

Comment Report: All Comments
 Project: Fargo Moorhead Metro - Reach 4 Design by MVK
 Review: PER - Rush River Structure - ATR
 Displaying 57 comments for the criteria specified in this report.

Id	Discipline	DocType	Spec	Sheet	Detail
4812865	Structural	Design Memorandum or Report	n/a'	n/a	n/a
Comment Classification: N/A I reviewed the PER and have no comments. Submitted By: Lyle Peterson (402-995-2161) Submitted On: Sep 06 2012 1-0 Evaluation Concurred check. Submitted By: Ken Cook (314-331-8498) Submitted On: Nov 01 2012 1-1 Backcheck Recommendation Close Comment I reviewed the PER and have no comments. Submitted By: Lyle Peterson (402-995-2161) Submitted On: Jul 17 2013 Current Comment Status: Comment Closed					
4821020	Economics	Design Memorandum or Report	n/a'	n/a	n/a
Comment Classification: N/A In addition to providing comments for Rush River Inlet Structure in DrChecks, I am attaching editorial comments on the PER, Appendix E, and Appendix K in a Word file. (Attachment: Fargo-MoorheadRushRiver_DesignATR_EditorialCommentsSep2012.docx) Submitted By: Elizabeth Peake (402-995-2686) Submitted On: Sep 11 2012 Revised Sep 20 2012. 1-0 Evaluation Concurred Will make necessary edits. Submitted By: Ken Cook (314-331-8498) Submitted On: Nov 01 2012 1-1 Backcheck Recommendation Close Comment Thanks! I am satisfied with the way my Rush River editorial comments were handled in the FTR documents that combined Reach 4 and Rush River. Submitted By: Elizabeth Peake (402-995-2686) Submitted On: Sep 23 2013 Current Comment Status: Comment Closed					
4821024	Economics	Design Memorandum or Report	n/a'	n/a	n/a
Comment Classification: N/A (Document Reference: PER, Section 11.2, pages 16 & 17) Several recreational features proposed by the local sponsor differ from those presented in Appendix J. Suggest that later in the design process, either Appendix J be revised, or an Addendum to Appendix J be prepared, that reflect these and other changes in recreational features. Submitted By: Elizabeth Peake (402-995-2686) Submitted On: Sep 11 2012 1-0 Evaluation For Information Only Appendix J was not used for the Rush drop structure report. Comments on Appendix J should be made in the overall review for Reach 4. Submitted By: Michael Hanks (314-331-8252) Submitted On: Oct 18 2012 1-1 Backcheck Recommendation Open Comment Earlier I was told I could not comment in Dr Checks on Appendix J, only in a Word file I emailed to Roland Hamborg, because Appendix J was prepared by an A/E firm and could not be revised. I made Comment 4821024 for Rush River because the Proposed Recreation Features text in the PER for Rush River (but not for Reach 4) conflicted with proposals in Appendix J. Even if Appendix J can not be revised, the Corps or A/E can prepare an Addendum to explain sponsor revisions in recreation concepts and facilities. Submitted By: Elizabeth Peake (402-995-2686) Submitted On: Oct 25 2012 1-2 Backcheck Recommendation Close Comment In the FTR version of the combined Reach 4 and Rush River documents, the major changes in recreation facilities and the rationale for the changes were satisfactorily explained. Submitted By: Elizabeth Peake (402-995-2686) Submitted On: Sep 23 2013 2-0 Evaluation Concurred Per discussion with Renee McGarvey, the local sponsor is going to update the recreation plan once a determination has been made regarding the diversion channel alignment south of I-94. Submitted By: Michael Hanks (314-331-8252) Submitted On: Oct 26 2012 2-1 Backcheck Recommendation Close Comment Thanks for coordinating this solution to the problem. Submitted By: Elizabeth Peake (402-995-2686) Submitted On: Oct 26 2012 Current Comment Status: Comment Closed					
4831105	Construction Management	Engineering Appendix	C.3.1.3	n/a	n/a
Comment Classification: N/A (Document Reference: Appendix C) Ensure all design conditions; elevations, flows for the Red River and Rush River are included in the Table, as indicated in the text. Submitted By: Kathleen Englert (402-995-2038) Submitted On: Sep 18 2012 1-0 Evaluation Concurred All values intended to be in the table were included in the table. For the design, only the 1% annual chance exceedance value is required for the Lower Rush River elevation. This elevation was used to ensure executive order 11988 was met as indicated in Section C.3.1.2. Elevations for the other events are not required for design. Submitted By: Donald Duncan (314-331-8809) Submitted On: Oct 29 2012 1-1 Backcheck Recommendation Close Comment Response adequate. Submitted By: Kathleen Englert (402-995-2038) Submitted On: Feb 27 2013 2-0 Evaluation Concurred The elevation column has been removed from this table. The updated table is Table C-6 in Appendix C. Discussion related to the table can be found in section C.5.2.1. Submitted By: Donald Duncan (314-331-8809) Submitted On: Feb 22 2013 <i>Backcheck not conducted</i> Current Comment Status: Comment Closed					
4831108	Construction Management	Engineering Appendix	D.3.1	n/a	n/a

Comment Classification: N/A
(Document Reference: Appendix D)

The information stated in the text is not consistent with what is portrayed in the table.

Submitted By: [Kathleen Englert](#) (402-995-2038). Submitted On: Sep 18 2012

1-0 Evaluation Concurred

The table presents the number and type of borings found within the project extents of the Rush River Inlet structure. The text will be updated to make this clear.

Submitted By: [Nathan Rose](#) (314-331-8443) Submitted On: Oct 24 2012

1-1 Backcheck Recommendation Close Comment

Response adequate.

Submitted By: [Kathleen Englert](#) (402-995-2038) Submitted On: Feb 27 2013

Current Comment Status: **Comment Closed**

4831111	Construction Management	Engineering Appendix	E.2	n/a	n/a
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Comment Classification: N/A
(Document Reference: Appendix E)

The Phase I ESA typically does not address the information stated in this paragraph. Typically a work plan developed as part of this project would include the tasks for removal and disposal of materials.

Submitted By: [Kathleen Englert](#) (402-995-2038). Submitted On: Sep 18 2012

1-0 Evaluation Concurred

Statement regarding Phase I ESA addressing disposal of materials has been removed.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 25 2012

1-1 Backcheck Recommendation Close Comment

Response adequate.

Submitted By: [Kathleen Englert](#) (402-995-2038) Submitted On: Feb 27 2013

Current Comment Status: **Comment Closed**

4831112	Construction Management	Engineering Appendix	E.4	n/a	n/a
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Comment Classification: N/A
(Document Reference: Appendix E)

This section is inconsistent with the design information in Appendix D.

Submitted By: [Kathleen Englert](#) (402-995-2038). Submitted On: Sep 18 2012

1-0 Evaluation For Information Only

Geotech determination of max EMB envelope not completed in time for inclusion in 35% plans. Max EMB envelope developed for Reach 1 used to provide ballpark EMB size necessary for earthwork balance. Further geotech changes since 35%(including viewshed analysis, revised stratigraphy, and a new low flow erosion design case) will result in a new max EMB envelope. All EMB layouts for the 65% submission will fall within Geotech's new max EMB envelope.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 18 2012

1-1 Backcheck Recommendation Close Comment

Response adequate.

Submitted By: [Kathleen Englert](#) (402-995-2038) Submitted On: Feb 27 2013

Current Comment Status: **Comment Closed**

4831115	Construction Management	Engineering Appendix	E.6.1	n/a	n/a
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Comment Classification: N/A
(Document Reference: Appendix E)

Clarify if the design criteria is for access roads, maintenance roads, access ramps or all three.

Submitted By: [Kathleen Englert](#) (402-995-2038). Submitted On: Sep 18 2012

1-0 Evaluation For Information Only

The criteria is the same for access ramps and maintenance roads. Each EMB will have a maintenance road on top. Any access ramps/roads providing additional connections to the maintenance road (at the request of the local sponsor) would utilize the same design as the maintenance road.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 19 2012

1-1 Backcheck Recommendation Close Comment

Response adequate.

Submitted By: [Kathleen Englert](#) (402-995-2038) Submitted On: Feb 27 2013

Current Comment Status: **Comment Closed**

4831116	Construction Management	Engineering Appendix	E.7.1	n/a	n/a
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Comment Classification: N/A
(Document Reference: Appendix E)

Impact to utilities should be determined prior to final design.

Submitted By: [Kathleen Englert](#) (402-995-2038). Submitted On: Sep 18 2012

1-0 Evaluation For Information Only

No impacts to utilities have been identified at the 35% design level. The WAPA overhead line was listed as being in close proximity to the 35% design footprint. As the design progresses, any changes to the design footprint that would impact the overhead line will be determined prior to final design.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 20 2012

1-1 Backcheck Recommendation Close Comment

Response adequate.

Submitted By: [Kathleen Englert](#) (402-995-2038) Submitted On: Feb 27 2013

Current Comment Status: **Comment Closed**

4831117	Construction Management	Engineering Appendix	E.8	n/a	n/a
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Comment Classification: N/A
(Document Reference: Appendix E)

Clarify reference to Paragraph 7.3.2. These zones should be indicated on the contract documents to depict where vegetation should be removed to meet the VFZs and to indicate where seeding may be necessary for VMZs.

Submitted By: [Kathleen Englert](#) (402-995-2038). Submitted On: Sep 18 2012

1-0 Evaluation For Information Only

Reference is to paragraph 7.3.2 in the main body of the report. The presentation of VFZ/VMZ lines for the Fargo contracts is currently being considered by MVP: either show on drawing or provide graphic in specs. Will follow suit once decision is reached.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 20 2012

1-1 Backcheck Recommendation Close Comment

Response adequate.

Submitted By: [Kathleen Engler](#) (402-995-2038) Submitted On: Feb 27 2013

Current Comment Status: **Comment Closed**

4831119 Construction Management Engineering Appendix D.10 and D.8 n/a n/a

Comment Classification: N/A
(Document Reference: Appendix D)

Incorrect references to Reach 1. Header for this reach references Reach 1 rather than Reach 4.

Submitted By: [Kathleen Engler](#) (402-995-2038). Submitted On: Sep 18 2012

1-0 Evaluation Concurred

The incorrect references have been changed and will be reflected in the 65% submittal.

Submitted By: [Nathan Rose](#) (314-331-8443) Submitted On: Oct 24 2012

1-1 Backcheck Recommendation Close Comment

Response adequate.

Submitted By: [Kathleen Engler](#) (402-995-2038) Submitted On: Feb 27 2013

Current Comment Status: **Comment Closed**

4832267 Hydraulics Other n/a p. 3, Sec. 2.1, 7th paragraph n/a

Comment Classification: **Public (Public)**
(Document Reference: Main report)

Coordinating Discipline(s): Project Management

Please clarify the 200,000 ac-ft of storage - does this include or not include Storage Area 1? This has not been reported consistently.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

Will revise and/or consistently report this in DTR submittal. Anticipate simplifying descriptions in DTR submittal for Reach 4 (incl. Rush River) by referencing the overall project description in Reach 1.

Submitted By: [Mark Rosenfeldt](#) (314/331-8441) Submitted On: Nov 14 2012

1-1 Backcheck Recommendation Open Comment

I'll look forward to this in future submittals.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Nov 27 2012

1-2 Backcheck Recommendation Close Comment

okay, thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Mar 28 2013

Current Comment Status: **Comment Closed**

4832268 Hydraulics Other n/a p. 4, Sec. 2.1, last paragraph n/a

Comment Classification: **Public (Public)**
(Document Reference: Main report)

Coordinating Discipline(s): Project Management

Please clarify which distance is to be followed - 100 meters (328 feet) or 300 feet?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

Changed to: In accordance with the cultural resources programmatic agreement, construction in select reaches of the project will need to be monitored by a qualified professional archeologist. Areas requiring construction excavation monitoring include river floodplains, terraces and oxbows, which are locations with high potential to contain buried archaeological sites. Construction monitoring is therefore required within 100 meters (328 feet) of the bank of the rivers affected by the diversion channel, including at the Red River outlet area, the Lower Rush River inlet area, the Rush River inlet area, the Maple River structure area, the Sheyenne River structure area, the Wild Rice River structure area, and the Red River inlet structure area, as well as where the diversion channel crosses through the Drain 14 oxbow area south of the Maple River.

Submitted By: [Ken Cook](#) (314-331-8498) Submitted On: Nov 01 2012

1-1 Backcheck Recommendation Close Comment

Thanks!

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Nov 01 2012

Current Comment Status: **Comment Closed**

4832270 Hydraulics Other n/a p. 8, Sec. 2.2.5, last sentence n/a

Comment Classification: **Public (Public)**
(Document Reference: Main report)

Coordinating Discipline(s): Project Management

In Sect. 2.1, we state that monitoring is required near all rivers, while here we state just the Red River - please clarify.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

This statement is targeted specifically for only Reach 4.

Submitted By: [Ken Cook](#) (314-331-8498) Submitted On: Nov 01 2012

1-1 Backcheck Recommendation Open Comment

Please clarify - in no place along Reach 4 do we approach within 100 meters of Red River, but we do come within 100 meters of Rush River. Should the text be changed to Rush River, rather than Red River?

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Nov 01 2012

2-0 Evaluation Concurred

Yes, sorry, got my reach location mixed-up again. Will change text.

Submitted By: [Ken Cook](#) (314-331-8498) Submitted On: Nov 09 2012

2-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Nov 27 2012

Current Comment Status: **Comment Closed**

4832273 Hydraulics Other n/a p. 10, Sec. 4.2 n/a

Comment Classification: **Public (Public)**
(Document Reference: Main report)

Coordinating Discipline(s): Project Management

In the Reach 4 report, we state that the bottom width will be different upstream and downstream of Rush River - please coordinate between teams to iron out this inconsistency.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

Revised Sep 19 2012.

1-0 Evaluation Concurred

There is a planned cross-section change at the Rush River. We are not aware of any proposed changes to this plan. Will revise and/or consistently report in DTR submittal, as Reach 4 and Rush River PER contributions are consolidated.

Submitted By: [Mark Rosenfeld](#) (314/331-8441) Submitted On: Nov 14 2012

1-1 Backcheck Recommendation Close Comment

My mistake, this comment did not apply to this reach.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Nov 27 2012

Current Comment Status: **Comment Closed**

4832277	Hydraulics	Other	n/a	p. 17, Sec. 12.2	n/a
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Comment Classification: **Public (Public)**

(Document Reference: [Main report](#))

Coordinating Discipline(s): Project Management

Please clarify how we intend to verify for the resource agencies that we have a diverse range of hydraulic conditions, unless we do some type of hydraulic modeling (probably 2-D)?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

Discussion of velocities will be included in the hydraulic appendix of later versions of this report. One dimensional hydraulic modeling and results of previous research efforts and effectiveness of existing rock ramp fish passages in the Red River basin will be used in the discussion.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Oct 29 2012

1-1 Backcheck Recommendation Open Comment

Thanks, I look forward to reading this in the next submittal.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

2-0 Evaluation Concurred

Information related to this comment can be found in Section C.5.2.7 of Reach 4 Appendix C.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Feb 22 2013

2-1 Backcheck Recommendation Close Comment

Thank you for the discussion

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Mar 28 2013

Current Comment Status: **Comment Closed**

4832279	Hydraulics	Other	n/a	p. 18, Sec. 12.2, last paragraph	n/a
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Comment Classification: **Public (Public)**

(Document Reference: [Main report](#))

Coordinating Discipline(s): Project Management

How well does the proposed rock ramp "match" the morphological character of the natural river habitat? Some assessment of this should be in the report.

Same comment applies to App. K, p. K-3, Sect. K.3.1

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

Revised Sep 19 2012.

1-0 Evaluation Concurred

Will revisit the language of the document for next review. Some general feedback from the PDT regarding your question: 1. Rock riffles are not common on the Red, but there are some reaches of rock substrate in parts of the upper tributary areas. 2. Rock riffles are probably the best option available and the small drops that they create aren't out of line with the head differential caused by beaver dams, which aren't uncommon in the Red River basin. The key is that we keep the drops to a reasonable height and give fish the opportunity to rest between each drop. These riffles aren't what we would find in the Red River mainstem, but may be what we might find higher up in the watershed. And it's about the best we can do to get fish up and over. Anything more gradual in terms of slope and our costs would really go through the roof.

Submitted By: [Ken Cook](#) (314-331-8498) Submitted On: Nov 09 2012

1-1 Backcheck Recommendation Open Comment

I look forward to this in the next submittal, thanks for the clarification here.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Nov 27 2012

2-0 Evaluation Concurred

check

Submitted By: [Ken Cook](#) (314-331-8498) Submitted On: Mar 07 2013

2-1 Backcheck Recommendation Close Comment

Okay, thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Mar 28 2013

Current Comment Status: **Comment Closed**

4832282	Hydraulics	Other	n/a	n/a	n/a
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Comment Classification: **Public (Public)**

(Document Reference: [App. C and D](#))

Coordinating Discipline(s): Project Management

Editorial - There are several locations in both appendices where "ram" should be changed to "ramp" and at least one instance of "rap" that should be changed to "ramp".

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

Revised Sep 19 2012.

1-0 Evaluation Concurred

This will be corrected in the next version of the report.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Oct 25 2012

1-1 Backcheck Recommendation Close Comment

Thanks!

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

Current Comment Status: **Comment Closed**

4832285	Hydraulics	Other	n/a	p. C-2, Section C.3.1.1	n/a
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Comment Classification: **Public (Public)**

(Document Reference: [App. C](#))

Coordinating Discipline(s): Hydraulics

How do we know if we are meeting these velocities, particularly the lateral variation within the pools and riffles?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

Additional discussion related to velocity will be included in later versions of this report. The discussion will utilize the flow distribution option in steady HEC-RAS to show passage opportunity for various conditions in the fish passage.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Oct 29 2012

1-1 Backcheck Recommendation Open Comment

I look forward to the presentation of those results.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

2-0 Evaluation Concurred

Information related to this comment can be found in Section C.5.2.7 of Reach 4 Appendix C.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Feb 22 2013

2-1 Backcheck Recommendation Open Comment

35% submittal stated that critical design velocity for riffles was 6.5 ft/s and resting pool was 2.5 ft/s. In 65% submittal the resting pool velocity is exceeded at 2500 cfs, while the riffle velocity (center) is exceeded at all discharges above 1000 cfs. Is this acceptable to fisheries people?

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Mar 28 2013

3-0 Evaluation For Information Only

Please refer to the paragraph following the velocity summary figure. Note that fish will have opportunity to pass through the fringe riffle zone at all discharges. It is acceptable that there may not be 100% passage opportunity.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Aug 06 2013

3-1 Backcheck Recommendation Close Comment

Thank for the clarification, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 26 2013

Current Comment Status: **Comment Closed**

4832288	Hydraulics	Other	n/a	p. C-3, Table C-1	n/a
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Comment Classification: **Public (Public)**

(Document Reference: App. C)

Coordinating Discipline(s): Hydraulics

Please clarify - is there only one tailwater elevation per discharge being considered in the design of this, or will a range of tailwater be evaluated?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

Additional discussion will be added to the report. The design was checked with normal depth in the diversion using only the Rush River flows. This condition represents the worst case scenario which results in the highest velocities along the fish passage.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Oct 29 2012

1-1 Backcheck Recommendation Open Comment

Even though the low tailwater may represent the worst case scenario for velocities, a high tailwater condition should be evaluated for proper energy dissipation and flow patterns.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

2-0 Evaluation Concurred

Reach 4 Appendix C Section C.5.2.1 includes discussion of the tailwater used for design. Additional information related to how the tailwater effects velocities in the structure is included in Section C.5.2.6.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Feb 22 2013

2-1 Backcheck Recommendation Close Comment

Okay, thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Mar 28 2013

Current Comment Status: **Comment Closed**

4832290	Hydraulics	Other	n/a	p. D-3, Sect. D.4.1.1	n/a
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Comment Classification: **Public (Public)**

(Document Reference: App. D)

Coordinating Discipline(s): Geotechnical

Please clarify in which direction the slope increases and at what stations is this increase occurring?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

The paragraph has been changed to "The Rush River will empty into the FMM Diversion Channel via a rock ramp throughout which the longitudinal slope of the channel increases from the invert of the lowflow channel at Sta 0+00 to the invert of the Rush River at Sta 22+73. As the channel invert descends geotechnical constraints require that the main channel side slopes become flatter in order to maintain global stability through the rock ramp." The wording of this paragraph may change as the design progresses but the desired info will still be presented.

Submitted By: [Nathan Rose](#) (314-331-8443) Submitted On: Oct 24 2012

1-1 Backcheck Recommendation Close Comment

Okay, thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

Current Comment Status: **Comment Closed**

4832379	Hydraulics	Other	n/a	p. D-4, Table D-2	n/a
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Comment Classification: **Public (Public)**

(Document Reference: App. D)

Coordinating Discipline(s): Geotechnical

Text in table indicates some analyses still in progress - do we have a date for completion?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation For Information Only

The geotechnical design is an iterative and ongoing process that requires adjustments to the models as design progresses. As such no analyses is ever complete until the DDR is completed. In addition several factors outside the designer control have cause significant geotechnical rework and the project schedule is currently being adjusted to reflect these changes. With that being said, analyses will be in a "working" state of completion for the 65% submittal.

Submitted By: [Nathan Rose](#) (314-331-8443) Submitted On: Oct 24 2012

1-1 Backcheck Recommendation Close Comment

Thanks!

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

Current Comment Status: **Comment Closed**

4832382	Hydraulics	Other	n/a	p. D-6, Sect. D.5, 2nd sentence	n/a
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Comment Classification: **Public (Public)**

(Document Reference: App. D)

Coordinating Discipline(s): Geotechnical

Suggest rewording of sentence - we cannot state that the EMBs will act in any fashion as levees, unless they are specifically designed as levees. Otherwise we would be showing a higher level of protection that we are stating and giving the impression to residents that the EMBs can be relied upon for flood protection.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

The paragraph will be changed to the wording below. This is consistent with the Reach 1 DDR. "The EMBs will be constructed on both sides of the diversion, distributing the excavated material equally between the two sides. Discussions have been ongoing with the non?Federal Sponsor in regards to the ultimate use of the EMBs. The current concept proposed by the non?Federal Sponsor is that on the right bank, the EMBs will incorporate recreational features including an undulating landscape. On the left bank, the non?Federal Sponsor has requested that the footprint be minimized ? grading of the left bank EMB for future agricultural use is not required. The typical configurations for the proposed EMBs are indicated in the figures below. Of note is the embedded levee within the right bank EMB. The right bank levee is needed to provide risk reduction benefits for the FMM area. There is no need for an embedded levee in the left bank EMB. Additional details concerning the levees and EMBs can be found in "MFR7001, Levees and Excavated Material Berms along the Diversion Channel (Reference D ? 2)."

Submitted By: [Nathan Rose](#) (314-331-8443) Submitted On: Oct 24 2012

1-1 Backcheck Recommendation Close Comment

Thanks!

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

Current Comment Status: **Comment Closed**

4832384	Hydraulics	Other	n/a	p. D-7, Sect. D.8.1.1	n/a
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Comment Classification: **Public (Public)**

(Document Reference: App. D)

Coordinating Discipline(s): Geotechnical

The excavation for the FMM diversion will be somewhat deeper than for either case cited in text here - can we really rely upon these two examples of what we would expect here on this project? Please address in more detail.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Check and Resolve

This section is consistent with the info contained in the Reach 1 PER and DDR submittals. We will consult with MVP and keep this section consistent with the other Reaches in the FMM project.

Submitted By: [Nathan Rose](#) (314-331-8443) Submitted On: Oct 24 2012

1-1 Backcheck Recommendation Close Comment

Thanks for checking with MVP, concur with your consultation with MVP

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 26 2013

Current Comment Status: **Comment Closed**

4832406	Hydraulics	Other	n/a	p. E-1, Sec. E.3.1, 2nd sentence	n/a
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Comment Classification: **Public (Public)**

(Document Reference: App. E)

Coordinating Discipline(s): Civil

No mention is made of the low flow channel between Station 448+00 and 449+00. Please address how the transition in size is being designed, and why the transition does not take place at the junction with Rush River.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

The profile for the low-flow channel was a government furnished (MVP) item. The furnished profile had a grade change occurring between 448+00 and 449+00, so the change in low flow width was also placed between these stations. In discussions between Don Duncan and MVP, the profile grade change and low flow width transition will be relocated to occur at the junction.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 19 2012

1-1 Backcheck Recommendation Open Comment

Okay, I look forward to seeing this change in the next submittal.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

1-2 Backcheck Recommendation Close Comment

Discussion of transition added to App. E, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 29 2013

Current Comment Status: **Comment Closed**

4832411	Hydraulics	Other	n/a	p. K-2, Sect. K.2.4	n/a
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Comment Classification: **Public (Public)**

(Document Reference: App. K)

Coordinating Discipline(s): Environmental

Please clarify how grade control structures will facilitate development of wetland conditions, as text in other appendices indicate that the grade control structures will be at-grade and will not impound any water.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

Grade control, except potentially at bridge crossings and inlets is no longer part of the plan for the low-flow channel.

Submitted By: [Ken Cook](#) (314-331-8498) Submitted On: Nov 15 2012

1-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Nov 27 2012

Current Comment Status: **Comment Closed**

4832412	Hydraulics	Other	n/a	p. K-1, Sect. K.1.3, K.1.4	n/a
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Comment Classification: **Public (Public)**

(Document Reference: App. K)

Coordinating Discipline(s): Environmental

Please clarify if the acreages of forested land and wetlands are for the entire project or for this reach. If for the entire reach, please quantify what portion falls within this reach.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

The planting plan is currently being updated and a new plan will be available for the next review.

Submitted By: [Ken Cook](#) (314-331-8498) Submitted On: Nov 01 2012

1-1 Backcheck Recommendation Open Comment

Okay, will look for the updated plan in the next submittal.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Nov 01 2012

2-0 Evaluation Concurred

check

Submitted By: [Ken Cook](#) (314-331-8498) Submitted On: Mar 07 2013

2-1 Backcheck Recommendation Open Comment

It's still unclear if the numbers presented refer to the entire project, or this portion of the project. It would appear to be for the entire project, so what portion resides within this reach??

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Mar 28 2013

3-0 Evaluation Concurred

My mistake again. Response from MVP: The numbers are for the entire project. We did not break it down by reaches, ...we are mitigating for the impacts as a whole not on a reach by reach basis, that is just extra work that I don't feel is value added especially with the reaches changing periodically.

Submitted By: [Ken Cook](#) (314-331-8498) Submitted On: Apr 22 2013

3-1 Backcheck Recommendation Close Comment

Thank you for the response, I do not disagree with your comment about value-added.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Apr 22 2013

Current Comment Status: **Comment Closed**

4832419	Hydraulics	Other	n/a	P. K2-1, Sect. K2.1, 2nd sentence	n/a
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Comment Classification: **Public (Public)**

(Document Reference: [App. K-2](#))

Coordinating Discipline(s): Environmental

Based on our May site visit, I'm not sure that either Rush or Lower Rush would qualify as a "natural" channel - please reconsider selection of words.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

Agree.

Submitted By: [Ken Cook](#) (314-331-8498) Submitted On: Nov 01 2012

1-1 Backcheck Recommendation Open Comment

Please clarify - will text be changed or what will be done in concurrence with comment?

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Nov 01 2012

2-0 Evaluation Concurred

How about change natural channel to "modified ditch"

Submitted By: [Ken Cook](#) (314-331-8498) Submitted On: Nov 09 2012

2-1 Backcheck Recommendation Close Comment

I'm fine with that change, thanks!

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Nov 27 2012

Current Comment Status: **Comment Closed**

4832424	Hydraulics	Other	n/a	Table K2-1	n/a
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Comment Classification: **Public (Public)**

(Document Reference: [App. K-2](#))

Coordinating Discipline(s): Environmental

From the table, it would appear there are two species of fish that were found in Rush River but not in the Red River. Can you address briefly where those species came from, and if they aren't found in the Red, do we need to worry about passage for these two species?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

To our knowledge, these two species likely do not commonly immigrate or emigrate to and from the Red River mainstem. Ideally, though, the target of fish passage would be to accommodate all species.

Submitted By: [Ken Cook](#) (314-331-8498) Submitted On: Nov 01 2012

1-1 Backcheck Recommendation Close Comment

Okay, thank you for the clarification.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Nov 01 2012

Current Comment Status: **Comment Closed**

4832429	Hydraulics	Other	n/a	p. K2-8, 6th paragraph	n/a
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Comment Classification: **Public (Public)**

(Document Reference: [App. K-2](#))

Coordinating Discipline(s): Environmental

Please clarify why lake sturgeon are a key species of concern when they are shown as extirpated in Table K2-1?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

Because of its conservation status and its potential to become re-established in the Red River, see: <http://www.fws.gov/midwest/NEPA/RedRiverNEPA/Documents/AppendixG.pdf>

Submitted By: [Ken Cook](#) (314-331-8498) Submitted On: Nov 01 2012

1-1 Backcheck Recommendation Close Comment

Okay, thank you, I was not aware of this effort, very good!

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Nov 01 2012

Current Comment Status: **Comment Closed**

4832434	Hydraulics	Other	n/a	p. K2-10, last paragraph	n/a
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Comment Classification: **Public (Public)**

(Document Reference: [App. K-2](#))

Coordinating Discipline(s): Environmental

Please clarify terminology - what is a viscous sublayer? The viscosity of water should not change within the water column, so what exactly is this sublayer?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

"The viscous sublayer is a thin layer of flow next to the boundary in which viscous shear stress predominates over turbulent shear stress. Shear in the viscous sublayer, as characterized by the rate of change of average fluid velocity as one moves away from the wall, is very high, because fast-moving fluid is mixed right down to the top of the viscous sublayer by turbulent diffusion." Here's the link: <http://ocw.mit.edu/courses/earth-atmospheric-and-planetary-sciences/12-090-special-topics-an-introduction-to-fluid-motions-sediment-transport-and-current-generated-sedimentary-structures-fall-2006/lecture-notes/ch4.pdf> The point of the statement made in the last paragraph of K2-10 is that the riffles create a complex flow field that includes areas where the velocity is much lower than average velocity of the cross-section. These low velocity areas improve the chances that fish will be able to make their way through the water surface drop.

Submitted By: [Ken Cook](#) (314-331-8498) Submitted On: Nov 01 2012

1-1 Backcheck Recommendation Close Comment

So essentially the zone of laminar flow, correct?

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Nov 01 2012

Current Comment Status: **Comment Closed**

4832448	Hydraulics	Other	n/a	p. K2-14, Sect. K2.3.5	n/a
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Comment Classification: **Public (Public)**

(Document Reference: [App. K-2](#))

Coordinating Discipline(s): Environmental

Please clarify - is this information that is needed for design, and do we have any of this information already? If not, how can we proceed with a design beyond a 35% submittal?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

Some is available but not yet included (time constraints, scheduling) in this review such as times for fish passage and burst and swim speeds, others are being developed such as the fishway geometry, pool lengths, boulder placement and orientation, fishway width, bedload transport...

Submitted By: [Ken Cook](#) (314-331-8498) Submitted On: Nov 01 2012

1-1 Backcheck Recommendation Close Comment

Thanks for the clarification

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Nov 01 2012

Current Comment Status: **Comment Closed**

4832449	Hydraulics	Other	n/a	n/a	n/a
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Comment Classification: **Public (Public)**
(Document Reference: 35% ATR Submittal)

Coordinating Discipline(s): Civil

There is no sheet index for the drawing set, nor is there a vicinity/site plan, please include for future submittals.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

Sheet index will be included in the 65% submission. The Rush structure will be Volume 2 of a 3 volume set for Reach 4. Following MVP's drawing standards for volumes, there will be a vicinity/location map at the beginning of the overall Reach 4 drawing set, but not in each specific volume. However, for the 65% submission a general plan will be provided in each volume showing its relation to the overall reach.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 19 2012

1-1 Backcheck Recommendation Open Comment

Okay, I will look for these in the next submittal.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

1-2 Backcheck Recommendation Close Comment

THanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

4832452	Hydraulics	Other	n/a	CS151	n/a
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Comment Classification: **Public (Public)**
(Document Reference: 35% ATR Submittal)

Coordinating Discipline(s): Civil

Text near STA 447+50 indicates a Note 4, but there is no Note 4 on this sheet, please correct.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Non-concurred

Text near Sta 447+50 indicates 'See Note 1', not Note 4. Note 1 indicates need for low flow channel width transition. As indicated in other comment response, low flow channel width transition will be relocated to the junction.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 19 2012

1-1 Backcheck Recommendation Close Comment

My mistake, when I printed this sheet out, it looked like a 4 instead of a 1 with the half-tone contour and the grade break line right under the '1'. Might consider repositioning this note.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

Current Comment Status: **Comment Closed**

4832453	Hydraulics	Other	n/a	CS151	n/a
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Comment Classification: **Public (Public)**
(Document Reference: 35% ATR Submittal)

Coordinating Discipline(s): Civil

How is the horizontal curve to be laid out for the diversion channel? Please include the necessary data to specify how this bend is to be laid out, to make sure we match alignment with reaches upstream and downstream precisely.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

All necessary horizontal control line data will be included in the 65% submission in a tabular format on a CS600 series drawing.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 19 2012

1-1 Backcheck Recommendation Open Comment

I will look for this in the next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

1-2 Backcheck Recommendation Close Comment

Requested horizontal curve data has been included in FTR package, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 29 2013

Current Comment Status: **Comment Closed**

4832457	Hydraulics	Other	n/a	CS151	n/a
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Comment Classification: **Public (Public)**
(Document Reference: 35% ATR Submittal)

Coordinating Discipline(s): Civil

How are the horizontal curves for the low-flow channel to be laid out, especially at the upper and lower ends of this reach, so that we tie in precisely with the upstream and downstream reaches?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation For Information Only

MVP specified a 20 degree start angle between reaches to ensure consistency. Separate 50 scale detail plan views as well as tabular horizontal control data for the low-flow channel will included in the 65% submission.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 19 2012

1-1 Backcheck Recommendation Open Comment

I will look for this info in the next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

1-2 Backcheck Recommendation Close Comment

Sheet number has changed, but comment has been addressed, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 29 2013

Current Comment Status: **Comment Closed**

4832461	Hydraulics	Other	n/a	CS151	n/a
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Comment Classification: **Public (Public)**
(Document Reference: 35% ATR Submittal)
Coordinating Discipline(s): Civil

The grading at the confluence of the diversion and Rush River appears to be not shown correctly, it looks like the Rush River template has been extended too far downstream on the left side as to where it would intersect grade of the diversion channel.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Non-concurred

Grading at the confluence is shown correctly. The extended left side is the 1V:7H slope of the ramp daylighting on the diversion channel bottom. The ramp comes in at the low-flow channel invert below the diversion channel bottom. This geometry will change some as a horizontal curve will be added at the junction as recommended in a separate ATR comment.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 20 2012

1-1 Backcheck Recommendation Open Comment

It appears that the left sideslope of the Rush River inlet extends to mid-channel of the low-flow channel. See attached.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012 (Attachment: [detail_CS151.jpg](#))

2-0 Evaluation For Information Only

The area past the red line that you identified shows areas of warping where the flow lines of the Main Channel and Rush Channel come together. However, confluence geometries have been completely reworked for the 65% submittal to incorporate a horizontal curve into the transition.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Feb 12 2013

2-1 Backcheck Recommendation Close Comment

Thanks!

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Feb 12 2013

Current Comment Status: **Comment Closed**

4832463	Hydraulics	Other	n/a	CS151	n/a
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Comment Classification: **Public (Public)**
(Document Reference: 35% ATR Submittal)
Coordinating Discipline(s): Civil

How are the embankments on either side of Rush River at STA 22+73 supposed to tie into the existing spoil banks? Need more detail for this area.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation For Information Only

The embankments on each side of the realignment have the same typical geometry as the existing embankments along the Rush River. Areas where new embankments meet existing embankments will be stripped to produce a good bonding surface. Any further geotech developed details at the tie points will be included in the 65% submission.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 20 2012

1-1 Backcheck Recommendation Open Comment

I will look forward to seeing this, thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

1-2 Backcheck Recommendation Close Comment

Note has been added to drawing to indicate that the project grading is to transition to existing grading at this location, concur with using note on drawing

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 29 2013

Current Comment Status: **Comment Closed**

4832466	Hydraulics	Other	n/a	CS151	n/a
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Comment Classification: **Public (Public)**
(Document Reference: 35% ATR Submittal)
Coordinating Discipline(s): Civil

Need a sheet showing the proposed demo area of CR 32 and 168th Ave by others for the areas that overlap this part of the project.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

The local sponsor is developing the plans for CR 32 and 168th Ave. Details not available from the local sponsor for the 35% submission. Demo sheets will be included in the 65% submission provided the information is available in time from the local sponsor.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 19 2012

1-1 Backcheck Recommendation Open Comment

Okay, will look for this in next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

1-2 Backcheck Recommendation Close Comment

Thanks, info included, needs a little polishing past the 65% stage

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Jun 12 2013

Current Comment Status: **Comment Closed**

4832471	Hydraulics	Other	n/a	CS151	n/a
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Comment Classification: **Public (Public)**
(Document Reference: 35% ATR Submittal)
Coordinating Discipline(s): Civil

I would recommend the transition from 52' to 46' bottom width take place at the junction with Rush River; just leave the right bank of the low-flow straight and add the extra 6 feet to the left side of the low-flow channel - this would follow standard hydraulic design for junctions (albeit usually for more rapid flow situations). Also would recommend you look at introducing a horizontal curve into the last few hundred feet of the Rush River so as to provide a "better" transition of flow at this junction.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

Per discussion with Don Duncan, a horizontal curve will be added to transition the ramp into the diversion low flow channel. Also, as discussed in a separate comment response, the low flow channel width transition will be relocated to the junction. The suggestion on adding the extra 6' to the left side will be considered when the junction area is remodeled.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 19 2012

1-1 Backcheck Recommendation Open Comment

Okay, will look for the changes in next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

1-2 Backcheck Recommendation Close Comment

Concur with FTR grading plan that incorporates the above comments.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 29 2013

Current Comment Status: **Comment Closed**

4832476	Hydraulics	Other	n/a	CS251	n/a
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Comment Classification: **Public (Public)**
(Document Reference: 35% ATR Submittal)
Coordinating Discipline(s): Civil

The design water surface profile should be included in the profile views.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Non-concurred

Design water surface elevation should be shown and discussed in the H&H section of the Design Documentation Report (DDR). The drawings are construction documents and the contractor wouldn't need to know the design water surface elevation for construction purposes. All design basis should be documented in the DDR.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 22 2012

1-1 Backcheck Recommendation Open Comment

I agree with you, the design water surface profiles should be shown in the H&H DDR (per ER 1110-2-1150). I should have changed the Sheet and Document reference in making the comment.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

1-2 Backcheck Recommendation Open Comment

Comment has not been addressed in H&H appendix

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Mar 28 2013

2-0 Evaluation Concurred

Design profiles are presented in the FTR (95%) version of the H&H appendix.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Aug 06 2013

2-1 Backcheck Recommendation Close Comment

WSP for diversion channel have been added to H&H appendix, per request, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 29 2013

Current Comment Status: **Comment Closed**

4832478	Hydraulics	Other	n/a	CS251	n/a
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Comment Classification: **Public (Public)**
(Document Reference: 35% ATR Submittal)
Coordinating Discipline(s): Civil

The slope of the low-flow channel invert increases by more than a factor of 20 from STA 447+00 to 448+00. Is this what you really intend (>22 ft per mile is fairly steep)? If this is the grade you intend, will there be a grade control structure at this location?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

The profile for the low-flow channel was a government furnished (MVP) item. In discussions between Don Duncan and MVP, the profile grade change will be moved and made more gradual by having it occur over the riprap armored area at the ramp junction. A grade control structure will also be incorporated into the armored area.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 20 2012

1-1 Backcheck Recommendation Open Comment

Okay, will look for the details in the next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

1-2 Backcheck Recommendation Close Comment

Slope reduced to ~11 ft/mile, there is a riprap toe detail on Sheet CS501 that appears to be substitute for grade control, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 29 2013

Current Comment Status: **Comment Closed**

4832480	Hydraulics	Other	n/a	CS251	n/a
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Comment Classification: **Public (Public)**
(Document Reference: 35% ATR Submittal)
Coordinating Discipline(s): Civil

Slopes shown for the diversion channel profile need a little more clarity. For instance, for the main channel invert, there is a note indicating slope of 0.00020 between STA 447+00 and 448+00, but what is the slope upstream and downstream of this short reach? Likewise, what is the slope of the top of embedded levee? Also, there is a slope=0.00017 indicated near the top of channel profile at channel sta. 428+00, but it is unclear if this is to be applied to the top of channel profile slope or the embedded levee profile slope or neither?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

I was attempting to label the profiles in a manner consistent with Reach 1's 65% DQC plans. Further refinement of Reach 1's plans have addressed the issues of clarity that you point out and will be reflected in the 65% submission.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 20 2012

1-1 Backcheck Recommendation Open Comment

Thanks, I will look for the changes in the next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

1-2 Backcheck Recommendation Close Comment

Changes appear satisfactory, comment addressed

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 29 2013

Current Comment Status: **Comment Closed**

4832483	Hydraulics	Other	n/a	CS351 through CS367	n/a
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Comment Classification: **Public (Public)**
(Document Reference: 35% ATR Submittal)
Coordinating Discipline(s): Civil

These sections need more annotation, as only a few are annotated at all with dimensions.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

For Reach 1's 35% submittal, only typical sections were provided with no cross sections. I dimensioned a few typical sections as well as provided cross sections to present a more complete picture of the project. Since the design is still developing, it didn't make sense to spend a lot of time annotating all of the cross sections at the 35% level. For the 65% submission, typical sections will be placed on separate sheets and cross sections will have slopes annotated.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 20 2012

1-1 Backcheck Recommendation Close Comment

Okay

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

Current Comment Status: **Comment Closed**

4832486	Hydraulics	Other	n/a	CS451	n/a
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Comment Classification: **Public (Public)**
(Document Reference: 35% ATR Submittal)
Coordinating Discipline(s): Hydraulics

Note and symbology indicating riprap armoring near the confluence of diversion channel and Rush River. However, the hydraulic appendix does not mention anything as to how the extent of this armoring has been determined, or how it was sized (if it has been sized), etc. Please address in App. C.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

At the time of this submittal, the riprap had not been designed. The note and symbol were added to the drawings to indicate that the design team was aware that there would be a requirement for riprap. The design of riprap will be fully documented in appendix C of later versions of the report.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Oct 25 2012

1-1 Backcheck Recommendation Open Comment

Okay, will look for this in the next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

2-0 Evaluation Concurred

Information related to this comment can be found in Section C.5.2.6 of Reach 4 Appendix C.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Feb 22 2013

2-1 Backcheck Recommendation Close Comment

Thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Mar 28 2013

Current Comment Status: **Comment Closed**

4832488	Hydraulics	Other	n/a	CS451	n/a
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Comment Classification: **Public (Public)**
(Document Reference: 35% ATR Submittal)
Coordinating Discipline(s): Hydraulics

There are two drainage culverts indicated upstream of the Rish River rock ramp, we need to have sheets showing more detail of these features.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

The local sponsor is developing the local drainage plan for areas outside the EMBs. Details on culverts not available from the local sponsor for the 35% submission. Culvert detail sheets will be included in the 65% submission provided the information is available in time from the local sponsor.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 20 2012

1-1 Backcheck Recommendation Open Comment

Okay, will look for these in the next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

1-2 Backcheck Recommendation Close Comment

More culvert details included in FTR, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 29 2013

Current Comment Status: **Comment Closed**

4832490	Hydraulics	Other	n/a	CS451	n/a
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Comment Classification: **Public (Public)**
(Document Reference: 35% ATR Submittal)
Coordinating Discipline(s): Hydraulics

We need several detail sheets for the rock ramp shown - profiles with materials, sections with materials, etc.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

Details for rock ramp sections and materials not available from H&H/Geotech for the 35% submission. Additional detail sheets for the rock ramp will be included in the 65% submission.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 20 2012

1-1 Backcheck Recommendation Open Comment

Thanks, I will look for this in the next submittal.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

1-2 Backcheck Recommendation Close Comment

More detail is included in FTR package, concur.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 29 2013

Current Comment Status: **Comment Closed**

4832492	Hydraulics	Other	n/a	CS451	n/a
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Comment Classification: **Public (Public)**
(Document Reference: 35% ATR Submittal)
Coordinating Discipline(s): Geotechnical

There is no discussion in App. D of how the tiebacks along Rush River are to be designed (compaction, lifts, material, transition to existing spoil banks, etc.). Please discuss in App. D.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation Non-concurred

Where the EMBs tie into the existing spoil piles, our design will conform to EMB requirements. The tiebacks will be designed constructed using the methodology laid out for the EMBs in MFR-001. There are not any tie-in specific design elements at this time. Wording will be added to clarify this.

Submitted By: [Nathan Rose](#) (314-331-8443) Submitted On: Oct 24 2012

1-1 Backcheck Recommendation Close Comment

Okay, thanks

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

Current Comment Status: **Comment Closed**

4832494	Hydraulics	Other	n/a	CS451	n/a
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Comment Classification: **Public (Public)**
(Document Reference: 35% ATR Submittal)
Coordinating Discipline(s): Civil

Note at bottom of page indicates rock weirs upstream of rock ramp are not shown - do we know roughly where these are going to be located yet?

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation For Information Only

Per discussion with Don Duncan, number and sizing of upstream weirs necessary to match 100 year water surface elevation as nearly as possible are still being determined by H&H. Weirs will be shown in 65% submission.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 20 2012

1-1 Backcheck Recommendation **Open Comment**

Okay, thanks, will look for in the next submittal

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

1-2 Backcheck Recommendation **Close Comment**

Drawing numbers have changed, but it appears this has been addressed on other drawing, concur

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Aug 29 2013

Current Comment Status: **Comment Closed**

4832498	Hydraulics	Other	n/a	n/a	n/a
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Comment Classification: **Public (Public)**
(Document Reference: 35% ATR Submittal)

Coordinating Discipline(s): Project Management

I have much the same concern with this set of drawing being at 35% as for the Reach 4 set - there are a lot of sheets that are not yet addressed that should be in a 35% submittal. Please address how design team will meet next submittal with appropriate level of detail/inclusiveness and quality.

Submitted By: [Roger Kay](#) (402-995-2342). Submitted On: Sep 19 2012

1-0 Evaluation **Non-concurred**

MVP are the designers for Reach 1 and as such have set by example their expectations for each submittal. For comparison purposes, I have attached the Reach 1 35% drawings. With the exception of not pasting an excel index on the coversheet, we have met and in most cases far exceeded the completeness, quality and level of detail with our 35% submission. Examples include: EMBs more developed (not just offsets of meandering daylight lines), low-flow channel geometry more developed, more extensive feature labeling, profiles include main channel/top of channel/embedded levee, cross sections provided every 100' in addition to typical sections for both ramp and diversion channel, ramp detail provide considerably more geometric detail than Reach 1 rock ramp plan sheet.

Submitted By: [Michael Hanks](#) (314-331-8252) Submitted On: Oct 22 2012 (Attachment: [PER_FMM_R1_Attachment_1_Drawings.pdf](#))

1-1 Backcheck Recommendation **Close Comment**

Thanks, the Reach 1 drawings were noted as being not complete enough as well.

Submitted By: [Roger Kay](#) (402-995-2342) Submitted On: Oct 30 2012

Current Comment Status: **Comment Closed**

4832538	Project Management	Design Memorandum or Report	13.5, Table 7 ATR team	n/a	n/a
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Comment Classification: N/A
(Document Reference: [PER_FMM_Reach 4](#))

Please update Table 7 to reflect current ATR team members.

Submitted By: [Ron Beyer](#) (402-995-2339). Submitted On: Sep 19 2012

1-0 Evaluation **Concurred**

will revise Table 7 in DTR submittal

Submitted By: [Mark Roenfeldt](#) (314/331-8441) Submitted On: Nov 14 2012

1-1 Backcheck Recommendation **Close Comment**

Thank you. I look forward to seeing the next draft.

Submitted By: [Ron Beyer](#) (402-995-2339) Submitted On: Mar 25 2013

Current Comment Status: **Comment Closed**

4832589	Hydrology	Engineering Appendix	C, 3.1.3.	n/a	n/a
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Comment Classification: N/A
(Document Reference: [App C, Page C-2](#))

Coordinating Discipline(s): Hydrology

Please include information or reference source documentation of the coincident probability analysis to support a 10-year Rush River event coinciding with a 100-year Red River event.

Submitted By: [Ron Beyer](#) (402-995-2339). Submitted On: Sep 19 2012

1-0 Evaluation **Concurred**

Reference will be included.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Oct 29 2012

1-1 Backcheck Recommendation **Open Comment**

Thank you. I will close comment after revised draft is reviewed.

Submitted By: [Ron Beyer](#) (402-995-2339) Submitted On: Mar 25 2013

1-2 Backcheck Recommendation **Open Comment**

Please clarify how the coincident frequencies were determined. This was not obvious from the Houston-Moore Group memorandum.

Submitted By: [Ron Beyer](#) (402-995-2339) Submitted On: Apr 15 2013

2-0 Evaluation **Check and Resolve**

The coincidental flows were chosen based on a review of the historic gage records. Conservative coincidental conditions were used for sizing the structure. Normal depth calculations were used for the tailwater depth when sizing the riprap. This is conservative, but it is possible, especially since the downstream portion of the diversion channel will operate for many years before upstream construction is completed.

Submitted By: [Aaron Buesing](#) (651-290-5627) Submitted On: Aug 28 2013

2-1 Backcheck Recommendation **Close Comment**

Changes verified. Thank you.

Submitted By: [Ron Beyer](#) (402-995-2339) Submitted On: Sep 09 2013

Current Comment Status: **Comment Closed**

4832612	Hydrology	Engineering Appendix	Table C-1	n/a	n/a
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Comment Classification: N/A
(Document Reference: [App C, Page C-3](#))

Coordinating Discipline(s): Hydrology

Please cite source of Peak Rush discharges in Table C-1, column 2. Reviewing Feasibility discharges, the 1-day 10% flow volume is approximately 600 cfs in Appendix A-1 Hydrology of the Flood Risk Management Supplemental Draft FMM FS, dated March 2011. Table 31, page A-2-45 of Appendix A-2 of the same report shows a "wet flow" 0.1 Exceed Probability value of 1212 cfs, and 0.01 value of 3,815 cfs for the coincident flows at the Rush River at Amenia gage.

Appendix A-4b of the above report, page A-4b-13, Table 10 lists the Flow Frequency values for Rush River at Amenia gage: 10% event=1663.8 cfs and 1% = 4215.4 cfs.

To clarify, I can not locate documentation of how the discharges in Table C-1 were developed nor are they in agreement with previous reports.

Submitted By: [Ron Beyer](#) (402-995-2339). Submitted On: Sep 19 2012

1-0 Evaluation **Concurred**

System wide modeling was performed by the Houston-Moore group to determine stages and flow rates for each of the inlets to the diversion. Flow rates at select frequencies from the Rush River were taken from the models at the inlet location and were provided to the design team.

This information can be found in Appendix C Section C5.2.1.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Feb 22 2013

1-1 Backcheck Recommendation **Open Comment**

Is there a report with the HMG model methodologies/results output available? I do not see it listed in the Appendix C References for the FTR draft revision. If the report is referencing MFR-002, please state in the text.

Submitted By: [Ron Beyer](#) (402-995-2339) Submitted On: Sep 09 2013

Current Comment Status: **Comment Open**

4832973	Hydraulics	Feasibility Study	n/a'	n/a	n/a
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Comment Classification: N/A
(Document Reference: c-3)

Coordinating Discipline(s): Hydraulics

The text states that the design requires 9 rock weirs upstream of the ramp inlet to increase the elevation by 1 ft. Detail on the 9 weirs is not presented. It is not clear on the selection of this approach or if other methods were considered. For instance, can the elevation of the ramp be adjusted?

Minimal detail is presented. Assuming that cost estimates will be developed from the current design, rock volume, rock size, and layer thickness should be presented.

Submitted By: [Dan Pridal](#) ((402)995-2336). Submitted On: Sep 19 2012

1-0 Evaluation Concurred

Additional discussion will be added on the selection of this approach. At the time of this report, the rock had not been sized. The analysis was preliminary. For the next submittal, a description of rock design will be presented.

Submitted By: [Donald Duncan](#) (314-331-8809) Submitted On: Nov 14 2012

1-1 Backcheck Recommendation Close Comment

Concur.

Submitted By: [Dan Pridal](#) ((402)995-2336) Submitted On: Jan 31 2013

Current Comment Status: **Comment Closed**

4834069	Environmental	Design Memorandum or Report	n/a'	n/a	n/a
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Comment Classification: N/A

I have completed the Reach 4 Design review and have no comments.

Submitted By: [Aaron Quinn](#) (402-995-2669). Submitted On: Sep 20 2012

1-0 Evaluation Concurred

Close

Submitted By: [Ken Cook](#) (314-331-8498) Submitted On: Sep 24 2012

Backcheck not conducted

Current Comment Status: **Comment Open**

4855194	Geotechnical	Preliminary Design Analysis	n/a	n/a	n/a
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Comment Classification: **Public (Public)**
(Document Reference: Section D.8.1.6)

An impervious cutoff trench may not be a trivial solution if there is the possibility of large quantities of flows entering the excavation. Is any old mapping available or does older aerial photography distinguish the former Rush River meanders prior to channelization. Has any geophysical testing (such as MER) been considered to identify the potential for large sand pockets or lenses

Submitted By: [David Sobczyk](#) ((402) 995-2249). Submitted On: Oct 09 2012

1-0 Evaluation Check and Resolve

There are several apparent geologic features along the project that are distinguishable with the use of fine topographic mapping. These features are being explored prior to the design phase. It is anticipated that the old Rush and Lower Rush channels were backfilled with local caly material. This may be verified with additional exploration. Generally speaking, we feel that the potential for any significant seepage into the channel is low enough that we intend to handle it through the contractual process should the need arise.

Submitted By: [Nathan Rose](#) (314-331-8443) Submitted On: Oct 17 2012

1-1 Backcheck Recommendation Close Comment

information provided

Submitted By: [David Sobczyk](#) ((402) 995-2249) Submitted On: Apr 08 2013

Current Comment Status: **Comment Closed**

4855197	Geotechnical	Preliminary Design Analysis	n/a	n/a	n/a
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Comment Classification: **Public (Public)**

Geotechnical Appendix Header should be corrected to reference this project

Submitted By: [David Sobczyk](#) ((402) 995-2249). Submitted On: Oct 09 2012

1-0 Evaluation Concurred

The headers will be reviewed and corrected for the 65% review.

Submitted By: [Nathan Rose](#) (314-331-8443) Submitted On: Oct 17 2012

1-1 Backcheck Recommendation Close Comment

Comment Addressed

Submitted By: [David Sobczyk](#) ((402) 995-2249) Submitted On: Apr 08 2013

Current Comment Status: **Comment Closed**
