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Montana Department of Transportation

2701 Prospect Avenue
PO Box 201001
Helena MT 59620-1001

Jim Lynch, Director
Brian Schweitzer, Governor

March 16, 2006

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LEGISLATIVE ENVIRONMENTAL
POLICY OFFICE

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COPY

Janice W. Brown
Division Administrator
Federal Highway Administration
585 Shepard Way
Helena, MT 59601

Subject: Request to recertify environmental documentation
STPHS 231-1(5)5
2000 – Sfty Imp – S of Jct. S279
CN 4706

Find enclosed two copies of the Programmatic Categorical Exclusion for your concurrence. Please sign and return one copy.

Environmental Services has reviewed the above proposed project's impacts and has determined that this proposed project still qualifies as a CATEGORICAL EXCLUSION under the provisions of 23 CFR 771.129(c). The original categorical exclusion was signed June 19, 2003. This proposed action also continues to qualify as a categorical exclusion under the provisions of ARM 18.2.261 (Sections 75-1-103 and 75-1-201, M.C.A.). This determination is based on the following:

The Scope-of-Work for the proposed project has been reviewed and has changed. The changes involve modifying the project from a slope-flattening project into a reconstruction of two curves in this area.

As a result of these changes, we have updated the biological/cultural/hazardous waste etc. reports and found that in accordance with 23 CFR 771.117(a), this action will neither individually or cumulatively, have any significant environmental impacts.

A new Programatic Cat Ex checklist has been completed for this project. Please discard the original checklist signed by your office in June of 2003, and replace it with the attached checklist.

Tom Hansen, P.E.
Engineering Section Supervisor
Environmental Services Bureau

TLH:tgg: S:\PROJECTS\GREAT-FALLS\TEMPLATES\LETTERHEAD.DOC

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

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Jim Lynch, Director
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LEGISLATIVE ENVIRONMENTAL POLICY OFFICE

March 16, 2006

Janice W. Brown
Division Administrator
Federal Highway Administration
585 Shepard Way
Helena, MT 59601-9785

Subject: STPHS 231-1(5)5
2000 – Sfty Imp – S of Jct. S-279
CN 4706

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. A Copy of its Alignment and Grade Review Report (2/17/06) is attached. This proposed action also qualifies as a CE under ARM 18.2.261 (Sections **75-1-103** and **75-1-201, MCA**).

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

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

	YES	NO	N/A	UNK
1. This proposed project would have (a) significant environmental impact(s) as-defined under 23 CFR 771.117(a).	☐	☒	☐	☐
2. This proposed project involves (an) unusual circumstance(s) as described under 23 CFR 771.117(b).	☐	☒	☐	☐
3. This proposed project involves one (or more) of the following situations where:				
A. Right-of-Way, easements, and/or construction permits would be required.	☒	☐	☐	☐
1. The context or degree of the Right-of-Way action would have (a) substantial social, economic, or environmental effect(s).	☐	☒	☐	☐
2. There is a high rate of residential growth in this proposed project's area.	☐	☒	☐	☐
3. There is a high rate of commercial growth in this proposed project's area.	☐	☒	☐	☐
4. Work would be on and/or within approximately 1.6 kilometers (1± mile) of an Indian Reservation.	☐	☒	☐	☐

	YES	NO	N/A	UNK
5. There are parks, recreational, or other properties acquired/improved under *Section 6(f)* of the *1965 National Land & Water Conservation Fund Act* (**16 USC 460L**, *et seq.*) on or adjacent to proposed the project area.	☐	☒	☐	☐
The use of such *Section 6(f)* sites would be documented and compensated with the appropriate agencies. (*e.g.*: MDFWP, local entities, etc.).	☐	☐	☒	☐
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 *Section 106* of the *National Historic Preservation Act* (**16 USC 470**, *et seq.*) by the State Historic Preservation Office (SHPO), which would be affected by this proposed project.	☐	☒	☐	☐
7. There are 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**) on or adjacent to the project area.	☐	☒	☐	☐
a. "Nationwide" Programmatic *Section 4(f)* Evaluation forms for these sites are attached.	☐	☐	☒	☐
b. This proposed project requires a full (*i.e.*: DRAFT & FINAL) *Section 4(f)* Evaluation.	☐	☐	☒	☐
B. The activity would involve work in a streambed, wetland, and/or other waterbody(ies) considered as "waters of the United States" or similar (*e.g.*: "state waters").	☒	☐	☐	☐
1. Conditions set forth in *Section 10* of the *Rivers and Harbors Act* (**33 USC 403**) and/or *Section 404* under 33 CFR Parts 320-330 of the *Clean Water Act* (33 USC 1251-1376) would be met.	☒	☐	☐	☐
2. Impacts in wetlands, including but not limited to those referenced under Executive Order (EO) #11990, and their proposed mitigation would be coordinated with the Montana Inter-Agency Wetland Group.	☐	☐	☒	☐
3. A 124SPA Stream Protection permit would be obtained from the MDFWP?	☒	☐	☐	☐
4. There is a delineated floodplain in the proposed project area under FEMA's Floodplain Management criteria.	☒	☐	☐	☐
The water surface at the 100-year flood limit elevation would exceed floodplain management criteria due to an encroachment by the proposed project.	☐	☒	☐	☐
5. Tribal Water Permit would be required.	☐	☒	☐	☐
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.	☐	☒	☐	☐

	YES	NO	N/A	UNK
The designated National Wild & Scenic River systems in Montana are:				
a. Middle Fork of the Flathead River (headwaters to South Fork confluence).	☐	☐	☒	☐
b. North Fork of the Flathead River (Canadian Border to Middle Fork confluence).	☐	☐	☒	☐
c. South Fork of the Flathead River (headwaters to Hungry Horse Reservoir).	☐	☐	☒	☐
d. Missouri River (Fort Benton to Charles M. Russell National Wildlife Refuge).	☐	☐	☒	☐
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).	☐	☐	☒	☐
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.	☒	☐	☐	☐
1. If yes, are there potential noise impacts?	☐	☒	☐	☐
2. A Noise Analysis would be completed.	☒	☐	☐	☐
3. There would be compliance with the provisions of both 23 CFR 772 for FHWA's Noise Impact analyses and MDT's Noise Policy.	☒	☐	☐	☐
D. There would be substantial changes in access control involved with this proposed project.	☐	☒	☐	☐
If yes, would they result in extensive economic and/or social impacts on the affected locations?	☐	☐	☒	☐
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.	☒	☐	☐	☐
2. Adverse effects to through-traffic dependant businesses would be avoided or minimized.	☒	☐	☐	☐
3. Interference to local events(*e.g.*: festivals) would be minimized to all possible extent.	☒	☐	☐	☐
4. Substantial controversy associated with this pending action would be avoided.	☒	☐	☐	☐
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.	☐	☒	☐	☐

	YES	NO	N/A	UNK
All reasonable measures would be taken to avoid and/or minimize substantial impacts from same.	☐	☐	☒	☐
G. The Montana Pollutant Discharge Elimination System's conditions (ARM 16.20.1314), including temporary erosion control features for construction would be met.	☒	☐	☐	☐
H. Permanent desirable vegetation with an approved seeding mixture would be established on exposed areas.	☒	☐	☐	☐
I. Documentation of an "invasive species" review to comply with both EO #13112 and the *County Noxious Weed Control Act* (7-22-21, MCA), including directions as specified by the county(ies) wherein its intended work would be done.	☒	☐	☐	☐
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**, *et seq.*).	☒	☐	☐	☐
K. Features for the *Americans with Disabilities Act* (PL 101-336) compliance would be included.	☐	☐	☒	☐
L. A written Public Involvement Plan, would be completed in accordance with MDT's Public Involvement Handbook.	☒	☐	☐	☐
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's 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				
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.).	☐	☐	☒	☐
C. Is this proposed project in a "Class I Air Shed" (Indian Reservations) under 40 CFR 52.1382(c)(3)?	☐	☒	☐	☐
5. Federally listed Threatened or Endangered (T/E) Species:				
A. There are recorded occurrences, and/or critical habitat in this proposed project's vicinity.	☐	☒	☐	☐
B. Would this proposed project result in a "jeopardy" opinion (under 50 CFR 402) from the Fish & Wildlife Service on any Federally listed T/E Species?	☐	☐	☒	☐

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

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

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

_____, Date: 3/16/06
Tom Gocksch P.E. – Environmental Area Engineer
MDT Environmental Services Bureau

Concur _____, Date: 3/17/06
Tom Hansen, P.E. - Engineering Section Supervisor
Environmental Services Bureau

Concur _____, Date: 3-22-06
Federal Highway Administration

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Attachments

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

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Helena, MT 59620-1001

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Memorandum

To: Paul Ferry, P.E.
Highway Engineer

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

Date: February 17, 2006

Subject: STPHS 231-1(5)5
2000 – Safety Improvements – South of Jct. S-279
Roadway and Roadside Safety Improvements
Control No. 4706

We request that you approve the Alignment and Grade Review Report for the subject project.

Approved _____ Date 2/17/06
Paul Ferry, P.E.
Highway Engineer

We are requesting comments from the following individuals, who have also received a copy of the report. We will assume their concurrences if no comments are received within two weeks of the approval date.

If you have any questions please contact Scott Keller at 994-1843 or Steve Heidner at 994-1859 within the two-week period.

Distribution:

Damian Krings –Road Design – Helena
Michael Johnson – District – Great Falls
Stephen Prinzing – District – Great Falls
Kent Barnes – Bridge – Helena
Jean Riley – Environmental Services – Helena
Matt Strizich – Materials – Helena
John Horton – Right of Way – Helena
Walt Scott – Utilities – Helena

Richard Jackson – Geotechnical – Helena
Duane Williams – Traffic and Safety – Helena
Danielle Bolan – Traffic – Helena
Mark Goodman – Hydraulics – Helena
Sandra Straehl – Rail, Transit, and Planning – Helena
Mac McArthur – Const. Engr. Services –Helena (2 copies)
FHWA (HOP-MT)

Copies:

Ivan Ulberg – Traffic – Helena
Pierre Jomini – Safety Management – Helena
Paul Sturm – Environmental Services – Helena
Tom Gocksch – Environmental Services – Helena
Jim Mullins – Right of Way – Helena
Bryce Larson – Photogrammetry – Helena
Jon Watson – Pavement Management – Helena
Dustin Rouse – Hydraulics – Helena
Wayne Noem – Secondary Roads – Helena
Jerilee Weibel – District Right of Way – Great Falls
Kevin Brewer – District Maintenance – Butte
Doug Wilmot – District Construction – Great Falls
Scott Keller – MSU Design – Bozeman
Wayne Effertz – Lewis and Clark County
Highways File

Alignment and Grade Review Report

The Alignment and Grade Field Review for the subject project was held on January 26, 2006, with the following personnel in attendance.

James Combs, District Traffic Engineer, MDT – Great Falls District
Dennis Ghekiere, District Utility Agent, MDT – Great Falls District
Scott Keller, MSU Design Supervisor, MDT – MSU Design Section
Steve Heidner, CE Specialist, MDT – MSU Design Section
Ivan B. Ulberg, Assistant Traffic Engineer, MDT – Traffic
Tom Gocksch, District Proj. Development Engineer, MDT – Environmental
Dustin Rouse, District Hydraulics Engineer, MDT – Hydraulics
Steve Prinzing, Engineering Services Supervisor, MDT – Great Falls District
Paul Sturm, District Biologist, MDT – Environmental
Jerilee Weibel, District R/W Supervisor, MDT – Great Falls District

Scope of Work

The scope of work is to reconstruct the road for a majority of the project, RP 4.9 to 5.5, with slope flattening from RP 5.5 to 5.7. Where there is to be slope flattening, mailbox turnouts and approaches will be designed to meet MDT standards. This scope was modified from just doing slope-flattening work to including this area of reconstruct in a supplement to the Preliminary Field Review Report signed and dated August 11, 2004.

The design speed for the project is 100 km/h, based on the design criteria for a Rural Collector Road.

Project Location and Limits

This safety project is located in the Great Falls District, in Lewis and Clark County, approximately 9 km north of Helena on S-231 (Green Meadow Drive), from slightly south of the John G. Mine Road (RP 4.9) to the bridge at Silver Creek (RP 5.5), and from the bridge to approximately RP 5.7. The project runs from south to north in the direction of increasing Reference Posts and is approximately 1.0 km in length. The north end of this project is approximately 0.8 km south of the junction with S-279 (Lincoln Road.) This road is functionally classified as a Rural Collector Road.

Physical Characteristics

This project is located in a semi-rural area, where the terrain is generally flat. This section of road is in an area of increasing development, primarily with residential lots on the west side of the road. Silver Creek traverses along on the east side of the road for most of the project length. This section of roadway was built in 1945 under county construction. It was

improved in 1995 under project number OL RTS 231-1(4). The roadway consists of two lanes, and has 160 mm of plant mix bituminous surfacing and 115 mm of gravel base. The surface width is recorded in the Road Log as 7.3 meters. An existing roadway width of 8.2 meters has been recorded in the Preliminary Field Review Report and will be used as a beginning width for transitioning to the design width.

The existing bridge at Silver Creek (S00231005+05001) is a single span, 9.1 m x 12.2 m pre-stressed concrete tri-deck structure. The county reconstructed this bridge in 2000 prior to MDT taking over the maintenance of this road.

Existing ditch in-slopes are approximately 3:1 to 4:1, with many of the ditches being V-shaped and not traversable. From the middle of the project to the bridge the ditches switch to larger and wider borrow ditches and are traversable. Ditches range anywhere from 0.5 to 2 meters in depth. There are no noticeable existing fill sections throughout the length of this project.

Horizontal Alignment

The existing horizontal alignment on this section of road has substandard radii and very little superelevation on the existing curves. No as-built plans are available for this section of roadway. A certificate of survey was prepared for this segment of road and yields what the measured radii are for each of the curves. See the new alignment information below for more details on the existing curves being reconstructed. These substandard curves are the primary contributing factor to the run-off-the-road accidents. This project will re-align this poor stretch of roadway using standard curve radii and superelevations.

The proposed alignment was approved as described below. The new alignment will begin on a tangent section just south of the intersection with John G. Mine Road (approximately station 1+95). The beginning of the connection is at station 0+20.00 and the beginning of the project is at station 1+34.00 and continues on a tangent until Curve #1.

Curve #1 - Station PC 1+65.52 to PT 4+64.30 (R = 1250 m)

The existing roadway has a 623.246 m radius curve to the left here beginning at the intersection with John G. Mine Road. This curve contributes to inadequate intersection sight distance for vehicles turning onto mainline from the west at this approach. The proposed new circular curve also curves to the left, but consists of a much larger radius, 1250 m, and a 4% superelevation. Since the curve is not nearly as tight as the existing curve, it causes this section of road to be shifted approximately 10 meters to the east of the existing PTW. This shift, combined with the removal of trees at this intersection, will allow for intersection sight distance that exceeds 265 m, the required distance for single unit trucks. The area to the west is built up with houses, while the area to the east is primarily grassland, with the Silver Creek drainage traversing this area. Shifting the road to the east here helps to minimize the impacts to the more developed area to the west.

Beyond this existing curve, there are two additional existing tight curves. The first one curves again to the left with a radius of 349.043 m. There's approximately 50 m of tangent before the road takes a sharp turn back to the right here through a 252.300 m radius curve. These two curves will be replaced with the tangent section between new curves #1 and #2.

Curve #2 - Station TS 7+33.43 to ST 9+66.52 (R = 500 m)

A new symmetrically spiraled curve with a radius of 500 m will curve to the right and will transition into the existing bridge at Silver Creek. This curve will receive an 8% superelevation. Larger radii curves with smaller superelevations were looked at in this location and found to force the alignment undesirably further to the west and caused higher impacts to the developed lots. The alignment becomes tangent approximately 20 m south of the south Silver Creek bridge end (B.E. Sta. 9+87.51).

Curve #3 Station PC 9+87.51 B.E. to PT 10+34.20 (R = 515.789 m)

The existing alignment consists of a 515.789 m radius curve that begins approximately 75 m south of the south bridge end and continues through the existing Silver Creek Bridge to a point approximately 35 m north of the north bridge end. We are not reconstructing the bridge or doing any reconstruction of the road after the bridge. The new 46.69 m long curve is simply a truncation of the existing 120.70 m long curve. There is little superelevation on the existing bridge and roadway on this horizontal curve. Based on the radius of this curve, our current standards would require an 8% superelevation. Without reconstructing the bridge, or doing major bridge modifications, we cannot change the orientation or superelevation on this bridge. It was agreed to end reconstruction on the short tangent section at the south bridge end. There are no documented accidents in this curve that suggests drivers are having difficulty with the current configuration of this curve through the bridge. During the office review of the plans, Paul Ferry was brought into the meeting to discuss this particular curve and the challenges faced with redesigning the existing roadway. After explaining the situation to Paul, he agreed to the above-described new alignment.

From the end of Curve #3, the new alignment continues on a tangent to the end of the project (Sta. 11+10.00) and connection (Sta. 11+55). From here it stays tangent all the way to the junction with S-279 (Lincoln Road).

Vertical Alignment

There are no as-built plans that show the existing vertical alignment. However, from looking at the survey it is evident that the existing vertical alignment is relatively flat, mostly with grades less than 2% throughout. There is a section right in the middle of the project, where there are two existing tight reverse horizontal curves, where the existing vertical alignment takes a short dip and then a fast rise, causing poor sight distance. The poor existing horizontal alignment combined with this area of substandard vertical curve lengths is a probable contributing factor to the large cluster of accidents at this location.

The proposed new vertical alignment will be relatively flat and gradual throughout the project length. We are improving the vertical stopping sight distance by taking out the rolling area in the middle of this project. There will be a single crest vertical curve with the VPI at Sta. 5+50.00 with a length of 300 m. The grade in will be +1.432% and the grade out will be +0.816%. This vertical alignment passes through the intersection with John G. Mine Road at roughly the same elevation as existing and ties into the beginning of the project and the south bridge end. There is an approach on the right at Sta. 5+32 that requires a steep downgrade and an approach on the left at Sta. 5+77 requires a steep upgrade to tie into mainline. There is little adjustment that can be made to this vertical alignment, as it is tied down at these noted locations. Raising or lowering the mainline grade causes problems with approaches as well as drainage issues.

Surfacing and Typical Section

The project will be surfaced with 90 mm of Grade S-19 mm NV plant mix surfacing and 300 mm of crushed aggregate course, for a total surfacing thickness of 390 mm. This surfacing recommendation is based on the top 0.6 m of subgrade having an R-Value of 5 or greater.

Mailbox turnouts will receive the same surfacing thickness as the mainline surfacing. Approaches will have 60 mm of plant mix surfacing and 190 mm of crushed aggregate course, with the exception of the John G. Mine Road approach on the east side of mainline, which will also receive the same thicknesses as mainline surfacing, due to the large number of heavier trucks that use this approach.

Two 3.6 m travel lanes with 2.4 m shoulders will be provided, as per MDT Road Design Manual (RDM) for Rural Collector Roads with ADT>3000 and DHV>400. Cross slopes will be -2% normal crown on tangents, with superelevation on curves as required. Surfacing in-slopes will be 6:1. Ditch inslopes will be 6:1 for 3 m, with a 20:1 ditch bottom for 3 m. Back and fill slopes will meet the requirements for Rural Collector Roads in Level/Rolling terrain. Backslope rounding will NOT be used on this project to minimize right-of-way impacts.

To minimize the R/W impacts on the west side of the road (left) just north of the intersection with John G. Mine Road, the 20:1 flat bottom ditch will be eliminated to create a V-ditch. This V-ditch will have a 6:1 inslope and a 4:1 backslope. The bottom of the V-ditch is located at the 6:1 clear zone distance from the edge of the traveled way. This V-ditch continues for a little over 100 meters until it transitions to a more traversable flat-bottom ditch section. With the V-ditch just north of the intersection, we still require over 10 meters of R/W acquisition to a residential lot that is already pretty small. The District R/W has requested we do all that we can to minimize this take, and this design meets that requirement.

A connection will be provided at the beginning of the project that transitions from the existing PTW to the new width over a distance determined using a 60:1 taper rate, based on Fig. 11.5A of the MDT RDM. The end of the reconstruct will not be tapered, but will end

abruptly at the south bridge end of the Silver Creek Bridge. The guardrail will need to taper to match the existing bridge. The additional roadway width behind the guardrail will serve as paved guardrail widening.

North of the Silver Creek Bridge, the existing surface will be used, with some widening for mailbox turnouts, placement of guardrail, and miscellaneous slope flattening being required.

The entire project and connections will receive a seal and cover. Approaches and mailbox turnouts will NOT receive seal and cover. The joint between the existing surfacing and the new surfacing created by widening for the mailbox turnouts north of the bridge will receive an overlap of seal and cover, preventing water from getting into the joint.

Grading

The Embankment-in-Place bid item will be used for the grading on this project. Due to the constraints mentioned in the Vertical Alignment section of this report, the idea of achieving a balance to the grading is not practical.

Where the roadway is being shifted significantly to the east of the existing PTW, the cross sections will show excavating as much of the existing roadway embankment as practical, rather than cutting the standard ditch section. Wherever possible, the backslopes coming out of these areas of excavation of the existing roadway will be warped to catch inside the existing R/W, minimizing the impacts to parcels on the west side of the road.

Hydraulics

The existing bridge at Silver Creek will be used as is, with no alterations to this stream crossing. The existing Silver Creek drainage has been known to overtop its banks upstream of the existing bridge and flow along the west side of Green Meadow Drive (mainline). It also overtops mainline at several locations where the ditches are shallow and the approaches force water over mainline. John G. Mine Road is one of those known overtopping points on mainline. There is only one existing 600 mm mainline crossing along the length of this project and only a couple of approach pipes. Any water coming down the existing ditches overtops the approaches first and mainline second.

The proposed design will improve this drainage by adding 3 additional mainline crossings and replacing one existing crossing. All of these culverts will be 600 mm in size due to the low cover heights. The drainage from these new culverts will be directed into Silver Creek east of the roadway mainline. Approach pipes will be added wherever they are needed throughout the length of the project. The proposed vertical alignment does not alter the floodwaters overtopping mainline and getting to Silver Creek in the event of a very large runoff event.

The roadway re-alignment and flattening of slopes along this project will have longitudinal impacts to the Silver Creek floodplain and channel. The mainline fill slopes on the east side

will extend into the delineated floodplain for a portion of this project. Also, a portion of Silver Creek that currently meanders very close to the existing PTW at approximately Sta. 6+90 will need to be relocated to the east. The relocated channel will consist of a similar channel cross-section and channel profile to the existing stream channel.

A Location Hydraulic Study Report dated December 27, 2005 was prepared and distributed. A HYD-1 survey was conducted by the MDT/MSU Design Unit on February 7, 2006 and will be used to model the impacts being made to this floodplain in order to obtain a flood plain permit and obtain approval for the Silver Creek channel relocation.

Dustin Rouse, Paul Sturm, and Tom Gocksch provided additional guidance for the Silver Creek channel relocation detail, which will be incorporated into the final plans.

Bridges

The existing Silver Creek Bridge (S00231005+05001) will not be altered (See Physical Characteristics earlier in this report for additional information.) Through a design developed by the MDT Bridge Bureau the existing T-101 Bridge Rail will be transitioned off the bridge to 4 concrete anchor posts. New w-beam bridge approach sections will attach to these anchor posts and will have the appropriate run-out lengths and terminal sections.

Traffic

The intersection at John G. Mine Road has very poor Intersection Sight Distance (ISD) for vehicles entering mainline from the west. The proposed mainline horizontal alignment combined with the wider typical and new ditches will open this intersection up enough to provide the required ISD. See the Horizontal Alignment section for more detail.

Pavement markings and Signing Plans will be required for this project. Existing signing will need to be evaluated for replacement or upgrades. New delineators will be required through the entire project length.

Design Exceptions

The design exception process does not apply to this type of safety project. We will perpetuate the existing horizontal alignment and superelevation on the Silver Creek Bridge and roadway section north of the bridge as it is beyond the scope of this safety project to address these issues.

Miscellaneous Features

Mailbox turnouts are being provided for the approaches on each side of mainline directly north of the bridge for safety reasons. Guardrail will be placed for the necessary advancement lengths off the bridge ends.

Lewis and Clark County expressed a concern with the proposed 600 mm cross drain at John G. Mine Road and the use of the existing roadside ditch adjacent to the south side of the road. This ditch was reviewed in the field and will be adequate, with minor grading revisions, to carry the runoff directly into Silver Creek within the existing roadway right-of-way.

Rumble strips will NOT be provided on this short section of roadway at this time due to the fact that none exist on the adjacent roadway segments.

No bicycle or pedestrian facilities will be implemented with this project. The addition of 2.4 m paved shoulders will improve bicycle and pedestrian safety.

There are no ADA requirements in this rural area.

Right-of-Way

The Right-of-Way (R/W) impacts on this project have been the biggest concern from the beginning, as this project is in area where residential lots are being developed. The current alignment minimizes the impacts to new R/W needed from the developed lots, while addressing the problem with the existing alignment. However, there are still some large R/W impacts to several parcels. To minimize the take just north and west of the John G. Mine Road intersection, V-ditches are being utilized. To reduce the amount of R/W acquisition, backslope rounding will not used. Grading just North of the Silver Creek Bridge on the east side of the road will be limited to guardrail widening in order to minimize the impacts to the house and lot in extremely close proximity to the existing bridge.

Utilities/Railroads

Underground telephone and natural gas lines, as well as underground and overhead power lines are prevalent throughout this project. Where the roadway is being shifted to the east, the underground utilities on the west side of the existing PTW will have fewer impacts than other areas. Power lines will have to be re-located throughout most of the reconstruction segment. Many of the underground utilities will likely need some level of relocation.

During the field review it was discovered that a new Fiber Optic line was placed on the west side of the PTW along the existing fence line. This new underground fiber optic will need to be surveyed and shown on the plans. A SUE Survey has been requested to determine underground utility depths and locations at impacted areas.

No underground water, storm drain or sanitary sewer lines exist anywhere within the project limits. There is no railroad involvement on this project.

Environmental Considerations

A categorical exclusion was approved on June 19, 2003 for this project, when it was a slope flattening only project. A new environmental document will need to be re-submitted with the

updated design information based on the reconstruction and re-alignment of the roadway, impacts to a delineated flood plain, and re-alignment of a portion of the Silver Creek. There are no threatened and/or endangered species, or any habitats considered critical habitat for the continued existence of a threatened and/or endangered species, in the vicinity of this project. No hazardous materials, cultural resources or wetlands were observed at the field review.

Traffic Control

Traffic will be maintained through the project construction with appropriate signing, flagging, etc., in accordance with the *Manual on Uniform Traffic Control Devices*. No detours will be required.

Public Involvement

A news release was sent out to the appropriate news agencies in a memo dated February 23, 2005. Due to the amount of impacts and public interest generated to this point, a public informational meeting will be scheduled in the near future.

Cost Estimate

The current cost estimate for this project is $547,000. Preliminary engineering, construction engineering, and indirect costs associated with the project are not included. The current Red Book shows $320,000 for this project at a Benefit to Cost Ratio of 12:1. Transportation Commission approval will be requested for the increase in cost prior to project letting.

The cost break down is as follows:

Estimated Project Cost	$ 430,000
+ 7% Traffic Control	$ 30,000
Subtotal	$ 460,000
+ 10% Mobilization	$ 46,000
Subtotal	$ 506,000
+ 5% Contingencies	$ 25,000
Subtotal	$ 531,000
+ 3% inflation for 1 year	$ 16,000
Construction Total	$ 547,000
+ 10% Construction Engineering	$ 55,000
Total	**$ 602,000**

Ready Date

The current ready date for this project is July 2007.

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