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

Memorandum

To: James Combs, PE
Highways Engineer

From: William M. Squires, PE WMS
Road Design Engineer (acting)

Date: March 20, 2020

Subject: STPP 9-2(15)48
North of Augusta - North
UPN 9722000
Work Type 140 - Reconstruction – without added capacity

Please approve the attached Preliminary Field Review Report.

Approved James A Combs Date 4/13/20
James Combs, P.E.
Highways Engineer

We are requesting comments from those on the distribution list. We will assume their concurrence if we receive no comments within two weeks of the approval date.

Distribution (electronic only):
Jim Wingerter, Great Falls District Administrator
Stephanie Brandenberger, Bridge Engineer
James A. Combs, Highways Engineer
Gabe Priebe, Traffic and Safety Engineer
Robert Stapley, Right-of-Way Bureau Chief
Lynn Zanto, Rail, Transit, & Planning Division Administrator
Shane Pegram, Construction, VA Engineer
Jeff Jackson, Geotechnical and Pavement Bureau Chief
Tom Martin, Environmental Services Bureau Chief
Jon Swartz, Maintenance Division Administrator

cc:
RJ Snyder, EPS Project Manager, Great Falls District
Highways Master file (if different from Bureau Chief copy)

e-copies:
Located at the end of this document

Introduction

The preliminary field review for this project occurred on September 18, 2019 with the following individuals in attendance:

Steve Prinzing	Preconstruction Engineer	Great Falls District
Henry Henning	Acting Const. Ops. Engineer	Great Falls District
RJ Snyder	Project Design Manager	Road Design – GF District
Jim Dunbar	Design Supervisor	Road Design – GF District
Caitlyn Murphy	CE Specialist II	Road Design – GF District
Zackary Stewart	CE Specialist I	Pavement Analysis – Helena
Chad Knuth	Hydraulic Engineer	Hydraulics – GF District
Paul Sturm	Biologist	Environmental – GF District
Lee Grosch	Geotechnical Engineer	Materials - GF District
Jason Allen	Maintenance	Augusta Maintenance
Doug Nowlin	Maintenance	Choteau Maintenance
Jay Shalz	Maintenance	Augusta Maintenance
Ron Neckstad	Maintenance	Augusta Maintenance

Proposed Scope of Work

The proposed project has been nominated to reconstruct and potentially realign US-287 (P-9) between RP 47.0 to 56.0.

This project will be designed in 3D model workspace as agreed during the review.

Needs and Objectives

This section of roadway has been identified to be reconstructed due to the convergence of outdated design (e.g. no shoulders, curvilinear features, inadequate passing opportunities, etc.) and the poor interaction that they have with modern vehicles. A 28-top width is proposed. Potentially significant horizontal and vertical realignment between RP 51.0 and RP 53.0 will be explored. Current snow drifting issues will be addressed as well with the perpetuation of existing and potentially new snow fence and/or wider ditches.

Public Summary

The proposed project will upgrade an old portion of US-287 by providing improved alignment, a wider travel surface, and more forgiving roadside. The two-lane roadway will be widened to have 2' shoulders on each side of the 12' travel lanes. Potentially significant realignment of the roadway will be explored and implemented where it is feasible. The improvements will enhance roadway safety and improve the traveling conditions for local communities and the agricultural industry surrounding the area.

Project Location and Limits

a. This project is in Teton County on US-287 (C00009) north of Augusta.

b. The roadway (P-9) is functionally classified as a Primary Minor Arterial. The project was originally nominated to begin at RP 47.8, but it was decided during the field review to move the beginning of the project back to RP 47.0 to tie into where the canal bridge project *(BR 9-2(10)47 – 2006)* ended (as-built plans indicate the project end at RP 47.06). The project proceeds northeast, ending at RP 56.0. The project length is approximately 9.0 miles with the new BOP.

c. There are two county roads that intersect the route within the project limits:
   - At RP 50.3, 1st Rd. NW intersects the route on the east side of US-287 while Jacksons Corner Rd. W intersects the road on the west side.
   - At RP 52.7, 3rd Rd. NW intersects the roadway on the west side.

d. There are no bridges within the project limits. The project is located 4.9 miles north of the Sun River bridge and just north of the bridge over the USRS canal.

e. The following bullets are the compilation of as-built projects within the proposed limits:

- NRH 275 A (1935) – Sta. 71+67.5 (Approx. RP 40.0) - Sta. 809+54.4 (Approx. RP 53.9)
- FAP 275 B (1936) – Sta. 809+54.4 (Approx. RP 53.9) - Sta. 1371+30.0 (Approx. RP 64.8)
- BR 9-2(10)47 (2006) – RP 47.0
- STPP 9-2(14)52 (2012) – RP 52.2 - RP 64.0
- STPP 9-1(20)40 (2015) – RP 39.893 - RP 52.192

f. The project is located about 9.5 miles north of Augusta and about 9 miles south of Choteau. The proposed BOP station is ≈436+63.0 and the EOP station is ≈911+83.0.

g. There are no adjacent projects and the stationing will run congruent with the reference markers – south to north.

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). These issues are discussed in more detail under the Traffic Control and Public Involvement sections.

Physical Characteristics

a. The As-Built project numbers are shown below:
- *NRH 275 A* (1935) – Original Construction – Sta. 71+67.5 (Approx. RP 40.0) - Sta. 809+54.4 (Approx. RP 53.9)
- *FAP 275 B* (1936) – Original Construction – Sta. 809+54.4 (Approx. RP 53.9) - Sta. 1371+30.0 (Approx. RP 64.8)
- *BR 9-2(10)47* (2006) – Grade, Gravel, Pl. Mix Surf., Seal & Cover & Str. – RP 47.0
- *STPP 9-2(14)52* (2012) – Overlay (0.2'), Seal and Cover – RP 52.2 - RP 64.0
- *STPP 9-1(20)40* (2015) – Overlay (0.15'), Seal and Cover – RP 39.893 - RP 52.192

b. According to Roadlog, the following mainline lanes and dimensions are present:

Beg. RP	End RP	# Travel Lns	Lane Width (ft)*	Shoulder Width (ft)*	Total Width (ft)*
BOP (47.0)	52.216	2	11	0	22
52.216	EOP (56.0)	2	12	0	24

*Matches field dimensions

c. According to Roadlog, the following surfacing types and depths are present:

Beg. RP	End RP	Surfacing Type	Surfacing Thickness (in.)	CAC Thickness (in.)
BOP (47.0)	52.216	PMS	1.5	7
52.216	53.936	PMS	2.4	7
53.936	EOP (56.0)	PMS	2.4	4

d. The 2019 PvMS Pavement Management System produced the following Performance Indexes within the project length:

Beg. RP	End RP	Ride	Rut	ACI	MCI
BOP (47.0)	52.216	67.7	74.9	99.3	96.5
52.216	EOP (56.0)	79.3	72.9	99.7	98.5

e. The 2019 PvMS Pavement Management System produced the following treatment recommendations within the project length:

Beg. RP	End RP	Construction 2019	Construction 2021	Maint. 2019	Maint. 2021
BOP (47.0)	52.216	Thin Overlay	Thin Overlay	Thin Overlay	Thin Overlay
52.216	EOP (56.0	Do Nothing	Crack Seal & Cover	Do Nothing	Do Nothing

f. The project is located in a rural area with rolling terrain. There are no bridges within the proposed limits

g. The six simple horizontal curves within the project are summarized in the following table:

	Curve 1	Curve 2	Curve 3	Curve 4	Curve 5	Curve 6
PC	517+64.1	659+94.6	702+04.1	719+47.9	744+95.0	899+68.1
PI	519+00.0	667+00.0	706+35.0	726+61.6	750+74.0	905+42.8
PT	520+35.8	673+05.4	710+41.2	732+72.1	756+37.5	910+61.0
Δ	2° 43'R	52°26'L	33°29'L	52°58'R	22°51'R	43°43'L
D	1° 00'	4°00'	4°00'	4°00'	2°00'	4°00'
T (ft)	135.9	705.4	430.9	713.7	579.0	574.7
L (ft)	271.7	1,310.8	837.1	1,324.2	1,142.5	1,092.9
R (ft)	5,730.0	1,432.5	1,432.5	1,432.5	2,865.0	1,432.5

h. There are 17 sag and 18 crest vertical curves within the limits of this project. There are 9 vertical curves with K values below current standards, which are outlined in the table below:

VPI Sta.	VPI Approx. RP	Length (ft)	G_1 (%)	G_2 (%)	K	SSD (V)
513+30	48.3	300	+2.02	+6.00	76	59 mph
518+40	48.4	400	+6.00	-2.96	45	59 mph
532+82	48.6	400	-4.24	0.00	95	57 mph
765+50	53.0	500	-6.00	+3.07	56	59 mph
777+05.7	53.3	1000	+3.07	-6.00	111	59 mph
786+05.5	53.4	400	-6.00	+3.42	43	59 mph
898+50.0	55.6	500	+0.30	-4.50	105	58 mph
906+00	55.7	400	-4.50	+4.86	43	58 mph
912+50.0	55.9	400	+4.86	+0.15	85	58 mph

The highlighted grades callout locations that exceed the 4% design standard for grades in rolling terrain.

i. The left and right ditches are parabolically shaped with inslopes and back slopes that vary between 2:1 and 4:1. The backslopes are typically steeper than the inslopes and no inslopes appear to be steeper than 3:1. The inslopes appear to flatten out (4:1) beyond the bench (RP 52.5). Fill heights range between 3 feet and 8 feet and cut depths range between 1 foot and 8 feet.

j. There are no bridges within the limits of this project.

k. A natural spring has developed and utilized by the landowners on the west side of the road near Sta. 718+00. Excess water from the spring flows down the ditch on the west side of the road before crossing under the roadway at Sta. 702+00. There are no other known special features at this time.

Traffic Data

RP *47.0* to RP *56.0*

2019 AADT	690 – Present
2025 AADT	780 – Letting Year
2045 AADT	1,210 – Design Year
DHV	160
T	4.6%
EAL	20
AGR	2.2%

Crash Analysis

As requested, a safety review was completed on a portion of State Primary Route P-9 (US 287) from reference post 47.0 to reference post 56.0 for the 10-year period from January 1, 2009 through December 31, 2018. The review evaluates the project from a corridor-wide perspective. The project was evaluated

using the safety performance functions (SPF's) and Level of Service of Safety (LOSS) models developed for rural, flat & rolling 2-lane undivided highways. Non-junction/non-intersection related crashes will be utilized for this review.
There have been 17 reported crashes within these limits: 1 – fatal (K) crash, 1 suspected serious (A – incapacitating) injury crash, 1 suspected minor (B – non-incapacitating) injury crash, 1 possible injury (C) crash, and 13 no apparent injury (O – property damage only) crashes. Sixteen of the 17 crashes were non-junction related crashes after an in-depth review of the crash data.

For the SPF – Total Model, this section of roadway is performing at a LOSS III rating for total non-junction crashes. A LOSS III rating indicates a moderate to high potential for crash reduction.

For the SPF – Severity Model, this section of roadway is performing at a LOSS II rating for fatal and injury, non-junction crashes. A LOSS II rating indicates a low to moderate potential for crash reduction.

Using MDT pattern recognition tools, there were "Off Road Right" patterns observed along this section of roadway during the study period. There were 13 property damage only crashes of which 7 were road departure and 2 others being wild animal collisions. All injury crashes were road departure crashes. Of all 11 road departure crashes, 5 were off road right on a curve, however 7 involved crossing over centerline. Six of the recorded crashes involved winter conditions (snow, frost, and ice). Crash patterns are established with a minimum of 5 crashes and a 95% cumulative probability.

Crash Clusters and Safety Projects
In 2018, the section of roadway from RP 55.25 to RP 58.14 was identified as a crash cluster. No new addressable crash trends were identified due to upcoming projects.

There have been no safety projects nominated for this segment of roadway.

Recommendations
The current project calls for reconstructing the roadway segment. Based on the predominant roadway departure trend on this segment, it is recommended that the reconstruction also include centerline and shoulder rumble strips. There are no further recommendations based on this crash analysis and the scope of this project.

Major Design Features

a. **Design Speed.** According to the MDT Geometric Design Standards, the design speed for a Primary Minor Arterial in rolling terrain is 55 mph. The posted speed limit is 70 mph daytime/65 mph nighttime and 65 mph for trucks. All efforts will be made to achieve design standards throughout the limits.

b. **Horizontal Alignment**. The proposed horizontal alignment will similarly follow the existing alignment. Although all curves currently have wider radii than the standard design minimum for rural primary arterials, some curve revisions are expected. Investigating potentially significant horizontal realignment between RP 51 and RP 53 will be pursued. This pursuit may prove challenging (See Context Sensitive Design Section).

c. **Vertical Alignment**. The proposed vertical alignment will be designed to current geometric design standards where feasible. Maintenance mentioned exploring the potential to raise the grade of the roadway around Basin Lake (RP 49). Environmental Services and the Geotechnical Section will be consulted about this request. Due to the unique constraints of this project, some grades may be too steep and a design exception(s) may be necessary (See Design Exceptions Section).

   Improved coordination between the horizontal and vertical alignments will be considered during design. The current roadway includes several locations where a vertical curve "hides" a horizontal curve. This condition is undesirable because the driver may not perceive the horizontal change in alignment, especially at night. These locations include:
   Northbound – RP 52.1, RP 55.5, and RP 56.3
   Southbound – RP 55.9, RP 53.0, and RP 51.4

d. **Typical Sections and Surfacing**. The typical section will consist of 12-foot travel lanes and 2-foot shoulders for a top width of 28 feet. Pavement Analysis has not yet provided a surfacing recommendation. We anticipate the surfacing section will be similar to the one constructed for the canal replacement project that abuts the south end of [9722000]: 0.30' of plant mix atop 1.50 feet of crushed aggregate course.

Wider (up to 20'), flat-bottomed ditches will likely be needed in select areas for snow storage. The entire corridor will need to be analyzed for snow drifting, particularly in locations with cut slopes.

e. **Geotechnical Considerations**. It is anticipated that an extensive Geotechnical investigation will be necessary for this project. This project appears to have two distinct Geotechnical environments: A lower lying area between the BOP to RP 52.5 and a bench between Sta. RP 52.5 to the EOP. The bench area appears to have adequate subgrade on which to build. The lower lying area soils may prove challenging to build upon. The soils around Basin Lake (RP 49) will be of particular interest as the roadway bisects this saturated wetland. Regardless of how the project will address the soils around Basin Lake, maintaining mainline traffic progression during construction will be challenging.

There are 2 stockpasses at Sta. 685+80 (RP 51.5) and Sta. 784+83 (RP 53.4) that will need to be analyzed for perpetuation.

Beside requesting typical Geotechnical input regarding shrink/swell factors, soil classification, and balancing earthwork, early project communication with the Geotech will need to occur, not only as good practice, but to ensure all opportunities for soil investigations will not be missed.

f. **Hydraulics**.
According to the As-built plans, there are 19 minor mainline drainage culverts within the project section, which are shown in the table below:

Minor Culverts

Size	No. of Culverts
18"	13
24"	5
30"	1

All of these pipes are concrete with square ends and are nearing the end of their service life, however field observations show the pipes to be in fair condition.

One spring exists west of the project alignment near RP 52.0. The spring was developed by the current landowner, Mr. Hodgskiss. The water flows southeasterly along the toe of the west embankment, and crosses underneath the PTW via a 30" RCP culvert at RP 51.8 (Sta. 702+00). It then flows into a tributary of Roundup Coulee, before eventually out falling into Freezeout Lake.

There are two major stockpass/drainage crossings within the project limits which each outflow into a tributary of Roundup Coulee. Two 36" drainage culverts are located at RP 48.7 (Sta. 539+00) and RP 48.9 (Sta. 552+00) and act as equalizers that balance Basin Lake's water elevation along either side of U.S. 89. The two pipes are located at either end of Basin Lake, which drains approximately 7.7 square miles.

The following table lists the major drainage crossings as well as the two 36" drainage culverts within the project limits.

Major Drainage – Bridges and Drainage Culverts 36" and Larger

RP	As-Built Station	Drainage Name	Existing Structure	Year Constructed	Basin Area (mi^2)	*Q_{Design} (cfs)	*Q_{100} (cfs)
48.7	539+00	Maloney Coulee/Basin Lake	36" RCP	1935	7.7	913	1,230
48.9	552+00		36" RCP	1935			
51.5	685+80	N/A	7'x6' Stockpass/Dr.	1935	0.8	312	405
53.4	784+83	N/A	7'x6' Stockpass/Dr.	1935	0.1	111	140

*USGS Regression Equations for the NW Foothills Region were used for the preliminary analysis.

Irrigation Facilities
There are no existing irrigation facilities within the project limits.

Floodplains
There are no floodplains within the project limits.

Site History and Maintenance Observations
Maintenance indicated that the culverts are undersized and that there is poor culvert outlet drainage. Ponding occurs up gradient of the highway culverts, but the water has not flowed overtop the roadway to their knowledge. However, at 3 different sections along the project, the water has reached as high as the fog line on the PTW. The first section is located between Stas. 435+00 (RP 47.0), just north of the Sun River Slope Canal to Sta. 510+00 (RP 48.3). The second section is in the vicinity of Basin Lake between Stas. 539+00 (RP 48.7) and 552+00 (48.9). The last section is at 618+00 (RP 50.2), just west of Jacksons Corner. Mr. Allen noted the ponding generally occurs when the area receives a rain-on-snow or rain-on-frozen-ground event; otherwise there are no drainage issues. These observations and recollections of MDT Maintenance will be used to evaluate the hydraulics as the design progresses.

g. **Bridges.** There are no bridges within the limits of this project.

Traffic. Signing and pavement markings will be upgraded. Geometrics will be involved with the realignment of the 2 public approaches as they intersect P-9 at a skew. Truck climbing lanes and a traffic study are not anticipated at this time; however, Engineering Analysis will evaluate the proposed AGR alignment and provide any recommendations. Signing was asked to determine if some kind of weather warning sign (variable or static) is warranted at the top of the bench as weather conditions vary greatly between the lower area and the bench.

h. **Pedestrian/Bicycle/ADA**. There are no existing bicycle or pedestrian facilities. Due to the recent increase in bicycle traffic on the route within recent years, constructing a wider CAC base of the road for future widening will be considered and possibly implemented.

i. **Miscellaneous Features**. Per the recommendation from Safety, shoulder rumble strips and centerline rumble strips are proposed to be included in the plans. Snow fences will be modified and/or added where they are deemed necessary as the project progresses. There are 2 pullouts within the boundaries of Basin Lake that are used by birdwatchers. Preliminary conversations indicate that perpetuating these pullouts should be discussed, and if perpetuated, relocating them should be pursued.

j. An RWIS site will be installed near the top of the bench if possible. Maintenance has mentioned that the weather can vary drastically between the lower area and the upper bench and knowing exactly what type of weather the bench is experiencing will optimize their response in that area. A new RWIS site placed at RP 55± would be virtually midway between the existing RWIS sites at the Pendroy junction on US 89 and at Bowman's Corner on

Montana 200.

k. **Context Sensitive Design Issues**. Currently, impacts to Basin Lake and the spring at Sta. 718+00 are the only known Context Sensitive Design Issues. Impacts to these features will be documented and minimized to the greatest extent possible and attention to other Context Sensitive Design Issues will be paid.

l. **Permanent Erosion and Sediment Control (PESC) Features**. Permanent erosion control features will be implemented with this project. No reoccurring erosion issues have been identified.

Other Projects
There are no other projects near the limits of this project.

Location Hydraulics Study Report
The Location Hydraulics Study Report has been prepared by the Hydraulics Section and can be found via the following link:
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Design Exceptions
Design Exceptions are unknown but anticipated due to the challenges of correcting the vertical alignment to current design standards.

Right-of-Way
The following table displays the approximate Right-of-Way widths at the following locations:

Station	LT (feet)	RT (feet)
435+00 (BOP)	50	50
487+40	60	50
525+00	60	60
566+00	50	50
622+30	60	40
688+00	50	50
900+00	60	50
916+00 (EOP)	60	50

The preliminary strategy toward R/W will be to strike a balance between the size of the footprint of the proposed design and the acquisition of R/W. It is unknown how much R/W will be necessary as the R/W is wider on the left than the right. Obviously, the preliminary approach toward design will be to widen to the left whenever possible. The programmed R/W cost estimate is $136,250 ($171,636 w/IDC + INF) and R/W concurs that this is presently accurate.

Access Control
There is no existing access control for this roadway. No access control changes are anticipated.

Utilities/Railroads
Overhead power (transmission and distribution), underground telephone, and underground fiber optic cable exist within the project limits. Impacts will be identified upon the completion of the SUE I survey.

No railroads exist near the route.

The programmed cost estimate for Incidental Construction (IC) is $392,400 ($494,315 w/ IDC + INF) and is presently accurate.

Maintenance Items
No maintenance-specific issues were discussed. The only maintenance that may be necessary prior to construction is the patching of the road at RP 51.8, near the spring. According to maintenance personnel,

the road has been patched at that location several times and was starting to unravel again at the time of the field review. Maintenance will be kept abreast of this project as it develops.

Intelligent Transportation Systems (ITS) Features
No ITS features are being considered.

Experimental Features
No experimental features are anticipated at this time; however, the project is early in design and experimental features could be included later.

Survey
Aerial mapping was requested July 24, 2019. Photogrammetry requested the District set aerial targets and coordinate a control and photo control survey for this project with the Helena Survey Unit. Only one target was missing at the time of the meeting. A regular survey request will be necessary for plans production. A survey request may be filled out for pipes if hydraulics deems it necessary.

Public Involvement
The project Level of Impact (LOI) has been determined to be Substantial and the Level of Public Involvement C, as defined by MDT's Public Involvement Plan. MDT has deemed this project as Substantial. A PI consultant has not yet been requested; however, the request is forthcoming.

Specific strategies identified in the project-specific Public Involvement Plan (as described in the Engineering Project Communication Process Guide) include:

Level C (Moderate or Substantial Impact)

1. News release explaining the project and including a department point of contact.
2. Project information, including public summary, posted to MDT website (GIS map).
3. Personal contacts with adjacent landowners at the time of right of entry and at major project milestones (PFR, AGR, PIH).
4. A right-of-way public information meeting to present the final proposed right-of-way plans.
5. Electronic phase/milestone updates for stakeholders and other entities requesting updates. Contact list maintained on project specific electronic database.
6. Notification of initial project selection to all parties on electronic notification list.
7. Construction notification and information during construction.
8. The proposed addition of centerline rumble strips and shoulder rumble strips will require additional public outreach. Rumble strip information will be mailed to impacted residences within the project limits, the Montana Legislature Senators and House Representatives for the area, and the Teton County commissioners.

Environmental Considerations
The proposed project is not part of a greater corridor study and will require a complete environmental review throughout the proposed project limits. A Biological Resources Report (BRR) will be prepared and wetlands will be delineated. There are no fisheries within the project limits.

As Basin Lake borders both sides of the roadway within the proposed project limits, it is anticipated that a 404 permit will be required. Other locations may require a 404 permit as well.

In-stream work may be necessary within the project limits. This could result in temporary increased erosion potential, reduced slope stability, and could temporarily increase turbidity downstream of the project area. The investigation of additional permits, e.g. SPA 124, will occur as the design progresses.

No wildlife needs were identified during the meeting.

Energy Savings/Eco-Friendly Considerations
No energy savings/eco-friendly considerations were considered at the field review. Due to the early stages of design for this project, eco-friendly considerations will be evaluated throughout the design.

Traffic Control

In locations where the new alignment parallels the existing alignment, incorporating some lateral separation between them will be kept in mind to allow for two-way traffic to remain on PTW during construction. Local access will be maintained to the maximum extent possible. Motorists should expect some medium-length delays during construction. No road closures will be allowed. Wide loads, pedestrian traffic, mail delivery, business access, and bus pickup will be accommodated through the project limits during construction. Detours during culvert installation may be necessary.

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

Preliminary Construction Cost Estimate

As mentioned, during the field review, approximately 0.8 miles of additional reconstruction was added to this project (BOP starts at RP 47.0 instead of RP 47.8). As MDT has abandoned the use of the AASHTO Preliminary Estimation Tool (PET), the estimate for the additional funds needed to pay for this extra 0.8 mile (≈9% increase in length) was extrapolated from the existing estimate in PPMS. This project was estimated to cost approximately $1,000,000 per mile (not including Inflation or IDC). Therefore, an additional $800,000 was added to the CN (STPP Funding) estimate. This is approximately 9% more than the originally nominated project and the cost estimates for IC, CE, and R/W were increased accordingly (values displayed in this document reflect the 9% increase). The following table shows the updated construction estimate:

	Estimated cost	Inflation (INF) (from PPMS)	w/INF + IDC (from PPMS)
STPP - CN	**$6,900,000**	**$972,561**	**$ 8,692,094**
HSIP- CN	**1,918,341$**	**$270,391**	**$ 2,416,579**
TOTAL CN	**$8,818,341**	**$1,292,952**	**$ 11,108,673**
CE (10%)	**$882,000**	**$124,318**	**$ 1,111,075**
Project TOTAL CN+CE	**$9,700,341**	**$1,417,270**	**$ 12,219,748**

The estimate above includes $*500,000* for traffic control, 20% allowance for contingency, and 10% for mobilization. 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 10.41% for FY 2020.

Preliminary Engineering

Currently $ 1,002,429 is programmed and 4% of the PE budget has been expended. Given what is known, no modification is necessary at this time.

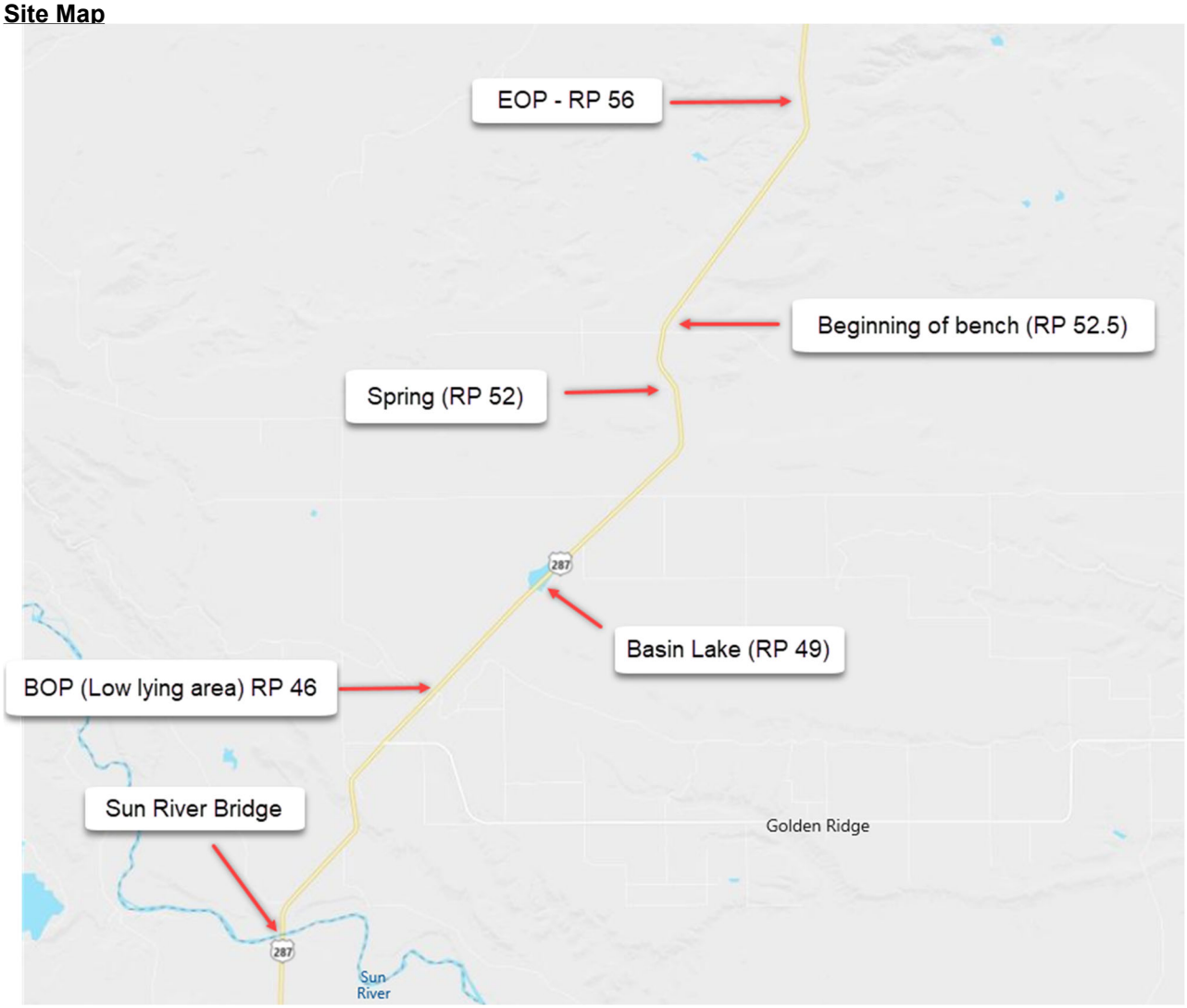
Project and Risk Management

Road Design in Helena will be responsible for the plans. RJ Snyder will be the project manager through the design phase. This project is not considered a Project of Division Interest (PoDI) by FHWA. No project-specific issues that pose a risk to the delivery of this project have been identified at this time.

Ready Date

The Ready Date will be determined through the override process. The project is outside of the Tentative Construction Plan. There does not appear to be any design activities that will require an exception amount of time. The current PE end date is 12/31/2027. As this project is in its infancy of design, no PE End Date modification is needed at this time.

Site Map


EOP - RP 56
Beginning of bench (RP 52.5)
Spring (RP 52)
287
Basin Lake (RP 49)
BOP (Low lying area) RP 46
Sun River Bridge
Golden Ridge
287
Sun River

e-copies:

Dustin Rouse, Preconstruction Engineer
Damian Krings, Acting Highways Design Engineer
Dave Hedstrom, Hydraulics Engineer
Bill Weber, Supervisor, Photogrammetry & Survey
Stanton Brelin, Traffic Operations Engineer
Ivan Ulberg, Traffic Design Engineer
Patricia Burke, Safety Engineer
Chad Richards, Engineering Cost Analyst
John Pirre, Engineering Information Services
Vacant, Public Involvement Officer
Sue Sillick, Research Section Supervisor
Lisa Hurley, Fiscal Programming Section
David Phillips, Engineering Division
Vacant, Engineering Division
William Squires, Road Design Engineer (acting)
Tom Martin, Environmental Services Bureau Chief
Shane Pegram, Construction Bureau – VA Engineer
Nathan Haddick, Bridge Design Engineer
Stephen Prinzing, Preconstruction Engineer
vacant, Materials Lab
Brandon Olds, Right of Way Supervisor
Richard Hibl, Construction Engineer
Chad Knuth, Hydraulics Engineer
Mike Grover, Traffic Project Engineer
Paul Sturm, Biologist
Christie McOmber, Projects Engineer
Jay Manuel, District Traffic Engineer
Steve Giard, Utilities Engineering Manager
David Hoerning, Lands Section Supervisor
Jerilee Weibel, Acquisition Section Supervisor
Jon Burnett, R/W Access Management Section Manager
Jim Davies, Materials Bureau Chief
DJ Berg, Pavement Analysis Engineer
Miles Yerger, Surfacing Design Supervisor
Scot Helm, Geotechnical Operations Manager
Paul Johnson, Project Analysis Bureau
Jean Riley, Planner
Tom Gocksch, ESB, Engineering Section Supervisor
Dawn Stratton, Fiscal Programming Section
Doug McBroom, Maint Division Operations Mgr (RWIS)
Joe Radonich, Remediation and Assessment
Bill Semmens, Enviro Resources Section Supervisor
Jon Axline, Historian
Darcy Goodson, Reclamation Specialist
Harry Barnett, Maintenance Chief
Vacant, Right of Way Design Supervisor
Jim Wingerter, Construction Ops Engineer
Jere Stoner, Bridge Area Engineer
Lee Grosch, Geotechnical Manager
vacant, Project Development Engineer
James Kinsey, District 3 MCS Captain
Zachary Stewart, Surfacing Design
Brendan Scott, District Utility Agent
Steve McEvoy, Constructability Reviewer