



Montana Department of Transportation

2701 Prospect Avenue
PO Box 201001
Helena MT 59620-1001

Michael T. Tooley, Director
Steve Bullock, Governor

RECEIVED

APR 14 2014

TRANSPORTATION PLANNING

RECEIVED
APR 03 2014

FHWA
MONTANA DIVISION

March 26, 2014

Kevin L. McLaury
Division Administrator
Federal Highway Administration
585 Shepard Way, Suite 2
Helena, MT 59601-9785

MASTER FILE
COPY

Attention: Jeff Patten

Subject: Categorical Exclusion Subject:
WHITEHALL - SOUTH WATERLOO N & S
STPP 55-1(6)0 STPP 55-1(8)0
Control Number: 5801 5801001

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 the Alignment and Grade Review Reports (AGRR) dated September 25, 2012 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 shaded 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 1-3 describe project impacts and circumstances. Row 3A describes Right-of-Way, easements, and/or construction permits.

	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>UNK</u>
1. The context or degree of the Right-of-Way action would have (a) substantial social, economic, or environmental effect(s).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. There is a high rate of residential growth in this proposed project's area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. There is a high rate of commercial growth in this proposed project's area.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Work would be on and/or within approximately 1.6 kilometers (1± mile) of an Indian Reservation.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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</i> (16 USC 460L, <i>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. (<i>e.g.</i> : MDFWP, local entities, etc.).	<input type="checkbox"/>	<input checked="" 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</i> (16 USC 470, <i>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</i> (49 USC 303) on or adjacent to the project area.	<input type="checkbox"/>	<input checked="" 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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
b. De minimis finding(s) is/are necessary for this project.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
c. "Nationwide" Programmatic <i>Section 4(f)</i> Evaluation forms for these sites are attached.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
d. This proposed project requires a full (<i>i.e.</i> : DRAFT & FINAL) <i>Section 4(f)</i> Evaluation.	<input checked="" 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 (<i>e.g.</i> : "state waters").	<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>
1. Conditions set forth in <i>Section 10</i> of the <i>Rivers and Harbors Act</i> (33 USC 403) 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 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 (E.O.) #11990, and their 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 checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. A 124SPA Stream Protection Authorization would be obtained from the MDFWP?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. There is a delineated floodplain in the proposed project area under FEMA's Floodplain Management criteria.	<input checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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"/>
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 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 type="checkbox"/>	<input type="checkbox"/>
c. South Fork of the Flathead River (headwaters to Hungry Horse Reservoir).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d. Missouri River (Fort Benton to Charles M. Russell National Wildlife Refuge).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
In accordance with <i>Section 7</i> of the <i>Wild and Scenic Rivers Act</i> (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"/>

	<u>YES</u>	<u>NO</u>	<u>N/A</u>	<u>UNK</u>
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 type="checkbox"/>	<input type="checkbox"/>	<input checked="" 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 <i>CERCLA</i> or <i>CECRA</i>) 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"/>
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 (<u>ARM 16.20.1314</u>), 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"/>

	YES	NO	N/A	UNK
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, <i>et seq.</i>).	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
K. Features for the <i>Americans with Disabilities Act</i> (PL 101-336) compliance would be included.	<input 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 <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 checked="" type="checkbox"/>	<input 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 checked="" type="checkbox"/>	<input 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.

Barry Brosten, Date: 3/26/14
Barry Brosten - Butte District Project Development Engineer
MDT Environmental Services Bureau

Concur Heidy Bruner, Date: 3/26/14
Heidy Bruner, P.E. - Engineering Section Supervisor
MDT Environmental Services Bureau

Concur Jeffery Patten, Date: 4/14/14
Federal Highway Administration

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.

Attachment: AGRR

Copy (w/o attach.):

Jeff Ebert	Butte District Administrator
Paul Ferry	Highway Engineer
Kent Barnes	Bridge Engineer
Tom Martin	Chief, Environmental Services Bureau
Robert Stapley	Right-of-Way Bureau Chief
Suzy Price	Contract Plans Bureau Chief
Lisa Hurley	Fiscal Programming Section Supervisor
Tom Erving	Fiscal Programming Section
Barry Brosten	Environmental Services
Environmental Services File	
Montana Legislative Branch Environmental Quality Council (EQC)	



Memorandum

To: Paul Ferry, P.E.
 Highways Engineer

From: Dustin Rouse, P.E
 Road Design, Engineer

Date: September 25, 2012

Subject: STPP 55-1(7)7
 Whitehall-South
 CN: 5801000
 Project Work Type: 140 Reconstruction – Without Added Capacity

Please Approve the Alignment and Grade Review for this project.

Approved Paul Ferry Date September 26, 2012
 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 concurrence.

Distribution:

- | | |
|---|--|
| Jeff Ebert, District Administrator | Tom Martin, Environmental Services Bureau Chief |
| Kent Barnes, Bridge Engineer | Lynn Zanto, Rail, Transit, & Planning Division Administrator |
| Paul Ferry, Highways Engineer | Jake Goettle, Construction Engineering Services Bureau |
| Roy Peterson, Traffic and Safety Engineer | Matt Strizich, Materials Engineer |
| Robert Stapley, Right-of-Way Bureau Chief | Jon Swartz, Maintenance Administrator |

cc:

- | | |
|--|-------------------------------------|
| Dawn Stratton, Fiscal Programming Section | Damian Krings, Road Design Engineer |
| Joe Walsh Project Design Manager, Butte District | Master file |

e-copies:

- | | |
|--|---|
| Jim Walther, Engineering, Preconstruction Engineer | Jake Goettle, Construction Bureau – VA Engineer |
| Lesly Tribelhorn, Highways Design Engineer | Dustin Rouse, District Preconstruction |
| Mark Goodman, Hydraulics Engineer | Joe Walsh, District Projects Engineer |
| Walt Ludlow, District Hydraulics Engineer | Casey Ballard, Butte District Materials Lab |
| Bonnie Gundrum, Env. Resources Section Supervisor | Kam Wrigg, Butte District Maintenance Chief |
| Deb Wambach, District Biologist | Phillip Inman, Utilities Engineering Manager |
| Barry Brosten, District Project Development Engineer | David Hoerning, R/W Engineering Manager |
| Danielle Bolan, Traffic Engineer | Greg Pizzini, Acquisition Manager |
| Leroy Wosoba, District Traffic Project Engineer | Joe Zody, R/W Access Management Section Manager |
| Kraig McLeod, Safety Engineer | Paul Johnson, Project Analysis Bureau |
| Nathan Haddick, Bridge Area Engineer, Butte District | Sue Sillick, Research Section Supervisor |
| Matt Strizich, Materials Engineer | Duane Williams, Motor Carrier Services Division Administrator |
| Daniel Hill, Pavement Analysis Engineer | Alice Fleisch, ADA Coordinator |
| Patrick McCann, District Geotechnical Manager | Mark Keeffe, Bicycle/Pedestrian Coordinator |
| Bryce Larsen, Supervisor, Photogrammetry & Survey | Wayne Noem, Secondary Roads Engineer |
| Marty Beatty, Engineering Information Services | Becky Duke, Traffic Data Collection Section Supervisor (WIM) |
| Paul Grant, Public Involvement Officer | Dave Hand, Maintenance Division Operations Manager (RWIS) |
| Jean Riley, Planner | Alyce Fisher, Fiscal Programming |
| Dawn Stratton, Fiscal Programming | Marisa Mailand, Road Log Manager |
| Scott Bunton, Engineering Cost Analyst | Bill Rabey, Environmental |
| Dave Cunningham District Geotechnical | |

Alignment and Grade Report

Introduction

An Alignment and Grade Review was held on July 30, 2012 for the above noted project.

In attendance were:

Joe Walsh – District Project Engineer – Butte
Dustin Rouse – District Preconstruction Engineer – Butte
Kevin Mueller – Road Design – Butte
Tyler Steffan – Bridge –Helena
Michael Krausert – Bridge –Helena
Nathan Haddick – Bridge –Helena
Deb Wambach – Environmental –Helena
Dave Cunningham – Geotechnical –Helena
Pat McCann – Geotechnical –Helena
Ray Sacks Construction – Helena
Walt Ludlow – Hydraulics–Helena
Annette Compton – Hydraulics–Helena

Scope of Work

This project is a widen and overlay project. Some minor adjustments in the horizontal and vertical alignments will be included to improve sight distance, reduce conflicts with utility and irrigation facilities, and to provide the best fit for the proposed 32' typical. A new bridge at Pipestone Creek will be included with this project. Culvert replacement will also be included as needed. The intersection with MT-2 at the end of this section will be left as is.

Project Location and Limits

The project is located in Jefferson County on State Primary Route 55. The project begins at RP-7.0± in Sec. 25, T1N, R5W and extends Northeasterly to RP- 12.1± in Sec. 4, T1N, R4W intersection with MT-2 within the city limits of Whitehall. The project length is 5.1 miles. The project Reference Posts and Stationing run from south to north.

Work Zone Safety and Mobility

At this time, Level 3 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 interchange ramp closures and wide load detours will also be included in the plan package. These issues are discussed in more detail under the Traffic Control and Public Involvement sections.

Physical Characteristics

1. Surfacing information is provided below:

<u>From</u>	<u>To</u>	<u>Top Thickness (in)</u>	<u>Bottom Thickness in)</u>	<u>Top Width (ft)</u>
RP 7.0	RP 12.1	4.3	9.0	24

2. Existing Roadside Geometrics: The functional classification is minor arterial the project is rural in rolling terrain consisting mainly of ranchland. The only structure on this project is a bridge over Pipestone Creek. There are also stock passes, irrigation crossings, and irrigation

Alignment and Grade Report

ditches that parallel the existing roadway. Numerous approaches and several mailbox clusters are present throughout the project. There is one at-grade railroad crossing at RP 12.080.

All of the existing horizontal curves meet the minimum radius for minor arterials. Numerous existing vertical curves do not meet the minimum stopping sight distance and will be adjusted with this project.

Existing fill slopes range from 4:1 to 1½:1 with heights between five feet and fifteen feet. Existing cut slopes range from 5:1 to 1½:1 with heights less than ten feet. Most of the existing slopes do not meet design standards.

The design speed for this project is 55 mph based on MDT standards for Primary Rural Minor Arterials in rolling terrain. The posted speed for cars and light trucks is 70 mph daytime, 65 mph night time and 65 mph daytime and nighttime for heavy trucks.

As-built Projects

S 100 (1) 1953

Horizontal Alignment

The horizontal alignment will be perpetuated for areas that will be widened with this project. At the alignment and grade review it was suggested to consider shifting the alignment to the left to avoid irrigation.

As the design progresses we will look at the feasibility of an alignment shift from Sta. 450+00 to Sta. 490+00 & Sta. 565+00 to Sta. 585+00 to avoid irrigation and residential areas. An updated set of plans will be sent out for review prior to the Scope of Work Report.

Vertical Alignment

The vertical alignment will follow the existing grades in the widening areas. The vertical curves in the following area will be reconstructed to meet stopping sight distance. Sta. 413+50 to Sta. 425+65 and Sta. 553+00 to Sta. 565+00 & Sta. 565+00 to Sta. 585+00

The existing grade exceeds the maximum design grade at one location. The - 4.95% grade from Sta. 565+00 to Sta. 585+00 exceeds the design maximum of 4.0% for rolling terrain. The vertical alignment will be reconstructed to meet current MDT standards.

The Bridge Bureau is proposing a slight grade raise (approx.6 inches) of the Pipestone Creek Bridge. Road design will work with bridge to accommodate this request.

Surfacing and Typical Section

The existing 24 ft. roadway top width will be widened to a 32 ft. top width to conform to current State Primary Minor Arterial design standards. The top width was approved prior to the formation of the width committee. The proposed roadway width will allow for two - 12 ft. travel lanes and two - 4 ft. shoulders. The intent of this project is to saw cut the existing pavement on both sides of the roadway and add 4 ft. of widening to the existing top. In certain areas the roadway may be widened to one side to avoid impacts to various features (environmental, utilities, irrigation and residential areas).

Alignment and Grade Report

The preliminary surfacing section for widening is:

RP. 7.0 to RP10.8
0.15' Cold milling
0.30' Plant Mix Surfacing

RP. 10.8 to RP. 12.1
0.15' Cold milling
0.45' Plant Mix Surfacing

The preliminary surfacing section for Reconstruction/Widening is:

0.30' Plant Mix Surfacing
0.70' Crushed Aggregate Course
1.00'

The reconstruction/widening will be built on 2.00' of special borrow.
The special borrow will be placed in the top 2.00' of the subgrade as opposed to being included in the typical section to reduce the construction limits.

Minimum Design R-Value = 50

Grading

Grading on this project will be Unclassified Excavation and Unclassified Borrow. The borrow material will be contractor furnished. The Geotechnical Section will work with the District and determine what shrink factor will be used in the final plans.

Hydraulics

There are numerous irrigation ditch crossings and irrigation ditches paralleling the roadway within the project limits. Right-of-way will investigate all irrigation crossings and stockpasses to determine if the crossings need to be perpetuated or if they can be abandoned. If a stockpass is not going to be perpetuated, Hydraulics will determine if a drainage pipe is required.

The Hydraulic section will review all pipes and provide culvert recommendations for the project. Pipes with limited service life will be replaced. All drainage and irrigation pipes will be extended or replaced as part of the project.

USDA Soil Conservation Service prepared a Flood Plain Management Study for Pipestone Creek in 1984. That indicates potential overtopping at the bridge location. There are also recorded observations of overtopping due to rainfall at various locations between RP 8± and RP 9± at three different times in the early 1990's. Hydraulics will be asked to review the area for proper sizing of all drainage facilities.

Great West Engineering is developing a reconstruction plan for Pipestone Creek. MDT will coordinate with Great West and Jefferson County for the location of the new bridge.

The Location Hydraulics Study Report was prepared by the Hydraulic Section June 30, 2005.

All drainage structures will be perpetuated as required. The existing bridge will be replaced over Pipestone Creek.

Alignment and Grade Report

Bridges

There is one bridge within the project limits. The Bridge Bureau provided the following information for the PFR Report:

Structure	Feature Crossed	Approximate Location	County
P00055011+10031	Pipestone Creek	1 mile W Whitehall	Jefferson

Physical Characteristics

Structure	Year Built	DWG #	Length ft	Rdwy. Width ft	Sufficiency Rating	Structure Status
P00055011+10031	1953	3180	76	24	68.5	Not Deficient

P00055011+10031 Pipestone Creek

The structure is a four span timber bridge with an asphalt overlay. Maintenance indicated constant problems with the asphalt deck. The existing bridge rail does not meet current standards and has blunt ends. The bridge was designed for an H15 live load. Due to the low design load, the bridge should be replaced. Consider a new flat slab to minimize grade raise and maintain freeboard. An irrigation ditch flows parallel with the roadway and flows into Pipestone Creek at the southeast corner of the bridge.

The proposed width of the new structure will be 40' allowing for two – 12 ft. travel lanes and two – 8 ft. shoulders.

Traffic

The traffic section will provide quantities for signing, pavement markings, and delineation. Rumble strips will be evaluated for use on this project per rumble strip policy revision of 6/14/2011.

Intelligent Transportation Systems (ITS) Features

No ITS solutions will be implemented on this project.

Miscellaneous

Mailbox turnouts will be provided because the shoulder width will be less than 6 ft and the ADT is greater than 300 vehicles per day.

Skewed approaches will be realigned to be perpendicular to the new centerline alignment where feasible.

Bus turn around locations will be reviewed.

Guardrail will be required in areas where slope flattening is not feasible.

Design Exceptions

At this time the known design exception that will be requested for is for the use of barn roof slopes at approximately Sta. 498+00 to Sta. 504+00 on the right and the use of V ditches from approximately Sta. 500+00 to Sta. 506+00 on the left to minimize impacts to irrigation and acquiring of new right of way and avoiding buildings.

Right-of-Way

New right-of-way acquisition will be needed. Easements and construction permits will also be required. New fencing will be provided according to the fencing policy. The Right of Way

Alignment and Grade Report

Bureau will need to investigate the existing irrigation ditches to determine if they should be perpetuated or removed. There are many center pivot irrigation systems located next to the roadway, as design progresses it can be determined if any roadside safety measures will be needed.

Utilities/Railroads

There is underground telephone, irrigation, and overhead power present. Due to the nature of this project utility conflicts are anticipated. Once the construction limits have been developed, utility conflicts will be identified.

There is one at-grade railroad crossing at RP 12.080. An agreement with the railroad may be required. A new railroad crossing was installed in the fall of 2011 in coordination with this project to accommodate the wider typical. Originally an alignment shift near the end of the project was proposed to better align the intersection of P-55 with MT 2. It was decided to use the existing configuration because of the difficulty and expense to redo this intersection.

Environmental Considerations

A Categorical Exclusion is being prepared for this project.

Swallows are nesting on the bridge over Pipestone Creek. Structure and tree/shrub removal will be subject to the Migratory Bird Treaty Act special provision. Various (common) wildlife species are using the bridge as an under-crossing through the roadway, as noted by tracks and scat beneath the structure. Maintaining this wildlife access along the riparian corridor should be considered in design.

Minor impacts to isolated (roadside ditch), riparian, and irrigation fringe wetlands are anticipated. USACOE jurisdiction of these wetlands will need to be determined. Avoidance and/or minimization of wetland and riparian impacts should be a design consideration throughout the project corridor. A CWA 404 permit and SPA 124 authorization are anticipated for this project.

Agricultural and livestock operations are the predominant land use adjacent to the roadway. Where fencing is to be replaced with the project, the use of wildlife friendly fencing should be proposed due to the high use of the project area by deer species. At most, existing ROW fencing should be replaced in-kind (i.e. no more restrictive than the existing configuration).

Experimental Features

There are no experimental features anticipated on this project.

Traffic Control

A traffic control plan will be developed as the design of the project progresses. Traffic will be maintained during construction activities throughout the project. A county road will be used to detour local traffic during construction of the new bridge over Pipestone Creek. At this time there are no other detours being planned. Phase construction will be utilized if any other drainage structures or stockpasses are in need of replacing.

Appropriate traffic control devices and signing will be used throughout the project in accordance with the *Manual of Uniform Traffic Control Devices*.

Public Involvement

A news release for this project was sent on August 1, 2005 that included pulverization, widening, two new structures, drainage, irrigation and reconstruction from RP.0.0 to RP. 12.1 before the project was split into two projects.

Alignment and Grade Report

STPP 55-1(7)7, Whitehall-South
Project Manager :Joe Walsh

Page 6 of 6

A second news release was sent February 8, 2011 from PR. 7.0 to RP. 12.1 stating that the project will include: spot reconstruction, pulverization, widening, a new structure, drainage, irrigation and overlay.

A third news release was sent on July 18, 2012 from PR. 7.0 to RP. 12.1 stating that the project will include: spot reconstruction, drainage, irrigation, a new structure, widening, and overlay. A public meeting was held in Whitehall on August 29, 2012. Some Comments and concerns that came up at the meeting were Bus turnouts, approaches, reduces speed limits leaving Whitehall, and fixing the sight distance just south of Whitehall at Sta. 565+00 to Sta. 585+00

Personal contacts with adjacent landowners explaining the final design, construction notification and information will be completed during construction.

Cost Estimate

	Estimated cost	Inflation (INF) (from PPMS)	TOTAL costs w/INF + IDC (from PPMS)
Road Work	3,745,961		
New Structure	480,000		
Remove Structure	30,000		
Drainage	200,000		
Traffic Control	150,000		
Subtotal	4,605,961		
Mobilization (10%)	460,596		
Subtotal	5,066,557		
Contingencies (20%)	1,013,311		
Total CN	<u>\$6,079,868</u>	<u>\$791,147</u>	<u>\$ 7,632,323</u>
CE (10%)	<u>\$607,986</u>	<u>\$79,114</u>	<u>\$ 763,236</u>
TOTAL CN+CE	<u>\$6,687,855</u>	<u>\$ 870,261</u>	<u>\$ 8,395,559</u>

The estimated cost \$8,395,559 (CN+CE+INF+IDC) = \$1,646,188 per mile

This project was initially nominated as pulverize, widen & overlay project with a total construction cost of \$ 6,873,899. The preliminary cost estimate has been revised to reflect the cost of the revised treatment to a mill, fill, widen, spot reconstruction, seal & cover and the use of special borrow a new structure and irrigation.

Note: Inflation is calculated in PPMS to the letting date. 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 11.08% as of FY 2013.

Ready Date

The project is currently blue in OPX2. Once the scope of work has been approved, the FM's will be contacted to adjust activities based on the scope with the intent of meeting the ready date of January, 2015.



Memorandum

To: Paul Ferry, P.E.
 Highways Engineer

From: Dustin Rouse, P.E
 Road Design, Engineer

Date: September 25, 2012

Subject: STPP 55-1(8)0
 Waterloo-N & S
 CN: 5801001
 Project Work Type: 140 Reconstruction – Without Added Capacity

Please Approve the Alignment and Grade Review for this project.

Approved Paul Ferry Date September 26, 2012
 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 concurrence.

Distribution:

- | | |
|---|--|
| Jeff Ebert, District Administrator | Tom Martin, Environmental Services Bureau Chief |
| Kent Barnes, Bridge Engineer | Lynn Zanto, Rail, Transit, & Planning Division Administrator |
| Paul Ferry, Highways Engineer | Jake Goettle, Construction Engineering Services Bureau |
| Roy Peterson, Traffic and Safety Engineer | Matt Strizich, Materials Engineer |
| Robert Stapley, Right-of-Way Bureau Chief | Jon Swartz, Maintenance Administrator |

cc:

- | | |
|--|-------------------------------------|
| Dawn Stratton, Fiscal Programming Section | Damian Krings, Road Design Engineer |
| Joe Walsh Project Design Manager, Butte District | Master file |

e-copies:

- | | |
|--|---|
| Jim Walther, Engineering, Preconstruction Engineer | Jake Goettle, Construction Bureau – VA Engineer |
| Lesly Tribelhorn, Highways Design Engineer | Dustin Rouse, District Preconstruction |
| Mark Goodman, Hydraulics Engineer | Joe Walsh, District Projects Engineer |
| Walt Ludlow, District Hydraulics Engineer | Casey Ballard, Butte District Materials Lab |
| Bonnie Gundrum, Env. Resources Section Supervisor | Kam Wrigg, Butte District Maintenance Chief |
| Deb Wambach, District Biologist | Phillip Inman, Utilities Engineering Manager |
| Barry Brosten, District Project Development Engineer | David Hoerning, R/W Engineering Manager |
| Danielle Bolan, Traffic Engineer | Greg Pizzini, Acquisition Manager |
| Leroy Wosoba, District Traffic Project Engineer | Joe Zody, R/W Access Management Section Manager |
| Kraig McLeod, Safety Engineer | Paul Johnson, Project Analysis Bureau |
| Nathan Haddick, Bridge Area Engineer, Butte District | Sue Sillick, Research Section Supervisor |
| Matt Strizich, Materials Engineer | Duane Williams, Motor Carrier Services Division Administrator |
| Daniel Hill, Pavement Analysis Engineer | Alice Fleisch, ADA Coordinator |
| Patrick McCann, District Geotechnical Manager | Mark Keeffe, Bicycle/Pedestrian Coordinator |
| Bryce Larsen, Supervisor, Photogrammetry & Survey | Wayne Noem, Secondary Roads Engineer |
| Marty Beatty, Engineering Information Services | Becky Duke, Traffic Data Collection Section Supervisor (WIM) |
| Paul Grant, Public Involvement Officer | Dave Hand, Maintenance Division Operations Manager (RWIS) |
| Jean Riley, Planner | Alyce Fisher, Fiscal Programming |
| Dawn Stratton, Fiscal Programming | Marisa Mailand, Road Log Manager |
| Scott Bunton, Engineering Cost Analyst | Bill Rabey, Environmental |
| Dave Cunningham District Geotechnical | |

Alignment and Grade Report

Introduction

An Alignment and Grade Review was held on July 30, 2012 for the above noted project.

In attendance were:

Joe Walsh – District Project Engineer – Butte
Dustin Rouse – District Preconstruction Engineer – Butte
Kevin Mueller – Road Design – Butte
Tyler Steffan – Bridge –Helena
Michael Krausert – Bridge –Helena
Nathan Haddick – Bridge –Helena
Deb Wambach – Environmental –Helena
Dave Cunningham – Geotechnical –Helena
Pat McCann – Geotechnical –Helena
Ray Sacks Construction – Helena
Walt Ludlow – Hydraulics–Helena
Annette Compton – Hydraulics–Helena

Scope of Work

This project is a widen and overlay project. Some minor adjustments in the horizontal and vertical alignments will be included to improve sight distance, reduce conflicts with utility and irrigation facilities, and to provide the best fit for the proposed 32' typical. A new bridge at Fish Creek will be included with this project. Culvert replacement will also be included as needed.

Project Location and Limits

The project is located in Madison, Silver Bow and Jefferson Counties on State Primary Route 55. The project begins at RP- 0.0 in Sec. 21, T1S, R5W and extends northerly to RP- 7.0 ± in Sec. 25, T1N, R5W. The project length is 7.0 miles.

The project Reference Posts and Stationing run from south to north.

Work Zone Safety and Mobility

At this time, Level 3 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 interchange ramp closures and wide load detours will also be included in the plan package. These issues are discussed in more detail under the Traffic Control and Public Involvement sections.

Physical Characteristics

1. Surfacing information is provided below:

<u>From</u>	<u>To</u>	<u>Top</u> <u>Thickness (in)</u>	<u>Bottom</u> <u>Thickness (in)</u>	<u>Top Width (ft)</u>
RP 0.0	RP 7.0	4.3	9.0	24

2. Existing Roadside Geometrics: The functional classification is minor arterial the project is rural in rolling terrain consisting mainly of ranchland. The only structure on this project is a bridge over Fish Creek. There are also stock passes, irrigation crossings, and irrigation ditches that parallel the existing roadway. Numerous approaches and several mailbox

Alignment and Grade Report

clusters are present throughout the project.

All of the existing horizontal curves meet the minimum radius for minor arterials.

Numerous existing vertical curves do not meet the minimum stopping sight distance and will be adjusted with this project.

Existing fill slopes range from 4:1 to 1½:1 with heights between five feet and fifteen feet.

Existing cut slopes range from 5:1 to 1½:1 with heights less than ten feet. Most of the existing slopes do not meet design standards.

The design speed for this project is 55 mph based on MDT standards for Primary Rural Minor Arterials in rolling terrain. The posted speed for cars and light trucks is 70 mph daytime, 65 mph night time and 65 mph daytime and nighttime for heavy trucks.

As-built Projects

F-HES 55-1(3) 1981

S 100 (3) 1953

S 100 (1) 1953

Horizontal Alignment

The horizontal alignment will be perpetuated for areas that will be widened with this project.

At the alignment and grade review it was suggested to consider shifting the alignment to the left to avoid irrigation.

As the design progresses we will look at the feasibility of an alignment shift from Sta. 230+00 to Sta. 290+00 staying within existing right of way to avoid irrigation. The horizontal curve at Sta. 118+65.96 to Sta. 149+00.32 will need to be reconstructed to re-super to current design standards. An updated set of plans will be sent out for review prior to the Scope of Work Report.

Vertical Alignment

The vertical alignment will follow the existing grades in the widening areas. The vertical curves in the following areas will be reconstructed to meet stopping sight distance. Sta. 1+13 to Sta. 31+35, Sta. 194+00 to Sta. 214+00, Sta. 236+00 to Sta. 256+00, Sta. 325+00 to Sta. 369+00.

The Bridge Bureau is proposing a slight grade raise (approx.6 inches) of the Fish Creek Bridge. Road design will work with bridge to accommodate this request.

Surfacing and Typical Section

The existing 24 ft. roadway top width will be widened to a 32 ft. top width to conform to current State Primary Minor Arterial design standards. The top width was approved prior to the formation of the width committee. The proposed roadway width will allow for two – 12 ft. travel lanes and two – 4 ft. shoulders. The intent of this project is to saw cut the existing pavement on both sides of the roadway and add 4 ft. of widening to the existing top. In certain areas the roadway may be widened to one side to avoid impacts to various features (environmental, utilities, irrigation and residential areas).

The preliminary surfacing section for widening is:

RP. 0.0 to RP 7.0

0.15' Cold milling

0.30' Plant Mix Surfacing

Alignment and Grade Report

The preliminary surfacing section for Reconstruction/Widening is:
0.30' Plant Mix Surfacing
0.70' Crushed Aggregate Course
1.00'

The reconstruction/widening will be built on 2.00' of special borrow.
The special borrow will be placed in the top 2.00' of the subgrade as opposed to being included in the typical section in order to reduce the construction limits.

Minimum Design R-Value = 50

Grading

Grading on this project will be Unclassified Excavation and Unclassified Borrow. The borrow material will be contractor furnished. The Geotechnical Section will work with the District and determine what shrink factor will be used in the final plans.

Hydraulics

There are numerous irrigation ditch crossings and irrigation ditches paralleling the roadway within the project limits. Right-of-way will investigate all irrigation crossings and stockpasses to determine if the crossings need to be perpetuated or if they can be abandoned. If a stockpass is not going to be perpetuated, Hydraulics will determine if a drainage pipe is required.

The Hydraulic section will review all pipes and provide culvert recommendations for the project. Pipes with limited service life will be replaced. All drainage and irrigation pipes will be extended or replaced as part of the project.

There is a FEMA Flood Insurance Rate Map for Fish Creek prepared in 1986, Community-Panel Number 300154 0600B. That indicates potential overtopping at the bridge location. Hydraulics will be asked to review the area for proper sizing of all drainage facilities.

The Location Hydraulics Study Report was prepared by the Hydraulic Section June 30, 2005.

All drainage structures will be perpetuated as required. The existing bridge will be replaced over Fish Creek.

Bridges

There is one bridge within the project limits. The Bridge Bureau provided the following information for the PFR Report:

Structures:

Structure	Feature Crossed	Approximate Location	County
P00055003+06271	Fish Creek	9 mile SW Whitehall	Jefferson

Physical Characteristics

Structure	Year Built	DWG #	Length ft	Rdwy. Width ft	Sufficiency Rating	Structure Status
P00055003+06271	1953	3180	38	24	51.5	Not

Alignment and Grade Report

						Deficient
--	--	--	--	--	--	-----------

P00055003+06271 Fish Creek

The structure is a two span timber bridge with an asphalt overlay. The existing bridge rail does not meet current standards and has blunt ends. The bridge was designed for an H15 live load. Due to the low design load, the bridge should be replaced. A new bridge will require a grade raise. There is a utility attached to bent four, perpendicular to the roadway.

The proposed width of the new structure will be 40' allowing for two – 12 ft. travel lanes and two – 8 ft. shoulders.

Traffic

The traffic section will provide quantities for signing, pavement markings, and delineation. Rumble strips will be evaluated for use on this project per rumble strip policy revision of 6/14/2011.

Intelligent Transportation Systems (ITS) Features

No ITS solutions will be implemented on this project.

Miscellaneous

Mailbox turnouts will be provided because the shoulder width will be less than 6 ft and the ADT is greater than 300 vehicles per day.

Skewed approaches will be realigned to be perpendicular to the new centerline alignment where feasible.

Bus turn around locations will be reviewed.

Guardrail will be required in areas where slope flattening is not feasible.

Design Exceptions

At this time the known design exception that will be requested for is for the use of V ditches from approximately Sta. 73+00 to Sta. 100+00, Sta. 319+00 to Sta. 337+00 on the left to minimize impacts to irrigation.

Right-of-Way

New right-of-way acquisition will be needed. Easements and construction permits will also be required. New fencing will be provided according to the fencing policy. The Right of Way Bureau will need to investigate the existing irrigation ditches to determine if they should be perpetuated or removed. There are center pivot irrigation systems located next to the roadway, as design progresses it can be determined if any roadside safety measures will be needed.

Utilities/Railroads

There is underground telephone, irrigation, and overhead power present. Due to the nature of this project utility conflicts are anticipated. Once the construction limits have been developed, utility conflicts will be identified.

There will be no railroad involvement with this project.

Environmental Considerations

A Categorical Exclusion is being prepared for this project.

Swallows are nesting on the bridge over Fish Creek. Structure and tree/shrub removal will be subject to the Migratory Bird Treaty Act special provision. Various (common) wildlife species are using the bridge as an under-crossing through the roadway, as noted by tracks and scat beneath the structure. Maintaining this wildlife access along the riparian corridor should be considered in design.

Minor impacts to isolated (roadside ditch), riparian, and irrigation fringe wetlands are anticipated. USACOE jurisdiction of these wetlands will need to be determined. Avoidance and/or minimization of wetland and riparian impacts should be a design consideration throughout the project corridor. A CWA 404 permit and SPA 124 authorization are anticipated for this project.

Agricultural and livestock operations are the predominant land use adjacent to the roadway. Where fencing is to be replaced with the project, the use of wildlife friendly fencing should be proposed due to the high use of the project area by deer species. At most, existing ROW fencing should be replaced in-kind (i.e. no more restrictive than the existing configuration).

Experimental Features

There are no experimental features anticipated on this project.

Traffic Control

A traffic control plan will be developed as the design of the project progresses. Traffic will be maintained during construction activities throughout the project. A detour using county roads will be used to detour traffic during construction of the new bridge over Fish Creek. At this time there are no other detours being planned. Phase construction will be utilized if any other drainage structures or stockpasses are in need of replacing.

Appropriate traffic control devices and signing will be used throughout the project in accordance with the *Manual of Uniform Traffic Control Devices*.

Public Involvement

A news release for this project was sent on August 1, 2005 that included pulverization, widening, two new structures, drainage, irrigation and reconstruction from RP.0.0 to RP. 12.1 before the project was split into two projects.

A second news release was sent February 8, 2011 from PR. 0.0 to RP. 7.0 stating that the project will include: spot reconstruction, pulverization, widening, a new structure, drainage, irrigation and overlay.

A third news release was sent on July 18, 2012 from PR. 0.0 to RP. 7.0 stating that the project will include: spot reconstruction, drainage, irrigation, a new structure, widening, and overlay. A public meeting was held in Whitehall on August 29, 2012. Some Comments and concerns that came up at the meeting were Bus turnouts, fixing approaches, and adding turn lanes at Waterloo Parrot Castle road, and at the Jct. of MT-41 & MT-55.

Personal contacts with adjacent landowners explaining the final design, construction notification and information will be completed during construction.

Alignment and Grade Report

Cost Estimate

	Estimated cost	Inflation (INF) (from PPMS)	TOTAL costs w/INF + IDC (from PPMS)
Road Work	5,512,000		
New Structure	224,000		
Remove Structure	20,000		
Traffic Control	150,000		
Subtotal	6,106,000		
Mobilization (10%)	610,600		
Subtotal	6,716,600		
Contingencies (20%)	1,343,320		
Total CN	<u>\$8,059,920</u>	<u>\$1,125,970</u>	<u>\$ 10,203,686</u>
CE (10%)	<u>\$805,992</u>	<u>\$112,597</u>	<u>\$ 1,020,368</u>
TOTAL CN+CE	<u>\$8,865,912</u>	<u>\$ 1,238,567</u>	<u>\$ 11,224,054</u>

The estimated cost \$11,224,054 (CN+CE+INF+IDC) = \$1,603,436 per mile

This project was initially nominated as pulverize, widen & overlay project with a total construction cost of \$ 8,396,796. The preliminary cost estimate has been revised to reflect the cost of the revised treatment to a mill, fill, widen, spot reconstruction, seal & cover and the use of special borrow a new structure and irrigation.

Note: Inflation is calculated in PPMS to the letting date. 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 11.08% as of FY 2013.

Ready Date

The project is currently blue in OPX2. Once the scope of work has been approved, the FM's will be contacted to adjust activities based on the scope with the intent of meeting the ready date of July, 2015.