

MEMORANDUM FOR CECW-MVD (ATTN: John Lucyshyn)

SUBJECT: Fargo-Moorhead Metropolitan Area Flood Risk Management Feasibility Report and Environmental Impact Statement (November 2011) – Documentation of Review Findings

1. This memorandum forwards the documentation of policy compliance review findings for the subject project proposal. In the opinion of the policy compliance review team, all policy review concerns have been adequately addressed for this phase of project formulation and development.
2. Office of Water Project Review consideration of the subject report and environmental impact statement is complete. Questions concerning the HQUSACE policy compliance review of this project proposal may be discussed with review manager, Thomas Hughes, at 202-761-5534.



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DOCUMENTATION OF REVIEW FINDINGS

**FARGO-MOORHEAD METROPOLITAN AREA
FLOOD RISK MANAGEMENT PROJECT**

**FEASIBILITY REPORT
AND
ENVIRONMENTAL IMPACT STATEMENT**

NOVEMBER 2011

ENCLOSURE

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29 November 2011

**FARGO-MOORHEAD METROPOLITAN AREA
FLOOD RISK MANAGEMENT PROJECT**

**FEASIBILITY REPORT
AND
ENVIRONMENTAL ASSESSMENT
September 2011**

A. GENERAL.

1. Policy Compliance Review Findings. The following summarizes the final HQUSACE policy compliance review findings for Fargo-Moorhead Metropolitan Area Flood Risk Management Project. This summary includes the concerns and the related resolutions of those concerns for the HQUSACE reviews of the Alternative Formulation Briefing Documentation received in April 2010, Draft Report and EIS dated June 2010, and the September Final Feasibility Report and EIS.

2. Project Location. The geographic scope of analysis for the environmental impacts of the selected plan and alternatives encompasses the Fargo-Moorhead Metropolitan area plus areas in the floodplain of the Red River from approximately 300 river miles north of Fargo near Emerson, Manitoba to approximately 30 miles south of Fargo near Abercrombie, ND. The Fargo-Moorhead Metropolitan area is located within the area from approximately 12 miles west to 5 miles east of the Red River and from 20 miles north to 20 miles south of Interstate Highway 94.

3. Authority. The *Fargo-Moorhead Metropolitan Area Flood Risk Management Feasibility Report and Environmental Impact Statement* (the Study) was authorized by a September 30, 1974, Resolution of the Senate Committee on Public Works:

RESOLVED BY THE COMMITTEE ON PUBLIC WORKS OF THE UNITED STATES SENATE, That the Board of Engineers for Rivers and Harbors be, and is hereby, requested to review reports on the Red River of the North Drainage Basin, Minnesota, South Dakota and North Dakota, submitted in House Document Numbered 185, 81st Congress, 1st Session, and prior reports, with a view to determining if the recommendations contained therein should be modified at this time, with particular reference to flood control, water supply, waste water management and allied purposes.

4. Non-Federal Sponsors. The cities of Fargo, North Dakota and Moorhead, Minnesota are the non-federal sponsors for this study.

5. Problems, Needs And Opportunities. The primary problem identified in the study area is a high risk of flood damage to urban infrastructure from the Red River of the North, the Wild Rice River (ND), the Buffalo River, and the Sheyenne River and its tributaries, the Maple River, Lower Rush River and Rush River. Flooding also causes damage to rural infrastructure and agricultural land and disrupts transportation and access to properties within the study area. The study area has estimated average annual flood damages of more than \$194.8 million. There are opportunities to increase and improve wildlife habitat in conjunction with the measures used to reduce flood risk. Wildlife habitat in the study area has been significantly altered by various human activities associated with conversion of native prairie for agricultural uses and urban development.

6. Plan Formulation. Action alternatives were developed in four separate planning phases. Phase 1 was an extension of the reconnaissance effort. During Phase 1, hydraulic models and economic data were developed in order to assess basic conceptual plans. One diversion alternative and one levee/floodwall alternative were considered. The results verified that further study was warranted. This conclusion was reinforced by the occurrence of the flood of record in March 2009, which greatly increased public interest in the study.

Phase 2 included two screening iterations. During the first iteration potential features were formulated, based on the identified problems and opportunities, project goals, and objectives. Measures included nonstructural measures as well as structural measures including flood storage, flood barriers (levees and floodwalls), and increased conveyance (cutoff channels, tunnels, and diversions). The array of conceptual plans included 2-percent and 1-percent chance event levee alternatives and diversion channels with capacities ranging from 25,000 to 45,000 cubic feet per second (cfs) along four different alignments (two in Minnesota and two in North Dakota).

Phase 3 began in March 2010. Primary activities were to refine the plans and identify which of the Minnesota plans would maximize net economic benefits. Hydrologic assumptions were revised based on input from an Expert Opinion Elicitation panel and to include the 2009 flood event, and the hydraulic model was calibrated to the 2009 event.

Phase 4 focused on extending and refining the hydraulic models and using the models to assess several strategies to minimize project impacts. The strategies that were considered

included shifting the diversion further north (to near the MN35K plan's inlet), staging water upstream on the Red and Wild Rice rivers, passing additional water through the protected area in the Maple River's natural channel, and using off-channel storage areas along the diversion channel. The study team assessed several different channel sizes and slopes in combination with various amounts of upstream staging and temporary storage within the protected area to achieve a definable impacted area. The control structures in the design were operated as necessary to achieve the desired hydraulic conditions in the Red River channel through Fargo-Moorhead.

The resulting final array of alternatives included the following four plans:

- No Action
- The FCP as defined in Phase 3 (MN35K),
- The ND35K as defined in Phase 3 (the LPP in the May 2010 Draft Environmental Impact Statement), and
- The redefined LPP (a 20,000 cfs capacity North Dakota diversion with upstream storage and staging).

7. Selected Plan. The selected plan is the redefined LPP: a 20,000 cfs capacity North Dakota diversion with upstream storage and staging. The ASA(CW) approved identifying the LPP as the tentatively selected plan on April 28, 2011. The LPP diversion alignment starts approximately four miles south of the confluence of the Red and Wild Rice Rivers and extends west and north around the cities of Horace, Fargo, West Fargo, and Harwood and ultimately re-enters the Red River of the North at the confluence of the Red and Sheyenne Rivers near the city of Georgetown, MN. The alignment is approximately 36 miles long and incorporates the existing Horace to West Fargo Sheyenne River diversion channel. The LPP includes 19 highway bridges and 4 railroad bridges that cross the diversion channel. Interstate Highway 29, U.S. Highway 75 and a BNSF railroad line would be raised within the staging area to maintain transportation during flood events.

The plan consists of the following primary features:

- Red River gated control structure (with fish passage)
- Connecting channel (Red River to Wild Rice River)
- Wild Rice River gated control structure (with fish passage)
- Diversion inlet weir (at Cass County Road 17)
- Storage Area 1 (levees and flowage area)
- Upstream staging area (with non-structural mitigation)
- Main diversion channel
- Sheyenne River aqueduct and spillway structures

- Maple River aqueduct and spillway structures
- Lower Rush River drop structure (with fish passage)
- Rush River drop structure (with fish passage)
- Outlet drop structure (with adjacent fish passage)
- Wolverton Creek control structure
- Tie-back levees
- Side ditch inlet structures
- Highway bridges
- Railroad bridges
- I-29, US75 road raises and BNSF railroad raise in staging area
- Recreation features, including to multipurpose trails, benches and parking facilities
- Environmental mitigation features

8. Project Costs. Based on October 2011 price levels, the estimated total first cost of the recommended plan is \$1,781,348,000. The Federal share of the total first costs of the project is estimated at \$801,542,000, and the non-Federal share is estimated at \$979,806,000. The flood risk management features have an estimated total first cost of \$1,745,033,000, with the federal and non-federal shares estimated at \$783,384,000 (44.9 percent) and \$961,649,000 (55.1 percent), respectively. The recreation features have an estimated total first cost of \$36,315,000, with the federal and non-federal shares estimated at \$18,157,500 (50 percent) and \$18,157,500 (50 percent) respectively.

9. Operation, Maintenance, Repair, Rehabilitation, and Replacement (OMRR&R).

The cities of Fargo and Moorhead would be responsible for the operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) of the project after construction, a cost currently estimated at \$3,631,000 per year. The OMRR&R estimate includes \$527,135 for monitoring and adaptive management beyond the construction phase.

10. Project Benefits. The recommended plan would significantly reduce risk to the Fargo-Moorhead metropolitan area from a flood which has a 1-percent chance of occurrence in any year (100-year flood); the 1-percent chance stage would be reduced from approximately 42.4 feet to 30.6 feet on the Fargo gage, which would require only minimal emergency measures to pass safely. The recommended plan would leave average annual residual damages estimated at \$32,000,000. The equivalent average annual benefits are estimated to be \$174,617,000 for flood risk management and \$5,130,000 for recreation, respectively. The net average annual benefits would be \$76,519,000 for flood risk management and \$3,276,000 for recreation, respectively. The benefit-cost ratio for the project is approximately 1.80 to 1.

11. Cost Sharing. The recommended plan is a locally preferred plan (LPP) which provides fewer total average annual benefits than the national economic development (NED) plan. Therefore, it was necessary to develop a federally comparable plan (FCP) smaller than the NED plan that could be compared to the LPP for cost-sharing purposes. Federal investment in the flood risk management features of the LPP is capped at the investment that would have been made for the FCP. Based on October 2011 price levels, the estimated first cost of the FCP flood risk management features are \$1,205,207,000. The Federal share of the first cost of the FCP flood risk management features is estimated at \$783,385,000 (65 percent). The incremental cost of the LPP flood risk management features is \$539,826,000.

12. Environmental Compliance. The Fargo-Moorhead Metropolitan Area Flood Risk Management Feasibility Report and Environmental Impact Statement has undergone all required review under the National Environmental Policy Act. The Final report includes responses to all resource agency and interested party comments on the Draft and Supplemental Draft reports. An indication of Section 401 Water Quality Certification was requested from both the Minnesota Pollution Control Agency (MPCA) and the North Dakota Department of Health. The MPCA indicated Section 401 WQ Certification for this report should be submitted to the MPCA after the plans and specifications are prepared and the 401 WQ Certification would be considered at that time. The North Dakota Department of Health indicated that there are no identified major issues at this time that would preclude 401 WQ Certification as the project proceeds.

A Programmatic Agreement has been negotiated between the St. Paul District, U.S. Army Corps of Engineers, the Minnesota State Historic Preservation Officer, and the North Dakota State Historic Preservation Officer. The City of Fargo and the City of Moorhead, the non-federal sponsors of the project, are concurring parties to the Programmatic Agreement. The Cass County (North Dakota) and Clay County (Minnesota) Boards of Commissioners also signed as concurring parties. Sixteen Indian tribes were also invited to be concurring parties to the Programmatic Agreement.

The final U.S. Fish & Wildlife Service Coordination Act Report was received on July 14, 2011, and the selected plan would result in no significant impacts on federally-listed species or habitats. The Findings of Compliance for Clean Water Act Section 404(b)(1) Evaluation was signed on July 15, 2011. The Clean Water Act Section 402 NPDES permits will be obtained from the appropriate state agencies in Minnesota and North Dakota by the construction contractor before the start of construction.

B. REVIEW COMMENTS ON THE APRIL 2010 ALTERNATIVE FORMULATION BRIEFING PACKAGE.

1. Incomplete nature of report. Several portions of the report (e.g., part 4.2.1.4 on page 95, states that “information for the Maple River and Wild Rice River will be included in the final report”) indicate that additional information is needed to complete the report. The environmental impacts and mitigation plan has not been fully developed. Economic impacts of increased flooding, a takings analysis, and an evaluation of mitigation alternatives for those impacts have not been completed. Completion and review of the full report will be necessary prior to its final approval.

MVP Response: Concur. The established schedule has additional ATR and vertical team reviews scheduled prior to the report’s final approval; the vertical team review is scheduled to begin in August. A preliminary takings analysis was completed and will need to be revisited based on the new hydrology. All data gaps will be finalized in the final version of the report, which will be able to incorporate some of the survey information being collected this summer. It is unlikely that mitigation for the downstream stage impacts would be economically justified. The analysis will first determine if there is a taking, then determine if there is a justified solution and then any unmitigated damages will be included in the project as a cost. The non-Federal sponsors will continue to be actively involved in this effort.

Discussion: The downstream hydraulic impacts of the NED Plan and Locally Preferred Plan were discussed in detail, along with options to mitigate. The district advised that it is unlikely that mitigation would be economically justified as an incremental feature (social or environmental) or justified as a result of a takings analysis. If this is the case unmitigated damages would need to be included as an economic cost in the economic analysis. It was also recognized that non-Federal Sponsor could chose to include downstream mitigation measures should the mitigation measures be found to be not supportable either economically or thru a takings analysis. It was agreed that the draft report going out for public review would discuss the range of impacts.

Required Action: The district will more fully develop the mitigation plans utilizing the most recent hydrologic and hydraulic data. Any unmitigated downstream hydraulic damages would need to be included as an economic cost in the economic analysis. The draft report going out for public review at a minimum will discuss the range of downstream hydraulic impacts with the final report presenting the full analysis.

Action Taken: The draft report includes an analysis in Chapter 5 on the range of downstream impacts for both size and depth. This analysis will be updated in the final report to include any unmitigated downstream damages. Those damages will be determined by using the HEC-FDA model. See section 5.2.1.4 Downstream Water Quantity.

HOUSACE Assessment: Resolved.

2. Problems and Opportunities. There is no clear ‘problem and opportunity’ statement. Per the Planning Manual and Planning Guidance Notebook (ER-1105-2-100), the first step of the planning process is a clearly defined statement of problem and need. A clear statement of problem and opportunity provides a focal point for all stakeholders.

- a. Additionally, the problems listed for the proposed project do not include ecological problems; however, there are ecological objectives for the proposed project. The opportunities for the flood risk management portion of the proposed study do not adequately reflect the plan formulation that has been conducted.
- b. Furthermore, the primary problem cited is “high risk of flood damage to urban infrastructure”, yet this is not specific to the cause of flooding, timing, or importance.
- c. Opportunities are limited to improving wildlife habitat.
- d. ER 1105-2-100 App E Para E3 states that problems and opportunities should be defined in terms of their nature, cause, location, dimensions, origin, timeframe, and importance. Be specific on the sources of flooding, as well as the timing and overall significance of the flooding. Also be specific to the location and significance of improving wildlife habitat. As such, the problems and opportunities should be revised in accordance with the above-comments.

MVP Response: Concur. The PDT will revisit the Problems and Opportunities to ensure they adequately capture the information located in other portions of the report. The revisions will not impact the plan formulation nor the efforts completed to date. Additionally, the PDT coordinated the development of the problems and opportunities with the local sponsors, natural resource agencies, and had particularly heavy involvement from the EPA.

Required Action: The district will revisit the Problems and Opportunities discussion in the main report to ensure discussions adequately capture the information located in other portions of the report and ensure the draft main report to be released to the public fully documents the problems and opportunities identified.

Action Taken: The Problems and Opportunities were updated to capture information from other portions of the report and to clearly indicated that flood risk management is the primary objective of the study. The report layout was changed to better tell the story before presenting the Problems and Opportunities. See Section 2.4.

HOUSACE Assessment: Resolved.

3. Objectives. The objectives that are identified for the study are extremely vague and do not allow for sufficient evaluation of the project alternatives. ER 1105-2-100 E Para E3 states “Objectives, as well as constraints, are written statements that should generally include the following four types of information: effect (the verb that expresses the intent to bring about an objective and not to violate a constraint); subject (what is to be changed for the better through meeting the objective or not changed through avoiding a constraint); location (often the study area, which defines where the objective is to be achieved); and timing and duration (often the study period of analysis, which define when and how long the objective is to be achieved or the constraint to be avoided). Developing specific, flexible, measurable, realistic, attainable, and acceptable objectives and constraints is critical to the success of the entire planning process.” The objectives must be restated consistent with the ER.

MVP Response: Concur. The PDT will revisit the Objectives to ensure they adequately capture the information located in other portions of the report. The revisions will not impact the plan formulation nor the efforts completed to date. Additionally, the PDT coordinated the development of the problems and opportunities with the local sponsors, natural resource agencies, and had particularly heavy involvement from the EPA.

Required Action: The district will revisit the Objectives discussion in the main report to ensure it captures the information located in other portions of the report and will ensure the draft main report to be released to the public fully documents the study objectives.

Action Taken: The Objectives were updated to capture information from other portions of the report and to clearly indicated that flood risk management is the primary objective of the study. The report layout was changed to better tell the story before presenting the Objectives. See section 2.6.

HOUSACE Assessment: Resolved.

4. Flood Fighting. The text indicates that no credit is taken for flood fighting although it has been very successful in reducing damages for the most recent flooding events. It is not evident in the main report material what the costs of these flood fighting efforts have been or how they might vary for different flooding events. Since it is indicated that flooding is

somewhat predictable based on snow melt, it is anticipated that the level of efforts expended by public employees and community volunteers during these emergency actions would vary by event. It isn't evident from the main report how these efforts are captured as part of emergency costs in the damage analysis. The Economics Appendix has much more information on emergency costs including the residuals anticipated for the various diversion plans. HQ suggests that more information be provided in the main report so that the reader can get a basic understanding of the emergency costs incurred and how they translate into benefits. Table 12 on page 69 alludes to reduced risk and emergency actions, but makes no distinction between the impacts of the diversion plans regarding the extent of reduction. The emergency costs should be specifically addressed under the without-project conditions text as a basis for impact assessment under the with-project conditions. See ER 1105-2-100, paragraph 2-4.b.(1).

MVP Response: Concur the information from the economics appendix will be added to the main report and the emergency costs will be specifically addressed. We will talk about the sensitivity analysis in the main report.

Required Action: As identified in the response the district will add information from the economics appendix to the main report and the emergency costs will be specifically addressed.

Action Taken: The information from the economics appendix was moved into the main report to better tell the story of the emergency measures. Information was also added on the average annual cost of the emergency measures. See section 2.3.3.

HOUSACE Assessment: Resolved.

5. Base Year. The text doesn't clearly state what the assumed base year is for the analyses. This defines the start of the 50-year period of analysis and should be discussed in the without-project condition section. It is critical to the forecasting of future without-project conditions and comparison of alternative effects over time. The Implementation Requirements shown in Section 3.9 indicate the project completion date is in October 2018, which may be the base year. However, Table 19 shows construction continuing into 2019, so it isn't clear what the base year is assumed to be. Page C-74 of the Economics Appendix shows the flood proofing cost savings calculation over the period 2018-2068. Clarification is needed per ER 1105-2-100, paragraph 2-4.b.(1).

MVP Response: Concur. MVP will revise the analyses to make the two plans directly comparable regarding the base year. This will be adjusted in the future as we are completing a detailed construction schedule for both the NED and LPP plans.

Discussion: The district indicated it is preparing a detailed schedule for both the NED plan and the LPP and will coordinate with the Office of Water Project Review (OWPR) to ensure that the analysis is correct and will adjust the benefits accordingly.

Required Action: The district will prepare a detailed schedule for both the NED plan and the LPP and coordinate with the OWPR to ensure that the analysis is performed correctly and will adjust the benefits accordingly.

Action Taken: A draft detailed schedule was developed and resulted in the MN35k having a construction schedule of 7.5 years and the ND35k having a construction schedule of 8.5 years. This will continue to be developed and will be included in more detail in future reports. The MVP economics team coordinated with MVD and OWPR to ensure that the base year was being calculated correctly. This resulted in all information be discounted to the base year of 2019. The costs and benefits were adjusted accordingly and the information was provided to and checked by DCQ, MVD, OWPR, and the ATR team member. See Economics Appendix Section 1.0.

HOUSACE Assessment: Resolved.

6. Period of Analysis. Paragraph 2-4.j. of ER 1105-2-100 requires that the period of analysis be the same for each alternative plan. However page C-60 of the Economic Appendix indicates that the MN diversion plans could be implemented after 6.5 years of construction and the ND diversion plans would require 8.5 years. In order to compare these plans on a comparable period of analysis, the ND plans should be shifted to the same 50-year timeframe as those in MN using the appropriate economic factors. This may make the ND plans more competitive, since the construction costs would be discounted for comparison.

MVP Response: Concur. MVP will revise the analyses to make the two plans directly comparable regarding the period of analysis. MVP will coordinate changes with OWPR to be sure the intent of the comment has been addressed.

Required Action: The district will revise the analyses to make the two plans directly comparable regarding the period of analysis. Prior to revising the report, the changes will be coordinated with OWPR to ensure the intent of the comment has been addressed.

Action Taken: The MVP economics team used the base year of 2019 for all plans and used discounting to ensure that all plans were comparable. This information was provided to MVD

and OWPR for review and information. These changes were incorporated into the draft feasibility report. See Economics Appendix Section 1.0.

HOUSACE Assessment: Resolved.

7. Reach Delineation. Economic Appendix (pg C-7) does not adequately address land use and the reasoning of the subdivision of the reaches. ER 1105-2-100 states that floodplain characteristics and land use should be determined. Existing land use and characteristics must be determined before its actual use can be estimated. Recommend further explanation of project area and reach delineation and land use.

MVP Response: Concur. The information will be added regarding the reasoning for the reaches.

Discussion: The district explained that reaches were determined by beginning damage elevation and other factors such as existing infrastructure and geographic location. The district agreed to add a better description of how reaches were determined to the economics appendix and will include a description of the location in terms of river miles, existing structures, etc.

Required Action: The District will add appropriate discussion in the report concerning the rationale for reach delineations

Action Taken: The information was updated in the economics appendix see section 3.1 and Figures C-9 through C-12.

HOUSACE Assessment: Resolved.

8. Screening of Management Measures. The AFB document, in particular Appendix O, does not adequately discuss how the management measures were screened, retained, and/or combined into alternatives. Management measures form the basis of alternatives, and typically lack the details that are required to evaluate alternatives. Utilizing cost to screen management measures or even an initial array of alternatives without adequate detail could lead to a flawed formulation process. Additionally, the screening of management measures by mitigation is not appropriate as sufficient detail is not yet included to evaluate the effects of each measure. It is typically not possible to quantify compensatory mitigation requirements from features or activities that lack detailed designs, locations, etc. Some management measures such as flood barriers, were described as having low positive impacts in Section 2.2.3. However, in Section 2.2.3.1 titled Natural Resources, it states that the effects would be neutral. A table should be provided that demonstrates the rationale used to evaluate the management measures. Moreover the management measures that are listed in

Section 1.6 seem to be different than the management measures that are evaluated in Section 2.4. The document needs to more fully document the screening process taking into account the requirements identified above.

MVP Response: Concur. The information will be clarified in the main report and in Appendix O. The information will be updated by including more detail from the Alternatives Screening Document attached to Appendix O. This document provides adequate rationale for the screening that was completed. Although there was a large list of initial screening criteria, some of those were weighted differently. For example, the separable mitigation was included as requested by the local sponsors and was important for their decision making, but it did not necessarily lead to the dismissal of any measures. Tables are used in Appendix O to clarify this information; this will be added to other portions of the report.

Discussion: The district agreed to review the discussions in the report to ensure they accurately explain the screening process. The details surrounding the alternative selection/ screening process will be presented in the main report rather than in an Appendix.

Required Action: As noted in discussion.

Action Taken: The screening criteria were updated in both Appendix O and the main report. This information helps to clarify the screening process and the criteria used. See sections 3.3, 3.4, 3.5, and 3.6 of the main report.

HOUSACE Assessment: Resolved.

9. Screening of Alternatives. Reasons for why the particular Alternative Screening Criteria were chosen and how they were measured and quantified in comparing alternatives is not clearly explained. It is difficult to determine why these screening criteria were uniquely used and if they have individual weighting separate from criteria such as completeness, effectiveness, efficiency and acceptability. In ER 1105-2-100 paragraph 2-3 it is suggested that each alternative plan should be formulated in consideration of the four criteria. If the 11 criteria presented in the Alternatives Screening Document cover these criteria it should be explained why this is the case and why this particular method of screening was used. Recommend adding an explanation of the criteria used, why they were selected, and how this fits in with the prescribed methods of evaluation in ER 1105-2-100.

MVP Response: Concur. The PDT will add information on why each criterion was selected and how this fits with the prescribed methods.

Required Action: The district will revise the report to include appropriate information on why each screening criterion was selected and how it fits with the prescribed methods.

Action Taken: The screening criteria were updated to include why it was used and how it applies to the P&G. See section 3.4.2 of the main report.

HOUSACE Assessment: Resolved.

10. Ecosystem Restoration Measures. The plan formulation for the proposed project lists two objectives as having ecosystem restoration intentions; however, the initial formulation of management measures, subsequent screening, and formulation of alternatives do not discuss ecosystem restoration until further into the report. It appears that some management measures or alternatives were eliminated due to environmental degradation; however, there is not mention of how these measures or alternatives would perform in regards to the objectives. As such, the plan formulation should be revised to include an evaluation of ecosystem restoration potential for each of the measures and alternatives.

MVP Response: The primary objective of the study is flood risk management. If individual measures were not able to substantially contribute to flood risk management, they were screened out early in the process. As the study progressed it was determined that very few opportunities in the project area for ecosystem restoration would have a federal interest except as incidental components of a flood risk reduction project. The Objectives will be clarified to identify FRM as the primary objective and that ecosystem restoration is secondary to FRM. The main report will be clarified to discuss any environmental measures that were considered where relevant, this will be completed by pulling information out of the alternative screening document.

Discussion: The district affirmed that FRM is the primary objective and that the report will be revised to identify FRM as the primary objective and that ecosystem restoration is secondary to FRM. Although not apparent at this time, there still may be opportunities for restoration associated with potential downstream hydraulic mitigation measures.

Required Action: The district will revise the report to clarify the planning objective and pull info out of the alternatives screening document to explain how ecosystem objectives were considered.

Action Taken: The planning objectives were clarified to clearly indicate that flood risk management is the primary objective and all other objectives are in conjunction with flood risk management features. See section 2.6 of the main report.

HOUSACE Assessment: Resolved.

11. Alternative Development. Page 24 of the main report indicates that no further consideration was being given to grassland, wetland, and storage measures as stand-alone features, but they would be considered further in combined plans with diversions. Additionally, the Economic Appendix states there is a possibility for incremental non-structural measures. However, further discussions of plan formulation in the main text do not mention these measures being considered in combination with the diversion plans. Additional rationale needs to be presented in the main text on what consideration was given to these measures in combination with diversion and how they were written off during further formulation in order to present a complete and logical formulation story.

MVP Response: Partially Concur. Non-structural measures are included in the NED plan but not the LPP, as discussed in paragraph 3.3.5 on page 52 of the main report. The wetland and grassland restoration measures were similar to storage, and it was determined that they would not be incrementally justified along with any of the diversion channels. This is primarily due to the large costs associated with these plans and their limited ability to provide any incremental flood risk management benefits. This information will be taken from the screening document and included in the main report.

Required Action: The district will revise the main report to include additional information regarding how grassland and wetland restoration were screened out. It was agreed that information from the Alternatives Screening Document should be used to pull information into the report.

Action Taken: Information was added to the report to indicate the dismissal of grassland and wetland restoration. See section 3.5.6 of the main report.

HOUSACE Assessment: Resolved.

12. NED Plan. The MN20K diversion plan is designated as the NED plan in the text, however it is also noted that with the reanalysis of hydrology the NED plan designation may change. It is important to establish the NED plan per 2-3.f.(1) of ER 1105-2-100 prior to release of the draft report because the NED plan forms the basis for cost sharing when a larger LPP is proposed for recommendation and the waiver package being coordinated through ASA(CW) for approval as well as the draft feasibility report must detail the incremental differences between the LPP and NED plans. Further discussion is needed at the AFB regarding the NED plan designation based on the latest available information and consideration of the various review concerns which have potential to impact the plan formulation.

MVP Response: Concur. The NED plan should be identified by May 10, 2010 and will be incorporated into the draft report prior to public release. The incremental differences will be included in the draft report, this will be based on each line of the cost estimate. This information will be presented to the vertical team for final approval to release the draft report to the public and for concurrent MVD/HQ review. Following the updating of the H&H, information will be included in the main report indicating why the changes do not impact the results of the screening, and actually strengthen it. An ATR will be completed on the updated work.

Discussion: The district agreed to prepare appropriate read ahead information to describe and summarize the final NED analyses for the vertical review team and will arrange for a vertical team Teleconference to discuss. The LPP and NED plan will need to be developed in the same level of detail because the NED plan will form the basis for Federal share in the LPP. The district will also discuss effects the revised hydrology will have on the alternatives screening analysis and confirm that the screening based on the traditional analysis remains valid.

Required Action: Prior to release of the draft report to the public the district will arrange for a vertical team teleconference call to discuss the results of the updated NED plan identification.

Action Taken: The NED plan has been identified as the MN40k alternative, the MN35k alternative is identified as the Federally Comparable Plan (FCP) and the ND35k is the LPP. The vertical team was briefed on the results of the information on May 11, 2010 and again on May 20, 2010. The decision was made to release the draft report with the LPP being the tentatively recommend plan, if the sponsors still wanted to continue on that path. The sponsors notified the Corps that they still wanted the ND35k as the LPP and adopted a resolution on May 26, 2010 reaffirming their position. Based on this information the report was updated and information was provided to MVD and HQ on the path forward. In the vertical team briefings HQ indicated that no additional approvals from the ASA(CW) would be necessary and they would coordinate with the ASA(CW) office.

HOUSACE Assessment: Resolved.

13. Value Engineering Study. It is difficult to determine if any of the VE study comments / recommendations were incorporated into the alternatives. This information should be included in the report documentation.

MVP Response: The VE comments were considered with further development of the plans. Most of the VE recommendations were not able to be implemented. The VE report will be updated to include responses from the PDT, and these will be included in the VE report for the final report.

Required Action: The district will draft responses to the VE recommendations and include in the VE report for the final report.

Action Taken: This will be completed for the final report.

HOUSACE Assessment: Resolved.

14. Downstream Effects. Section 3.5.3.4.2 indicates that the diversion plans would all have downstream effects that have not been analyzed except for the MN35K and ND35K diversion plans to identify maximum extent. It is indicated that additional analyses will be conducted for only the LPP and NED Plans. However, it is unclear how significant the differences might be between various scale plans and whether there is potential for these considerations to affect the NED plan designation. For example, what is the extent of any “new” acreage that would be subject to inundation by the induced rises in downstream flood elevations? Other factors that should be addressed include how the increased flood elevations would affect structures, traffic patterns, access to residences, provision of emergency services, and agricultural land use.

These analyses should be performed for each of the detailed alternatives utilizing the most recent H&H analysis as a basis for plan comparison and selection. Per E-18.f. , ER 1105-2-100 induced flooding damages should be investigated to determine if mitigation is warranted and if not, unmitigated damages should be accounted for in the economic analysis and the impacts displayed and discussed in the report. Clarification is needed as to the effects of the induced flooding on the detailed alternative plan formulation and NED plan designation.

MVP Response: Concur. The NED and LPP plans will be updated based on the new H&H analysis, and this will be included in the final report. In general, the area that will be impacted will already be under water and there will be minimal additional disruption or damages caused by the additional downstream stages. The PDT will complete an economic analysis of the downstream impacts based on the future without project condition. Although the downstream impacts are expected to vary between the plans, it was assumed that those variations between the plans would not be significant; therefore the screening of the alternatives would be valid. This will be verified by the results of the final NED and LPP evaluations. The downstream impacts that will be provided to the public in the Draft report will be identified as preliminary and new numbers will be provided to the public as soon as possible. The future without project condition includes levees to the 100-year plus 3 feet for

the communities of Georgetown, Perley, and Hendrum. Halstad has a 250-year levee already in place.

Discussion: The district indicated that additional hydraulic modeling based on revised hydrology will be required to assess downstream hydraulic effects. The district will ensure that unsteady modeling for both the LPP and NED plan is completed for the final report. The district clarified that the extent of downstream impacts is most likely just past Halstad and that there is no increased agricultural damage because of the time of the year floods usually occur—March and April, when no crops are planted. It was agreed that the district will need to account for induced damages and demonstrate that the difference in impacts between the plans does not influence the determination of the NED plan. The district advised that if the updated hydraulic downstream analysis would identify significant environmental effects additional public review would be required to comply with NEPA. It was agreed the draft report could be released to the public without final resolution of the downstream impact numbers but the draft report will need to be clear that the impacts are preliminary. It was recognized that there is risk associated with going out for public review before final impacts are determined.

The district further explained that many of the downstream communities currently have plans for state project engineered levees that are at 100-yr + 3 feet of protection; these levees will probably be in place prior to the completion of the proposed Fargo-Moorhead project; and that future without project conditions in the feasibility study assume that new levees are in place for the downstream communities.

Required Action: For the NED plan and LPP the district will present the downstream hydraulic effects based on results the revised hydraulic modeling reflecting the updated hydrology and will discuss in the report any effects on plan formulation.

Action Taken: The final report will be updated to include the downstream impacts from the MN35k plan and the ND35k plan. These plans will be used to determine the costs of those impacts. The report was updated to indicate that the costs of the downstream impacts would not impact the plan formulation. See section 3.6.7.

HOUSACE Assessment: Resolved.

15. Additional wetland habitat, Table 13. It is unclear how the alternatives would provide increases in the acres of wetland habitat in the study area. Is the additional wetland provided in the bottom of the diversion channels?

MVP Response: Concur. The wetlands will be at the bottom of the diversion.

Discussion: The district clarified that wetlands in the project area are of poor quality in the region.

Required Action: The report will address how the alternatives would provide for increases in the acres of wetland habitat in the study area.

Action Taken: The report clarified that the wetland impacts will be offset by the creation of wetlands in the bottom of the diversion. See section 5.2.1.6.

HOUSACE Assessment: Resolved.

16. Other Social Effects. Table 12 presents information on the Other Social Effects account however in most cases the information presented for each OSE consideration uses the identical general statement for each alternative. This provides little value for distinguishing between the effects of the alternatives. It would be anticipated that the plan effects would vary for the MN versus ND alternatives and various scales of diversion. The text should be clarified to provide more definitive information on the other social effects for each of the scales of the diversion alternatives as a basis for comparison.

MVP Response: Concur, the table will be updated. Generally all of the plans under consideration provide a large level of flood risk reduction, this results in the other social effects being very similar on size and location. Will add info on impacts of the NED plan to Dilworth and will add downstream effects discussion to the OSE portion.

Discussion: The district indicated it review the table and clarify impacts where necessary. Since all the plans under consideration provide 100-yr protection or better, from a social perspective all the plans perform strongly. There was an issue in the City of Dilworth where concern was raised over the diversion cutting off developable lands. The district indicated this concern was analyzed and will be addressed in the report.

Required Action: The district will update the other social effects table as noted in the MVP response.

Action Taken: The OSE table was reviewed and updated where necessary. As previously indicated the plans all provide a high level of flood risk management and have similar impact to the OSE account. This information can be found in Table 15.

HOUSACE Assessment: Resolved.

17. Expected Average Annual Damages. Table 9 shows the NED account analysis for the various plans based on the analyses conducted prior to incorporating the EOE panel recommendations. It is noted that the average annual diversion benefit varies between \$61,780,000 and \$71,454,000 for the various MN short alternatives based on the EAAD of \$77.1M, whereas table 6 indicates residual damages would vary between 15,290,000 and 26,490,000 for EAAD= \$104,000,000 (benefits would increase substantially and would vary from \$77.060,000 to \$88,710,000). Please clarify why the EAAD and benefits differ so significantly between the information presented in the two tables and why formulation results would not be expected to change based on the revised H&H information.

MVP Response: Concur. The numbers will be reviewed and updated for the draft report.

Required Action: As noted in the MVP response.

Action Taken: The EAAD benefits were updated in the draft report to be \$195.9 million annually. This was caused by the incorporation of the EOE panel results and updating the hydrology and hydraulics based on the 2009 flood of record. The numbers in the report have been updated and corrected to be consistent.

HOUSACE Assessment: *Resolved.*

18. Interest During Construction (IDC). In Table 9, page 61 the values shown for IDC on the North Dakota plans are much higher than the MN plans in comparison. For instance, the 35K MN plan has a first cost of \$999,733,000 with IDC of \$149,047,000 whereas the 30K ND plan has a cost of \$1,026,030,000 and IDC of \$210,856,000. So a \$27M cost difference results in a \$60M IDC difference. These differences are not explained in the main report, but page C-60 of the Economic Appendix indicates the construction period for ND plans would be 8.5 years while the MN plans would take 6.5 years. It is not clear why the schedules/and IDC calculations would vary so significantly between the MN and ND plans. Is this due to the extent of structures in the ND plan? It is also unclear why the construction period would be the same for all the MN plans. Further explanation should be provided to support the assumed construction periods and the basis for IDC calculations, since this has potential to impact the formulation. See D-3.e.(11) of ER 1105-2-100.

MVP Response: Concur. A critical path analysis was completed and determined the construction schedules for each of the diversion alternatives. The difference has to do primarily with how the large tributary structures are constructed and brought on line. The Maple River structure is the critical path on the ND diversion, and the rail yard modification is the critical path on the MN diversion. A detailed construction schedule will be completed for both alternatives. The plans will be revisited to ensure that the IDC is comparable.

Discussion: The district advised they are currently working on a detailed schedule and phasing for both the ND and MN alignments. Currently the district is comparing the NED 2018 numbers to the LPP 2020 number because the NED plan will take two years less to construct. The district is recommending comparing the two plans using 2020 numbers. This will make the IDC comparable.

Required Action: The district will explain the construction schedules for the NED plan and LPP in the main report and their impact on the cost estimates. The economic analysis will be revised to reflect the different schedules.

Action Taken: The schedules were refined based on a preliminary deliverable from a contract to develop a phasing plan for the construction of the project. This analysis indicated that a 7.5 year period of construction can be expected for the MN diversion with a 8.5 year period for the ND diversion. The report was updated to include information on the construction schedules, see 3.5.3.12 and 3.5.4.2. The base year was set at 2019. This information, approach, and results were coordinated with the vertical team and all numbers in the report reflect this information.

HOUSACE Assessment: Resolved.

19. Beneficial Effects on Floodplains. Table 9 shows that economic benefits for Flood Insurance Administrative Cost Savings are the same (\$1,000,000) for all the diversion plans. Flood Proofing Costs Savings are the same for the two ND plans (\$10,430,000) and for all of the larger MN diversion plans (\$6,240,000) with the MN 20K plan slightly less (\$5,960,000). However, the information in Table 10 under Floodplains (EO 11988) states that floodplains were not analyzed for the ND30K, MN20K (NED Plan), and MN30K. For the diversion plans analyzed the floodplain area taken out of the 1% chance event floodplain varies between 30.5 sq. mi. (MN25K) and 81.3 sq. mi. (ND35K). Given these variations and the limited analyses conducted it isn't clear why the FIA cost savings would be shown as the same for each alternative or how flood proofing cost savings could be estimated for the various plans with confidence. Please provide further explanation, since these benefit categories have significant values relative to the difference in benefits between plans.

MVP Response: Concur. The information provided will be clarified, generally speaking all plans considered significantly reduce the 1% chance floodplain and there are only minor differences between the 20K-35K plans. The FIA cost savings is based on the number of existing policies in place under the existing conditions, this will be revisited to consider refinancing that may take place.

Discussion: The district explained that flood proofing cost savings were based on flood outlines from the contractor. The district had different flood plains for different project alignments. Benefits varied with channel size. Flood insurance cost savings is based on existing policies. The ATR reviewer made the comment that they haven't considered future changes to flood insurance. The assumption is that FEMA regulations will not change.

Required Action: The district will revisit the FIA cost savings to consider refinancing that may take place and revise the report to clarify that generally all plans considered significantly reduce the 1% chance floodplain and there are only minor differences between the 20K-35K plans.

Action Taken: The FIA cost savings were revisited and it resulted in keeping the original analysis. The larger plans continue to perform well for events up to the 1% chance event, resulting in most of the benefits being accrued equally to them all. There are only minor differences between the plans. With the analysis moving towards the larger plans for implementation and the NED it was also determined that these benefits would have no impact on the plan formulation or the screening process. The economic team will reconsider the FIA cost savings in the final report based on the refinancing, however it is believed that these benefits would be extremely small compared to the benefits provided by the project.

HOUSACE Assessment: Resolved.

20. Sanitary Sewers. Economic Appendix (C-12) discusses damages accruing in the existing conditions caused by backwater flow through the sewer system. Please clarify how the beginning damage elevations were adjusted downward to the lower zero-damage elevation for the sanitary sewer basin and how this information was used in the damage calculations.

MVP Response: Concur. Information will be included in the draft report as well as discussions on what other incremental measures could be used to reduce sewer backups.

Required Action: The district will include discussion in the report addressing what other incremental measures could be employed to reduce sewer backup.

Action Taken: The economics appendix was updated to include the required discussion. See section 3.2.3 of the economics appendix.

HOUSACE Assessment: Resolved.

21. Use of ratios. Several sections of the main report (examples include Sections 3.8.1.3, 5.2.1.8, 5.4.1.9 and 5.5) state that mitigation acreage ratios of 2:1 would be utilized for wetlands, geomorphic/fisheries and riparian impacts. This proposal is inconsistent with paragraph C-3(d)(5) of ER 1105-2-100, which states that habitat-based evaluation methodologies shall be used to the extent possible to describe and evaluate ecological resources and impacts associated with alternative plans.

MVP Response: Concur - The mitigation portion of the report will be updated and better defined to ensure that it is policy compliant. The initial report used a 2:1 replacement approach, which should result in a conservative cost estimate to address the mitigation needs in the future. It is acknowledged that ER1105-2-100 requires specific habitat evaluation, including CE/ICA of mitigation actions. A large amount of survey work is ongoing, and any results from that will be used to complete the analysis in the feasibility report. The report will be updated to include all of the items discussed in WRDA 2007, Section 2036. MVP will coordinate with MVD/HQ on the mitigation approach and will receive future guidance on this.

The updated mitigation plan will not be available for the May draft report to be released for public review, but it will be included in the August 2010 submittal for the CWRB. The CE/ICA will be done after completion of the mitigation analysis, the intent is to develop a plan that can be included in the final report.

Discussion: A follow-on vertical team conference call was held on 5 May to discuss the mitigation approach in more detail. Based on this teleconference it was decided that: 1) the 2:1 ratio approach will be removed from the draft report scheduled to be released in May 2010; 2) A habitat evaluation will be completed for the impacts and to determine the mitigation requirements. There are existing models that might be approved for use or could be. Coordination with the ECO-PCX is necessary; 3) An appendix on adaptive management will be developed for the August report. This will include pre and post-project monitoring plans, post-construction mitigation monitoring costs and metrics that can be used to assess the mitigations effectiveness; 4) There are two options for mitigation the first being stream remeandering and riparian corridor restoration, the second being dam removal downstream (note this would not be for fish connectivity mitigation but to mitigate for the riparian impacts); and 5) The second approach would constitute out-of-kind mitigation, but may be environmentally preferable, and will need to be closely coordinated with the natural resource agencies, and letters of support should be provided .

Required Action: As noted in the discussion.

Action Taken: The 2:1 ratios have been removed from the document. The team is working to completed the analysis necessary using habitat evaluation to justify the mitigation costs – this will be included in the final report. The appendix on adaptive management will also be included in the final report. The team is coordinating with the natural resource agencies on the mitigation plan and approach.

HOUSACE Assessment: Resolved.

22. CE/ICA. Neither the main report nor the Environmental Appendix F contains a CE/ICA for the mitigation plan. The use of CE/ICA is required consistent with paragraph C-3(e)(8) of ER 1105-2-100.

MVP Response: Concur - The mitigation portion of the report will be updated and better defined to ensure that it is policy compliant. See response to comment F.1.

Required Action: For the final report appropriate CE/ICA analysis will be performed to support the selected mitigation plan.

Action Taken: This will be completed for the final report.

HOUSACE Assessment: Resolved.

23. Proposed mitigation plan for wooded areas. Section 5.2.1.8, page 187. This section of the report states that the loss of wooded areas would be replaced at a ratio of 2:1 by tree plantings along the recreational corridor of the LPP. Plates 1-3 of Appendix M show that the recreation corridor is along certain segments of the ND 35 diversion channel. In the absence of a habitat-based analysis, it is unclear whether the proposed plantings would adequately replace the functions of the wooded areas lost due to the construction activities, or would result in either over-mitigation or under-mitigation of the impacts. The mitigation for loss of wooded areas should be evaluated using both a habitat-based assessment and CE/ICA, consistent with ER 1105-2-100.

MVP Response: Concur - The mitigation portion of the report will be updated and better defined to ensure that it is policy compliant. See response to comment F.1.

Required Action: See comment B. 21. Use of ratios.

Action Taken: See comment B. 21. Use of ratios.

HOUSACE Assessment: Resolved.

24. Inconsistent Mitigation Costs. Table 42 on pages 242-243 of the main report states that mitigation costs are \$43,903,000 for while an un-named 11 by 17 inch table in Appendix F gives the mitigation cost for the ND Alignment as \$60,518,726. Given the title of Table 42, the \$43 million figure accounts only for fisheries mitigation measures. HQUSACE recommends that costs for all needed mitigation measures, including riparian and wetlands losses, be incorporated in Section 5 of the main report. Also, it is unclear whether the riparian losses discussed in Section 5 refer to the same resource as the loss of wooded areas discussed in Section 5.2.1.8 of the main report.

MVP Response: Concur. The tables and information will be updated and verified for the draft report.

Required Action: Section 5 will be updated to include all needed mitigation measures, including riparian and wetlands losses. The tables and information will be updated and verified for the draft report.

Action Taken: Section 5 of the report was updated to include all the costs of the mitigation, these costs are included in the total project cost. Additional refinement will be completed on the mitigation in future reports.

HOUSACE Assessment: Resolved.

25. Mitigation performance standards, monitoring and adaptive management. The draft feasibility report should include mitigation performance standards, mitigation monitoring costs and duration, and an adaptive management plan, as discussed in the August 31, 2009 implementation guidance for Section 2036(a) of WRDA 2007.

MVP Response: Concur. The information required in Section 2036 will be included in the final report, this will include: Draft performance standards and monitoring plans for mitigation; costs for monitoring all mitigation areas; and adaptive management (including monitoring) to implement if original project is not effective. See response to comment F1.

Discussion: The district explained that the project will create many more acres of wetland in the bottom of the channel than the project is affecting. A question was raised -- Does the

vertical team concur that it would be acceptable to use those wetland acres to mitigate for the wetland loss as long as the resource agencies concur? Before this could be answered it was explained that we need to know enough about what will be created to justify the claim that the project is self-mitigating. The discussion then focused on how to address performance standards and mitigation requirements of Section 2036. Specifically, the district will need to write performance standards into the feasibility report that can be used to verify impacts after the project is constructed. It was recommend to the district speak with the Regulatory folks about suitable standards that could be used. The district was advised to be careful in writing performance standards, because the Corps will be accountable for whatever mitigation it claims will be offered. In addition the current plan has no adaptive management included. Adaptive management needs to be part of the plan until those wetlands are successful. If it is determined the mitigation doesn't perform as intended, the adaptive management will need to be modified (this adaptive management could go beyond 5-yrs). But it was pointed out that adequate analysis need to be performed upfront and not use adaptive management as a solution.

Required Action: The district will include performance standards and monitoring plans for mitigation in the report as noted in the comment. The district will also include appropriate discussion of contingency measures and adaptive management (including monitoring) to implement if original proposed mitigation does not perform as intended.

Action Taken: The performance standards and monitoring plans will be included in the final report in August. This will include the appropriate discussion of contingency measures and adaptive management if the original mitigation does not perform as intended.

HOUSACE Assessment: Resolved.

26. Consideration of mitigation banks. Section 2036(c) of WRDA 2007 directs that the Secretary, where appropriate, shall first consider the use of the mitigation bank if the bank contains sufficient available credits to offset the impact and the bank is approved in accordance with the Mitigation Rule (73 Fed. Reg. April 10 2008). The November 6, 2008 implementation guidance for this section of WRDA states that the analysis and documentation of the rationale for the determination concerning the use of banks should be included in the project decision document. Also, please be advised that the mitigation bank does not have to be capable of providing all of the mitigation needed for the project in order to be eligible for consideration. The implementation guidance is available at the following link:

http://www.usace.army.mil/CECW/Documents/cecwp/leg_manage/wrda2007/sec_2036c.pdf

MVP Response: Concur. Mitigation banks will be considered and information will be included in the final report. There are currently no mitigation banks in the study area.

Required Action: The district will consider use of mitigation banks and include appropriate discussion in the final report.

Action Taken: The information on mitigation banks was added to section 5.5.1.8.

HOUSACE Assessment: Resolved.

27. Refinement of Mitigation Plan. The text indicates that the mitigation plans require refinement during PED. Page 236 indicates that the costs and features may differ from what is described in the text. It further indicates that mitigation was developed based on only existing data to assess potential impacts and no detailed studies, analyses, or modeling was performed. An appropriate level of detail is needed to evaluate the project impacts through the period of analysis and mitigation requirements should be identified based on an average annual habitat value as a basis for CE/ICA analyses. The checklist indicates on page 2 that there is no CE/ICA analysis, but it is pending. Based on the checklist guidance (page 2) an issue paper should be submitted when analyses are proposed for deferral into PED. This does not appear to be included in the AFB package and should be discussed during the AFB due to its potential for changing the costs of the various plans.

MVP Response: Concur - The mitigation portion of the report will be updated and better defined to ensure that it is policy compliant. See response to comment F.1.

Discussion: It was agreed that the mitigation analysis cannot be put off to PED.

Required Action: The mitigation portion of the report will be updated and better defined to ensure that it is policy compliant, including requirements of Section 2036 of WRDA 2007.

Action Taken: See B. 21. Use of ratios.

HOUSACE Assessment: Resolved.

28. Cultural resources. Part 4.2.2 on pages 115-119 indicate that historically significant resources may exist in the project area. Part 5.4.2 on pages 234-235 indicate that at least one listed or eligible historic property could be affected by either the NED or LPP plans. As the report acknowledges, further information and analysis of the potential impact of the NED or LPP plans on cultural resources will need to be provided, along with an explanation of

appropriate measures to be taken to assess such potential impacts and to coordinate with appropriate state officials.

MVP Response: Concur. Information on the cultural resources and how impacts will be addressed will be included in the final report.

Required Action: The district will include information on the cultural resources and how impacts will be addressed will be included in the final report

Action Taken: The draft report includes the draft programmatic agreement which covers the Corps responsibilities under Section 106 of the National Historic Preservation Act. This is included as Attachment 3.

HOUSACE Assessment: Resolved.

29. Water Quality Effects. The Environmental Quality table lists no expected water quality effects for any alternative, however the document later states (Sec 5.2.1.2.2, P. 126) that all diversion alternatives would create temporary minor adverse impacts (3.5.2.3, p 64). All possible impacts and environmental effects should be clearly identified in the AFB document as well as all pertinent agency coordination.

MVP Response: Concur. The report will be clarified to list impacts and environmental effects.

Required Action: As noted in the response.

Action Taken: The information was updated to clearly identify the possible environmental impact. See table 13 of the main report.

HOUSACE Assessment: Resolved.

30. Sediment Transport. Because the TSP involves significant changes to the flow regime for the Red and Sheyenne Rivers, changes to sediment movement could impact the stream habitat. The sediment transport analysis seems inadequate to support conclusions presented in the report. Please provide more detail on the sediment transport that demonstrates the TSP will maintain proper aquatic habitat.

MVP Response: Concur. The PDT is using the limited data that is available and is coordinating with the appropriate resource agencies to design the project to minimize impacts to geomorphology. Additional information was gathered during the 2010 flood event to

address these concerns, but the data will not be available in time to be incorporated into the final report. Some mitigation is assumed for geomorphic impacts that will not be adequately addressed by design. Based on the available info, we do not anticipate major issues. The river systems contain mostly fines (silts and clay) the project will allow 2-yr or greater flows on the tributaries and 5-yr flows on the Red these are anticipated to be high enough so that sediment transport won't be an issue. The final report will include a qualitative analysis of bed sediment transport concerns. Adaptive management will be used to address residual concerns.

Discussion: The district explained that geomorphology is an issue the resource agencies are most concerned about regarding adaptive management. Based on the available info, the district does not think there will be major issues. Mostly fines (silts and clay). 2-yr flows on tributaries and 5-yr flow on the Red will be high enough so that sediment transport won't be an issue. The district is confident these concerns will not affect O&M of hydraulic structures and will use the new info that is currently being collected and analyzed by the USGS based on the 2010 flood event to verify assumptions. USGS data will not be available before the end of June 2010. The district will have a qualitative analysis of bed sediment transport concerns by June, but will not have a quantitative analysis until the final report submittal. Some mitigation was included on the Wild Rice River, because there is more bed load in that river. Adaptive management will be used to address residual concerns.

Required Action: The district will include qualitative data in draft report to be released to the public with quantitative data included in the final report.

Action Taken: The discussion in section 4.2.1.4 was updated to include additional information on sedimentation and geomorphology. Information from the 2010 food event will be included in the final report in August.

HOUSACE Assessment: Resolved.

31. Status of environmental coordination activities and resource agency views. The main report should contain a brief summary of resource agency views and environmental coordination activities, as noted in ER 1105-2-100, Exhibit G-5, item 10. Appendix Q, Public Involvement and Coordination, includes letters from several Federal and State resource agencies, as well as non-governmental environmental organizations.

MVP Response: The main report will be updated to include the information on the coordination and the information from the resource agencies. This will be much more important after we receive the formal responses from the agencies on the draft report.

Required Action: The district will include a summary of info already presented in Appendix Q into the main report.

Action Taken: Section 6.5 and 6.6 were included in the report to provide information on the comments received during the public comment period. Additional information and official responses will be provided in the final report in August.

32. Environmental Compliance Status Table. Table 17 on page 85 presents information on the status of project compliance with applicable statutes and laws. The status is shown as Full Compliance or N/A for each of the statutes and EOs. This is not appropriate at this stage of the study and compliance status should reflect the current status of compliance, not what is anticipated at the study completion. Please revise to show partial compliance based on the studies and coordination accomplished to date and revise the text to correct for typo errors which have shifted the statute names and status into incorrect locations. See 2.b. of Exhibit H-4 in ER 1105-2-100.

MVP Response: Concur. The information will be reviewed and updated to reflect the current status.

Required Action: As noted in the response.

Action Taken: The table was updated. See table 19.

HOUSACE Assessment: Resolved.

33. Pending Environmental Compliance. As described in the Project Study Issue Checklist accompanying the District's transmittal, substantial environmental compliance remains "pending." Similarly, as indicated in part 3.9.4 on page 88 of the report, the sponsor still requires additional state or local permits. These environmental compliance and permitting requirements will need to be completed prior to final approval of the report.

MVP Response: Partially Concur. The required environmental compliance issues will be completed for the final report. However, it is not necessary to obtain permits to complete the feasibility study and report. The sponsors cannot apply for permits until there is an authorized plan and detailed plans and specifications are completed.

Required Action: The required environmental compliance issues will be completed for the final report, recognizing that the non-Federal sponsors cannot apply for permits until there is an authorized plan and detailed plans and specifications are completed.

Action Taken: The environmental compliance issues will be completed for the final report, coordination is still ongoing. The sponsors will apply for the necessary permits at the appropriate time, following the completion of the plans and specifications.

HOUSACE Assessment: Resolved

34. District legal review. CEMVP's March 26, 2010 transmittal memo states that the St. Paul Office of District Counsel has reviewed the main report and that "[n]o significant legal issues are apparent at this time." This review should be memorialized in a written certification of the report's legal sufficiency signed by the District Counsel. See ER 1105-2-100 para. 7.d. (requiring that "decision documents [] be reviewed throughout the study process for their compliance with law and policy") and ER 1105-2-100 Appendix H, page H-2.d.3. ("District and Division Counsel are responsible for ensuring the legal sufficiency of each decision document") ("District Counsel is responsible for the legal review of each decision document and signing a certification of legal sufficiency.").

MVP Response: Concur. A certification of legal review indicating that there are no significant issues at this time will be provided for the final report and all future submittals.

Required Action: As noted in the response.

Action Taken: The St. Paul District Counsel has provided a signed legal sufficiency dated May 27, 2010. This indicates that the release is adequate for public review.

HOUSACE Assessment: Resolved.

35. Reliance on future WRDA. Part 3.9 on page 84 of the report states that the "schedule for project implementation assumes authorization in the proposed Water Resources Development Act of 2010." Given that an actual draft WRDA 2010 has not yet been formally proposed or moved forward in the legislative process, suggest this be revised to read "schedule for project implementation assumes authorization in a Water Resources Development Act of 2010 if enacted, or other future WRDA."

MVP Response: Concur. The report will be updated as suggested.

Required Action: As noted in the response.

Action Taken: The report was updated as suggested, see section 3.12.1.

HOUSACE Assessment: Resolved.

36. Cost sharing calculation. The report does not make sufficiently clear how the sponsor's cost share is calculated. As reflected in the Executive Summary on pages ES-8 and ES-9, and in parts 3.9.2 and 3.9.3 on pages 87 and 88 of the report, the project includes a \$523,061 Federal share, and a \$590,245 non-Federal share, for a total project cost of \$1,113,306. Similarly, the chart in Table 18 includes a substantial cash contribution (\$426,057) toward the cost of the flood risk management features, it is not clear how this number is calculated or how the sponsor is in fact providing its required 35 percent cost share. Similarly, with regard to the recreation features, it is not clear how the sponsor's cash contribution amounts to its 50 percent cost share.

MVP Response: Concur. The report will be clarified to show how the NED plan is the driving factor in the cost sharing. The incremental costs of the LPP will be identified as 100% the responsibility of the local sponsors. Tables will be added to show the incremental difference in the plans.

Discussion: The non-Federal sponsors will be required to cost share more than 50% of the cost because they have chosen the LPP and not the NED plan. The report will need to step through the cost sharing process and show how the total Federal cost share was determined. The district expects to get sponsor's letter before July 14th stating that they agree to pay the additional project costs beyond 50% for the LPP. This letter will be in final document, but not in document out for public review.

Required Action: The report will be revised to clearly explain why the NED plan is the driving factor in the cost sharing. The incremental costs of the LPP will be identified as 100% the responsibility of the non-Federal sponsors. Appropriate tables will be added to the report show the incremental difference in the plans. Cost apportionment tables for both LPP and NED plan will also be included.

Action Taken: Section 3.12.2 was updated to clearly identify the cost sharing requirements. This included the addition of a table showing the incremental cost between the FCP and the LPP, along with cost apportionment tables for both the FCP and LPP. These are tables 20, 21, and 22 in the main report.

37. “Special cost sharing.” Page 4 of the Project Study Issue Checklist makes reference to “special cost sharing”. It is not clear from the report what this means. From the local cooperation items listed in the recommendations section of the report, traditional cost sharing appears to be contemplated. The District should clarify this statement

MVP Response: The answer to Checklist item #43 will be changed to the following: “NO. No special cost-sharing applies, per the FSM discussion.” No special cost sharing is anticipated--standard cost sharing is assumed for all project items, and the non-Federal sponsor will pay 100% for all costs in excess of the NED plan.

Required Action: As noted in the response.

Action Taken: The checklist item was updated.

38. Sponsor letter of intent and financial self-certification. Part 3.9.5 on page 88 of the report indicates that the local sponsor supports the project and has certified its financial capability to implement the tentatively selected plan. However, the sponsor’s written commitment to the project, in the form of a letter of intent and the aforementioned financial certification, do not appear to be included in the report. These items should be included to ensure that sufficient local support for the project will enable it to be implemented, as required by ER 1105-2-100, Appendix G, at G-9 (“The non-Federal sponsor’s acceptance of, or desired departures from, the terms of the applicable model PCA must be presented, including: 1) applicable cost sharing and financial policies; 2) policies regarding provision and valuation of non-Federal lands, easements, rights-of-way, and disposal areas provided by non-Federal sponsors; 3) policies governing non-Federal project construction; and, 4) other provisions required by law and policy for new start construction projects.”).

MVP Response: Concur. The report will be clarified. The sponsors will be providing their letter of intent and financial self certification on July 15th. They have provided a letter requesting the LPP. This letter was submitted with the LPP waiver request.

Required Action: As noted in the response.

Action Taken: The local sponsors were provided an example of the financial self certification that was required and they have provided this to the Corps.

HOUSACE Assessment: Resolved.

39. Items of Local Cooperation. The items of local cooperation included in the Recommendation, Section 8.0 include no provisions for the sponsors to pay for LPP costs in excess of the Federal cost share for the NED plan. These items appear to be the standard requirements and indicate the local share is a minimum of 35% and would not exceed 50% of the total FRM costs. Table 18 shows the FRM share as \$573,124,000 out of a total FRM cost of \$1,079,065,000 or 53.1%. Appropriate cost sharing requirements should be included that address the non-Federal share exceeding 50% of the project costs based on the responsibility of the sponsors to pay for the additional LPP costs for the larger plan.

MVP Response: Concur. The items of local cooperation were updated just after the draft went to print, it now includes a statement on how the locals will pay the entire increment for the LPP.

Required Action: The draft report will include appropriated provisions related to non-Federal requirements associated with recommendation of the LPP.

Action Taken: The items of local cooperation were updated to include the local sponsors being responsible for 100% of the increment between the FCP and the LPP. All references to the NED plan were converted to FCP in this section.

HOUSACE Assessment: *Resolved.*

40. MCACES. The MCACES cost estimate (for NED and LPP) should be included in the report as prescribed in ER 1110-2-1302 (see paragraph 8.0) and ER 1105-2-100 (see Exhibit H).

MVP Response: Concur. This information will be included in the final report.

Required Action: The district will remove Exhibits A through G in Appendix L Cost engineering and include the MCACES estimates for the NED plan and LPP in the report.

Action Taken: The Exhibits were removed from the Cost appendix.

HOUSACE Assessment: *Resolved.*

41. Cost and Schedule Risk Assessment (CSRA). The information presented in paragraph L13.0 describes the CSRA process and procedures for the development of contingency. However, it is not very clear who participated in the meetings. Also, it is not evident the

CSRA results have been reviewed and approved. The requirement for cost risk analysis is prescribed ER 1110-2-1302 (see paragraph 20) and ETL-1110-2-573 (see Appendix G).

MVP Response: Concur. The CSRA will be included in the cost appendix in the August report. The report will be updated to include information on who participated. The participants were the local sponsors, Corps PDT members, AE team members, and a member of the Cost Engineering DX in Walla Walla District. Walla Walla will be completing a second CSRA based on the final costs of the NED and LPP plans, this will be included in the final report.

Discussion: The district explained that Walla Walla Cost DX assisted us with the CSRA and that the final CSRA will be included final report.

Required Action: The district will include the CSRA in the cost appendix in the final report.

Action Taken: The district has been coordinating with Walla Walla to ensure that the next round of the CSRA is completed as necessary.

HOUSACE Assessment: Resolved.

42. Total Project Cost Summary (TPCS). A TPCS should be submitted as prescribed in ER 1110-2-1302. Guidance for preparing a TPCS is described in ETL 1110-2-573.

MVP Response: Concur. The TPCS will be provided as prescribed; all costs in the feasibility report will be to the October 2009 price level.

Required Action: Project cost for the NED plan and LPP in the final feasibility report should be in October 2009 price level.

Action Taken: The TPCS is included in section 3.12.3. The project costs for the final will be provided in October 2010 price levels. The cost engineer is coordinating with Walla Walla to ensure that the cost estimates are provided with the correct basis. The costs in the report were provided to the December 2009 price level, with them being indexed up to the October 2010 price level. The final report will be updated based on the results of the conversations with Walla Walla.

HOUSACE Assessment: Resolved.

43. Executive Summary TPCS. The Total Project Cost for the recommended plan stated in the Executive Summary (ES) is not consistent with the cost stated in the Project Cost Summary Sheet (PCSS) in Appendix L. The ES shows \$1,113,307,000 based on October 2009 price level. However, the PCSS shows \$1,113,726,000 based on December 2009 price level. Also, Table 2 in the ES shows \$1,113,306,000.

MVP Response: Concur. The numbers in the report will be checked for consistency.

Required Action: As noted in the response.

Action Taken: The cost have been updated and are consistent.

HOUSACE Assessment: Resolved.

44. Inconsistent Cost Data. Table 8 of the main report has an anomaly regarding the costs for levees and floodwalls for the various MN Short Alignment alternatives. Although Table 7 shows each alternative to have a 9.9 mile long tie-back levee with a height of 8 feet, the costs in Table 8 for the 20K, 25K, 30K, and 35K plans are shown as 13,561, 12,682, 14,992, and 12,682 for the plans, respectively. It is unclear why plan costs would vary in that manner, based on the description in Table 7 and whether this could potentially impact formulation when considered with other comments. Clarification is needed to assure costs are accurately estimated as a basis for alternative comparisons.

MVP Response: Concur. The numbers will be reviewed and corrected, and any oddities that are correct will be explained in the text.

Required Action: As noted in the response.

Action Taken: The costs varied in that manner because the non-structural measures were included in that account. The smaller plan had higher non-structural costs and therefore larger costs in the account than the bigger plans. This was clarified by adding “and floodproofing” to the name of the account. See section 3.7.1.

HOUSACE Assessment: Resolved.

45. Excavation Costs. Comparison of information shown in Tables 7 and 8 shows that the ND plans have significantly higher costs for channels and canals in comparison to the MN

plans. For example the ND 30K plan has costs of \$620,367,000 versus \$524,576,000 for MN35K despite the fact that the MN plan involves an additional 1mcy of excavation (55 vs. 54 mcy). It isn't apparent why the costs should vary so significantly between the two alignments- the ND plan costs about \$95,000,000 more to excavate 1mcy less material. Is this a function of the river crossings and drop structures required for the ND plans? Please explain.

MVP Response: The information will be checked for accuracy.

Discussion: Concern was raised concerning suitability of excavated material to be used to construct levees. The district explained that there is such a massive quantity of material that is being excavated in order to construct the diversion channel that they are not very concerned about material qualities. The built up on the banks of the diversion channel are more for disposal than for the levees. However, for the LPP levees will be required. The MN side doesn't need levees in middle reaches. The upstream and downstream ends for the MN do need levees for the 500-yr level of protection.

Required Action: As noted in the response.

Action Taken: The difference in the channel costs was due to the tributary structures. Geotechnical stability issues were identified for the ND diversion channels requiring a change to the cross section. These costs were included in the draft report. Additional analysis is being completed; however the quantities of available material should be sufficient for the levee construction.

HOUSACE Assessment: Resolved.

46. Fully Funded Estimate. Table 19 on page 88 shows the schedule of funding for the LPP from FY11 through FY19. The first line for Federal E&D costs shows all funding occurring between FY 11 and FY14, with no funding scheduled between FY15 and FY19 where the majority of construction is taking place. This raises a question as to whether the E&D shown is fully accounting for the engineering during construction requirements versus Preconstruction Engineering and Design. Please clarify to assure the appropriate E&D costs are included in the fully funded project cost and planning.

MVP Response: Concur. The E&D was assumed to be for the entire design effort, however this will be modified based on the comment and spread out over the entire project implementation period.

Discussion: It was clarified that some additional material for concrete structures and rip rap, but all other material will come from excavation of the channel

Required Action: As noted in the response E&D costs will be spread out over the entire project implementation period.

Action Taken: Cost for E&D have been spread over the life of the project. See section 3.12.3.

47. Cost Apportionment. Table 18 on page 87 shows the cost apportionment for the LPP (ND35K plan). Values are missing or shown as zero in the total column for two entries (Planning Engineering & Design, Fish and Wildlife Facilities) that need to be corrected. The subtotal for flood risk management should show FRM rather than FDR, consistent with the heading. In addition, the report will need to clearly explain the cost sharing for the NED plan as a basis for comparison to show that the LPP is being cost shared appropriately.

MVP Response: Concur. The information will be reviewed and corrected.

Required Action: As noted in the response.

Action Taken: The table was updated to include FRM, the costs were revisited and the total columns were updated. Tables were added for the FCP. These changes can be found in section 3.12.2.

HOUSACE Assessment: Resolved.

48. Borrow Material. Is it assumed that all spoil material from the channel excavation will be used in the project area and that no disposal areas will be required? Will there be any additional material needs such as Borrow Material? If so then this must be addressed.

MVP Response: Concur. The spoil will all be in the project area and no borrow is anticipated. Aggregate for concrete structures and riprap will be needed.

Required Action: The REP will address use of spoil material from the channel and need of borrow material.

Action Taken: The REP will be updated for the final report to clearly indicate that borrow material is not needed except for aggregate necessary for the concrete structures and riprap. This will be included once additional information is developed.

HOUSACE Assessment: Resolved.

49. Mineral Restrictions. Does the Fee Estate include any Mineral Restrictions?

MVP Response: No mineral restrictions are needed.

Required Action: The REP will address no mineral restrictions are needed

Action Taken: The REP will be updated for the final report to indicate that no mineral restrictions are needed. Section 13 of the REP indicates that there are no present or projected mineral activities within the project area.

HOUSACE Assessment: Resolved.

50. Federal Project Lands. The REP states that there are previous Federal Project lands in the area. Recommend that these lands be placed on future mappings to insure their placement.

MVP Response: Concur. The information will be added for the draft report.

Required Action: As noted in the response.

Action Taken: The information was not as readily available as anticipate, these maps will be included in the final report submitted in August.

HOUSACE Assessment: Resolved.

51. Phasing Construction. The current acquisition schedule in paragraph 16 shows a total of 87 months from the time that the PCA is signed until the Real Estate is made available. If there is indication of phasing the construction for this project, then a brief sentence stating such should be included.

MVP Response: Concur. A detailed construction schedule is being developed that will have phasing, this will be completed for the final report (submitted in August).

Required Action: As noted in the response.

Action Taken: The information will be updated for the final report in August once the Phasing for the project is determined.

HOUSACE Assessment: Resolved.

52. Project Cost Estimate. The estimate of project costs in the Tentatively Selected Plan Table 16 in the Draft Feasibility Report do not match the Real Estate Plan totals in the REP listed on page 10.

MVP Response: Concur. The costs will be corrected.

Required Action: As noted in the response.

Action Taken: The costs in the REP were updated to match the costs in the report.

HOUSACE Assessment: Resolved.

53. Relocations. The REP paragraph 12 mentions relocations that have not been fully determined. There is a relocations figure in the feasibility report in Table 16 that has a figure. Where did this figure come from?

MVP Response: Concur. The utility relocation information should be very good in the report and was determined by identifying each of the impacted utilities. Information is still being developed on business and real estate relocations and this will be included in the final report.

Discussion: The district explained that it does not have a clear idea of business and real estate relocations at this time and it will be able to refine this as more information is available.

Required Action: Information on business and real estate relocations will be included in the final report.

Action Taken: This information will be developed and included in the final report.

HOUSACE Assessment: Resolved.

54. Sponsor Capability Checklist. The REP does not have a Sponsor Capability Checklist attached.

MVP Response: Concur. The checklist will be included in the final report once the official non-federal sponsor has been identified.

Required Action: As noted in the response.

Action Taken: The checklist will be included in the final report once the local sponsor is identified.

HOUSACE Assessment: *Resolved.*

C. REVIEW COMMENTS FROM THE JUNE 2010 DRAFT FEASIBILITY REPORT.

1. FEMA views on induced damages. The report does not appear to specifically address the current state of coordination and/or agreement with the Federal Emergency Management Agency (FEMA) over the project's contribution to induced flood damages. During past reviews of the report, FEMA has objected to the project's contribution to induced flood damages, and at least informally noted the possible impact of the project on the eligibility of state and local entities for flood insurance under FEMA's program. Whether this issue has been resolved or remains an outstanding concern, its current status and anticipated impact on the project's ability to proceed should be discussed in the report, perhaps as one of the areas of controversy discussed in Part 5.3 on page 331 of the report.

MVP Response: MVP has been coordinating with FEMA on the comments that were provided during the initial Draft Report and Environmental Impact statement. Staff level discussions indicate that the currently proposed plan is supportable by FEMA. MVP is working with FEMA to determine how to address the project impacts versus the increased base flows due to the updated hydrology. We do not see this as an area of controversy and believe that we will be able to move forward without any additional requirements or project costs to the Federal Government or the non-federal sponsors.

Discussion: The district explained there have been meetings with FEMA and that it is expected they will support the current mitigation plan in their comments on the SDEIS. The district prefers laying out the path forward outside of the FEIS. FEMA's comments on the DEIS were responded to and allowed the district to continue forward with the process.

Required Action: None.

Action Taken: None.

HOUSACE Assessment: Resolved.

2. Environmental and permitting compliance. As described in various parts of the report, substantial environmental compliance remains ongoing, and part 3.14.4 of the report indicates that additional work remains on the part of the sponsor to obtain state and local permits required for the project. These environmental compliance and permitting requirements will need to be completed prior to final approval of the report.

MVP Response: Do not concur, it is standard practice to get a number of the permits once specific plans and specifications are completed, these will not be included in the final report.

Discussion: The district explained that only 401 Certification or indication that 401 Cert will be granted will be included in the FEIS. All other permits must be acquired during plans and specs, prior to construction, when designs are nearly complete.

Required Action: Include 401 Certification or indication that 401 Cert will be granted in the FEIS.

Action Taken: MVP requested 401 Certification or an indication that 401 Certification would be granted from ND and MN. MN denied the request stating that the request should be submitted after the plans and specifications are prepared. NDDoH has provided an email stating that they see no major reasons why Section 401 WDC will not be issued.

HOUSACE Assessment: Resolved.

3. Cultural resources. The report acknowledges that historically significant resources may exist in the project area and that impacts from the project will need to be analyzed and coordinated with State Historic Preservation officials. Once a programmatic agreement is negotiated between the District and the respective officials in Minnesota and North Dakota, the resulting agreement and required coordination will need to be documented.

MVP Response: The final draft Programmatic Agreement is out for final review. Only minor changes or corrections are expected. Comments are due by close of business Friday, June 10.

The finalized Programmatic Agreement will be routed for signatures starting on June 13. Several signature copies will be sent out: one to the SHPO's, cities and counties, and one to each of the tribes listed as concurring parties. The signed signature pages will be compiled onto one copy and that original will be sent to the Advisory Council on Historic Preservation. A copy of the signed Programmatic Agreement will be sent to all signatory and concurring parties.

Required Action: None.

Action Taken: None.

HOUSACE Assessment: Resolved.

4. Real estate plan. The Preliminary Real Estate Plan indicates that no takings are currently expected to be caused by downstream impacts from the project, but acknowledges that additional analysis will be necessary to confirm this. Given the substantial acreage which appears to be at least nominally affected by induced flooding, this issue will need further review and documentation to better estimate the impact of the project on individual landowners downstream of the project and the possible need for additional real estate acquisition.

MVP Response: Agreed. Expect a Takings Analysis to be completed. Not anticipating significant acquisitions, if any.

Discussion: It was agreed that a Takings Analysis should be included for both the LPP and FCP in the FEIS.

Required Action: The district will include the results of the takings analysis for both the LPP and FCP in the FEIS.

Action Taken: The results of Takings analysis for both the LPP and FCP will not be included in the FEIS and will be completed at a later date during PED.

5. Sponsor letter of intent and financial self-certification. Part 3.14.5 on page 132 of the report indicates that the local sponsor supports the project and will certify its financial capability to implement the tentatively selected plan.

a. The sponsor's written commitment to the project, in the form of a letter of intent and a self-certification of financial capability, do not appear to be included in the report. These items should be included to ensure that sufficient local support for the project will

enable it to be implemented, as required by ER 1105-2-100, Appendix G, at G-9 (“The non-Federal sponsor’s acceptance of, or desired departures from, the terms of the applicable model PCA must be presented, including: 1) applicable cost sharing and financial policies; 2) policies regarding provision and valuation of non-Federal lands, easements, rights-of-way, and disposal areas provided by non-Federal sponsors; 3) policies governing non-Federal project construction; and, 4) other provisions required by law and policy for new start construction projects.”).

b. The report also does not appear to include a certification by the non-Federal sponsor that it has the financial ability to provide the non-Federal share of the project’s costs. This will be required prior to final approval of the report. See also CECW-PC memorandum dated 12 June 2007, Lean Six Sigma (L6S) Actions to Improve the Project Cooperation Agreement Process – Non-Federal Sponsor’s Self-Certification of Financial Capability (“a non-Federal sponsor will sign the Non-Federal Sponsor’s Self-Certification of Financial Capability For Decision Documents (enclosure 3) for such purpose.”).

MVP Response: Concur. These will be included in the final report package. The sponsors provided a letter of support indicating they are financially capable for the design agreement and that will be used.

Discussion: Include letter of support from Sponsor(s) and the Self-Certification which is a standard form located in the guidance.

Required Action: The district will include a sponsor letter of intent and Self-Certification of Financial Capability in the final submittal package.

Action Taken: The sponsor letter of intent and Self-Certification of Financial Capability have been included in the final submittal package.

HOUSACE Assessment: Resolved.

6. Advance Bridge Replacement Benefits. Other reports submitted to HQ recently, which have included significant numbers of bridge replacements, have quantified benefits due to advance bridge replacement. The LPP includes 19 highway bridges and 4 railroad bridges. Advance bridge replacement benefits could be investigated and quantified or discussed as a potential additional NED impact for completeness of the NED analysis. See IWR Report 88-R-2, NED Procedures Manual, Urban Flood Damage.

MVP Response: The bridge replacement benefits is a moot issue and was already addressed. You cannot take advanced replacement for bridges that were not there before. We discussed this in an earlier meeting with MVD/HQ.

Required Action: None.

Action Taken: None.

HOUSACE Assessment: Resolved.

7. Condemnations. How many condemnations are anticipated and what is the estimate of cost? Is that amount figured into the projections on page 11? This will also require a NFS capability assessment.

MVP Response: Unable to estimate the number of condemnations at this time without the actual number of acquisitions required. Costs of condemnations have been accounted for in contingencies and administrative costs. There are a total of 6 different entities that are working with the Corps of Engineers on this project during feasibility. They include cities, counties and watershed boards on both the Minnesota side and North Dakota side. A sponsor capability checklist will be completed and included in the FEIS.

Required Action: The district will include the Sponsor Capability Checklist in the FEIS .

Action: None. The Sponsor Capability Checklist has been included in the FEIS.

HOUSACE Assessment: Resolved.

D. COMMENTS FROM REVIEW OF THE SEPTEMBER 2011 FINAL REPORT

1. Mitigation ratios for riparian areas, pages 369 and 374, Attachment 6 pages 29-30.

The main report states in two places that a 2:1 ratio was used to estimate the mitigation need for riparian zones in the study area. The reason for employing the ratio, i.e., lack of a reliable community-based model, is provided on pages 29 and 30 of Attachment 6. While reliance on the use of a ratio is contrary to ER 1105-2-100, Section C-3 (d) (5), it appears to be reasonable in this case given the difficulties involved in evaluating the fragmented nature of the forested areas. Please be advised that questions concerning the use of the ratio may arise in review of the project by OASA(CW) and OMB.

MVP Response: Concur. PDT will be prepared to answer questions that may arise.

Action Taken: No changes were made to the report.

HOUSACE Assessment: Resolved.

2. Mitigation Banks. Use of mitigation banks, page 367. Section 5.5.2.3 of the report states that the use of mitigation banks to fulfill mitigation needs was considered, but was screened out because none of the mitigation banks had enough available credits to meet the mitigation needs of the Fargo-Moorhead project. Section 2036 (c) of WRDA directs the Secretary of the Army to consider mitigation banks to fulfill mitigation needs, where appropriate. Neither the law nor the November 6, 2008 implementation guidance requires that the mitigation bank be capable of supplying all the mitigation needed for any particular project. The stated reason for not choosing to use a mitigation bank is not sufficient to demonstrate due diligence in the consideration of mitigation banks, and additional analysis should be undertaken to document why part of the mitigation need for the project could not be satisfied by using a bank. Factors such as habitat types, costs, available credits, timing implications and associated risks, and potential adverse affects to the Corps of Engineers Regulatory program should be specifically addressed. Furthermore, the analysis should address the benefits of the transfer of liability for mitigation performance to the mitigation bank, and note that there are no follow-on monitoring and adaptive costs for mitigation needs fulfilled by a bank. The need to fully document the consideration of mitigation banks is important because of ongoing Congressional interest in the business of mitigation banking, as well as demonstrating compliance with WRDA 2007.

MVP Response: Concur.

Action Taken: Added the following text to main report section 5.5.2.3 at the end of the first paragraph:

"A review of the Upper Red River of the North Wetland Bank Service Area (region 4) indicates that there are only 26 useable wetland credits available for offsetting wetland impacts. Banks are located in five Minnesota counties within this service area and available credits range from .02 in Clay County (where project is located) to 16 credits in Otter Tail County. There are no commercial wetland banks in the state of North Dakota."

HQSACE Assessment: *Resolved.*

3. Wetland Functionality. The main report page 368 and Attachment 6, page 37 state, in part, that the LPP would provide greater wetlands functionality than the existing condition. HQSACE recommends that this statement be explained more fully, because some readers may interpret this to mean that the project is over-mitigating for the impacted wetlands. Clarity is important because the mitigation costs for the project are significant, and HQ, OASA(CW) and OMB reviewers will all be very interested to know that all mitigation costs associated with the project are well-justified.

MVP Response: Concur.

Action Taken: Main Report page 368 (section 5.5.2.3, third paragraph) and Attachment 6 page 37 (section 3.3, fourth paragraph) were edited to say, “When overall wetland functions are considered, the wetland development associated with the LPP is expected to fully offset any losses associated with project construction.” Sentences stating that the LPP would provide “equal to or greater wetland functionality than existing conditions” were deleted.

HOUSACE Assessment: *Resolved.*

4. Performance standards for mitigation features. The discussion of performance standards for geomorphology, aquatic habitat and connectivity as found in pages 56 and 57 of Attachment 6 are incomplete, and do not meet the requirements discussed in paragraph 5 (b) (3) of the August 31, 2009 implementation guidance for Section 2036 (a) of WRDA 2007. The report proposes to develop performance standards during the adaptive management phase following the completion of mitigation measures. This proposal is clearly inconsistent with WRDA 2007 and Corps guidance.

MVP Response: Non-concur. The PDT is working with resource agency stakeholders to collect data that can be used to fully define the without project condition and develop appropriate performance standards. Attachment 6, section 6.0 describes the framework that will be used to develop performance standards and metrics as project design proceeds. The report qualitatively discusses existing conditions and expected changes due to the proposed project, but there is insufficient data at this time to build meaningful metrics for geomorphology, aquatic habitat and connectivity. We are currently collecting baseline data in these areas, and we expect that better tools will evolve in the next several years that will make it possible to set appropriate metrics and performance standards prior to project implementation.

Action Taken: No changes were made to the report. The comment was resolved through discussion with OWPR staff.

HOUSACE Assessment: *Resolved.*

5. Sponsor(s) from Minnesota vs. North Dakota. We understand that while the project will include design and construction work in both Minnesota and North Dakota, it is currently unclear whether political entities in both states will be participating as formal project sponsors. To the extent that the project is intended to be carried out with only one state or local sponsor, the report will need to address how the needs of the project in all states

can be met without multiple state participation, including the ability of the participating sponsor to ensure that all local cooperation for the project can be provided, including but not limited to cost sharing, LERRD provision and OMRR&R.

MVP Response: Main Report page 137, section 3.14.5 states that both the cities of Fargo, North Dakota and Moorhead, Minnesota have expressed the desire to implement the project. Both cities entered jointly into a design agreement for the project on September 12, 2011. The cities have also entered into a limited joint powers agreement with Cass County, North Dakota and Clay County, Minnesota, the Cass County Joint Water Resource District and the Buffalo-Red River Watershed District to collaborate on project design efforts prior to authorization. The limited joint powers agreement states intent to establish another joint entity following authorization of the project. The project is not intended to be carried out by only one state or local sponsor unless a suitable joint powers entity is created to represent the several governmental stakeholders.

Action Taken: No changes were made in the report to address this comment.

HOUSACE Assessment: Resolved.

6. Sponsor work-in-kind. A recent proposed Chief's Report circulated for the project states that the project sponsors wish to perform a portion of construction work on the project and to be afforded credit for such work toward their required cost share. See CECW-PC email of proposed Chief's report dated 12 August 2011, paragraph 9 ("The non-Federal sponsors wish to perform design and construction of structural flood risk management measures that are elements of the recommended plan."). However, the feasibility report does not appear to discuss this sponsor desire to perform design and construction work, including the scope of work to be performed and the particular requirements that will need to be met for the Government to afford credit for such work performed by the sponsor. This issue should be addressed in the report.

MVP Response: Concur.

Action Taken: Main Report page 137, section 3.14.5 added the following paragraph:

"The non-Federal sponsors wish to perform design and construction of structural flood risk management measures that are elements of the recommended plan. Pursuant to Section 221 of the Flood Control Act of 1970 as amended, the non-Federal sponsors will be eligible to receive credit for the work, subject to a determination by the Secretary of the Army that the work is integral to the project and execution of an agreement covering the work that is executed by the Corps and the non-Federal sponsors prior to work being carried out."

HOUSACE Assessment: Resolved.

7. Impact of project on existing flood works. Various parts of the report, as well as the proposed Chief's Report, state that the recommended plan would modify several existing Federal flood control projects. In both documents, references are made to abandoning or to the idea of deauthorizing portions of these existing projects. As reflected in recent revisions to the Chief's Report by the Office of the Chief Counsel, no recommendation should be made that existing projects or portions to be deauthorized or abandoned. Rather, the Corps should advise that the LPP will be carried out in a way that fulfills the authorized purposes and provides intended benefits of the existing projects, while in some cases curtailing or eliminating the need for their continued operation and maintenance. This will avoid unintentionally implying an intent to end flood protection for communities currently benefitting from projects slated for "abandonment", maximize the authority retained by the Corps to carry out all projects, and avoid undercutting its ability to modify implementation of the projects as needed in the future.

MVP Response: Concur.

Action Taken: An errata sheet was prepared to indicate several paragraphs that must be revised to remove the term "abandon." The errata sheet **has been** inserted at the beginning of the final feasibility report and EIS to provide the revised text.

HOUSACE Assessment: Resolved.

8. FEMA views on induced damages. As noted in this office's prior review of the report, part 5.3 on page 352 of the report does not appear to include or address the ongoing coordination with FEMA over the project's contribution to induced flood damages, as a possible obstacle to the sponsor's participation in the project under USACE Flood Risk Management Project Policies and FEMA Regulation 44 CFR 65.12. During past reviews of the report, FEMA has objected to the project's contribution to induced flood damages, and at least informally noted the possible impact of the project on the eligibility of state and local entities for flood insurance under FEMA's program. Whether this issue has been resolved or remains an outstanding concern, its current status and anticipated impact on the project's ability to proceed should be discussed in the report.

MVP Response: Revisions to the LPP that concentrated impacts upstream of the diversion and minimized downstream impacts have reduced FEMA's concern over this issue. FEMA provided no comments on the SDEIS. Additional requirements FEMA may impose on the non-federal sponsors are minimal due to the changes in the LPP. MVP has coordinated with

FEMA on numerous occasions and has indications from FEMA that the LPP as proposed will be sufficient and will not require additional mitigation from the local sponsors.

Action Taken: Saint Paul District is continuing to coordinate with FEMA Region VIII to resolve issues. No changes were made in the report to address this comment.

HOUSACE Assessment: Resolved.

9. Real estate plan. Part 3.13.1.2 on pages 122-123 of the report as well as the real estate plan state that the recommended plan will result in 5th Amendment takings due to flood impacts caused by upstream and downstream impacts of the LPP diversion channel, and that a full takings analysis remains to be completed for all properties affected. Completion of this feasibility level analysis and incorporation of its conclusions into the required LERRD and estimated costs of the project will be required prior to final approval of the report.

MVP Response: Concur. The feasibility level takings analysis identified all of the potential properties that could have takings. The cost estimate in the real estate plan accounted for all of those properties. As we more closely analyze the individual properties, we will potentially be eliminating properties from consideration for compensation for takings, not adding new properties to the list. In other words, we have included costs for all potential takings in the estimate. Additionally, the vast majority of properties where takings are possible will already be compensated based upon the mitigation plan. There is a limited number of properties outside of the mitigation area that could have takings implications. Therefore, the impacts of a more complete takings analysis will minimally impact the final estimate in the real estate plan.

Action Taken: A feasibility level takings analysis was completed, and the results are included in the project cost estimate.

HOUSACE Assessment: Resolved.

Thomas Hughes

Policy Compliance Review Manager