



Missoula County
South Avenue Bridge Project

Subject:	Project TDC Meeting No. 02	Meeting Location:	HDR Engineering Inc. Office 700 SW Higgins Street, Suite 200 (Clark Fork Conference Room)
Meeting Date:	June 14, 2016; 12:00 PM (Mountain)	Conference Call Information:	Call-in: n/a Code: n/a
Notes by:	Chris Kelly	Minutes Issued:	June 14, 2016

Attendees (see attached sign-in sheet):

Name	Organization	Present	Phone	Name	Organization	Present	Phone

Abbreviations: Msla Co – Missoula County; MDT – Montana Department of Transportation; HDR – HDR Engineering, Inc.; DJ&A – DJ&A; TT – Tetra Tech; HRA – Historical Research Associates; MBA – Maclay Bridge Alliance; MBC – Maclay Bridge Coalition.

Meeting Purpose:

Conduct Technical Design Committee meeting to discuss project status and schedule, and identify a time for conducting Public Meeting No. 2.

Discussion Items:

The following items were discussed at the meeting. Any additions or corrections should be sent to Chris Kelly within three (3) business days after receipt or the items and notes will be assumed to be accurate as shown.

Section 1 - Introductions and Committee Purpose
1.1 Formal Introductions 1.2 Purpose of TDC 1.3 Meeting Ground Rules

Section 2 - Project Updates & Status
<p>Field Work</p> <ul style="list-style-type: none"> No updates <p>Hydraulics</p> <ul style="list-style-type: none"> Developed bridge alternatives. H&H staff are using HEC-RAS model to determine if the options work hydraulically. Putting finishing touches on preliminary design reports. All options are hydraulically feasible.

- Are we onboard with DNRC and FEMA on how we're approaching project? Agencies suggested we submit the revised floodplain with the hydraulic modelling for this project so that they do not need to duplicate the reviews.

Environmental

- No updates until we have a preferred alternative alignment and bridge configuration that can be further described in the biological assessment and environmental document. Reports are reliant on determining proposed ROW, alignments, etc.

NEW: Utilities

- Utilities are located on the north side of River Pines Road that will be in conflict with new alignment. We'll need to do a utility survey, identify utilities, and determine how to proceed.

Section 3 - TDC Input and Other Technical Items

River Access

- How will access be provided without encouraging excessive use, loitering, etc. What restrictions will be in place, enforcement, etc.? The design of access and how the site is rehabilitated needs to be considered.
- A lot of the sandbar island may be removed by the river after the Maclay Bridge is removed. This may impact how access is determined.
- It would be good to collect public input on river access at public meeting

Alignment Discussion

- Dustin provided an overview Alignments A-E; narrowed to B and C. B is more direct and avoids impacts to O'Brien Creek. . Alignment C has gradual curves and crosses river at more of a perpendicular angle. Now re-named to Alignments 1 and 2.
- Dustin provided explanations of several possible typical sections for the bridge.
- South Avenue will be designed designated as a minor collector (same classification as North Avenue); 32 foot wide roadway top.
- Missoula County doesn't have specific standards for bridge width. MDT minimum for an off-system bridge is 28ft. Given the length of bridge and consideration to snow removal and drainage a 32-ft minimum bridge roadway is proposed. Sidewalks/shared use path/additional shoulder widths – not determined yet. Also showed a typical section with 10 foot shared use path and 46-ft. wide roadway and a typical section with 5 foot walkways, with barrier separations, and 47 feet roadway.
- For the purpose of estimating costs, a 43-ft bridge deck width without walkways is assumed.
- Kona Ranch bridge provides a 32 FT roadway, similar in length to this bridge. Has a 5-foot separated walkway (barrier rail) on one side.

Bridge Alternates

- Dustin provided an overview of the alternates.
- Maintaining 50-ft to 100-foot buffer between edge of pavement to the centerline of confluence of O'Brien Creek.
- Ladd would like a buffer where new alignment joins existing alignment along River Pines Road, as it's currently very close to O'Brien Creek.
- Dustin handed out summary draft pros and cons sheet for all bridge alternatives based on current progress. The Bridge TSL work is currently being reviewed internally. Final draft should be available in about a week.
- Channel thalweg is not clearly defined; the riverbed is fairly flat through that area.
- All alternates presented perform adequately from a hydraulic standpoint.

Section 3 - TDC Input and Other Technical Items

- At this point Alternate 1B stands out as the preferred option. Alternate 1A is similar and has one fewer pier in the active channel but is at a higher cost. Alternates 2A and 2B are similar to 1A and 1B respectively but on Alignment #2. Alignment #2 places a horizontal curve on the east bridge end which is undesirable.
- Alternates 1A and 1B will be carried forward and presented at the public meeting.

Next public meeting

- Second public meeting is tentatively planned for August 9th, otherwise, August 11th. HDR to schedule.

Next TDC Meeting

- Scheduled for July 19th.
- Draft public meeting graphics to be prepared for TDC meeting; committee will provide feedback.
- Schedule 4th TDC meeting for after public meeting.

Section 4 - Discussion/Q&A

Chris Brick: There is enough recreational use that it would make sense to accommodate the pedestrians.

Q - This project could put people on the west side onto a dangerous system. Is that the plan for this project?

A – This is a question for Lisa Moise regarding a master plan for bike plan in this area.

Q - Is there money to cover the ditch and provide safe pedestrian access to Blue Mountain Road?

A - It's not part of this plan, but it would be part of the Parks & Rec Master Plan.

Q – This design should consider the future to get people across the river. Right now there is a bike path on one side of South Avenue. Will you split that and have traffic on either side of the bridge, or would it make more sense to keep foot traffic on the same side of the bridge, or would you split the traffic and let them cross on both sides of the bridge.

A – There have been conversations about a path on each side of South Avenue, Missoula County is exploring funding options (MDT's Transportation Alternatives, for example). Depends on the long term plans and future needs/funding. Shared use path locations are determined by a lot of variables, including utilities, right-of-way, etc. A wider bridge provides more options in the future for non-motorized transportation.

Q – Is a separate ped structure being considered?

A – Most cost effective to combine ped access on bridge, not a separate structure.

Q - What is cross sectional area impacting the river between Alternates 1A and 1B?

A - Net increase on 1B since there are two piers compared to one pier in the active channel for Alternate 1A

Q – Is there flexibility in span lengths?

A - Yes. Bridge dimensions will continue to be refined as the design progresses. Tried to keep them within practical lengths to accommodate local suppliers and optimize location in the channel.

Q - Will a pier for Alternate 2D cause an accumulation of gravel?

A – Dustin asked H&H folks if there are any options that are a bad idea, they said no. However, a misaligned pier is more vulnerable to scour compared to a pier that aligns with the direction of flow.

Clark Fork Coalition is in favor of an option that will minimize scour and gravel disposition

Design needs to avoid fill in the floodway, so all bridge alternates are 700 FT minimum in overall length

Ladd thinks keeping piers out of thalweg would reduce the debris that is gathered on the pier (fish passage consideration). Shape of the pier could mitigate that.

Recreational navigability -

Dave Loomis would like a consideration for the fishing/rafting public and their experience on the river.

Q – Can aesthetic options be considered that provide a more rural driver experience? A vertical component to define the bridge more? Something to make it stand out more than most typical bridges. Clear demarcation from one side to the other.

A - Lighting and railing are options. Railing is a cost-effective way to enhance the appearance. Lighting may be out of place, setting is too rural. Bridge end monuments or pilasters are ways to make the bridge ends stand out.

Include a station/board at public meeting to show public options, gather input from the public on aesthetic options.

Q - What is the process for approval of the final alternative?

A – The County and TDC will need to approve. MDT will also need to approve as the project funding is through MDT.

Environmental Documents/Categorical Exclusion

- Biological Resource Report and preliminary Biological Assessment may be completed in time for public meeting; need to finalize alignment and bridge configuration based on public input before finalizing Categorical Exclusion.
- Bob Schweitzer feels there has been a lack of attention to the impacts of residents on South Avenue in the environmental process.

Action Items:

Item No.	Description	Due By	Resp.
1	Send invite for next TDC meeting		C. Kelly
2	Schedule public meeting		C. Kelly
3	Coordinate with Lisa Moise to determine future plans/interest in expanding the trail system.		E. Dickson

Attachments:

- June 14, 2016 Sign-in Sheet
- DRAFT Bridge Type, Size, and Location (TS&L) Study Bridge Alternate Summary (provided at meeting)
- DRAFT Roadway Alternatives Exhibit
- Summary of all alignments considered



MISSOULA COUNTY
SOUTH AVENUE BRIDGE
TDC MEETING NO. 2

Tuesday, June 14th, 2016
HDR Engineering
12:00 - 1:00pm

NAME	AFFILIATION	ADDRESS	E-MAIL
Chris Kelly	HDR	7005 W Higgins Ste 200	Chris.kelly@hdrinc.com
Bob Schwaetzer	MBA	11905 Greencrest Missoula	outlaw.43@hotmail.com
Ladd Knotch	FCUP	-	Lknotch@mt.gov
Roger Austin	PCT	41555 Windome. Missoula	roger@PCI.com
Chris Brick	CFC		chris@clarkfork.org
Dan Thomas	HDR		
Riley Lubbers	HDR		riley.lubbers@hdrinc.com
Mike Buensick	MB CSC	4610 Edward Ave	mackaybridge@gmail.com
Dave Loomis	MBA Citizen	8155 Mesa Ct. Msla 59804	mizoda@gmail.com
ERIK DICKSON	MISSOULA COUNTY		edickson@missoulacounty.us



MISSOULA COUNTY
SOUTH AVENUE BRIDGE
TDC MEETING NO. 2

Tuesday, June 14th, 2016
HDR Engineering
12:00 – 1:00pm

NAME	AFFILIATION	ADDRESS	E-MAIL
Jon Schick	HDR		jon.schick@hdrinc.com
Dustin Hirose	HDR		



Bridge Alternate	Possible Advantages	Possible Disadvantages	Other	Construction Cost
Alternate 1A Two Welded Plate Girder Units Each Two Span Structures 250'-251'; 121'-120' = 742'	<ul style="list-style-type: none"> Only one pier in the main river channel Haunched girder provide structural economy and possible aesthetic preference Tangent Alignment 	<ul style="list-style-type: none"> Girder dimensions preclude local fabrication Skew requires additional analysis and detailing Instream falsework required to erect girders 	<ul style="list-style-type: none"> Parallel flange design could increase cost. 	\$14,400,000
Alternate 1B Four Span Welded Plate Girder 160'-200'-200'-160' = 720'	<ul style="list-style-type: none"> Balanced span configuration Girder depth within local fabricator capabilities Tangent alignment Low cost alternative 	<ul style="list-style-type: none"> Two substructure units in active channel 	<ul style="list-style-type: none"> Cost is based on parallel flange option. Girders could be haunched for aesthetics with possible added cost. 	\$12,100,000
Alternate 2A Two Welded Plate Girder Units A Two Span and Three Span Structure 226'-227'; 91'-90'-85.167' = 719.167'	<ul style="list-style-type: none"> Only one pier in the main river channel Haunched girder provide structural economy and possible aesthetic preference 	<ul style="list-style-type: none"> Girder dimensions preclude local fabrication Skew requires additional analysis and detailing Instream falsework required to erect girders Curved alignment on east end 	<ul style="list-style-type: none"> Parallel flange design could increase cost. 	\$12,900,000
Alternate 2B Four Span Welded Plate Girder 160'-200'-200'-160' = 720'	<ul style="list-style-type: none"> Balanced span configuration Girder depth within local fabricator capabilities Tangent alignment Low cost alternate 	<ul style="list-style-type: none"> Two substructure units in active channel Alignment places east end of bridge on a curve 	<ul style="list-style-type: none"> Cost is based on parallel flange option. Girders could be haunched for aesthetics with added cost. 	\$12,300,000
Alternate 2C Two Simple Span Truss Unit and Three Span Welded Plate Girder 226'-227'; 91'-90'-85.167' = 719.167'	<ul style="list-style-type: none"> Relatively shallow superstructure could allow lower roadway profile grade Through Trusses provide aesthetic continuity from Maclay bridge 	<ul style="list-style-type: none"> Truss spans do not accommodate future widening Alignment places east end of bridge on a curve Trusses require protective coating system Trusses require Fracture Critical Members 	<ul style="list-style-type: none"> Truss spans could possibly be supplier designed with reduced roadway width. 	\$18,300,000
Alternate 2D Two Simple Span Tied Arch Unit and Three Span Welded Plate Girder 226'-227'; 91'-90'-85.167' = 719.167'	<ul style="list-style-type: none"> Relatively shallow superstructure could allow lower roadway profile grade Aesthetics 	<ul style="list-style-type: none"> Bridge type does not accommodate future widening Curved alignment on east end of bridge Tied Arches require protective coating system Arch requires Fracture Critical Members 		\$20,900,000
Alternate 2E One Simple Span Through Truss or Tied Arch Unit and Three Span Welded Plate Girder 451'; 91'-90'-85.167' = 717.167'	<ul style="list-style-type: none"> Eliminates construction in active channel Relatively shallow superstructure could allow lower roadway profile grade Aesthetics 	<ul style="list-style-type: none"> Curved alignment on east end of bridge Misaligned piers increase the scour risk Protective coating system Fracture Critical Members with special inspection requirements. High cost alternative 		\$27,400,000



MC PUBLIC WORKS MANUAL

TABLE 6.1 ROAD DESIGN CONSIDERATIONS (SOUTH AVENUE)

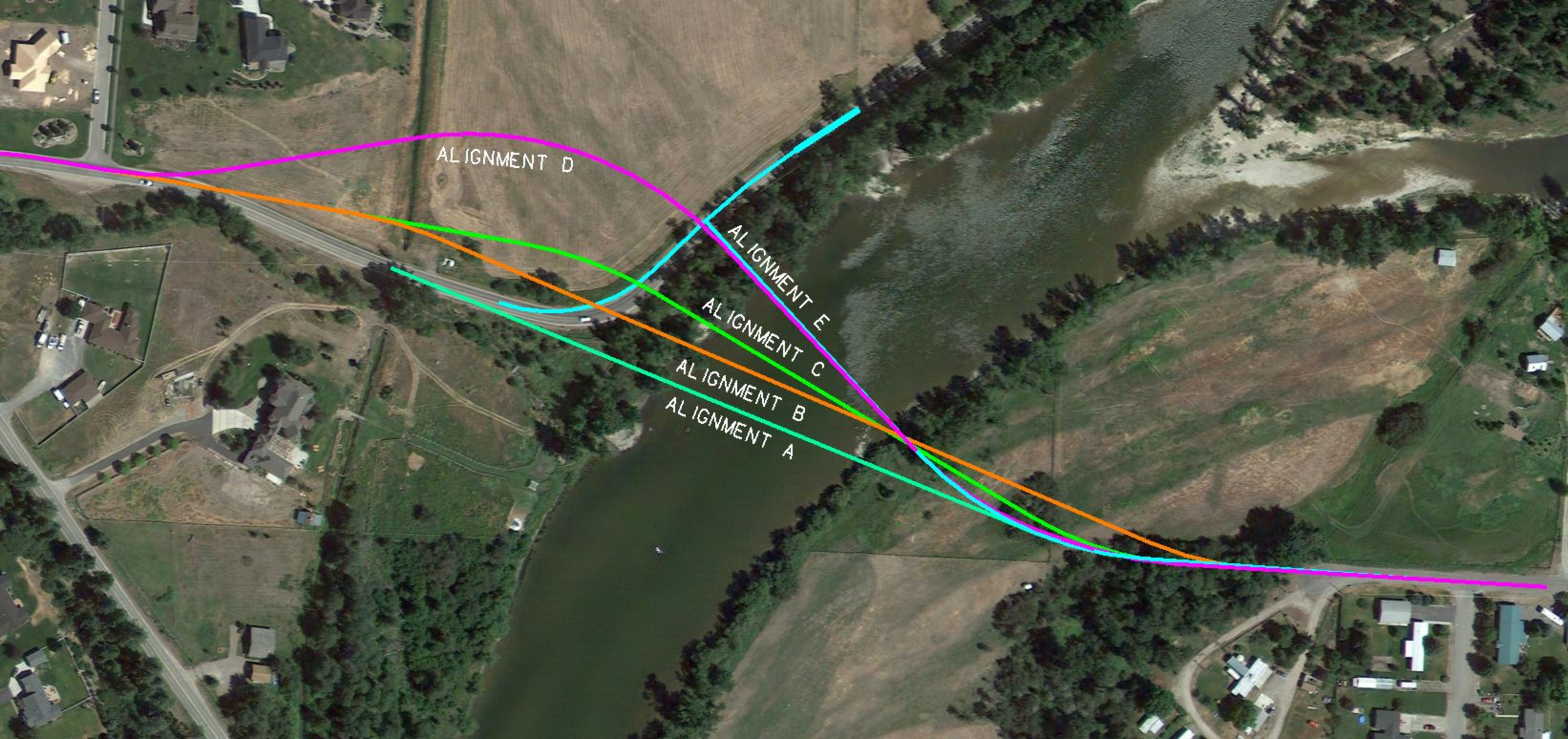
DESIGN PARAMETER	COLLECTOR OR COMMERCIAL
DESIGN SPEED (MPH)	25-45
MAXIMUM VERTICAL GRADE (%)	6
MINIMUM HORIZONTAL CURVE RADIUS (FT)	525
RETURN RADIUS BETWEEN INTERSECTION STREETS* (FT)	50
HORIZONTAL CLEARANCE (FT)	20
VERTICAL CLEARANCE (FT)	14

*BASED ON ROAD WITH HIGHER CLASSIFICATION



**SOUTH AVENUE BRIDGE
OVER BITTERROOT RIVER
ALIGNMENT EXHIBIT
ALTERNATE 1**





ALIGNMENT D

ALIGNMENT E

ALIGNMENT C

ALIGNMENT B

ALIGNMENT A