



Montana Department of Transportation

2701 Prospect Avenue
PO Box 201001
Helena MT 59620-1001

Jim Lynch, Director
Brian Schweitzer, Governor

August 18, 2010

Kevin McLaury
Division Administrator
Federal Highway Administration
585 Shepard Way
Helena MT 59601



RECEIVED
AUG 20 2010
ENVIRONMENTAL

Subject: Programmatic Categorical Exclusion (PCE) Concurrence Request
STPU 5204(3)
Smelter Avenue-Black Eagle
Control Number: 6589000

Dear Kevin McLaury:

This submittal requests approval of the above-mentioned proposed project as a Categorical Exclusion under the provisions of 23 CFR 771.117(d) and the Programmatic Agreement as signed by MDT and FHWA on April 12, 2001. This proposed action also qualifies as a Categorical Exclusion under ARM 18.2.261 (MCA 75-1-103 and MCA 75-1-201).

The following form provides documentation required to demonstrate that all of the conditions are satisfied to qualify for a Programmatic Categorical Exclusion. A copy of the Alignment and Grade Review Report, dated March 11, 2010, and a project location map are attached. In the following form, "N/A" indicates not applicable; "UNK" indicates unknown.

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

Table with 4 columns: Question, Yes, No, N/A, UNK. Contains 10 rows of questions regarding environmental impact, unusual circumstances, and right-of-way requirements.

	<u>Yes</u>	<u>No</u>	<u>N/A</u>	<u>UNK</u>
5. Parks, recreational, or other properties acquired/improved under Section 6(f) of the 1965 National Land & Water Conservation Fund Act (16 USC 460L, <i>et seq.</i> ) are on or adjacent to the proposed project area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The use of such Section 6(f) sites would be documented and compensated with the appropriate agencies (MDFWP, local entities, etc.).	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Sites either on, or eligible for the National Register of Historic Places with concurrence in determination of eligibility or effect under Section 106 of the National Historic Preservation Act (16 USC 470, <i>et seq.</i> ) by the State Historic Preservation Office (SHPO) would be affected by this proposed project.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Parks, recreation sites, school grounds, wildlife refuges, historic sites, historic bridges, or irrigation that might be considered under Section 4(f) of the 1966 US Department Of Transportation Act (49 USC 303) are on or adjacent to the project area.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
a. The proposed project would not impact the site(s), so a 4(f) evaluation is not necessary.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b. A de minimis finding has been secured for this project.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. Nationwide Programmatic Section 4(f) Evaluation forms for those sites are attached.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. This proposed project requires a full Section 4(f) 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 water body (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 Section 10 of the Rivers and Harbors Act (33 USC 403) and/or Section 404 of the Clean Water Act (33 USC 1251-1376) codified at 33 CFR 320-330 would be met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Impacts in wetlands, including but not limited to those referenced under Executive Order (EO) #11990, and proposed mitigation would be coordinated with the US Army Corps of Engineers and other Resource Agencies (Federal, State, and Tribal) as required for permitting.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. A 124SPA would be obtained from the MDFWP.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. A delineated floodplain exists 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. A 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 that 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 and/or 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 Section 7 of the Wild and Scenic Rivers Act (16 USC 1271 – 1287), 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 23 CFR 772.5(h), 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
1. If yes, are there potential noise impacts?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. A Noise Analysis would be completed.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. There would be compliance with the provisions of both 23 CFR 772 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. Substantial changes in access control would be associated with the 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 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	<u>Yes</u>	<u>No</u>	<u>N/A</u>	<u>UNK</u>
All reasonable measures would be taken to avoid and/or minimize substantial impacts from same.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
G. The Stormwater Discharge conditions (ARM 17.30.1101-1117), including temporary erosion control features for construction would be met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input 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 County Noxious Weed Control Act (7-22-2152, MCA), including directions as specified by the county(ies) wherein its intended work would be done would be conducted.	<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. If the proposed work would affect Important Farmlands, then an AD 1006 Farmland Conversion Impact Rating form would be completed in accordance with the Farmland Protection Policy Act (7 USC 4201, <i>et seq.</i> ).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K. Features for the Americans with Disabilities Act (PL 101 336) compliance would be included.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 Clean Air Act's Section 176(c) (42 USC 7521(a), as amended) under the provisions of 40 CFR 81.327 as it is either in a Montana air quality:				
A. "Unclassifiable"/attainment area. This proposed project is not covered under the EPA's September 15, 1997 Final Rule on air quality conformity. and/or	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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 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" under 40 CFR 52.1382(c)(3)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Federally listed Threatened or Endangered (T/E) Species:				
A. Recorded occurrences, and/or critical habitat are in the vicinity of the proposed project.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B. Would this proposed project result in a "jeopardy" opinion (under 50 CFR 402) from the Fish and Wildlife Service on any Federally listed T/E Species?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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

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). The project also complies with the provisions of Title VI of the Civil Rights Act of 1964 (42 USC 2000d) under FHWA regulations (23 CFR 200).

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

Eric Thunstrom Date: 8/18/10  
Eric Thunstrom  
Environmental Services Bureau  
Great Falls District Project Development Engineer

Heidy Bruner Date: 8/18/10  
Concur Heidy Bruner, P.E.  
Environmental Services Bureau  
Engineering Section Supervisor

[Signature] Date: 18 AUG 2010  
Concur [Signature]  
Federal Highway Administration

Attachment

copies without attachment:

- |                      |  |
|----------------------|--|
| Tom Martin, P.E.     | Environmental Services Bureau Chief                          |
| Heidy Bruner, P.E.   | Environmental Services Bureau Engineering Section Supervisor |
| Michael P. Johnson   | Great Falls District Administrator                           |
| Kent Barnes, P.E.    | Bridge Engineer  |
| Paul Ferry, P.E.     | Highways Engineer  |
| Rob Stapley          | Right-of-Way Bureau Chief                                    |
| David W. Jensen      | Fiscal Programming Section Supervisor                        |
| Dustin Rouse, P.E.   | Road Design Area Engineer                                    |
| Suzy Price           | Contract Plans Bureau Chief                                  |
| Steve Prinzing, P.E. | Great Falls District Engineering Services Supervisor         |
| Stacy Hill, P.E.     | Great Falls District Environmental Engineering Specialist    |
| Walt Scott           | Right-of-Way Bureau Utilities Section                        |

copies with attachment:

- |  |                               |
|--|-------------------------------|
| File   | Environmental Services Bureau |
| Montana Legislative Branch Environmental Quality Council (EQC) |                               |

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

**Memorandum**

To: Paul Ferry, P.E.  
 Highways Engineer

From: Damian Krings, P.E. *DMK*  
 Road Design Engineer

Date: March 11, 2010

Subject: STPU 5204(3)  
 Smelter Avenue – Black Eagle  
 UPN 6589000  
 Work Type: 140 Reconstruction – without added capacity

Please approve the Alignment and Grade Review for this project.

Approved Lesly Tribelhorn for Paul Date 3/12/10  
 Paul Ferry, P.E.  
 Highways Engineer

We are requesting comments from the below distribution. If no comments are received within two weeks of the release date we will assume agreement.

**Distribution:**

(memo and cost estimates only)

Jim Walther, Preconstruction Engineer - Engineering	Damian Krings, Road Design Engineer
Paul Ferry, Highways Engineer	Kent Barnes, Bridge Engineer
Dave Jensen, Fiscal Programming Section Supervisor	Duane Williams, Traffic and Safety Engineer
Marty Beatty, Engineering Information Services	Highways File

**Distribution:**

(w/attachments)

Dustin Rouse, Project Design Manager

Andrew Finch  
[G.F. City-County Planning](#)  
 #2 Park Drive S.  
 P.O. Box 5021  
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 City of Great Falls  
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 Cascade County Roads  
 415 3rd Street NW  
 Great Falls, MT 59403

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 Black Eagle Water and Sewer District  
 PO Box 1  
 Black Eagle, MT 59414

Sarah Peck, Secretary/Treasurer  
 Black Eagle Water and Sewer District  
 PO Box 1  
 Black Eagle, MT 59414

Senator Mitch Tropila  
 PO Box 2286  
 Great Falls, MT 59403-2286

Chris Ward, Project Engineer  
 Thomas, Dean and Hoskins  
 1200 25th Street  
 Great Falls, MT 59403

Representative Brian Hoven  
 1501 Meadowlark Dr  
 Great Falls MT 59404-3325

## Alignment and Grade Report

STPU 5204(3)

Project Manager : Dustin Rouse

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### Electronic Distribution (w/electronic attachments in email):

Jim Walther, Preconstruction Engineer - Engineering	Damian Krings, Road Design Engineer
Paul Ferry, Highways Engineer	Kent Barnes, Bridge Engineer
Dave Jensen, Fiscal Programming Section Supervisor	Duane Williams, Traffic and Safety Engineer
Marty Beatty, Engineering Information Services	Mick Johnson, Great Falls District Administrator
Lynn Zanto, Rail, Transit & Planning Div. Administrator	Doug Wilmot, District Construction Engineer
Dustin Rouse, Project Design Manager	Bob Vosen, District Operations Engineer
Jake Goettle, Construction Engineering Services (2 sets)	Dave Hand, District Maintenance Chief
Tom Martin, Environmental Services Bureau (3-4 sets)	Stephen Prinzing, District Preconstruction Engineer
Vacant, Right-of-Way Bureau Chief	Jerilee Weibel, District R/W Supervisor
Walt Scott, R/W Utilities Section Supervisor	Linda Cline, District R/W Design Supervisor
Danielle Bolan, Traffic Engineer	Dennis Ghekiere, Utility Agent
Ivan Ulberg, District Traffic Project Engineer	James Combs, District Traffic Engineer
Pierre Jomini, Safety Management Engineer	Stan Kuntz, District Materials Lab
Matt Strizich, Materials Engineer	Gerald Brown, CES Reviewer, Lewistown
Lee Grosch, District Geotechnical Manager	Kevin McCray, Bridge Area Engineer
Mark Goodman, Hydraulics Engineer	Greg Pizzini, R/W Access Management Section Manager
Jim Mullins, R/W Design Manager	
Jon Watson, Pavement Engineer	
Jason Sorenson, Hwys Bureau Engineering Cost Analyst	
Mark Keeffe, Bicycle/Pedestrian Coordinator	
Alice Flesch, ADA Coordinator	

## Alignment and Grade Report

STPU 5204(3)

Project Manager : Dustin Rouse

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### **Introduction**

This report was developed with information from the preliminary field review conducted on February 23, 2010 with the following in attendance:

Dustin Rouse	Road Design	MDT- Helena
Mick Johnson	District Administrator	MDT- Great Falls
Stephen Prinzing	District Engineering Services Engineer	MDT- Great Falls
Doug Wilmot	Construction Engineer	MDT- Great Falls
Christie McOmber	District Projects Engineer	MDT- Great Falls
Jerilee Weibel	R/W Supervisor	MDT- Great Falls
James Combs	District Traffic Engineer	MDT- Great Falls
Brian Hoven	Montana Legislature	Great Falls
Andrew Finch	City Planning	City of Great Falls
Jason Handl	Public Works	City of Great Falls
Jim Helgeson	Great Falls Transit	City of Great Falls
Chris Ward	TD&H	Great Falls
Sarah Peck	Black Eagle-Sewer & Water	Black Eagle
Charles Harant	Black Eagle-Sewer & Water	Black Eagle
Dave Sutton	Road Supervisor	Cascade County
Brian Clifton	Public Works	Cascade County
Kurt Marcoux	Hydraulics	MDT- Helena
Dan Maze	Bridge	MDT- Helena
Lee Grosch	Geotechnical	MDT- Helena
Charles Pierce	Road Design	MDT- Helena
Jim Hansen	Road Design	MDT- Helena

### **Scope of Work**

The proposed project has been nominated for reconstruction. The intent of the project is to design an improved travel way for vehicle and pedestrian traffic. The proposed work includes new asphalt surfacing, grading, gravel, new sidewalk, ADA ramps, storm drain, seal & cover, new pavement markings, new signage, and improved intersection geometry at Wire Mill Road (RP 0.21±).

After discussion, the original 0.25-ft mill and overlay between 22<sup>nd</sup> St NE and the end of the project was changed to a 0.4-ft mill and overlay. This change was made to improve the surfacing of an otherwise poor quality existing roadway. ADA upgrades to the existing sidewalks are proposed for the section from 22<sup>nd</sup> Street NE (RP 0.75±) to 23<sup>rd</sup> Street NE (RP 0.85±).

The existing bridge at 15<sup>th</sup> Street was to have been modified to provide increased vertical clearance for southbound vehicles traveling on 15<sup>th</sup> Street. However, because an existing pedestrian use bridge south of Smelter Ave on 15<sup>th</sup> St (U.S. 87) will remain in place that provides even less vertical clearance, bridge alterations to the Smelter Ave overpass will not be included in this project.

The appropriate intersection configuration for the proposed reconstruction of the Wire Mill Rd/Smelter Ave intersection was established by MDT Geometrics and incorporates public comments regarding the design.

## Alignment and Grade Report

Sidewalk is proposed on both sides of the roadway where practical. New sidewalk is proposed on the south side of the roadway from the intersection of Wire Mill Road to the intersection with 10<sup>th</sup> Street NE.

### **Project Location and Limits**

The project is located within the Community of Black Eagle (within Great Falls Urban Boundary) in Cascade County on Urban Route 5204 (Smelter Avenue) beginning at the intersection with 10th Street NE (RP 0.00±) and extending to the junction with 23<sup>rd</sup> Street NE (RP 0.85 ±) near the entrance to the Anaconda Hills Golf Course.

- a. The functional classification of U-5204 is Urban Collector and the project will be designed to the geometric design criteria of a curbed Urban Collector roadway.
- b. The Smelter Avenue bridge spanning 15<sup>th</sup> Street is located at RP 0.38±.
- c. The project length is 0.85 miles.
- d. This project lies in Township 21 North, Range 3 East, Section 36.
- e. As-built plans are not available for this project.

### **Work Zone Safety and Mobility**

At this time, Level 2 construction zone impacts are anticipated for this project as defined in the Work Zone Safety and Mobility (WZSM) guidance. The plans package will include a Transportation Management Plan (TMP) consisting mainly of a Traffic Control Plan (TCP). A limited Transportation Operations (TO) component and a limited Public Information (PI) component to address street closures. These issues are discussed in more detail under the Traffic Control and Public Involvement sections.

### **Physical Characteristics**

- a. This project is located in level terrain within an urban area. The adjacent land is used for both commercial and residential property.
- b. This project consists of two undivided lanes running west and east along Smelter Avenue from 10th Street NE to the junction with 23<sup>rd</sup> Street NE (RP 0.85 ±). According to the road log and aerial mapping; between RP 0.00 and RP 0.24 (intersection with Wire Mill Road) the finished top width is 27-ft with 12-ft driving lanes and 1-ft shoulders, the finished top from RP 0.24 to RP 0.77 (intersection with 22<sup>nd</sup> Street NE) is 40-ft with 12-ft driving lanes and 8-ft shoulders, and the finished top from RP 0.77 to RP 0.85 is 32-ft with 12-ft driving lanes and 4-ft shoulders.
- c. The roadway section from RP 0.24 to RP 0.77 was likely last reconstructed in 1963 by Cascade County forces. This date is based on Bridge records for the Smelter Avenue structure over 15<sup>th</sup> Street.
- d. Based on a traffic study, traffic signals do not meet warrants and will not be installed at the intersection of Smelter Avenue and Wire Mill Road RP 0.21±.
- e. The pavement condition index (PCI) for this section of roadway was rated poor (less than 50) by the City of Great Falls. The existing roadway is severely “crowned” due to past overlays. The pavement from RP 0.00 to RP 0.77 includes several sections of longitudinal cracking, alligator cracking, and spalling. Inadequate surface drainage has resulted in pavement deterioration at most intersections.
- f. A 2008 Black Eagle water project required a trench along Smelter Avenue at 13<sup>th</sup> Street, from 15<sup>th</sup> Street to 21<sup>st</sup> Street, and from 22<sup>nd</sup> Street to the end of the project. The trench was backfilled and paved as an interim fix until this project is constructed.

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- g. Cores indicate existing plant mix depths vary from 0.30-ft to 0.50-ft and base course depths vary from 0.90-ft to 1.40-ft. Subgrade soil classes of A-6 and A-7-6 are predominant throughout the project. Cores indicate the asphalt mat in the area of 22<sup>nd</sup> Street is 0.50-ft in depth over 0.90-ft of base course surfacing. The subgrade soil in this section is A-7-6(23).
- h. The bridge over 15<sup>th</sup> Street was built in 1963, has a sufficiency rating of 74.8 and is 109 feet long with a roadway width of 40 feet. Its structural status is functionally obsolete and eligible for rehabilitation due to the substandard vertical clearance of 14'-3" below.

### **Horizontal Alignment**

The existing alignment meets or exceeds the 30 mph design speed geometric design criteria. Using curbed Urban Collector criteria, the minimum curve radius is 250' for 30 mph with a maximum super rate of 4%.

Based on the intersection configuration developed by MDT Geometrics, minor modifications were necessary to the Smelter Avenue horizontal alignment.

### **Vertical Alignment**

The existing vertical alignment is adequate for the 30 mph design speed geometric design criteria. Using curbed Urban Collector criteria in a level area, the maximum grade going into or coming out of a curve is 9%. The Minimum k-values for crest and sag curves are 19 and 37 respectively.

The existing vertical profile was lowered by up to 1-ft in several locations due to removal of the built up crown. The new profile was developed to provide connections to most of the existing sidewalk. Sections of existing sidewalk are connected to retaining walls (16<sup>th</sup> Street to 19<sup>th</sup> Street on the north side of the street, 19<sup>th</sup> to 20<sup>th</sup> Street on the south side of the street) and may be left in place. At Borries and 3-D restaurants the sidewalk appears to be connected to the foundation. The profile was designed to match the existing sidewalk at both these locations.

### **Surfacing and Typical Section**

Preliminary surfacing recommendations are shown below:

0.40' Plant Mix Surfacing  
0.65' Crushed Aggregate Course  
1.05'

Surfacing recommendations are based on a Design R value = 5 and 25 ESAL's. PG 64-28 binder and ¾" plant mix are recommended.

We are proposing 0.75' of PCCP over 0.50' of CAC from Sta 6+25 to Sta 10+00 for the additional WB lane and shoulder. The proposed surfacing matches the surfacing for NH 10-1(3)2 Smelter Ave & 10th Street NE.

# Alignment and Grade Report

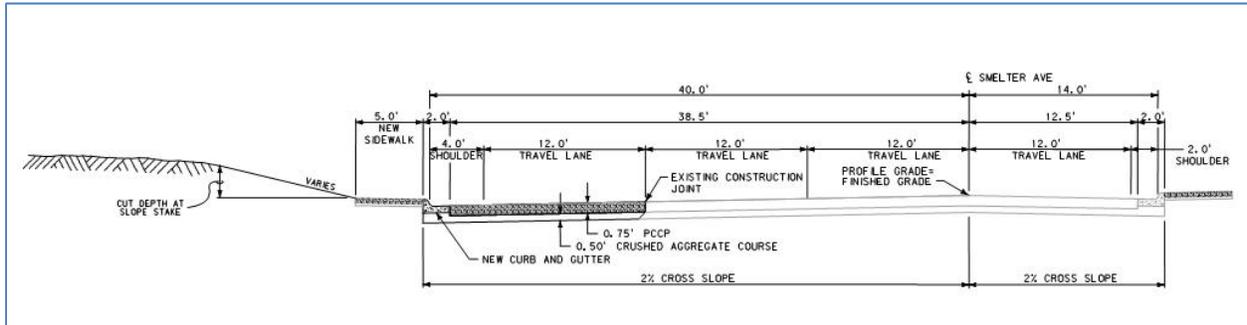


Figure 1. Smelter Ave 6+25 to 10+00

Smelter Avenue and Wire Mill are in transition throughout the intersection. The normal crown shown in the above typical also transitions to the left and becomes the crown for Wire Mill shown in the Figure 2 below.

Use of an offset crown on Smelter Avenue was necessary from Sta 17+67.19 to Sta 21+50.00 and from Sta 26+61.49 to Sta 37+25.00 in order to match the existing sidewalk elevations without exceeding a 4% cross slope on the roadway. The constructability and design of the crown at the edge of the travel lane was discussed. It was determined that this type of crown was constructible and hydraulically preferable to allowing sheet flow across the entire roadway.

Hydraulics will determine if sheet flow (full super) could be allowed from 17+67.19 to 20+00 without altering the existing flow patterns.

The proposed ditch inslopes for the uncurbed portion of Wire Mill are 4:1 (the recommended slope for an uncurbed Urban Collector route). A flatter 6:1 slope may be used wherever possible.

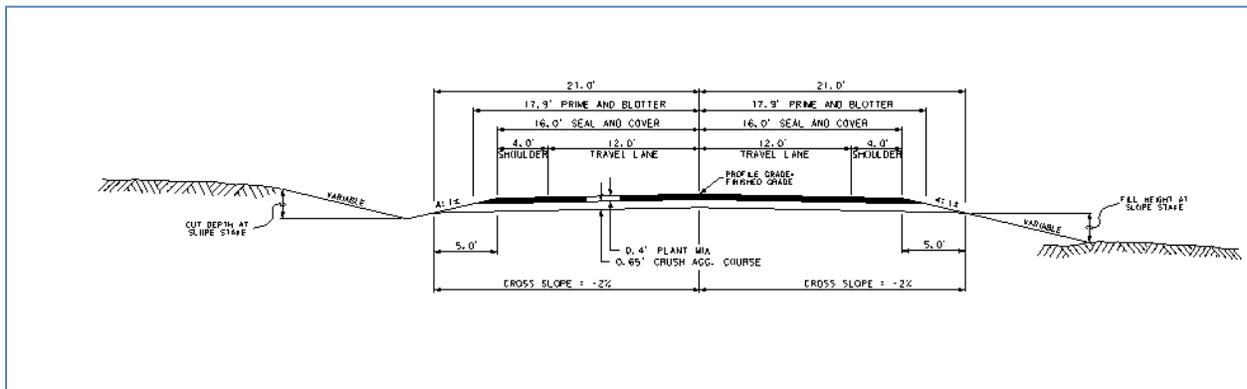


Figure 2. Wire Mill 14+19.54

Finally, a wider shoulder width was preferred on Smelter Avenue through Black Eagle given the limited off-street parking available to area residents. The proposed 9-ft shoulder width exceeds current MDT Geometric Design Standards for Urban and Developed Area guidelines.

# Alignment and Grade Report

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Project Manager : Dustin Rouse

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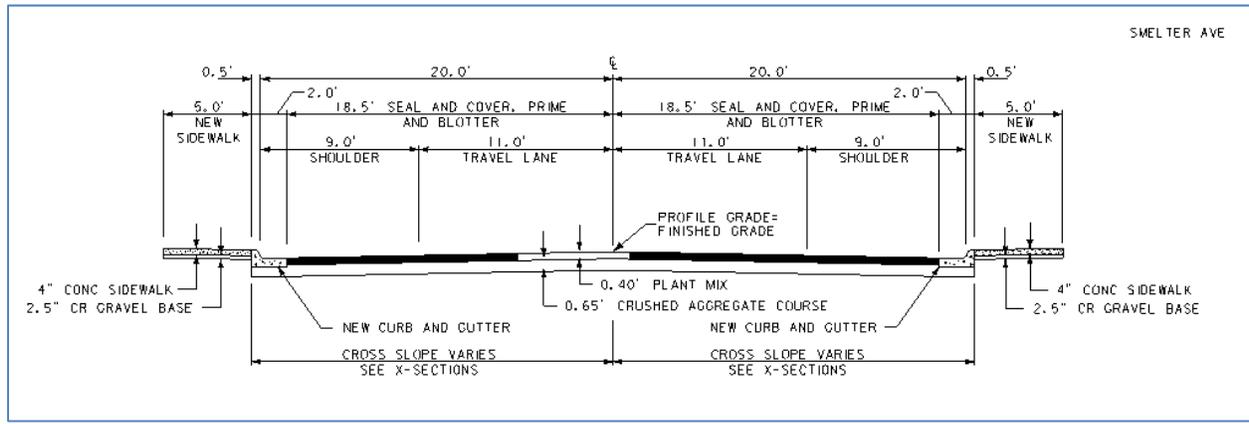


Figure 3. Smelter Ave Typical

## Grading

Excavation, curb and gutter removal, and sidewalk removal on the project will be paid for as Street Excavation.

## Geotechnical

Preliminary Geotechnical recommendations include utilizing the 0.4' of asphalt and the 0.65' of crushed aggregate course proposed in the typical sections by Pavement Design. Additionally, Geotech requests that section be underlain by 1-ft of A-1-a sub-base and underlain by separation/stabilization fabric. Edge drains tied into inlets are also proposed to keep the sub-base well drained. The A-1-a will provide superior drainage and support compared to the existing base. We estimate it will cost about 40% of using CBC for the full thickness.

Some of the pavement distress on this job appears related to poor subgrade drainage and frost heave. The soil survey results indicate that the existing base is about 1.2' thick, with some as much as 1.4'. That base material did not do very well in the long term, though it is A-1-b and A-2 material.

Since this project will match the existing width, the existing retaining walls located at several residences along the project will be left in place during construction of this project. Geotech is looking at options for the retaining wall along the south side of Smelter Avenue near the intersection with 21st Street. It may be possible to leave the existing wall in place by providing additional shoring and pouring a new cap. This wall is located under an existing hand rail adjacent to the new sidewalk location.

A new retaining wall on the north side of Smelter in the NE corner of the intersection of 10th St may be required because the addition of a new travel lane cuts into the existing slope. As no bridge work is expected, Geotechnical will no longer have to assess the existing foundation at the structure over 15th Street NE.

## Hydraulics

There are several locations where surface drainage problems exist. Standing water after rain events appears to have deteriorated the existing plant mix at intersections and low points along the route. Several of the existing inlets connect to pipes that "daylight" through roadway grates to the south discharging into gutters along side streets.

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Existing outfalls/outlets along the project include the following locations:

- 10th Street NE (Inlet LT outlets southwest to 10th Street NE storm system)
- 11th Street NE (Inlet LT outlets to south)
- 13th Street NE (Inlets LT and RT outlet to south)
- 14th Street NE (Inlets LT and RT outlet to south)
- 15th Street NE (Inlets LT outlets northwest to 15th Street NE storm system)
- 16th Street NE (Inlets LT and RT outlet to south)
- 17th Street NE (Inlets LT and RT outlet to south)
- 21st Street NE (Drains north to coulee then south under roadway fill)
- 22nd Street NE (Inlet LT outlets to south)
- 23rd Street NE (Inlet LT outlets to south)

Existing drainage issues identified during the field review include:

- Northside Cenex experiences major drainage issues and ponding.
- Cascade County noted ponding and erosion problems where the drainage along the east side of 11th Street NE south of Smelter Avenue crosses North River Road.
- 17th Street NE intersection experiences frequent ponding.
- House southwest of Borries flooded (between 17th Street NE and 18th Street NE)
- 19th Street NE intersection experiences flooding that eventually flows to 17th Street.
- 19th Street NE possible location for new inlets and outfall.
- 21st Street NE north half of street drains north to coulee and is then piped south under Smelter Avenue between 21st and 22nd Street discharging at the bottom of large fill. South half of street drains to inlet that connects to same outfall to south.

In accordance with the MDT Storm Drain Policy, the intent of the storm drain design will be to maintain the existing drainage patterns and to utilize existing storm drain facilities and outfall locations to the furthest extent practical. Where feasible, short sections of storm drain trunkline and additional inlets will be considered to address existing drainage issues.

With the exception of the inlet in the northeast quadrant of the 10th Street intersection which is the City of Great Falls maintenance responsibility, the existing storm drain is Cascade County's maintenance responsibility. Maintenance responsibilities will be documented in the Construction Agreement for the project. At the request of Cascade County, sumps will be included in the design of new storm drain inlets.

Cascade County recommended a design that best utilized inlets on the north side of the roadway because they get the most sunlight and tend to be the first to thaw and become operational in the spring.

Use of an offset crown on Smelter Avenue was necessary from Sta 17+67.19 to Sta 21+50.00 and from Sta 26+61.49 to Sta 37+25.00 in order to match the existing sidewalk elevations without exceeding a 4% cross slope on the roadway. The constructability and design of the crown at the edge of the travel lane was discussed. It was determined that this type of crown was constructible and hydraulically preferable to allowing sheet flow across the entire roadway.

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Hydraulics will determine if sheet flow (full super) could be allowed from 17+67.19 to 20+00 without altering the existing flow patterns.

### **Bridges**

The preliminary field report stated the existing bridge over 15th Street (U 05204 000+03801) would be modified to provide additional vertical clearance for vehicles traveling on 15th Street. The structure has been struck several times by vehicles ignoring the posted height restriction and warning light. However, the existing former railroad overpass south of Smelter Ave has an even more restricted vertical clearance. Since the railroad bridge is currently used as a ped/bike path and will remain in place for the foreseeable future, any work on the Smelter Ave overpass wouldn't improve the route vertical clearance and all proposed work on this bridge was dropped.

The Smelter Ave bridge was built in 1963, has a sufficiency rating of 74.8 and is 109 feet long with a roadway width of 40 feet. Its structural status is Functionally Obsolete and Eligible for Rehabilitation due to the substandard vertical clearance of 14'-3" below.

Sidewalks are located on both sides of the existing structure and will remain-in-place. Bridge work focused, instead, on ADA access to the north side of the roadway. An existing power pole on the south side of the bridge prevents placement of an ADA accessible route here. The northwest bridge end approach to the bridge can be made accessible, but the northeast bridge end approach is restricted by both height (too high) and distance (too short) and prevents construction of a ramp meeting minimum ADA guidelines.

Two alternate designs were suggested and will be investigated. One option proposes building a new, lower four foot wide sidewalk having ADA ramps on each end parallel to the current sidewalk. The second design proposes delineating a path and uses the current bridge deck as the sidewalk surface.

### **Traffic**

A traffic study was completed at the intersection of Wire Mill and Smelter Avenue. The proposed intersection configuration for the reconstruction of the Wire Mill Rd/Smelter Ave intersection was established by MDT Geometrics and incorporates public comments regarding the design.

The proposed intersection requires a widened roadway width and its greatest impact is to a business at the intersection gore of the two roads. The business is affected by the proposed design and to mitigate this impact, traffic geometrics is requested to investigate possible modified approach configurations and off-street parking options.

To reduce impacts to the businesses on the north side of Wire Mill Road, traffic is also requested to investigate installing a two-way left turn lane (TWLTL) east and west of the Wire Mill gore. A TWLTL would not restrict traffic at these locations to right-in, right-out only movements.

The U.S. Postal Service in Black Eagle was contacted to discuss the problem of through traffic (Wire Mill to Smelter) and to discuss possible solutions to eliminating this traffic from their parking lot. The proposed design that includes double yellow striping on Wire Mill restricting access to right-in-right-out was agreeable to the local office; however, the final layout will need to be approved by the Great Falls U.S. Postal Service.

The private approach just east of the Cenex Service station will be designed for WB-67 design vehicles accessing MRC's loading facility.

MDT will request the drafting of a no parking ordinance for the south side of Smelter Ave at the intersection with Wire Mill from Cascade County since the shoulder is less than the minimum width specified by MDT guidelines for parking.

Existing street lighting is connected to the power poles located on the south side of the roadway. Traffic is requested to design replacement lighting that is to include a section of period lighting in the Black Eagle area. The location and extent of the period lighting is to be coordinated with Cascade County and the Black Eagle – Cascade County Water and Sewer District.

### **Pedestrian/Bicycle/ADA**

Existing sidewalk is located intermittently along the entire project and in several locations the sidewalk is integral with building foundations and existing retaining walls. Concrete steps extend into the sidewalk at several private residences located on the north side of Smelter Avenue between 16th Street and 19th Street. None of the existing intersections appear to meet ADA accessibility requirements and most intersections do not have any ramps.

New sidewalk is proposed on both sides of the roadway where practical. Longitudinal connection to existing sidewalk will be necessary at several locations. Sidewalk is proposed only to the south side of the roadway from the intersection of Wire Mill to 10th Street NE to minimize pedestrian/traffic conflicts to the north. A section of 4-ft wide sidewalk is proposed for the north side of the bridge over 15th Street.

Sidewalk with approach laydowns is proposed to the north between 21st and 22nd Street NE. Sidewalk and new railing are recommended to the south between 21st and 22nd Street NE. ADA accessible ramps are proposed at all intersections where new sidewalk is installed. ADA upgrades are proposed to the existing sidewalk between 22nd and 23rd Street. Crosswalks will be designed to provide an ADA accessible route through the project corridor. An agreement will be developed with Cascade County defining maintenance responsibility of the new sidewalk.

### **Intelligent Transportation Systems (ITS) Features**

No ITS solutions within this project were identified now that the proposed traffic signals at the Wire Mill Rd and Smelter Ave. intersection have been dropped.

### **Miscellaneous**

Period lighting was requested with Cascade County looking into the possibility of securing CTEP funding for this and other pedestrian enhancements including a new safety rail from 21st Street NE to 22nd Street NE on the south side of the roadway. Signed city bus stops include: the NE intersection of 15th Street (church); the NE intersection of 18th Street (Borries); and the NW intersection of 19th (3D).

### **Other Miscellaneous - Context Sensitive Design Issues**

The community of Black Eagle is considered low income and elimination of on-street parking would be a hardship for many residences. Providing pedestrian connectivity (ADA accessible) along the route would benefit many in the community. Continued coordination with the

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Community of Black Eagle, City of Great Falls, Cascade County, and TD&H (Black Eagle Drainage) will help reduce impacts to the community and keep this project moving forward.

### **Design Exceptions**

Design exceptions may be necessary for the v-ditch sections proposed on the north side of Wire Mill.

### **Right-of-Way**

New right-of-way and construction permits are required for this project. New right-of-way is necessary at the intersection of Wire Mill Road. As the design progresses, the exact locations of additional right-of-way will be identified and addressed.

The proposed intersection at Wire Mill and Smelter Avenue requires a widened roadway width and its greatest impact is to a business at the intersection gore of the two roads. The business is affected by the proposed design and to mitigate this impact, traffic geometrics is requested to investigate possible modified approach configurations and off-street parking options.

New right-of-way will be needed on the north side of Smelter Avenue for the proposed widening at the intersection of 10th Street NE. New approaches will need to be designed and coordinated to work with the adjacent businesses.

To reduce impacts to the businesses on the north side of Wire Mill Rd traffic is also requested to investigate installing a two-way left turn lane (TWLTL) east and west of the Wire Mill gore. A TWLTL would not restrict traffic at these locations to right-in, right-out only movements.

Cascade County owns property located south of 11th Street NE that will be evaluated as a possible detention site for the outfall at that location. Additional right-of-way and construction permits may be necessary to construct an outfall at 21st Street NE.

### **Utilities/Railroads**

A new water main was installed during Summer/Fall of 2008. The water main was installed to a depth of 7.5-ft (typically 6.5-ft depth) to account for the approximate 1-ft crown that will be removed during construction of this project. Service lines will still likely be impacted during construction and will be insulated if necessary during construction of this project.

Additional waterline work is planned for Smelter Avenue between 10th Street NE and Wire Mill connecting south down 11th and 12th Street NE. Continued coordination will be needed between MDT Utilities, Design, and TD&H as the projects move forward.

Utility issues involve removal and relocation of the existing telephone pole line on the north side of Smelter. The current phone lines will be placed beneath the new sidewalk.

MDT Utilities and Northwest Energy field reviewed the project and determined the power poles supporting the transmission line located on the south side of the roadway are in poor condition and will need to be replaced. A proposed relocation site is the abandoned railroad grade located south of the project. Services for residences and new luminaires will need to be rerouted to the relocated line.

### **Environmental Considerations**

The Environmental Services Bureau will determine and provide the appropriate Environmental Documentation for this project.

Based on the final site investigation report completed on Smelter Ave., there was one area of subsurface petroleum contamination identified. We will likely need to remove this soil if we are doing any subsurface work in that area. It was encountered at 1003 Smelter Ave in front of the former Mahaffey Trucking building.

MDT did not find any visual evidence of smelter wastes in any of the borings and two lab samples from the road base did not show elevated metals. MDT Environmental will coordinate with TD&H who took soil samples as part of the water line replacement project. Based on this information, Environmental will provide an Initial Site Assessment (ISA) document for the project.

The Superfund listing for Black Eagle is still pending the Governor's concurrence with EPA; however, Environmental does not foresee any ramifications to our project.

### **Traffic Control**

The proposed traffic control plan includes limited sections of full closure of Smelter Avenue during construction of this project. Closure of the following sections are proposed: from Wire Mill to 17th Street NE; 17th Street NE to 22nd Street NE. Lane closures and short duration full closure is proposed during construction from 10th Street NE to Wire Mill Road.

Alternate routes will be discussed as the project develops. Local access will be maintained to the maximum extent possible to minimize impact to local residents and traveling public. Reasonable business access will be maintained and coordinated with local businesses during construction of this project.

A Transportation Management Plan (TMP) consisting of a Traffic Control Plan (TCP), a limited Transportation Operations (TO) component and a limited Public Information (PI) component is appropriate for this project.

### **Public Involvement**

The proposed level of public involvement is an Expanded Level B for this project:

#### Expanded Level B

1. News release explaining the project and including a department point of contact. Alternatively, contact with a newspaper or papers serving the area to develop a story and graphics that explain and illustrate the proposal. Radio and TV contacts.
2. Personal contacts with local government officials, interest groups.
3. Public information meeting to present basic concepts/information and seek input.
4. Personal contacts with adjacent landowners explaining final design.
5. Construction notification and information during construction.

A public informational meeting was held on Tuesday, April 28, 2009 at 5:30 pm. The proposed project was described including the redesigned Wire Mill and Smelter Avenue intersection.

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Although supportive of the project, most residents in attendance were opposed to any intersection that required Smelter Avenue traffic to stop or yield to Wire Mill traffic. An additional concern identified was traffic using the Post Office parking lot to bypass the intersection.

A second public informational meeting was held Tuesday, July 28, 2009 at 5:30 pm. The proposed project was again described and a revised intersection was presented that incorporated comments from the residents and met MDT's Traffic Geometric requirements. Comments received at the meeting were very supportive of the project and the proposed intersection configuration. Based on input from this meeting the proposed Wire Mill Rd intersection was established by MDT Geometrics.

As stated in the Right-of-Way section, continued coordination will be necessary with the impacted property at the Wire Mill intersection. No unresolved design issues requiring further public involvement are expected.

Weekly public meetings are recommended during construction. Reasonable business access will be maintained and coordinated with local businesses during construction of this project.

### Cost Estimate

The PFR estimate was \$5,569,000 including CN, CE, IDC, and 3.5% inflation over 5-years. The AGR estimate is \$5,023,000 and includes CN, CE, IDC and inflation to the target letting date of September 2011.

	Estimated cost	Inflation (INF) (from PPMS)	TOTAL costs w/INF + IDC (from PPMS)
Road Work	2,567,000		
Traffic Control	120,000		
<b>Subtotal</b>	<b>2,687,000</b>		
Mobilization (10%)	269,000		
<b>Subtotal</b>	<b>2,956,000</b>		
Contingencies (15%)	443,000		
<b>Total CN</b>	<b><u>\$3,399,000</u></b>	<b><u>\$320,000</u></b>	<b><u>\$4,367,000</u></b>
<b>CE (15%)</b>	<b><u>\$509,000</u></b>	<b><u>\$48,000</u></b>	<b><u>\$656,000</u></b>
<b>TOTAL CN+CE</b>	<b><u>\$3,908,000</u></b>	<b><u>\$368,000</u></b>	<b><u>\$5,023,000</u></b>

Note: Inflation is calculated in PPMS to the letting date plus one year to estimate mid-point of construction. If there is no letting date, the project is assumed to be inside the current TCP and is given a maximum of 5 years until letting. IDC is calculated at 17.48% as of FY 2010.

### Ready Date

The planned finish shown in OPX is April 27, 2011. The ready date is June 1<sup>st</sup>, 2011. The target letting date based on the Tentative Construction Plan (TCP) is September 2011.