

Glenda Wiles

From: Short, Valerie <vshort@mt.gov>
Sent: Thursday, December 11, 2014 10:14 AM
To: Greg Chilcott
Cc: John Horat; Mike Whelehon (mikew@pcimontana.com); Glenda Wiles; Anseth, Becky
Subject: Ravalli County TSEP ranking report
Attachments: Ravalli_RankRpt_2017BI_Final.pdf; Ravalli_EngRevRpt_2017bi_fin.pdf

Good morning,

Please find attached the TSEP engineering and ranking report for Ravalli County. We look forward to meeting with you on December 16 at 9:15 via a conference call.

John Horat will participate

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**Ravalli County Project No. 10
Bridge System Improvements**

This application received 3,174 points and ranked 10 out of 11 for funding in the 2017 Biennium.

Funding Source	Type of Funds	Amount	Status of Funds
TSEP	Grant	\$195,798	Awaiting decision of the Legislature
County	In-Kind	\$70,864.67	Committed by Resolution
County	SRS Fund	\$124,933.83	Committed by Resolution
Project Total		\$391,597.01	

Median Household Income:	\$43,000	Total Population: 40,212
Percent Non-TSEP Matching Funds:	52 %	Number of Households: 16,933

Project History – Ravalli County has selected two bridges for replacement.

- Etna West Bridge is located five miles south of Stevensville and crosses over an irrigation ditch. The existing concrete bridge is 17 feet long and 20 feet wide. The bridge construction date is unknown. It serves just fewer than 400 vehicles per day, including 19 residences, businesses and agricultural traffic. The detour route is about 7.7 miles.
- Union Ditch Bridge is located five miles south of Stevensville and crosses over an irrigation ditch. The existing concrete bridge is 12 feet long and 19 feet wide. The bridge construction date is unknown. It serves just fewer than 400 vehicles per day, including 19 residences, businesses and agricultural traffic. The Union Bridge is located less than one-half mile east of the Etna West Bridge. The detour route is about 7.7 miles.

Identified Problem – The County’s two bridges have the following deficiencies:

The Etna West Bridge has a sufficiency rating of 52.4. Deficiencies include:

- The bridge is too narrow for the road conditions,
- Bridge rail is not adequate; and
- Approach rails and end treatments are not in place.

The Union Ditch Bridge has a sufficiency rating of 53.4. Deficiencies include:

- The bridge is too narrow for the road conditions,
- Bridge rail is not adequate; and
- Approach rails and end treatments are not in place.

Proposed Solution – The proposed project would replace both structures with new concrete bridges.

Statutory Priority #1: Solves urgent and serious public health or safety problems, or enables local governments to meet state or federal health or safety standards.

The applicant was scored at a level 3 and received 660 points out of a possible 1,100 points.

Conclusion: The applicant sufficiently demonstrated that the public health and safety problems associated with the deficiencies in the bridge system are likely to occur in the long-term if the deficiencies are not corrected.

Rationale: The Commerce review team noted that the Etna West Bridge had a sufficiency rating of 52% at the time of its last NBI inspection. The structure rating was 4 and the lowest element condition rating was 5. The Union Ditch Bridge had a sufficiency rating of 53% at the time of its last NBI inspection. The structure rating was 4 and the lowest element condition rating was 5. These ratings resulted in an overall level 3 score for the application.

Statutory Priority #2: Reflects greater financial need.
The applicant received 394 points out of a possible 900 points.

The score for Statutory Priority #2 is based on a weighted analysis of two financial indicators with a total of 900 points possible. The scores for each of the two indicators are added together, with a total number of points possible for Statutory Priority #2 based on five levels. The fifth level is assigned to the group of applicants that reflect the greatest financial need.

Indicator #1. Household Economic Condition Analysis: The applicant received 178 points. (This analysis accounts for 40% of the score for Statutory Priority #2. Each of the three sub-indicators are ranked and scored, with each accounting for 33% of the total score for Indicator #1. Being ranked the lowest indicates the most severe household economic conditions and is assigned the highest score. Being ranked 11th indicates that the applicant has the least severe household economic conditions and is assigned the lowest score. The scores for each sub-indicator are added together.)

- ❑ The applicant's Median Household Income (MHI) is the 5th lowest of the 11 applicants.
- ❑ The percent of persons living at or below the *Low and Moderate-Income* (LMI) level is 39.1%. The applicant's relative concentration of persons living at or below the LMI level is the 8th highest of the 11 applications.
- ❑ The percent of persons living at or below the *Poverty* level is 13.8%. The applicant's relative concentration of persons living at or below the *Poverty* level is the 5th highest of 11 applications.

Indicator #2. Financial Analysis: The applicant placed in the 2nd level and received 216 points. (This analysis accounts for 60% of the score for statutory priority #2. The number of points possible for Indicator #2 is based on five levels. The fifth highest level is assigned to the group of applicants that appear to have the greatest financial need based upon the revenues available to the county that could be used to maintain their bridges and the number of bridges that the county is responsible for maintaining.)

(Note: The financial analysis for bridge applications is unique to bridge applications only. Commerce staff conducted the analysis and assigned a score, which was then manually inserted into the computerized financial assessment in place of the target rate analysis score generated for the other types of projects.)

The number of bridges under 20 feet that the county is responsible for maintaining	37
The number of bridges over 20 feet that the county is responsible for maintaining	64
Total available funds per county maintained bridge	\$43,035.58

Statutory Priority #3: Incorporates appropriate, cost-effective technical design and provides thorough, long-term solutions to community public facility needs.
The applicant was scored at a level 4 and received 800 points out of a possible 800 points.

Conclusion: The applicant strongly demonstrated that it has proposed an appropriate, cost-effective technical design that will provide a thorough, long-term solution to its public facility needs. The preliminary engineering report (PER) is generally complete and there were no issues, or only minor issues, that were not adequately addressed. It does not appear that the issues would raise serious questions regarding the appropriateness of the solution selected by the applicant.

Rationale: The Commerce review team thought that the PER was reasonably complete.

Statutory Priority #4: Reflects substantial past efforts to ensure sound, effective long-term planning and management of public facilities and attempts to resolve the infrastructure problem with local resources.
The applicant was scored at a level 2 and received 280 points out of a possible 700 points.

Conclusion: The applicant inadequately demonstrated that it has made reasonable past efforts to ensure sound, effective long-term planning and management of public facilities, and attempted to resolve its

infrastructure problem with local resources. The Commerce review team did not score this application higher because while the applicant has reasonable operation and management budgets and practices, they have not taken advantage of the various types of planning tools available (including but not limited to a CIP, growth policy, and needs assessments) or the proposed project does not appear to be consistent with the goals and objectives of adopted plans.

Rationale: The applicant submitted a 5-year road and bridge maintenance schedule that identifies bridges for replacement as a CIP. This schedule does not take a CIP approach and does not identify the bridges in question as being in need of replacement. However, the PER indicates that the bridge over Union Ditch was rated 9th out of 20 in an inventory of critical bridges in a 2012 TSEP grant application. There does not appear to be any other documentation supporting this claim. The bridge over Etna Ditch was not evaluated for sufficiency until the drafting of the current PER. The applicant also submitted a copy of the 2009 update to the Hamilton Area Transportation Plan, but this bridge falls outside of the planning area identified on page 4 of the addendum and the bridge is not mentioned within the plan. Ravalli County does not currently have a Growth Policy, but submitted a 2008 list of Planning Department Priorities. None of these priorities are directly related to infrastructure replacement.

The Commerce review team concluded that operation and maintenance practices related to the bridge appear to be reasonably adequate.

Statutory Priority #5: Obtains funds from other sources.

The applicant was scored at a level 4 and received 480 points out of a possible 600 points.

Conclusion: The applicant strongly demonstrated that the project would enable the local government to obtain funds from sources other than TSEP. The applicant demonstrated serious efforts to thoroughly seek out, analyze, and secure the firm commitment of alternative or additional funds from all appropriate sources to assist in financing the proposed project. The funding package for the proposed project is reasonable and appears to be viable. There are no major obstacles known at this time that would hinder the applicant from obtaining the funds from the proposed funding sources. The Commerce review team did not score this application higher because the applicant's matching dollars were not at least 150% of the TSEP grant requested.

Rationale: The applicant is proposing a funding package consisting of TSEP, County SRS funds and in-kind services. The applicant reasonably discussed other funding sources, and provided reasonable explanations as to why those funding sources are not being used. The applicant noted that the Commissioners and County Road and Bridge Department are very interested in the project completion and the assistance of TSEP funds. The applicant stated that if the TSEP grant is not received, the County will continue to monitor the structures and re-strategize how to fund the improvements.

Because there is more than one bridge involved in the proposed project, the Commerce review team does not consider the TSEP grant to be a critical component of the funding package, since one or more of the bridges could be removed from the proposed project and those funds re-allocated for the remaining bridge(s).

The proposed funding package appears viable to the Commerce review team.

Statutory Priority #6: Provides long-term, full-time job opportunities for Montanans, or provides public facilities necessary for the expansion of a business that has a high potential for financial success, or maintains or that encourages expansion of the tax base.

The applicant was scored at a level 2 and received 320 points out of a possible 480 points.

Conclusion: The applicant adequately demonstrated that the proposed project is necessary for an economic development project(s) and would increase business and job opportunities. The applicant cited a specific business that would be dependent on the proposed improvements being made and provided reasonable documentation showing that the business owner intends to proceed with the business expansion. If it occurs, the business expansion would likely provide specific long-term, full-time job opportunities for Montanans, other than those related to the construction or operation of the bridge system. The proposed project would likely add to the tax base if the business expansion occurs.

Rationale: The applicant stated that the new bridges will benefit 82 households who drive to work over these bridges every day. The applicant also noted there are eight businesses along one lane that will benefit from the bridge replacements in order to stay open, maintain a customer base, and potentially allow for expansion. If residents or business clientele lose access to these routes, all would have to absorb increased travel costs. The applicant stated the area has potential for expansion if the County continues to grow as it recently has done.

Statutory Priority #7: High local priority and strong community support.

The applicant was scored at a level 3 and received 240 points out of a possible 400 points.

Conclusion: The applicant adequately demonstrated that the proposed project is a high priority and has community support. The applicant documented that it held at least one public hearing or meeting, and has adequately informed the public about the proposed project in a timely manner, its cost and the impact per household, and has elicited public comment. The Commerce review team did not score this priority higher primarily because the applicant demonstrated moderate to little support from local residents even though the project was advertised in local papers for two weeks.

Rationale: The applicant held a public meeting at 6:30 p.m. on April 16, 2014 at the Town Hall for discussion and to obtain comments regarding the project. The meeting was advertised daily for two weeks in the *Bitterroot Star* and the *Ravalli Republic*. Notice of these publications are included as part of the application. An agenda with discussion points and sign in sheets for the meeting are included in the application materials; however, only the engineer and a County representative were in attendance at the meeting. No residents attended. Letters regarding the project were sent to area residents and business owners in February. Outreach in the form of telephone call notes from conversations with eight business are documented – three of these followed up with letters of support for the project.

The application included three letters of support from area residents, the hospital, the sheriff, the Town, the planning department, and one elected MT representative. The application also includes two letters citing concerns about the project. It is unknown if these concerns were responded to. The projects are not listed in the CIP or County Road and Bridge Department Bridge Schedule (2012).

ENGINEERING REVIEW REPORT FORM

APPLICANT NAME: Ravalli County

TYPE OF PROJECT: bridge system

COMMENTS PREPARED BY: Richard Knatterud, P.E., Montana Dept. of Commerce

DATE: October 1, 2014

History:

Ravalli County has selected two bridges for replacement.

- Etna West Bridge is located five miles south of Stevensville and crosses over an irrigation ditch. The existing concrete bridge is 17 feet long and 20 feet wide. The bridge construction date is unknown. It serves just under 400 vehicles per day, including 19 residences, businesses and agricultural traffic. The detour route is about 7.7 miles.
- Union Ditch Bridge is located five miles south of Stevensville and crosses over an irrigation ditch. The existing concrete bridge is 12 feet long and 19 feet wide. The bridge construction date is unknown. It serves just under 400 vehicles per day, including 19 residences, businesses and agricultural traffic. The Union Bridge is located less than one-half mile east of the Etna West Bridge. The detour route is about 7.7 miles.

TSEP Statutory Priority #1 Health and Safety

a. Does a serious deficiency exist in the bridge system and will the deficiencies be corrected by the proposed project?

Problem – according to the preliminary engineering report, the county's two bridges have the following deficiencies.

The Etna West Bridge has a sufficiency rating of 52.4. Deficiencies include:

- the bridge is too narrow for the road conditions, and
- bridge rail is not adequate.

The applicant's engineer responded with the following comments: In addition to the bridge rail itself not being adequate, approach rails and end treatments are not in-place (Section 2.3.2, page 15 of the PER).

The Union Ditch Bridge has a sufficiency rating of 53.4. Deficiencies include:

- the bridge is too narrow for the road conditions, and
- bridge rail is not adequate.

The applicant's engineer responded with the following comments: In addition to the bridge rail itself not being adequate, approach rails and end treatments are not in-place (Section 2.3.2, page 15 of the PER).

Proposed Solution - the proposed project would replace both structures with new structures; the preliminary plan would replace both the Etna West Bridge and the Union Ditch Bridge with a concrete superstructure/deck with steel piles and concrete cap.

Inspection results, following National Bridge Inventory protocol, for the bridges are as follows:

Etna West Bridge

- Sufficiency Rating: 52.4
- Structure Rating: 4
- Element Condition Ratings:
 - Bridge Deck: 5
 - Superstructure: 5
 - Substructure: 5

Union Ditch Bridge

- Sufficiency Rating: 53.4
- Structure Rating: 4
- Element Condition Ratings:
 - Bridge Deck: 5
 - Superstructure: 5
 - Substructure: 5

b. Is the entire county, or a substantial percentage of the residents of the county seriously affected by the deficiency, as opposed to a small percentage of the residents?

Etna West Bridge

Location: 5 miles south of Stevensville
(0.40 miles west of Union Ditch Bridge)

Waterway: irrigation ditch

Length: 17 feet

Width: 20 feet

Route: Groff Lane

Type of Road: major local access, asphalt

Serves: residential, business, ag

Mail Route: yes

School Bus Route: yes

Permanent Homes: 19

The applicant's engineer responded with the following comments: More than 19 residences, businesses and agricultural traffic are affected by the project. 82 households/businesses are affected by the problem (page 1 of the Statutory Priorities). 19 was just the number of houses that are part of the Post Office's mail route (see page 8 of the PER). Also, see correspondence with Stevensville Post Office in Appendix D.

Traffic Volume: just under 400 vehicles per day
Detour Route: 7.7 miles
Posted: no
Classified: neither structurally deficient nor functionally obsolete

Union Ditch Bridge

Location: 5 miles south of Stevensville
(0.40 miles east of Etna West Bridge)
Waterway: irrigation ditch
Length: 12 feet
Width: 19 feet
Route: Groff Lane
Type of Road: major local access, asphalt
Serves: residential, business, ag
Mail Route: yes
School Bus Route: yes
Permanent Homes: 19

The applicant's engineer responded with the following comments: More than 19 residences, businesses and agricultural traffic are affected by the project. 82 households/businesses are affected by the problem (page 1 of the Statutory Priorities). 19 was just the number of houses that are part of the Post Office's mail route (see page 8 of the PER). Also, see correspondence with Stevensville Post Office in Appendix D.

Traffic Volume: just under 400 vehicles per day
Detour Route: 7.7 miles
Posted: no
Classified: neither structurally deficient nor functionally obsolete

c. Is there any other pertinent information that might influence the scoring of this statutory priority?

Muth Engineering inspected the both bridges in accordance with NBI protocol. Neither bridge has MDT bridge numbers because the bridge lengths are less than 20 feet.

There do not appear to be any significant structural deficiencies with the concrete structures in place at either site. Inventory or operating load ratings are not available.

The applicant's engineer responded with the following comments: Regarding bridge capacity: "line load capacity is not available or able to be computed since there is no information on concrete or quantity, size or grade of steel reinforcing" (page 15 of PER).

The narrow width and inadequate guardrail were the deficiencies noted. The preliminary engineering report indicated that traffic is forced to wait for oncoming traffic. The speed limit on Groff Lane is 45 mph.

SUMMARY – STATUTORY PRIORITY #1

A weighted scoring average may be used for statutory priority #1 during the scoring process using the following construction costs from table 1-1 of the preliminary engineering report and the TSEP scoring criteria which can be found starting on page 41 of the TSEP 2014 Construction Application Guidelines.

<u>Bridge</u>	<u>Total Cost</u>	<u>%</u>
Etna West	\$ 186,832	48
Union Ditch	<u>\$ 204,765</u>	52
	\$ 391,597	

The Commerce review team determined that a level 3 score is appropriate for these types of deficiencies and the potentially resulting health and safety problems.

TSEP Statutory Priority #3 Technical Design
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a. Does the PER provide all the information as required by the TSEP PER outline for bridges, and did the analysis address the entire system in order to identify all potential deficiencies?

The preliminary engineering report closely followed the TSEP preliminary engineering report outline for bridges.

b. Does the proposed project completely resolve all of the deficiencies identified in the PER? If not, does the proposed project represent a complete component of a long-term master plan for the facility or system, and what deficiencies will remain upon completion of the proposed project?

All of the deficiencies with the Etna West and Union Ditch Crossings will be resolved by the proposed project.

All county bridges appear to have been evaluated as part of the County's Bridge Inventory. Ravalli County is responsible for maintaining 101 bridges. Of those, 57 are minor and 44 are major; major is defined as bridges over 20 feet in length. The most recent bridge inventory update occurred in 2012. Appendix H of the preliminary engineering report contained the bridge inventories and several maps depicting locations of the county bridges.

c. Are the deficiencies to be addressed through the proposed project the deficiencies identified with the most serious public health or safety problems? If not, explain why the deficiencies to be addressed through the proposed project were selected over those identified with greater public health or safety problems.

The current application includes the Union Ditch Crossing which is rated #9 on the priority list of critical bridges and culverts. Of the bridges prioritized #1 through #8, four have been replaced or are under construction, three others were either structurally sound or are in line for safety improvements, and one is a possibility for 2017 TSEP funding. The Etna West Crossing is not on the list, but was evaluated based on its proximity to the Union Ditch Bridge and determined to be in need of replacement.

d. Were all reasonable alternatives thoroughly considered, and does the technical design proposed for the alternative chosen represent an efficient, appropriate, and cost-effective option for resolving the local public facility need, considering the size and resources of the community, the complexity of the problems addressed, and the cost of the project?

Several alternatives were considered. The Alternative Screening section for each of the bridges included the no action or repair alternatives and several beam, deck, substructure, and culvert options.

Alternatives were examined for each bridge. Alternatives compared in the Alternative Analysis section of the preliminary engineering report for both bridges were as follows.

- Alternative A - steel superstructure with galvanized corrugated metal decking and steel piles with concrete caps.
- Alternative B - steel superstructure with galvanized corrugated metal decking and cast-in-place concrete spread footings.
- Alternative C - pre-cast concrete slab superstructure/decking and steel piles with concrete caps.
- Alternative D - pre-cast concrete slab superstructure/decking and cast-in-place concrete spread footings.

The preferred alternative for both the Etna West and Union Ditch Bridges was Alternative C. Section 4.3 of the preliminary engineering report included a matrix to assist in selecting the preferred option.

e. Does the technical design proposed thoroughly address the deficiencies selected to be resolved and provide a reasonably complete, cost-effective and long-term solution?

The preliminary engineering report indicated the proposed improvements to the structures should be designed to safely allow two-way traffic and conform to AASHTO and Ravalli County

standards. A copy of the county standards was not found; however, the preliminary engineering report indicated the following:

The Ravalli County Road and Bridge Department uses AASHTO and MDT standards for their road network. These guidelines are used because of their wide-based acceptance by county, city and state agencies as a standard guide for roadway design and construction. On rare occasions, Ravalli County has allowed some exceptions to the AASHTO guidelines through a design exception policy. New bridges in Ravalli County will be designed in accordance with the AASHTO HL-93 loading.

A preliminary hydraulic evaluation was not performed at either site. The preliminary engineering report indicated the following:

The Ravalli County Floodplain Regulations recommend that all new bridges in the floodplain be designed to accommodate the 100-year flood flows with a minimum of two feet of freeboard. As irrigation ditches, the flows in the Etna (west) and Union Ditches are controlled by the Tucker Headgate. As a result, freeboard is not as critical an issue. However, according to the ditch company representatives, Etna (west) and Union are known to carry some storm water runoff during the spring. Since the 100-year flood flows are undetermined for both structures, the bridge design will be similar in height and freeboard as the original structure.

The applicant's engineer responded with the following comments: Regarding irrigation ditch water volume and flow: "One item not clearly defined by the PER is the volume of water in each ditch. After discussing this project with, not only the ditch company representatives, but also the water rights consultant, it was apparent that average ditch flows were unknown. It was also made clear that storm water runoff occurs in both the Etna (west) and Union ditches occasionally, but this volume is unknown as well. There is not much water in the Etna (west) ditch during irrigation season at this location because Groff Lane is near the end of the ditch alignment and other irrigation users upstream have used their allocated amount of water. The Union ditch carries a high volume of water, but, anecdotally, there has never been a problem with the existing structure being able to handle the flows from either irrigation flows or storm water runoff" (From page 2 of the Statutory Priorities).

The Etna (west) irrigation ditch is labeled as Zone D on the floodplain map in Appendix A. It is also mentioned on Page 6 of PER. The Union irrigation ditch does not have any "zone" associated with it on the floodplain map.

During construction, traffic will be routed on a detour route rather than constructing a detour bridge. It appears that construction of the two bridges cannot be completed concurrently because there are homes in between the two bridges. Figure 6-1 shows the proposed implementation schedule. Page 15 of the preliminary engineering report determined that a detour bridge was uneconomical. Home Acres Road was acknowledged on page 17 of the preliminary engineering report as having some difficult stretches. If appropriate, use of a detour bridge could be re-visited during final design.

f. Are all projected costs and the proposed implementation schedule reasonable and well supported? Are there any apparent technical problems that were not adequately addressed that could delay or prevent the proposed project from being carried out or which could add significantly to projects costs?

Project cost estimates were provided in Appendix F. In-kind costs for approach work will be part of the project. The last page of Appendix F provided a breakdown of Ravalli County in-kind services. Approach work is proposed for 115 feet west and 53 feet east of the Etna West crossing, and 115 feet west and 105 feet east of the Union crossing. Appendix E contained a plan view of the approach work.

The preliminary engineering report indicated that construction is anticipated to occur during the irrigation off-season, between September and April. Etna (west) is known to carry storm water runoff during the spring, which potentially makes construction more difficult and time consuming.

The applicant's engineer responded with the following comments: Other potential delays are: 1.) an extended winter season (page 62 of the PER); 2.) unknown soil conditions (page 49 of the PER); 3.) unforeseen funding delays (page 3 of the Statutory Priorities); and 4.) in-kind availability (page 4 of Statutory Priorities).

g. Have the potential environmental problems been adequately assessed? Are there any apparent environmental problems that were not adequately addressed that could delay or present the proposed project from being carried out or which could add significantly to project costs?

An environmental checklist, stamped and signed by a P.E. 2014, was included with the preliminary engineering report. The preliminary engineering report indicated that letters were sent to the U.S. Army Corps of Engineers; U.S. Fish and Wildlife Service; Montana Fish, Wildlife & Parks; Montana Department of Environmental Quality; Montana Department of Natural Resources; Montana Historic Preservation Office; USDA Natural Resources Conservation Service. A sample letter (SHPO) was included in Appendix C, dated February 4, 2014.

Responses were received from the U.S. Army Corps of Engineers; U.S. Fish and Wildlife Service; Montana Fish, Wildlife & Parks; Montana Historic Preservation Office; USDA/NRCS; and the Montana Department of Environmental Quality. Information was also included from the Natural Heritage Program.

Since the proposed bridges cross over irrigation canals, permits from regulatory agencies are probably not required.

Approval from the respective ditch companies will be needed. Conversations with ditch company representatives were documented in Appendix D of the preliminary engineering report. It wasn't clear what was meant by the ditch company's request to keep Union and Etna separated with *something sturdy like a concrete wall*.

The applicant's engineer responded with the following comments: The correspondence with the ditch company representatives regarding the separation of the Union and Etna with a concrete wall can be ignored. This was a brain-storming conversation, but was not implemented in the final PER.

Neither bridge appears to be eligible for the National Register of Historic Places.

h. Is there any other pertinent information that might influence the scoring of this statutory priority?

No.

SUMMARY – STATUTORY #3

The Commerce review team determined that a level 4 score is appropriate for this project.