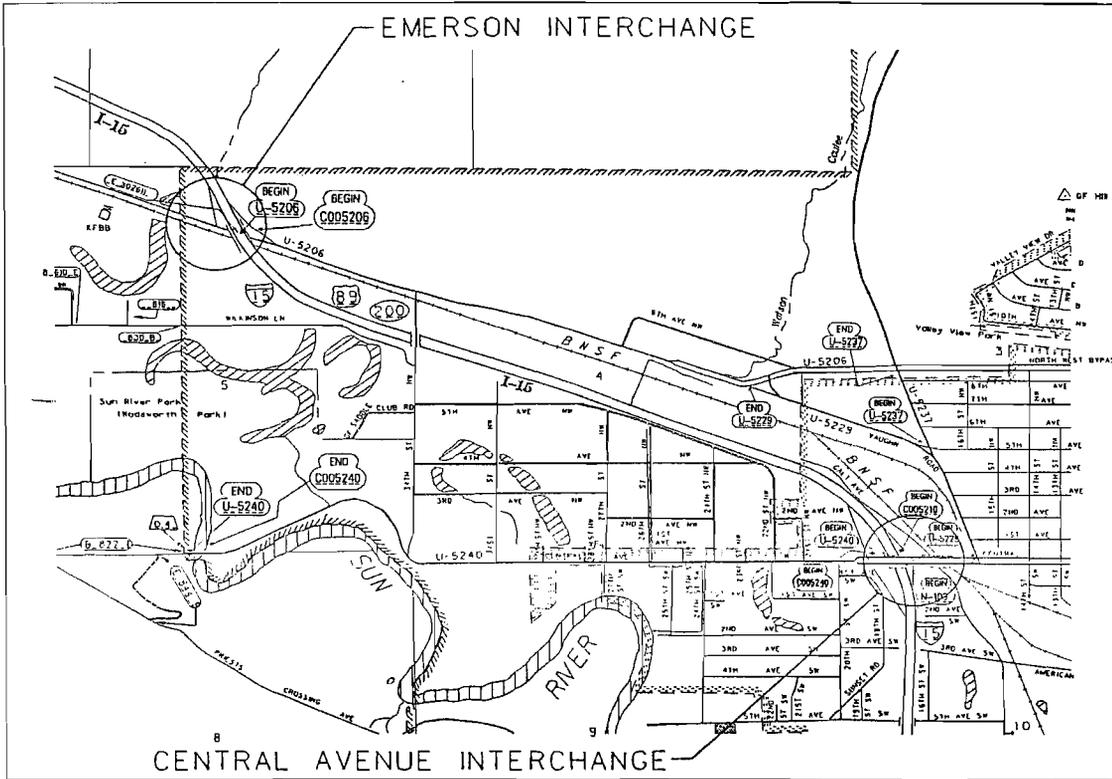
LOCATION 1

Relocate Luminaire =	\$ 5,500
Remove Guardrail =	\$ 500
New Terminal Section =	\$ 3,000
Misc. Earthwork =	\$ 1,000
SUB-TOTAL =	\$10,000
10% Mobilization	\$ 1,000
15% Traffic Control	\$ 1,500
SUB-TOTAL =	\$12,500
15% CE	\$ 1,875
10% Contingencies	\$ 1,250
TOTAL =	\$15,625

LOCATION 2

Remove/Replace W-Beam Rail =	\$ 5,000
Relocate Pull-Box =	\$ 1,000
Remove Island =	\$ 1,000
Remove/Replace Concrete Curb/Gutter/Sidewalk =	\$12,000
Signing/Epoxy Pvmnt Markings =	\$ 1,200
SUB-TOTAL =	\$20,200
10% Mobilization	\$ 2,020
20% Traffic Control	\$ 4,040
SUB-TOTAL=	\$26,260
15% CE	\$ 3,940
10% Contingencies	\$ 2,630
TOTAL=	\$32,830

Project Total Estimate = \$48,455, which is an increase of \$35,330, or roughly 370%.



IBU:AWL:SEB:LET:TR:5380SAPFR001