FLOOD DIVERSION BOARD OF AUTHORITY
Thursday, February 5, 2015
3:30 PM
Fargo City Commission Room
Fargo City Hall
200 3rd Street North

1. Call to order

2. Approve minutes from previous meeting — Item 2. — Action

3. Approve order of agenda — Action

4. Management — Information
   a. PMC report
   b. Corps of Engineers report

5. Administrative/Legal — Information/action
   a. Lawsuit update

6. Technical
   a. Task Orders/Authority Work Directives Summary — Item 6a. — Information/action
      i. HMG Task Order No. 8 Amendment 9
      ii. HMG Task Order No. 13 Amendment 8
      iii. URS Task Order No. 1 Amendment 2
      iv. HMG AWD-00047

7. Public Outreach — Information
   a. Committee report
   b. Business Leaders Task Force update

8. Land Management — Information/action
   a. Committee report
   b. CCJWRD update

9. Finance — Information/action
   a. Committee report
   b. Task Order No. 5 Amendment 1 – CH2MHill contract — Item 9b.
   c. Voucher approval — Item 9c.

10. Other Business

11. Next Meeting – March 12, 2015

12. Adjournment

cc: Local Media

FLOOD DIVERSION BOARD OF AUTHORITY
JANUARY 8, 2015—3:30 PM

1. MEETING TO ORDER

A meeting of the Flood Diversion Board of Authority was held Thursday, January 8, 2015, at 3:30 PM in the Fargo City Commission Room with the following members present: Cass County Commissioner Ken Pawluk; Cass County Commissioner Chad M. Peterson; West Fargo City Commissioner Mike Thorstad; Fargo City Mayor Tim Mahoney; Fargo City Commissioner Mike Williams; Fargo City Commissioner Melissa Sobolik; Cass County Joint Water Resource District Manager Rodger Olson; Clay County Commissioner Grant Weyland; and Moorhead City Council Member Nancy Otto. Also present was ex-officio member Gerald Van Amburg, Buffalo-Red River Watershed District.

Staff members and others present: Cass County Administrator Keith Berndt; Fargo City Administrator Pat Zavoral; Moorhead City Manager Michael Redlinger; Clay County Administrator Brian Berg; Cass County Engineer Jason Benson; Fargo City Director of Engineering Mark Bittner; Fargo City Engineer April Walker; Bruce Spiller, CH2MHill; Mark Nisbet, Chamber of Commerce Business Leaders Task Force; Brett Coleman, Project Manager, Corps of Engineers; and Terry Williams, Project Manager, Corps of Engineers.

Mr. Mahoney welcomed Colonel Dan Koprowski, St. Paul District Commander, Corps of Engineers, the meeting. Col. Koprowski thanked the Diversion Authority for their work, and said the project is one of the top priorities within the St. Paul District.

2. MINUTES APPROVED

MOTION, passed

Mr. Olson moved and Mr. Thorstad seconded to approve minutes from the December 11, 2014, meeting as presented. Motion carried.

3. AGENDA ORDER

MOTION, passed

Mr. Pawluk moved and Ms. Sobolik seconded to approve the order of the agenda. Motion carried.

4. ELECTION OF CHAIR AND VICE CHAIR FOR 2015

MOTION, passed

Mr. Pawluk moved and Mr. Peterson seconded to nominate Darrell Vanyo as Chairman and Tim Mahoney as Vice Chairman of the Flood Diversion Board of Authority for 2015. The motion carried with eight members voting "Yes" and Mr. Williams voting "No. Mr. Williams said Darrell Vanyo has done a good job as chairman, but he feels the position should be held by an elected official. Mr. Mahoney said a few of the reasons to support the nomination is that Mr. Vanyo will be able to assist with legislative issues as well as the pending lawsuit.

5. MANAGEMENT UPDATE

Program management consultant (PMC) report

Bruce Spiller provided an update on activities over the last month including work on the in-town levees, 2nd Street North pump station, 4th Street pump station, and 2nd Street South flood wall; OHB levee design work; Minnesota EIS (Environmental Impact Statement) work products; continued work on land acquisition activities and policies; and right of entry work on impacted cemeteries.

Mr. Spiller said the first preliminary draft of the MN EIS for internal review is expected in mid-March with the draft EIS released for public comments on May 28, 2015.

Corps of Engineers report

Brett Coleman provided an update of activities by Corps of Engineers staff including Maple River aqueduct physical modeling work; continued coordination with the Minnesota DNR for the EIS; continued work on the cemetery mitigation plan; work on the operation plan and adaptive management plan for the project; participation in weekly OHB levee coordination meetings; assistance with levee design and support of construction efforts on the in-town levees; and continued development of alternative resourcing and delivery plan for expedited implementation of the project.

6. ADMINISTRATIVE/LEGAL UPDATE

Lawsuit update

Attorney Erik Johnson provided an update regarding lawsuits filed by the Richland-Wilkin Joint Powers Authority. The administrative record needs to be complete by February 23, 2015. He said oral arguments are expected to be scheduled in April.

7. TECHNICAL UPDATE

Change Order No. 2

Mr. Spiller discussed Change Order No. 2 (CO2) to the 2nd Street North pump station project to incorporate costs associated with removal of an unknown subsurface concrete structure discovered during construction activities; and to provide a "Not to Exceed" (NTE) budget for the contractor to remove and dispose of potentially hazardous fill material discovered near the subsurface concrete structure.

MOTION, passed

Mr. Pawluk moved and Mr. Peterson seconded to award Change Order No. 2 (CO2) for the 2nd Street North pump station project in the amount of $67,397.00 for a total contract value of $8,203,317.00. On roll call vote, the motion carried unanimously.

8. PUBLIC OUTREACH UPDATE

Committee report

Rodger Olson said the Public Outreach Committee met January 7th and discussed several issues including: upcoming public meetings to explain the voting process for the special assessment district; a request from Hickson and Bakke residents for help with drainage along County Highway 25, and the need for access to do survey work on owners' properties; the need for public education on the new flood plain maps in Fargo; and e-newsletter and diversion website updates.

April Walker said the City of Fargo conducted an aggressive campaign to notify homeowners about changes to flood plain maps, which become effective January 16th.

Ms. Walker said letters were sent to around 300 homeowners regarding the changes, and were given a deadline to respond to allow the city access to properties to conduct surveys. She said 221 appeals were sent to FEMA and many of the appeals were granted and the properties were removed from the flood plain. The deadline has passed to submit appeals, so homeowners will have to submit a letter of map revision, which costs $1,000. There was a suggestion that the issue be discussed by the Fargo City Commission to try and help residents.

Business Leaders Task Force

Mark Nesbit said the task force met on December 16th with North Dakota legislators. He said February 12th is "Chamber Day" at the North Dakota State Capitol, so the Chamber of Commerce has arranged for buses for task force members and other officials to visit with state legislators regarding the project.

9. LAND MANAGEMENT UPDATE

Committee report

Mr. Mahoney said the Land Management Committee met earlier this afternoon. He said work continues on the Ag Risk Evaluation by NDSU Agribusiness and Applied Economics Department; however, hydraulic data needs to be updated.

CCJWRD update

Mark Brodshaug provided an update on land acquisitions completed through December 31, 2014. He reviewed a handout with information on completed acquisitions, budget figures, and completed negotiations. He said work continues on purchase offers and negotiations with the replacement housing process for Oxbow homeowners, and appraisals continue for properties associated with the OHB levee and in-town levees. He said negotiations have concluded with the Oxbow Country Club for the purchase and relocation of the golf course with the closing on the property scheduled for next week.

10. FINANCE UPDATE

Committee report

Kent Costin, Fargo Finance Director, discussed recommendations that were approved by the Finance Committee at their meeting held on January 7th regarding project financing:

Contract with Ernst & Young

Mr. Costin said the committee discussed a scope of services with Ernst & Young to help develop long-range alternative financing options for the project as part of public/private partnerships (P3). The estimated cost for a three-month period is $175,000 to $350,000 with work to be billed on an hourly basis.

MOTION, passed

Ms. Otto moved and Mr. Pawluk seconded to approve Ernst & Young as the P3 financial advisor for the FM Diversion Authority, and approve a three-month scope of work to be billed on an hourly basis. On roll call vote, the motion carried unanimously.

Federal Highway Administration loan application

Mr. Costin said the committee discussed a loan fund administered by the Federal Highway Administration as a partial funding source for transportation-related elements of the diversion project.

The program provides low interest loans with a repayment period of up to 35 years. The application fee is $100,000, and the intent is to work with Ernst & Young to complete the application.

MOTION, passed

Mr. Pawluk moved and Ms. Sobolik seconded to approve the submission of an application for Federal Highway Administration loans for eligible components of the FM Diversion project, and approve the application filing fee of $100,000. On roll call vote, the motion carried unanimously.

Voucher approval

The bills for the month are for government relation services with Fredrikson & Byron, P.A.; legal services with Dorsey & Whitney LLP; 2nd Street North pump station work; 4th Street pump station work; and 2nd Street South floodwall work.

MOTION, passed

Mr. Peterson moved and Mr. Olson seconded to approve the vouchers in the amount of $1,398,344.16 for December, 2014. On roll call vote, the motion carried unanimously.

11. OTHER BUSINESS

Mr. Mahoney discussed Senate Bill No. 2076 which would request the State Water Commission to contract for a study on the impact of the diversion project. He referred to the feasibility study completed by the Corps of Engineers and the MN EIS being done by the MN DNR to consider the impacts of the project, and questioned the necessity of another study.

Ms. Otto asked for comments from Corps of Engineers staff regarding recent information released by the MN DNR which concluded that retention projects are not a viable alternative to the FM diversion project. Ms. Williams and Mr. Coleman said the Corps of Engineers is very confident in their work product and appreciate that another agency has come to the same conclusion.

12. NEXT MEETING DATE

There was discussion regarding the next regularly scheduled meeting on February 12th, which is the same day that the Chamber of Commerce will be taking tour buses to the State Capitol to meet with the legislators. Some board members may want to travel to Bismarck that day.

MOTION, passed

Mr. Peterson moved and Ms. Sobolik seconded to change date of the next meeting to Thursday, February 5th at 3:30 PM. Motion carried.

13. ADJOURNMENT

There being no further business, the meeting was adjourned at 4:30 PM.

Minutes prepared by Heather Worden, Cass County Administrative Assistant

Task Order and AWD Summary

Date: February 5, 2015

Task Order and AWD Summary	Budget Estimate ($)
HMG Task Order No. 8-Amendment 9 Work-In-Kind (WIK)	97,000
• Provide Additional Support for MN EIS Information Request – Incorporate AWD-00046 • Provide LFC Modeling from the Maple River to the Diversion Inlet	
HMG Task Order No. 13-Amendment 8 Levee Design and Design Support	450,000
• Provide Phase II ESA 2nd Street/Downtown - Incorporate AWD-00045 • Conduct 2nd Street N Pedestrian Crossing Evaluation • Provide Mickelson Levee Extension Design - Incorporate AWD-00042	
URS Task Order No. 1-Amendment 2 Cultural Resources Investigations	244,130
• Provide Management and Coordination Services thought December 2015 • Provide additional cultural services for WP-42 (In Town Levees) • Provide Phase I field investigations for nine (9) Staging Area Cemeteries	
HMG AWD-00047 (WP-42H2: El Zagal Phase 2 Levee Design)	50,000
• Begin El Zagal Phase 2 Levee Design	
Total	**841,130**

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TASK ORDER SUMMARY

Houston-Moore Group, LLC (HMG)
Task Order No. 8, Amendment 9 **Add $ 97,000**
Work-In-Kind (WIK)

Subtask 2.E.VI: Analysis of 37-ft stage through the Protected Area

Description:

Incorporate AWD-00046: For Fargo ND, Moorhead MN, Cass County ND, and Clay County MN review existing infrastructure and document impacts that would occur and require mitigated if the Project Red River flow through town stage were increased from 35-feet to 37-feet at the Fargo gage.

Background:

DNR requested additional information on impacts to infrastructure and new infrastructure needed for Project Red River flow through town stage/flows greater than the current Project stage of 35-feet at the Fargo gage (equivalent to approximately 17,000 cfs).

Cost = $ 16,000

Subtask 2.E.XI: LFC Modeling from the Maple River to the Diversion Inlet

Description:

For the Diversion Channel between the Maple River and the Diversion Inlet Structure, determine the appropriate meandering Low Flow Channel (LFC) wavelength and amplitude design parameters Diversion Channel bottom widths of 200-feet and 250-feet, and if authorized, model the designed alignments from the Maple River downstream to Reach 1 in RVR Meander.

Background:

Additional H&H modeling of flow in the Diversion Channel from the Maple River to the Diversion Inlet has shown that the current 300-feet wide Diversion Channel can be narrow to 200-feet and still pass the project design flows. A narrower Diversion Channel will require revised meandering LFC design parameters.

Cost = $ 81,000

Recommendation:

PMC recommends authorization for Task Order No. 8, Amendment 9 for $ 97,000.

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Houston-Moore Group, LLC (HMG)
Task Order No. 13, Amendment 8 **Add $ 450,000**
Levee Design and Design Support

Subtask 2.B.i.2: WP-42F.1 Phase II Environmental Site Assessment (ESA)

Description:

Incorporate AWD-00045: Provide up to nine (9) borings at the Case Plaza and City Hall parking lot sites, survey boring locations, and provide the following sampling and testing services: boing logs by a field geologist, continuous soil sampling to the groundwater table, soil head space analysis for volatile organic compounds (VOCs), groundwater sampling, laboratory testing and analysis of samples for the presence of contaminants, and a report of the findings.

Background:

Phase I ESAs were conducted for the Case Plaza and City Hall parking lot sites in 2013 as part of the preliminary design of WP-42 (In Town Levees). The Phase I ESA recommended additional Phase II ESA testing of the soils and groundwater on these sites. Cost = $ 27,000.

Subtask 2.B.i.2: 2nd St N Pedestrian Crossing

Description:

Provide conceptual design services including: preparation of coordination meetings and Commission meeting; development of bridge design concepts for prefabricated and pre-stressed options, at-grade crossing concepts, and coordination with landscape design; preparation of visualizations and graphics; and prepare and provide a summary report.

Background:

A 2nd St N Pedestrian Crossing between the City Hall project and the Red River at 2nd Avenue N is desired and is integral to the 2nd St N floodwall design. Cost = $ 95,000

Subtask 2.B.i.5: Mickelson Levee Extension

Description:

Incorporate AWD-00046: Complete detailed project engineering and design and provide plans and technical specifications (Division 2 and higher) for the Mickelson Levee Extension. Include required surveying, permit list, removals and demolition, geotechnical and hydraulic analyses, internal flood control and pumping, levee systems, public and private utility relocations, landscaping, drawings and specifications, internal QA/QC, design documentation, operation and maintenance plan, and project management and coordination.

Background:

The Mickelson Levee Extension is a component of In-Town levees that was conceptually evaluated as part of the July 16, 2012 report entitled “Final Technical Memorandum, AWD-00002 – Flows Through Flood Damage Reduction Area” and includes an extension of the existing Mickelson levee to the south to tie into high ground. Cost = $ 328,000

Recommendation:

PMC recommends authorization for Task Order No. 13, Amendment 8 for $ 450,000.

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URS – Task Order No. 1 – Amendment 2 — Increase $ 244,130
Phase 1 Cultural Resources Investigations

Description:

Services of Engineer

A.	Perform management and coordination services through the 2015
B.I	Perform cultural investigations in Reaches 1, 2, 4, 5 and 6
B.II	Perform cultural investigations for In-Town Levees
B.III	Perform cultural investigations for Reaches 4 and 5 EMPs
B.VI	Perform cultural investigations for the OHB Ring Levee project
B.VII	Perform cultural investigations for Staging Area Cemeteries
C.I	Perform cultural investigations for the Wild Rice Dam Fish Passage Mitigation project
C.II	Perform cultural investigations for El Zagal Phase 2 Levee project

Background:

Phase I cultural investigations are required prior to construction of the Diversion Project. This field work is generally restricted to spring and fall seasons to minimize impacts to agricultural activities. Additional cultural investigations were added for In-Town Levees, Staging Area Cemeteries, and the El Zagal Phase 2 Levee project areas. Several tasks have been completed and it is recommended that the tasks budgets be revised to amount spent.

Subtask 2.A. (Management and Coordination) - Work to date on this subtask has exceeded the established budget by $ 6,736. This subtask budget did not include work in 2015. The estimated cost budget to fund this subtask through the end of 2015 is $ 26,000.

a. A budget increase of $ 26,000 is recommended to fund this subtask through the end of 2014.

Subtask 2.B.I (Reaches 1, 2, 4, 5 and 6) - The subtask is complete and remaining budget is $ 3,528.

a. A budget decrease of $ 3,528 is recommended to close out this subtask.

Subtask 2.B.II (In-Town Levees) – Additional cultural investigation work is needed due to additional agency review comments. The estimated cost budget to complete this subtask is $ 31000.

a. A budget increase of $ 31,000 is recommended to complete this subtask.

Subtask 2.B.III (Reaches 4 and 5 EMPs) - The subtask is complete and remaining budget is $ 5,370.

a. A budget decrease of $ 5,370 is recommended to close out this subtask.

Subtask 2.B.VI (OHB Ring Levee) - The subtask is complete and remaining budget is $ 240.

a. A budget decrease of $ 240 is recommended to close out this subtask.

Subtask 2.B.VII (Staging Area Cemeteries) - Conduct pedestrian surveys and Section 106 compliance reporting for nine (9) historic cemeteries located in Cass and Richland counties, North Dakota, and in Clay and Wilkin counties, Minnesota. U.S. Army Corps of Engineers (USACE) has identified these cemeteries as needing Phase I Cultural Resources survey for the Fargo-Moorhead Metro Flood Risk Management Project (Project).

a. A budget of $ 194,000 is recommended for this subtask.

Subtask C.I (Wild Rice Dam Fish Passage Mitigation) - This subtask has been completed and remaining budget is $ 7,732.

a. A budget decrease of $ 7,732 is recommended to close out this subtask.

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Subtask C.II (El Zagal Phase 2 Levee) - The El Zagal Phase 2 Levee is a component of In-Town levees project. Complete the Phase I cultural resources survey and reporting for the El Zagal Phase 2 levee.

a. A budget of $ 10,000 is recommended to for this subtask.

Net budget increase = $ 244,130

Recommendation:

PMC recommends authorization for Task Order No. 1, Amendment 2 for $ 244,130.

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AWD SUMMARY

AWD-00047
Houston-Moore Group, LLC (HMG) — Add $ 50,000
El Zagal Phase 2 Levee Design

Description:

The AWD authorizes the start of detailed design for the El Zagal Phase 2 Levee. Work includes required surveying, permit list, removals and demolition, geotechnical and hydraulic analyses, internal flood control and pumping, levee systems, roadway revisions, public and private utility relocations, landscaping, drawings and specifications, internal QA/QC, design documentation, operation and maintenance plan, and project management and coordination.

Background:

The El Zagal Phase 2 Levee is a component of In-Town levees that was conceptually evaluated as part of the July 16, 2012 report entitled "Final Technical Memorandum, AWD-00002 – Flows Through Flood Damage Reduction Area" and includes an extension of recently completed El Zagal Phase 1 Levee to the south to tie into high ground. Scope and budget changes will be incorporated into a future task order amendment to Task Order No. 13.

Cost incurred under this AWD is not to exceed $50,000.

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This is Task Order No. 8, Amendment ~~8~~9, consisting of 14 pages.

Houston-Moore Group, LLC

Task Order No. 8, Amendment ~~8~~9

Work-In-Kind (WIK)

In accordance with Paragraph 1.01 of the Agreement between **Fargo-Moorhead Flood Diversion Authority** ("Owner") and **Houston-Moore Group, LLC** (HMG) ("Engineer") for Professional Services – Task Order Edition, dated March 8, 2012 ("Agreement"), Owner and Engineer agree as follows:

The parties agree that in the event of a conflict between prior versions of this Task Order No. 8 and this Amendment, the terms and conditions in this Amendment shall prevail, provided however, nothing herein shall preclude ENGINEER from invoicing for work authorized under prior versions of this Task Order and performed prior to effective date of this Amendment, even to the extent such prior work was revised by this Amendment. All other terms and conditions shall remain the same and are hereby ratified and affirmed by the parties.

1. Specific Project Data

   A. Title: **Work-In-Kind (WIK)**

   B. Description: This task order will include requests by USACE for the Local Sponsor (Diversion Authority) to provide WIK services related to the Project.

   C. Background: As allowed by the Federal process, USACE is allowed to request the Diversion Authority provide services as WIK for services that USACE would normally do, but that the Diversion Authority has resources or particular expertise to perform.

2. Services of Engineer

   A. MEANDER BELT WIDTH ANALYSES:

   Background: Meander Belt Width Analysis was begun under a separate contract. This scope expands upon the work completed under the separate contract.

   Develop a Technical Memorandum (TM) that provides estimates of the probability of non-exceedance for different meander belt widths given design flows and channel geometry of the Low Flow Channel (LFC), variability and uncertainty in the erodibility and shear strength of the soils along the LFC, and most likely scenarios for the sequence of diversion works commissioning.

   Develop for the following six (6) reaches:

   I. Diversion outlet upstream to Rush River inlet
   II. Rush River inlet upstream to Lower Rush River inlet
   III. Lower Rush River inlet upstream to Maple River aqueduct
   IV. Maple River aqueduct upstream to Drain 14 inlet
   V. Drain 14 inlet upstream to Drain 21C inlet
   VI. Drain 21C inlet upstream to Sheyenne River aqueduct

   Conduct the following tasks:

   I. Site visit of Red River and tributaries.

   II. Conduct geoprobe drilling, sediment coring, and carbon dating at transects along successive point bars in meander loops at the Red River of the North, Sheyenne River, and Rush River (upstream of channelized reaches) to determine channel migration rates over geologic time scale.

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III. Identify channel avulsion using LiDAR, and develop preliminary hypothesis about possible triggers.

IV. Calculate meandering planform statistics for different reaches of the Red River of the North, Rush, Lower Rush, Maple, and Sheyenne Rivers and compare bankfull geometry and streamwise slope for bracketing of the proposed planform and cross section configuration of the LFC.

V. Develop RVR Meander models for selected reaches of the Red River of the North, Rush, Lower Rush, Maple, and Sheyenne Rivers to obtain calibration parameters for evaluation of the proposed planform and cross section configuration of the LFC.

VI. Quantify the ultimate meander amplitude of the proposed planform configuration of the LFC using RVR Meander in probabilistic fashion to account for the observed variability in hydrologic conditions and soil properties.

VII. Provide most optimal, alternative planform and cross section configuration of the LFC that minimizes meandering adjustments in both the short- and long-term. Evaluate need for lateral and vertical erosion control features in the LFC or the main diversion channel.

VIII. Assess impact of different scenarios for commissioning of diversion works on short-term LFC meandering adjustments using RVR meander in deterministic fashion.

IX. Develop a summary of significant O&M activities for the West Fargo Diversion and Horace to West Fargo Diversion Channels. This will include a map for every year since the Diversion channels were constructed, including items such as quantities and lengths of sediment removal, riprap, structure installations or modifications, or surveys.

X. Provide technical assistance and review to USACE on sediment transport analysis and Geomorphology Study.

The following data and definitions will be provided by USACE or Owner:

I. The resistance to erosion and shear strength properties of the soils along the LFC, including ongoing laboratory tests of soil erodibility at Texas A&M, as well as more recent geotechnical field investigations conducted along the LFC and main diversion channel.

II. The proposed LFC dimensions (cross sections, slope) and planform configuration.

III. Design flow discharges for the LFC, including updates on the hydrology of frequent events.

IV. Proposed vegetation coverage at the bottom of the main diversion channel.

V. Report prepared by WEST Consultants (“Geomorphology Study of the Fargo, ND & Moorhead, MN Flood Risk Management Project”), including electronic files containing historical data compiled and new data collected.

VI. Most likely scenarios for commissioning of diversion works.

Prepare a first Draft Technical Memorandum:

I. Summarize key findings during initial site visit.

II. Describe field investigations along successive point bars in meander loops; include laboratory results of carbon dating, if available.

III. Identify channel avulsion areas, and of other geomorphic features (e.g., oxbows) characterizing river dynamics over long spatial and time scales.

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IV. Present meandering statistics for the Red River of the North, Rush, Lower Rush, Maple and Sheyenne rivers and compare to bankfull geometry and streamwise slopes.

V. Provide initial description of approach for meander belt width analysis using RVR Meander, including modeling in probabilistic terms.

VI. Develop and calibrate RVR Meander models for selected reaches of the Red River of the North, Rush, Lower Rush, Maple, and Sheyenne Rivers.

Prepare a second Draft Technical Memorandum:

I. Describe approach for meander belt width analysis using RVR Meander and extended geomorphologic analysis of the Red River of the North and its tributaries.

II. Process data for input into meander belt width analysis of LFC.

III. Provide meander belt width analysis of LFC using RVR meander, and iterations with sediment transport calculations.

IV. Extend geomorphologic analysis of the Red River of the North and its tributaries, including determination of channel migration rates and channel avulsion potential over long time scales.

V. Recommend design planform and cross section configuration for Final Design of LFC.

Develop a brief, graphics-rich, PowerPoint presentation of the background and results. This presentation must be suitable for a non-technical audience.

Deliverables:

I. REV2 Technical Memorandum – Meander Belt Width Analysis

II. REV2 PowerPoint Presentation

B. IDENTIFICATION AND ASSESSMENT OF TIE-BACK LEVEES:

I. Background: USACE is undertaking an analysis to determine if the tie-back levees would be classified as jurisdictional dams. If the tie-back levees are classified as dams, the impact to the project needs to be determined.

II. Assist the Owner and PMC with identifying and assessing the impacts to the Project due to the possible reclassification of the tie-back levees to be jurisdictional dams. Assistance may include:

- analysis and comparison of Federal, State of North Dakota, and State of Minnesota regulations
- identification of applicable design criteria
- analysis of floodplain impacts, including FEMA, state law and rules, and local jurisdiction regulations
- assessment of spillway and flowway requirements
- recommendations for options for the project

C. EMB OPENINGS:

I. Background: prior to operation of the Diversion, the Fargo-Moorhead area may experience flood events. The partially constructed works should not increase the impacts of flooding.

II. Determine the location and size of openings in the excavated material berms (EMBs) to prevent an increase in flood elevations from the “without project” case for the 10-yr and

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100-yr events. In addition to analysis of Red River and Rush/Lower Rush River events, analyze Sheyenne River and Maple River events. Provide to USACE design teams.

D. DIVERSION INLET GATES:

I. Background: the FM Diversion Feasibility Study recommended a fixed weir for the inlet to the Diversion Channel. A gated inlet may offer some advantages over the fixed weir.

II. Develop preliminary layout and sizing of a gated inlet to the Diversion channel, including gate sizing and number of gates, to pass flows up to the Inflow Design Flood (IDF). Describe operation during the Probable Maximum Flood (PMF).

III. Assess capacity limitations of the Sheyenne River aqueduct for events up through the IDF.

IV. Determine advantages and disadvantages of a fixed weir and a gated structure, including reliability, operability, through-town hydrograph, environmental, and geotechnical considerations, and impacts on the volume, frequency, and duration of water in the staging and storage areas for the 10, 100, and 500 year events.

V. Develop preliminary comparative cost estimates of each type of inlet.

E. ON-CALL SERVICES**:** Respond to requests for services from PMC for tasks not identified to date. Requests will be provided by PMC in writing. Work will not be performed by Engineer without authorization by PMC or Owner.

Deliverables: On-call service deliverables as requested.

I. MAXIMUM PROJECT DESIGN FLOWS. For approximately 15 Project flow scenarios, ranging from 0 – 250,000 cubic feet per second (cfs) and with a maximum flow rate through the diversion channel of 100,000 cfs:

1. Use existing model runs with Fargo Gage range of 30-40 feet and interpolate when needed, determine the following:

- Modeled flow rates through the diversion channel.
- Modeled flow rates through the Red River.
- The water surface elevation for the southern embankment (staging/storage area).

2. For stages at the Fargo Gage up to 43 feet, conduct modeling to determine:

- Modeled flow rates through the diversion channel.
- Modeled flow rates through the Red River.
- The water surface elevation for the southern embankment (staging/storage area).

Deliverables: Provide a table of results. Use template developed by USACE.

II. LOCAL DRAINAGE PLAN. Complete the scope of work identified in AWD-00005, currently being executed under City of Fargo contract No. 5683-5.

Deliverables:

1. Technical Memorandum – Local Drainage Plan for the FM Diversion Project.
2. PowerPoint Presentation.

III. REACH 1 LOW FLOW CHANNEL (LFC) MEANDER MODELING.

1. Model the Reach 1 LFC design developed by USACE using the RVR Meander software.

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Deliverables:

1. Technical Memorandum.

IV. GEOMORPHOLOGY CONSULTING

1. Provide senior engineer ongoing engineering consultation, preparation for workshop with Minnesota Department of Natural Resources, and workshop participation.

V. MN EIS SCOPING DOCUMENT

1. Participate in meetings and perform requested work to expand upon the upstream retention portion of the FM Diversion – Flood Frequency and Retention White Paper in combination with levees to 42.5 feet. Assist the USACE with comments on the MN EIS Combination of Measures without a Diversion alternative.

Deliverables:

1. Revised upstream retention white paper.

VI. MN EIS PREPARATION SUPPORT

The Minnesota Department of Natural Resources (DNR) is preparing an EIS for the Fargo-Moorhead Flood Risk Management Project and requires support from the Local Sponsors to complete technical studies and reports for the EIS as listed below.

1. Socioeconomic Analysis:

The MN EIS will provide information on the social and economic effects of reducing flood risk within the Fargo-Moorhead Metropolitan area and impacts in the staging area. This information will satisfy the State's procedural requirements to assess social and economic factors as they relate to the Project and project alternatives (Minnesota Rules part 4410.2300 H) and address public comments received regarding the socioeconomic effects of the Project.

The socioeconomic impacts will quantitatively identify the costs of the Project (including mitigation) as well as the flood damage reduction benefits arising from operation of the Project (including mitigation). The EIS will also qualitatively disclose the social implications of the Project.

The socioeconomic analysis will incorporate new and updated information in addition to what was incorporated into models developed for the FFREIS. Therefore, the EIS model outputs will not provide a side-by-side comparison of model outputs developed for the FFREIS and will not be comparable to model outputs that were presented in the FFREIS or model outputs that would result from applying the model platform used for the FFREIS.

Model outputs for inclusion in the EIS will be quantitative cost/benefits for five different flood frequencies (10, 25, 50, 100, and 500-year) for all alternatives found to meet the purpose and need of the Project and carried forward in analysis. Flood elevations from the H&H flood frequencies will be used to populate a socioeconomic model to quantify flood related costs and benefits. Local and regional benefits will be identified and incorporated into the analysis.

Social impacts such as property buyouts will be described in monetary terms where possible and qualitatively disclosed where the impact is not quantifiable. If possible, the flood damages/fighting, development and qualitative social outputs will also be displayed geographically indicating North Dakota versus Minnesota and metropolitan versus rural.

a. Software: Hazus-MH 2.1 (FEMA) with user supplied data for economic analysis (IMPLAN default data not provided with this version).

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b. Local and Regional Benefits – obtain from Corp's Regional Economic Development (RED) account or similar source. An IMPLAN model can be used to develop quantitative outputs from updated RED information that can be added and/or subtracted from the costs and benefits output from the Hazus model.

c. Cost information for analysis:

   i. Construction costs (quantitative)

   ii. Mitigation costs (quantitative)

   iii. Operation and maintenance costs (quantitative)

   iv. Social costs (qualitative)

d. Benefit information needed for analysis:

   i. Flood damages/fighting (quantitative)

   ii. Development (quantitative)

   iii. Induced economic growth (quantitative)

   iv. Social (qualitative)

e. Analyze the following MN EIS alternatives (if found to meet the purpose and need of the Project):

   i. Proposed Project

   ii. Base No Action Alternative (no emergency measures)

   iii. No Action Alternative (with emergency measures)

   iv. Distributive Storage (with flood barriers)

   v. C2 (move the Southern Alignment north 1.5 miles)

2. Other Studies and Support:

   a. Compilation of completed and currently funded flood risk reduction projects since FFREIS) – provide list of project descriptions and available information to DNR.

   b. Changes in wetland impacts due to Project alignment changes – write memo based on information provided by USACE.

   c. County and city land use plans (relevant portions) – provide information to DNR.

   d. Analysis of hydrologic rating curve – provide DNR with updated H&H models that incorporate the most recent project modifications and mitigation measures (H&H 7.1 model update).

   ~~d.~~e. Analysis of 37-feet stage through town - For Fargo ND, Moorhead MN, Cass County ND, and Clay County MN review existing infrastructure and document impacts that would occur and require mitigated if the Project Red River flow through town stage were increased from 35-feet to 37-feet at the Fargo gage. Include in the evaluation: pump dependency time, county road closures and isolated properties, protecting/maintaining sewer systems between 35-feet and 37-feet, number of basements impacted between 35-feet and 37-feet, and impacts to Cass and Clay Counties in rural areas. Determine the additional length of levees required for Project Red River flow through town stage of

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37-feet at the Fargo gage. Determine what modifications are required for certification of existing levees for Project Red River flow through town stage of 37-feet at the Fargo gage.

3. Deliverables

   a. Model outputs for different flood frequencies for all alternatives found to meet the purpose and need of the Project

   b. For alternatives modeled, maps of the flood damages/fighting, development and qualitative social outputs displayed geographically indicating North Dakota versus Minnesota and metropolitan versus rural

   c. Project descriptions and available information of completed and currently funded flood risk reduction projects since FFREIS)

   d. Wetland impacts memo due to project changes

   e. County and city land use plans

   f. Updated H&H model

   ~~f.~~g. Technical memorandum summarizing the additional impacts and mitigation for a Project 37-foot stage at the Fargo Red River gage.

VII. CEMETERY ASSESSMENT TEAM SUPPPORT

Work with the Corps-Sponsor Cemetery Assessment Team to develop two to three mitigation alternatives (if applicable) for each site:

1. Identify impacts to each of 11 impacted cemeteries, both under existing conditions and with Project. Identify if the impact severity changes/increases under the "with-project condition" (does increase in depth, duration, frequency change/increase the impact).
2. Include issues/information identified during site-visits conducted on July 21-22, 2014.
3. Identify and screen alternatives for site-specific mitigation measures for the 11 cemeteries to be impacted by the diversion project. List all mitigation types considered.
4. Include the berm alternative evaluations.
   a. Include alternatives for interior drainage features for a berm/wall alternative.
   b. Consider use of closure types for access.
   c. Identify whether there are any land constraints making a berm unfeasible at a particular cemetery.
5. Include a high-level cost estimate for each. The cost estimate should include line items for projected O&M costs with each mitigation alternative in place.
6. Consider how access to each site is under existing and "with-project conditions". Include a rough cost estimate for mitigating for access.
7. The USACE will provide any necessary geotechnical assistance.
8. Develop a report that fully documents the efforts and analysis completed in developing a site-specific mitigation plan, including specific cemetery information.

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a. Report should include cemetery maps which show land parcel information. This would also show the parcels adjacent to the cemetery which may be needed if a berm is to be constructed.

b. Incorporate the previously developed "Cemetery Study – June 2013" as an appendix.

VIII. LARGE STRUCTURES DESIGN TEAM SUPPORT

1. Provide senior engineer to provide ongoing engineering consultation to the USACE Large Structure Design Team. Participate in weekly meetings and provide status reports to Owner and PMC regarding design of the following structures: Diversion Inlet Structure, Red River Control Structure, and Wild Rice River Control Structure.

IX. HYDRAULIC STRUCTURES AESTHETICS EVALUATION

1. Background: The Owner desires to have a unified aesthetic identity for structural elements along the Diversion Channel. Engineer completed a Bridge Aesthetics Technical Memorandum in November 2012 which included a review of relevant project information, including the draft recreation plan, a picture survey of regional bridges, and the development of several bridge aesthetic concepts for interstate and county road bridges. The Owner selected a simulated stone (Mankato Cut Stone) form liner for abutment wing walls, tapered wall piers for interstate bridges and hammerhead piers for county and township bridges.

2. Purpose: The USACE has started preliminary design work on the Diversion inlet structure and requested the non-federal local sponsors provide an aesthetic plan for the structure by February 1, 2015 after completion of their Preliminary Engineering Report. This scope of work builds on the selected bridge aesthetic plan and provides for an evaluation of several aesthetic concepts for the Project's hydraulic structures.

3. Scope: An aesthetics evaluation will be conducted for the Project's hydraulic structures which include three (3) control structures and two (2) aqueducts. It will take into account and build upon the aesthetics developed for the Project bridges. Up to three aesthetics concepts will be developed for the Projects hydraulic structures and ~~a~~an Owner selection team will review and select an aesthetics plan for the structures.

    a. Review preliminary hydraulic structure design documents and relevant available base mapping, the bridge aesthetics report and relevant planning studies and agency guidelines, and the Draft Diversion Recreation and Use Plan. Identify aspects of the Recreation and Use Plan that could affect the design of structures.

    b. Assess the visual character of the proposed structure sites and nearby surrounding community context through select photographs and sketches to serve as a basis for developing aesthetic design themes appropriate to the setting.

    c. Hydraulic Structures Aesthetics Concept Development and Coordination.

        i. Develop three (3) alternative aesthetic design themes for the Project's hydraulic structures. Prepare appropriate graphics to communicate each theme for preliminary consideration by project stakeholders with the goal of selecting a preferred alternative(s) that can be applied to the entirety of the

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project to establish a distinct recognizable identity. The scale of the project may potentially warrant multiple complementary aesthetic treatments rather than just one uniform theme dependent upon further review.

d. Prepare comparative cost estimates for each alternative.

e. Prepare hydraulic structures aesthetics design drawings.

i. At a minimum, prepare drawings for one (1) control structure and one (1) aqueduct.

ii. Coordinate with design team members on technical aspects of the hydraulic structures designs.

iii. Prepare conceptual plan, elevation, and section drawings that illustrate different hydraulic structures types using the selected preferred alternative theme(s).

f. Prepare prototypical hydraulic structures aesthetics design models. Prepare conceptual 3D computer models using the Sketchup Program that illustrate prototypical conditions and select design details utilizing the selected preferred alternative theme(s).

g. Develop one (1) photo-realistic 3D visualization graphic illustrating the incorporation of the preferred alternative design at a specific project location.

h. Prepare a Hydraulic Structures Aesthetics Technical Memorandum to serve as a guide for final design and as a record of the process by which aesthetic design decisions were made. Include an executive summary, narrative, design guidelines, meeting records, and a summary record of decisions matrix.

i. The narrative should summarize the basis for the selected preferred alternative theme(s) and intended application including but not limited to: project background, site and community context, associated studies, alternative themes considered, bridge types, retaining wall types, and other design features.

ii. Prepare hydraulic structures aesthetics design guidelines. Refine and format the graphic illustrations of the prototypical and bridge-specific studies prepared in task above that will serve as guidelines for the final design phase of each hydraulic structures.

iii. Summary Record of Decisions Matrix. In simple matrix table format, list the selected hydraulic structures aesthetic options as a quick summary reference.

X. BASELINE STREAM BANK EROSION EVALUATION

1. Purpose: To establish baseline data with historical references of stream bank erosion and channel planform changes along the Red River and associated tributaries in the Fargo, ND and Moorhead, MN region using GIS aerial imagery and analysis.

2. Background: The Project is being designed and constructed to reduce the impacts of Red River flooding in the Fargo/Moorhead area. River systems in

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dynamic equilibrium generally exhibit some erosion and ongoing changes that are considered baseline or normal responses to various driving mechanisms. The Army Corps of Engineers and partners acknowledge that post construction changes to the river systems may occur and are cooperatively creating a monitoring plan and adaptive management guidelines to measure, evaluate, and respond to changes. Relative impacts of the Project on the river channel and associated resources will largely be based on assessments and comparisons of stream bank conditions over time. Monitoring the river(s) before and after construction provides the necessary empirical data for a valid assessment of the impacts that can be attributed to the Project.

3. Location: Red River and associated tributaries in the Fargo, ND and Moorhead, MN Project area. Tributaries include Wolverton Creek, Wild Rice River (ND), Buffalo River, Sheyenne River, Maple River, Rush River and Lower Rush River.

4. Deliverables:

    a. Compile channel erosion and deposition data and graphics from existing reports into one file location and summary document.

    b. Provide aerial photographs, shapefiles and attributes for all stream bank erosion and depositional features for defined rivers and creeks including:

        i. Location

        ii. Feature identification (e.g., bridge scour, overbank deposition)

        iii. Length, height, area, and estimated volume of erosion or deposition

            1. Determine existing bank heights from LIDAR and estimate erosion/deposition volumes based on the LIDAR elevations, complemented by river cross sections or bathymetric information that can be available.

        iv. Hypothesis about possible driver of feature (natural meandering process, artificial structure, land use change, surficial drainage pattern change, etc.)

        v. Percentage of each river reach (as defined in the geomorphology study by WEST Consultants, also shown in Exhibit “A”) and the overall system that each feature type represents

        vi. Percent change of each feature at each location for 3 to 4 data points over evaluation period

        vii. Graphic and tabular data of changes from 1980’s to present day

            1. GIS layer with erosion and depositional features highlighted and linked to data attributes listed above.

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XI. LFC MODELING: MAPLE RIVER TO THE DIVERSION INLET

1. Purpose: For the Diversion Channel between the Maple River and the Diversion Inlet Structure, determine the appropriate meandering LFC wavelength and amplitude design parameters Diversion Channel bottom widths of 200-feet and 250-feet.
2. Background: Additional H&H modeling of flow in the Diversion Channel from the Maple River to the Diversion Inlet has shown that the current 300-feet wide Diversion Channel can be narrow to 200-feet and still pass the project design flows. A narrower Diversion Channel will require revised meandering LFC design parameters.
3. Scope:
    a. Task 1 - Provide analysis of the morphodynamic stability of the meandering LFC alignment within the main Diversion Channel from the Maple structure upstream to the Diversion Inlet structure. Determine an appropriate alignment wavelength that will not tend to initiate planform widening. Determine an alignment amplitude such that the LFC planform is within the main Diversion Channel for 200-feet and 250-feet bottom widths and 25-feet and 50-feet side slope toe buffer zones. Model the recommended alignments in RVR Meander model and summarize the alignments' stability.
    b. Task 2 – If authorized in writing, model the designed alignments from the Maple River downstream to Reach 1 (to be provided by USACE) in RVR Meander and summarize the alignments' stability.
4. Deliverables:
    a. Draft and Final Technical Memorandums summarizing the results of the analysis and modeling.
    b. Power Point presentation summarizing the results.

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3. Owner's Responsibilities

   Owner shall have those responsibilities set forth in Article 2 and in Exhibit B.

4. Times for Rendering Services

Subtask	Start Time	Completion Time
A. Meander Belt Width Analyses	April 12, 2012	October 31, 2012
B. Identification and Assessment of Tie Back Levees	June 1, 2012	October 31, 2012
C. EMB Openings	June 1, 2012	October 15, 2012
D. Diversion Inlet Gates	June 1, 2012	October 31, 2012
E. On-Call Services	TBD with each task	September 30, 2015
E.I-Maximum Project Design Flows	July 16, 2012	October 31, 2012
E.II-Local Drainage Plan	September 13, 2012	October 31, 2012
E.III-Reach 1 Low Flow Channel Meander Modeling	November 8, 2012	December 31, 2012

Subtask	Start Time	Completion Time
E.IV-Geomorphology Consulting	December 13, 2012	September 30, 2015
E.V-MN EIS Scoping Document Comment Support	April 24, 2013	September 30, 2014
E.VI-MN EIS Preparation Support	February 13, 2014	September 30, 2015
E.VII-Cemetery Assessment Team Support	October 9, 2014	March 31, 2015
E.VIII-Large Structure Team Support	October 9, 2014	September 30, 2015
E.IX-Hydraulic Structures Aesthetics Evaluation	December 11, 2014	February 28, 2015
E.X-Baseline Stream Bank Erosion Evaluation	December 11, 2014	February 28, 2015
E.XI-LFC Modeling: Maple River to Diversion Inlet	February 5, 2015	June 30, 2015

5. Payments to Engineer

A. Owner shall pay Engineer for services rendered as follows:

I. Compensation for services identified under Subtasks A through E shall be on a Time and Material basis in accordance with the Standard Hourly Rates shown in Appendix 2 of Exhibit C of the Agreement.

II. The total compensation for services identified under the Task Order for Subtasks A through E is not-to-exceed amount as defined in the table below.

III. Estimated budget for Subtask B, Identification and Assessment of Tie-Back Levees, Subtask C, Diversion Inlet Gates, and Subtask E, On-Call Services, are based on an allowance.

1. Engineer will notify Owner when eighty percent (80%) of the budget on Subtask B, Identification and Assessment of Tie-Back Levees, Subtask C, Diversion Inlet Gates, and Subtask E, On-Call Services, is expended.

2. Engineer will prepare and submit an amendment for additional compensation when ninety percent (90%) of budget on Subtask B, Identification and Assessment of Tie-Back Levees, Subtask C, Diversion Inlet Gates, or Subtask E, On-Call Services, is expended.

3. Engineer will not perform work beyond one hundred percent (100%) of the budget for Subtask B, Identification and Assessment of Tie-Back Levees, Subtask C, Diversion Inlet Gates, or Subtask E, On-Call Services, without Owner's authorization by an amendment to this Task Order.

Subtask	Current Budget ($)	Change ($)	Revised Budget ($)
A. Meander Belt Width Analyses	307,203	0	307,203
B. Identification and Assessment of Tie-Back Levees	40,000	0	40,000
C. EMB Openings (Allowance)	39,989	0	39,989
D. Diversion Inlet Gates (Allowance)	55,418	0	55,418
E. On-Call Services ($250,000 Allowance)	100,000	0	100,000
E.I. Maximum Project Design Flows	13,658	0	13,658

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Subtask	Current Budget ($)	Change ($)	Revised Budget ($)
E.II. Local Drainage Plan	9,978	0	9,978
E.III. Reach 1 LFC Meander Modeling	9,693	0	9,693
E.IV. Geomorphology Consulting	15,736	0	15,736
E.V. MN EIS Scoping Document Comment Support	15,000	0	15,000
E.VI. MN EIS Preparation Support	250,000	~~0~~16,000	~~250~~266,000
E.VII. Cemetery Assessment Team Support	61,000	0	61,000
E.VIII. Large Structure Team Support	25,000	0	25,000
E.IX. Hydraulic Structures Aesthetics Evaluation	54,000~~0~~	~~54,000~~0	54,000
E.X. Baseline Stream Bank Erosion Evaluation	210,000~~0~~	0~~210,000~~	210,000
E.XI. LFC Modeling: Maple River to Diversion Inlet	0	81,000	81,000
TOTAL	**1,206,675~~94 2,675~~**	**97,000~~26 4,000~~**	**1,303,675~~1 ,206,675~~**

B. The terms of payment are set forth in Article 4 of the Agreement and in Exhibit C.

6. Consultants:

   A. Barr Engineering Company

   B. HDR, Inc.

7. Other Modifications to Agreement: None

8. Attachments: None

9. Documents Incorporated By Reference:

   A. AWD-00039 REV-0, Cemetery Berm Conceptual Designs and Rural Water Well Survey, dated July 10, 2014.

   B. AWD-00046 REV-0, MN EIS Support for Additional Information Request, signed December 10, 2014.

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10. Terms and Conditions: Execution of this Task Order by Owner and Engineer shall make it subject to the terms and conditions of the Agreement (as modified above), which Agreement is incorporated by this reference. Engineer is authorized to begin performance upon its receipt of a copy of this Task Order signed by Owner.

The Effective Date of this Task Order is June 14, 2012.

ENGINEER:	OWNER:
Houston-Moore Group, LLC	**Fargo-Moorhead Metro Diversion Authority**
Signature Date	Signature Date
Jeffry J. Volk Name	Darrell Vanyo Name
President Title	Board Chair Title
DESIGNATED REPRESENTATIVE FOR TASK ORDER:	DESIGNATED REPRESENTATIVE FOR TASK ORDER:
C. Gregg Thielman Name	Keith Berndt Name
Sr. Project Manager Title	Cass County Administrator Title
925 10th Avenue East West Fargo, ND 58078 Address	211 9th Street South PO Box 2806 Fargo, ND 58108-2806 Address
cgthielman@houstoneng.com E-Mail Address	berndtk@casscountynd.gov E-Mail Address
(701) 237-5065 Phone	(701) 241-5720 Phone
Fax	(701) 297-6020 Fax

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This is Task Order No. 13, Amendment ~~7~~8, consisting of 19 pages.

Houston-Moore Group, LLC

Task Order No. 13, Amendment ~~7~~8

Levee Design and Design Support

In accordance with Paragraph 1.01 of the Agreement between **Fargo-Moorhead Flood Diversion Authority** ("Owner") and **Houston-Moore Group, LLC** (HMG) ("Engineer") for Professional Services – Task Order Edition, dated March 8, 2012 ("Agreement"), Owner and Engineer agree as follows:

The parties agree that in the event of a conflict between prior versions of this Task Order No. 13 and this Amendment, the terms and conditions in this Amendment shall prevail, provided however, nothing herein shall preclude ENGINEER from invoicing for work authorized under prior versions of this Task Order and performed prior to effective date of this Amendment, even to the extent such prior work was revised by this Amendment. All other terms and conditions shall remain the same and are hereby ratified and affirmed by the parties.

1. Specific Project Data
    A. Title: **Levee Design and Design Support**
    B. Description: As part of Work-in-Kind (WIK), provide assistance to USACE, in design and design support activities, for design of levees along the Red River to support increased flow through the protected area and for levees in the upstream staging area. Provide Lands, Easements, Rights-of-Way, Relocations, and Disposal areas (LERRDs) assistance to Owner to support the levee designs.
    C. Background:
        i. Red River Levees: At the November 8, 2012 Diversion Board meeting, the Board requested the US Army Corps of Engineers (USACE) add levees along the Red River to allow increased flow through the protected area. This task order allows HMG to provide design and design support to USACE for these Red River levees.
            1. Phase 1 – Screening of alternatives and selecting final alignment scope to include: Development of Alternatives, Public Involvement, Surveying, Geotechnical Exploration and Testing, Preliminary Geotechnical Analysis, Preliminary Hydrologic and Hydraulic Analysis, Preliminary Internal Flood Control Analysis, Preliminary Utility Investigation, Preliminary Levee and Structural Design, Transportation Evaluation, Preliminary Environmental Studies, Preliminary Report and Drawings, and Project Management.
            2. Phase 2 – Detailed Plans and Specifications: Based on the alternative selected in Phase 1, conduct a Value Engineering (VE) evaluation of the proposed project and prepare plans and specifications for 65 and 95 percent submittals, and prepare a cost estimate based on the 95 percent design submittal. Notice To Proceed (NTP) will be subject to the completion and signing of the USACE Supplemental Environmental Assessment (EA).
        ii. Upstream Staging Area Levees/Ring Dikes: At the November 8, 2012 Diversion Board meeting, the Board passed AWD-00020 Recommended Board of Authority Position for Post-Feasibility Alternatives Analysis VE-13A vs. VE-13C, which authorized HMG to begin conceptual design and site investigations of potential levees for the Oxbow.

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2. Services of Engineer

A. General

i. Red River Levees. Prepare Preliminary Design Report (PDR) and drawings for the construction of levees through town. The work will be done in 2 phases: Phase 1 will include screening of alternatives, preliminary design, and selecting final alignments. Phase 2 will include detailed plans and specifications.

ii. Support for Upstream Stage Area Levees. Provide, as requested, assistance to USACE for design of ring levees and non-structural improvements in the Upstream Staging Area.

1. Provide detailed designs for four of the Oxbow/Hickson/Bakke ring levee Work Packages (WP-43A, WP-43C, WP-43D, and WP-43E).

B. Scope of Work

i. Red River Levees – Work will be done in 2 phases:

1. Phase 1 - Screening of Alternatives, Selection of Alignment, and Preliminary Design for the area in Fargo, ND along the Red River between the existing railroad embankment near 5th Avenue North and the north end of the existing 4th Street levee (near 2nd Street South). Work will include:

a. Development of Alternatives – Develop up to three (3) protection alignment concepts and conceptual level cost estimates. Participate in an alignment selection meeting.

b. Public involvement – Meet with affected property owners (5 anticipated), participate in two (2) public meetings, and respond to calls after public meetings. Prepare visualizations of alignment alternatives(s).

c. Surveying – Conduct topographic survey of project corridor including elevations, utilities, landscaping, buildings, and streets.

d. Geotechnical Exploration and Testing – Determine location of borings, right-of-entry requests, conduct borings, field and laboratory testing, to determine surface and subsurface geological conditions.

e. Preliminary Geotechnical Analysis – Conduct preliminary stability analysis on alignment alternatives and report of findings.

f. Preliminary Hydrologic and Hydraulic Analysis - Conduct HEC-RAS modeling to complete preliminary evaluation of Red River stage impacts due to proposed project.

g. Preliminary Internal Flood Control Analysis – Conduct SWMM model update for existing conditions and proposed conditions with project (including consideration of interior ponding), review of historical precipitation and stream flow, simulation of low river gravity outlet condition, simulation of high river pumped outlet condition, and determine preliminary pump sizing and additional internal storage needs.

h. Preliminary Utility Investigation – Determine preliminary utility relocation requirements, conduct utility coordination meeting, and document utility relocation requirements and issues.

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i. Preliminary Levee Design Structural Design – Develop preliminary design of levee protection system, preliminary estimate of embankment and borrow requirements, and prepare a narrative of design criteria.

j. Preliminary Structural Design – Develop preliminary design for proposed floodwalls and closures, pump stations, and miscellaneous drainage structures. Prepare a narrative with descriptions of features, design considerations, and criteria assumptions.

k. Transportation Evaluation – Develop initial evaluation of transportation impacts, and participate in two (2) coordination meetings with City of Fargo staff and two (2) coordination meetings with railroad staff. Develop up to five (5) alternatives for the 2nd Street road alignment to accommodate flood protection alternatives.

l. Preliminary Environmental Studies – Complete Phase 1 Environmental Site Assessment report for six (6) properties.

m. Preliminary Design Report and Drawings – Prepare Preliminary Design Report (PDR) with cost estimates and preliminary project plans for selected alignment. Prepare artists renderings of selected plan.

n. Project Management – Document coordination and review, schedule and resource management, budgeting, and project team coordination.

o. Landscape Architecture/Master Planning- Provide landscape architecture and master planning services for the Red River Levees.

    i. Provide landscape architecture services for the 2nd St. Corridor from NP Ave. to 4th Ave. Coordinate with the city of Fargo City Hall Project throughout the design phase of the City Hall Project.

    ii. Provide master planning services from Mickelson to the 4th St. Levee.

2. Phase 2 – Detailed Plans and Specifications: Complete detailed project engineering and design and provide plans and technical specifications (Division 2 and higher) for the selected alternative from Phase 1. Include required surveying, environmental studies, permitting, removals and demolition, geotechnical and hydraulic analyses, internal flood control and pumping, levee systems, floodwalls, closures, traffic evaluations, road realignments and signal changes, public and private utility relocations, landscaping, drawings and specifications, internal QA/QC, design documentation, operation and maintenance plan, and project management and coordination. Major milestone deliverables include:

    a. 65 Percent Design Submittal – evaluate and incorporate accepted VE proposals into the design documents, advance the detailed design to 65 percent and submit the design report, plans and specifications for review by the Diversion Authority, PMC, USACE Consistency, Agency Technical Review (ATR) and USACE Independent External Peer Review (IEPR) review teams.

    b. 95 Percent Design Submittal – evaluate and incorporate 65 percent review comments into the design documents, advance the detailed design to 95 percent and submit the design report, plans and

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specifications for review by the Diversion Authority, PMC, and USACE Consistency and ATR review teams.

c. Cost Estimate – prepare a cost estimate for the project based on the 95 percent submittal documents.

d. Operation and Maintenance Plan – prepare draft O&M Plan for review by the Diversion Authority, PMC, and USACE. Incorporate review comments and prepare final O&M Plan.

e. Bid Document Development – incorporate 95 percent review comments into the design documents and assist the PMC with development of bid documents.

f. Additional design work to accommodate requested project changes:

   i. Increase 2nd Street N pump station size and pumping capacity to 75,000 gpm and add formed pump suction inlets.

   ii. Coordinate electrical design for connection to new back-up power generator on New City Hall site.

   iii. Add forty feet of floodwall to the pump station construction package.

   iv. Use USACE specifications in lieu of City of Fargo Specifications for the pump station.

   v. Coordinate pump station and floodwall architectural and design and aesthetics with the New City Hall project.

   vi. Provide Computational Fluid Dynamics (CFD) modeling for the pump station wetwell and pump inlet design.

   vii. Phase I ESAs were conducted for the Case Plaza and City Hall parking lot sites in 2013 as part of the preliminary design of WP-42 (In Town Levees). The Phase I ESA recommended additional Phase II ESA testing of the soils and groundwater on these sites.

      1. Provide up to nine (9) borings at the Case Plaza and City Hall parking lot sites, survey boring locations, and provide the following sampling and testing services: boing logs by a field geologist, continuous soil sampling to the groundwater table, soil head space analysis for volatile organic compounds (VOCs), groundwater sampling, laboratory testing and analysis of samples for the presence of contaminants, and a report of the findings.

      2. Deliverables include draft and final Phase II ESA Reports for Case Plaza and City Hall parking lot properties, and laboratory test results.

   viii. A 2nd St N Pedestrian Overpass between the City Hall project and the Red River at 2nd Avenue N is desired and is integral to the 2nd St N floodwall design. Provide the following conceptual design services:

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1. Prepare for and attend four (4) coordination meetings and Commission meeting.
2. Develop bridge design concepts for prefabricated and pre-stressed options, at-grade crossing concepts, and coordination with landscape design.
3. Prepare visualizations and graphics for City Commission Meeting.
4. ~~1.~~4. Provide a summary report.

3. Value Engineering Study (VES)
    a. Facilitate a VES in accordance with USACE guidelines (up to 3 days) with staff from the Diversion Authority, Program Management Consultant (PMC), and USACE. Prepare and distribute materials and documents, facilitate the workshop, and prepare a VES report.
4. 4th Street Levee Pump Station Replacement
    a. Background: At the November 8, 2012 Diversion Board meeting, the Board requested the USACE add levees long the Red River to allow increased flow through the protected area. To allow 35 feet through town, the 4th Street levee requires certification. In order to meet certification criteria, the stormwater pump stations on the north end of the levee must be replaced.
    b. Detailed Plans and Specifications: Provide design services and prepare detailed plans as described below.
        i. Complete detailed project engineering and design and provide plans and technical specifications (Division 2 and higher) for the 4th Street Levee Pump Station. Include required surveying, Section 408 permit (if required), removals and demolition, geotechnical and hydraulic analyses, internal flood control and pumping, levee systems, closures, traffic evaluations, service road realignments, public and private utility relocations, landscaping, drawings and specifications, internal QA/QC, design documentation, operation and maintenance plan, and project management and coordination. Major milestone deliverables include:
            1. 35 Percent Design Submittal – prepare preliminary design submittal and submit the design report and preliminary plans for review by the Owner, PMC, and USACE Consistency and ATR review teams.
            2. 95 Percent Design Submittal – evaluate and incorporate 35 percent review comments into the design documents, advance the detailed design to 95 percent and submit the design report, plans and specifications for review by the Owner, PMC, and USACE Consistency and ATR review teams.
            3. Pre-Purchase Specifications - prepare up to 3 pre-purchase specifications, if requested, for:
                a. Gates

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b. Pumps
c. Electrical Panels

4. Cost Estimate – prepare a cost estimate for the project based on the 35 percent and 95 percent submittal documents.
5. Operation and Maintenance Plan – prepare draft O&M Plan for review by the Owner, PMC, and USACE. Incorporate review comments and prepare final O&M Plan.
6. Bid Document Development – incorporate 95 percent review comments into the design documents and assist the PMC with development of bid documents.

c. Additional design work to accommodate requested project changes:

i. Increase capacity of the back-up power generator to accommodate power for adjacent sanitary sewer lift station.
ii. Modify the pump station and generator building design including: addition/modification of transoms and lintels, lower pump station slab, deletion of fuel storage, addition of louvers, removal of windows and parapets, and modification of brick veneer.

d. Deliverables:

i. Detailed Plans and Specifications
   1. 35 Percent Design Submittal
   2. 95 Percent Design Submittal
ii. Pre-Purchase Specifications
iii. 35 Percent Cost Estimate
iv. 95 Percent Cost Estimate
v. Operation and Maintenance Plan
   1. Draft Plan
   2. Final Plan

e. Work not included in this Scope of Services:

i. Environmental permitting
ii. Utility Relocation Agreements
iii. ROW Acquisition including Appraisals, Title Searches, Title Opinions, Deeds
iv. Bid documents and bidding services

5. Mickelson Levee Extension

a. Background: The Mickelson Levee Extension is a component of In-Town levees that was conceptually evaluated as part of the July 16, 2012 report entitled "*Final Technical Memorandum, AWD-00002 – Flows Through Flood Damage Reduction Area*" and includes an extension of the existing Mickelson levee to the south to tie into high ground.

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f. Detailed Plans and Specifications: Provide design services and prepare detailed plans as described below.

    i. Complete detailed project engineering and design and provide plans and technical specifications (Division 2 and higher) for the Mickelson Levee Extension. Include required surveying, Section 408 permit (if required), removals and demolition, geotechnical and hydraulic analyses, internal flood control and pumping, levee systems, public and private utility relocations, landscaping, drawings and specifications, internal QA/QC, design documentation, operation and maintenance plan, and project management and coordination. Major milestone deliverables include:

        1. 35 Percent Design Submittal – prepare preliminary design submittal and submit the design report and preliminary plans for review by the Owner, PMC, and USACE Consistency and ATR review teams.
        2. 65 Percent Design Submittal – evaluate and incorporate 35 percent review comments into the design documents, advance the detailed design to 65 percent and submit the design report, plans and specifications for review by the Owner, PMC, and USACE Consistency and ATR review teams.
        3. 95 Percent Design Submittal – evaluate and incorporate 65 percent review comments into the design documents, advance the detailed design to 95 percent and submit the design report, plans and specifications for review by the Owner, PMC, and USACE Consistency and ATR review teams.
        4. Cost Estimate – prepare a cost estimate for the project based on the 65 percent and 95 percent submittal documents.
        5. Operation and Maintenance Plan – prepare draft O&M Plan for review by the Owner, PMC, and USACE. Incorporate review comments and prepare final O&M Plan.
        6. Bid Document Development – incorporate 95 percent review comments into the design documents and assist the PMC with development of bid documents.

g. Additional design work to accommodate requested project changes:

    i. None.

h. Deliverables:

    i. Detailed Plans and Specifications

        1. 35 Percent Design Submittal
        2. 65 Percent Design Submittal
        3. 95 Percent Design Submittal

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ii. 65 Percent Cost Estimate
iii. 95 Percent Cost Estimate
iv. Operation and Maintenance Plan

ii. Upstream Staging Area Ring Levees:

1. Provide support as defined below and as requested in writing. Types of requests may include:

    a. Respond to information requests by affected residences and develop information for presentations or public meetings.

    b. Conduct a geotechnical site visit(s) of the levee site(s) to observe surface features and, if requested, conduct subsurface investigations.

    c. Determine existing utilities and utility relocation requirements.

    d. Begin conceptual design of the levees and/or floodwalls and floodgates, interior layout (which may include street layout, storm water sewer, storage, and lift station sizing, house relocation planning, and golf course layout), and external infrastructure (road raises for egress).

2. Oxbow/Hickson/Bakke – Ring Levee Evaluation:

    a. Prepare a proposed ring levee system to reduce flood risk to Oxbow/Hickson/Bakke, ND during operation of the Diversion Project and staging of water. Show the location of a potential ring levee, develop height required for rink levee, and evaluate access during periods of Diversion operation.

    b. The ring levee will impact the golf course and clubhouse. Provide conceptual design services for re-design of the golf course and clubhouse.

        i. Provide an updated conceptual design of golf course and clubhouse based on update levee alignment to accommodate a total of 80 replacement residential lots.

    c. Initial Survey and Geotechnical Activities for Levee Design:

        i. Work with USACE to develop a geotechnical investigation plan for the alternative Levee alignments for approval.

        ii. Stake the location of approved borings and record the coordinates and elevations of the borings.

        iii. Conduct laboratory testing on boring samples provide by the USACE for the OHB ring levee alternative alignments and Wild Rice River mirco-siting evaluation. Laboratory testing to include the following: Atterburg Limits, Water Content, Hydrometer and Sieve analysis, Proctor Density, Triaxial Compression-unconsolidated/undrained, Triaxial Compression-consolidated/undrained, Torsional Ring Shear, Consolidation Reporting P-e, and TWT Extrusion and Description. Approximately 580 laboratory tests are planned.

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iv. Obtain and comply with right of entry (ROE) and right of way (ROE) requirements for each property entered.

The construction of the Oxbow/Hickson/Bakke (O/H/B) ring levee and associated work is phased. The work has been divided into five (5) Work Packages, which include: three (3) levee design packages, an interior drainage and road raise package, and a demolition and utility relocations package. One of the levee design packages (WP-43B) will be completed by the USACE. The remaining 4 design packages (WP-43A, WP-43C, WP-43D and WP-43E) will be completed in this scope of work. See Figure 1, attached.

Assumptions for WP-43A, WP-43C, WP-43D and WP-43E include:

- No additional surveys required (included in WP- 43B).
- Soil exploration, laboratory testing, and instrumentation costs included under WP-43B. Geotechnical design of the levee is required. Groundwater evaluation is required to determine impacts to existing septic systems, sewer systems and basements.
- No staging area water hydrologic and hydraulic (H&H) modeling required (included in WP- 43B). H&H for local drainage and interior drainage is required.
- Include design of levee, vegetation free zone, and ditching (input from WP-43B and WP-43D). CR-81 road raise will be in WP-43D. Retention basin/pump station design will be in WP-43D. Utility relocation design and demolition design will be in WP-43E.
- Coordination between designers for WP-43B, WP-43C, WP-43D, and WP-43E is required, along with review of design submittals from WP-43B.
- Develop design, plans, ROW drawings, technical specs, Design Documentation Report (DDR), cost estimate, and engineering considerations.
- Preliminary Engineering Report (PER) -35% review includes internal review, Sponsor review, and USACE Consistency and ATR review.
- Draft Technical Report (DTR) -65% review includes internal review, Sponsor review, USACE Consistency, ATR, and USACE IEPR. IEPR will be accomplished by the Natural Resources Conservation Service (NRCS)
- Final Technical Report (FTR) -95% review includes internal review, Sponsor review, and USACE ATR.
- Final Technical Certification (Bid Documents). Provide final documents for closeout of remaining comments and technical signoff. There will not be a review associated with this submittal.
- Bid set will include final Plans and Specifications.
- Assume limited work effort during the bid period consisting of: responding to bidders' questions and preparing amendments.
- Provide final contract award CD of all work items.
- Weekly coordination meetings will be held and will include: tech lead, geotech, cost/specs, and H&H designers. Assume the meetings for

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WP-43A and WP-43C, WP-43D, and WP-43E will be combined into one weekly meeting.

- Provide right of way drawings for the WP-43B portion of the levee.

d. WP-43A – Levee Section from Riverbend Road to CR81 (southeast): Design approximately 7,300 lineal feet (lf) of levee, interior buffer zone, and interior drainage swale (if required – based on interior drainage developed in WP-43D), including geotechnical design, civil design, permitting, cost estimates, and preparation of drawings and technical specifications; coordinate design of interior levee buffer zone (drainage swale, snow drop area, and tree screen) and recreational features with O/H/B community and developer/golf course designer; determine affect of levee and exterior impounded water on existing septic systems, sewer systems, and basements. Coordinate with design of Retention Basin (WP-43D). Coordinate with design of road raise of CR-81 (design WP-43D). To be constructed with interior drainage stormwater pump station (WP-43D).

   i. Deliverables:

      1. 35 Percent Design Submittal – prepare preliminary design submittal and submit the design report and preliminary plans for review by the Diversion Authority, PMC, and USACE Consistency and ATR review teams.

      2. 65 Percent Design Submittal – evaluate and incorporate accepted VE proposals into the design documents, advance the detailed design to 65 percent and submit the design report, plans and specifications for review by the Diversion Authority, PMC, and USACE Consistency, ATR & IEPR review teams.

      3. 95 Percent Design Submittal – evaluate and incorporate 65 percent review comments into the design documents, advance the detailed design to 95 percent and submit the design report, plans and specifications for review by the Diversion Authority, PMC, and USACE Consistency, ATR & IEPR review teams.

      4. Cost Estimate – prepare cost estimates for the project based on the 35 percent and 95 percent submittal documents.

      5. Bid Document Development – incorporate 95 percent review comments into the design documents and assist the PMC with development of bid documents.

e. WP-43C - Levee Section from CR-81 (northeast) to Riverbend Road: Design approximately 5,000 lf of levee, including geotechnical design, civil design, permitting, cost estimates, and preparation of drawings and technical specifications; coordinate design of interior levee drainage with interior drainage design as part of WP-43D; coordinate

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design of interior levee slope and recreational features with O/H/B community and golf course designer. Removal/demolition of existing structures and utility cut, cap and removal will be designed under WP-43E.

i. Deliverables:

1. 35 Percent Design Submittal – prepare preliminary design submittal and submit the design report and preliminary plans for review by the Diversion Authority, PMC, and USACE Consistency and ATR review teams.

2. 65 Percent Design Submittal – evaluate and incorporate accepted VE proposals into the design documents, advance the detailed design to 65 percent and submit the design report, plans and specifications for review by the Diversion Authority, PMC, and USACE Consistency, ATR and IEPR review teams.

3. 95 Percent Design Submittal – evaluate and incorporate 65 percent review comments into the design documents, advance the detailed design to 95 percent and submit the design report, plans and specifications for review by the Diversion Authority, PMC, and USACE Consistency and ATR review teams.

4. Cost Estimate – prepare cost estimates for the project based on the 35 percent and 95 percent submittal documents.

5. Bid Document Development – incorporate 95 percent review comments into the design documents and assist the PMC with development of bid documents.

f. WP-43D –Interior Drainage and CR-81 Road Raises: Design interior drainage system for the O/H/B communities, including both new drainage infrastructure and required rehabilitation or upgrades to existing drainage infrastructure; design stormwater retention pond and new stormwater pump station, including surveying, H&H to determine ditch cross sections and slopes, culvert sizes and slopes, geotechnical, structural, electrical, architectural, civil, permitting, cost estimates, and preparation of drawings and technical specifications. Design road raises of CR-81, including geotechnical, geology, civil, cost estimates, and preparation of drawings and technical specifications, coordinate with levee design teams.

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i. Deliverables:

1. 35 Percent Design Submittal – prepare preliminary design submittal and submit the design report and preliminary plans for review by the Diversion Authority, PMC, and USACE Consistency and ATR review teams.

2. 65 Percent Design Submittal – evaluate and incorporate accepted VE proposals into the design documents, advance the detailed design to 65 percent and submit the design report, plans and specifications for review by the Diversion Authority, PMC, and USACE Consistency, ATR and IEPR review teams.

3. 95 Percent Design Submittal – evaluate and incorporate 65 percent review comments into the design documents, advance the detailed design to 95 percent and submit the design report, plans and specifications for review by the Diversion Authority, PMC, and USACE Consistency and ATR review teams.

4. Cost Estimate – prepare cost estimates for the project based on the 35 percent and 95 percent submittal documents.

5. Operation and Maintenance Plan – prepare draft O&M Plan for review by Diversion Authority, PMC, and USACE. Incorporate review comments and prepare final O&M Plan.

6. Bid Document Development – incorporate 95 percent review comments into the design documents and assist the PMC with development of bid documents.

7. Provide a separate bid package for the pump station and gatewell pre-consolidation construction package.

8. Provide an above ground building for the stormwater pump station.

g. WP-43E – Demolition and Utility Relocations: Develop demolition plan for WP-43C Levee area (CR-81 (northeast) to Riverbend Road, including utility identification, identification of structures to be sold or demolished in place, environmental Phase 1, permitting, and required remediation. Design utilities to be cut, capped, and removed, and utilities to be relocated (coordinate with developer of new City of Oxbow infrastructure), including cost estimates, and drawings and technical specifications. Review adequacy of existing wastewater pump station and forcemain for the 38 additional residential units.

i. Deliverables:

1. 35 Percent Design Submittal – prepare preliminary design submittal and submit the design report and

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preliminary plans for review by the Diversion Authority, PMC, and USACE Consistency and ATR review teams.

2. 65 Percent Design Submittal – evaluate and incorporate accepted VE proposals into the design documents, advance the detailed design to 65 percent and submit the design report, plans and specifications for review by the Diversion Authority, PMC, and USACE Consistency, ATR and IEPR review teams.
3. 95 Percent Design Submittal – evaluate and incorporate 65 percent review comments into the design documents, advance the detailed design to 95 percent and submit the design report, plans and specifications for review by the Diversion Authority, PMC, and USACE Consistency and ATR review teams.
4. Cost Estimate – prepare cost estimates for the project based on the 35 percent and 95 percent submittal documents.
5. Bid Document Development – incorporate 95 percent review comments into the design documents and assist the PMC with development of bid documents.

h. VES or Value Based Design Charrette (VBDC) – facilitate a VES or VBDC in accordance with USACE guidelines (up to 3 days) with staff from the Diversion Authority, PMC, and USACE. Prepare and distribute materials and documents, facilitate the workshop, and prepare a VES report.

   i. Coordinate and lead VES or VBDC of the five (5) O/H/B levee design packages (WP-43A through WP-43E).

i. O/H/B Ring Levee Design Modification - 100-year Elevation

   Provide the following design services to provide a modified levee design for WP-43C and WP-43D to protect to the without project 100-year event elevation. Work tasks include:

   i. Update interior flood control model based on 100-year levee earthwork quantities.
   ii. Update WP-43D plans to include 100-year levee design.
   iii. Update WP-43C plans to include 100-yr levee design.
   iv. Calculate earthwork balance for 100-year levee design.
   v. Update stormwater pond designs for 100-year levee earthwork quantities.
   vi. Provide roadway replacement plans and traffic control for gravity drain construction area on Cass County Highway 81.

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vii. Update pump station design based on 100-yr levee scenario. Includes reconfiguration of pump station elevation as well as general civil for access, etc.

viii. Update DDRs for WP-43C and WP-43D, including interior flood control, to include 100-year levee design documentation.

ix. Provide QA/QC review of design modifications.

3. Comstock – Ring Levee Evaluation:

    a. Prepare a proposed ring levee system to reduce flood risk to Comstock, MN during operation of the Diversion Project and staging of water. Show the location of a potential ring levee, develop height required for rink levee, and evaluate access during periods of Diversion operation.

4. Christine – Ring Levee Evaluation:

    a. Prepare a proposed ring levee system to reduce flood risk to Christine, ND during operation of the Diversion Project and staging of water. Show the location of a potential ring levee, develop height required for rink levee, and evaluate access during periods of Diversion operation.

5. Wolverton – Ring Levee Evaluation:

    a. Prepare a proposed ring levee system to reduce flood risk to Wolverton, MN during operation of the Diversion Project and staging of water. Show the location of a potential ring levee, develop height required for rink levee, and evaluate access during periods of Diversion operation.

6. Staging Area – Non-Structural Improvement Evaluation:

    a. Identify individual residential properties within the staging area and evaluate the potential benefit from non-structural improvements to reduce flood risk to residential structures during operation of the Diversion Project and staging of water. Show the location of potential improvements and evaluate access during periods of Diversion operation.

        i. Provide mapping of residential structures and farmsteads impacted by the Staging Area for the 100-year event, and include estimated depth of impact for the structures with and without the project.

        ii. Where technically feasible, provide concept for non-structural improvements and estimate cost of improvements.

        iii. Develop database of impacted properties that includes relevant project information (such as depth of impact with and without project, etc.)

        iv. Assist in preparation, provide meeting materials, and attend one-on-one meetings with impacted landowners.

7. Assist with preparation of materials for public meetings.

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iii. Provide land surveying services for In Town Levee and OHB Ring Levee projects. The surveying is required to create Right of Way descriptions and certificates of survey for 34 partial takes for the OHB Ring Levee and 17 certificates for the In Town Levee project.

1. Provide real estate drawings for the El Zagal project per USACE requirements.

iv. Deliverables

1. Red River Levees – Phase 1

a. Project Schedule with milestone dates for key activities and monthly updates
b. Monthly Progress Reports and meeting minutes
c. Alignment selection TM
d. Geotechnical TM, including:
- Geotechnical field and laboratory findings
- Geotechnical stability analysis
- Survey data
- Geotechnical field logs
e. Hydrologic and Hydraulic analysis TM
f. Transportation TM
g. Phase 1 Environmental Site Assessment reports
h. Preliminary Design Report, including:
- Preliminary pump sizing and storage needs
- Utility relocation requirements and issues
- Preliminary Levee design
- Preliminary Structural design
- Cost Estimate
- Preliminary Drawings
i. Landscape concepts and plans for the 2nd St. Corridor from NP Ave. to 4th Ave.
j. Master Plan from Mickelson to 4th St. Levee.

2. Red River Levees - Phase 2

a. 65 Percent Design Submittal
b. 95 Percent Design Submittal
c. Cost Estimates
d. Operation and Maintenance Plan
i. Draft Plan
ii. Final Plan

3. Red River Levees – VES reports

4. Support for Upstream Staging Area Levees

a. Oxbow/Hickson/Bakke TM
b. WP-43A
i. 35 Percent Design Submittal
ii. 65 Percent Design Submittal
iii. 95 Percent Design Submittal
iv. Cost Estimates
c. WP-43C
i. 35 Percent Design Submittal
ii. 65 Percent Design Submittal
iii. 95 Percent Design Submittal

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iv. Cost Estimates

d. WP-43D
   i. 35 Percent Design Submittal
   ii. 65 Percent Design Submittal
   iii. 95 Percent Design Submittal
   iv. Cost Estimates
   v. Operation and Maintenance Plan
      1. Draft Plan
      2. Final Plan

e. WP-43E
   i. 35 Percent Design Submittal
   ii. 65 Percent Design Submittal
   iii. 95 Percent Design Submittal
   iv. Cost Estimates

f. VES or VBDC reports

g. Comstock TM

h. Christine TM

i. Wolverton TM

j. Staging Area Non-Structural Improvements TM

v. Work not included in this Scope of Services

1. Environmental permitting
2. Utility Relocation Agreements
3. ROW Acquisition including Appraisals, Title Searches, Title Opinions, Deeds
4. Bid documents and bidding services

3. Owner's Responsibilities

Owner shall have those responsibilities set forth in Article 2 and in Exhibit B.

4. Times for Rendering Services

Subtask	**Start Time**	**Completion Time**
2.B.i Red River Levees – Phase 1	November 8, 2012	September 30, 2013
2.B.ii Upstream Staging Area Ring Levees	November 8, 2012	September 30, 2013
Amendment 1 all work	December 13, 2012	September 30, 2013
2.B.ii.2.d WP-43A Bid Documents	August 8, 2013	May 4, 2014
Amendment 2 other work	August 8, 2013	May 31, 2015
Amendment 3 all work	November 14, 2013	September 30, 2014
Amendment 4 all work	February 13, 2014	September 30, 2014
Amendment 5 all work	May 8, 2014	September 30, 2014
Amendment 6 all work	August 14, 2014	September 30, 2015
Amendment 7 all work	October 9, 2014	September 30, 2015
Amendment 8 all work	February 5, 2015	March 31, 2016

5. Payments to Engineer

A. Owner shall pay Engineer for services rendered as follows:

i. Compensation for services shall be on a Time and Material basis in accordance with the Standard Hourly Rates shown in Appendix 2 of Exhibit C of the Agreement.

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ii. The total compensation for services identified under the Task Order for Subtasks 2.B.i through 2.B.iii is not-to-exceed amount as defined in the table below.

iii. Estimated budget for Subtask 2.B.ii, Upstream Staging Area Levees/Ring Dikes, is based on an allowance.

1. Engineer will notify Owner when eighty percent (80%) of the budget on Subtask 2.B.ii, Upstream Staging Area Levees/Ring Dikes, is expended.
2. Engineer will prepare and submit an amendment for additional compensation when ninety percent (90%) of budget on Subtask 2.B.ii, Upstream Staging Area Levees/Ring Dikes, is expended.
3. Engineer will not perform work beyond one hundred percent (100%) of the budget for Subtask 2.B.ii, Upstream Staging Area Levees/Ring Dikes, without Owner's authorization by an amendment to this Task Order.

Subtask	Current Budget ($)	Change ($)	Revised Budget ($)
2.B.i.1 Red River Levees – Phase 1 Design	490,000	0	490,000
2.B.i.1.o.i Landscape Architecture/Master Planning - 2nd St. Corridor from NP Ave. to 4th Ave.	35,000	0	35,000
2.B.i.1.o.ii Master Planning Services - Mickelson to the 4th St. Levee	100,000	0	100,000
2.B.i.2 Red River Levees – Phase 2 Design	2,340,000	~~0~~122,000	2,~~340~~462,000
2.B.i.3 Red River Levees – VES	30,000	0	30,000
2.B.i.4 4th Street Levee Pump Station Replacement	600,000	0	600,000
2.B.i.5 Michelson Levee Extension	0	328,000	328,000
2.B.ii Upstream Staging Area Ring Levees (Allowance)	440,000	0	440,000
2.B.ii.2.d WP-43A Design	275,000	0	275,000
2.B.ii.2.e WP-43C Design	190,000	0	190,000
2.B.ii.2.f WP-43D Design	1,162,000	0	1,162,000
2.B.ii.2.g WP-43E Design	260,000	0	260,000
2.B.ii.2.h O/H/B Ring Levee – VES	30,000	0	30,000
2.B.ii.2.h i. O/H/B Ring Levee Design Modification - 100-Year Elevation	110,000~~0~~	~~110,0000~~	110,000
2.B.iii Right of Way Surveying	57,000~~52,000~~	~~5,0000~~	57,000
TOTAL	**6,119,000~~6,004,000~~**	**450,000~~115,000~~**	**6,569,000~~6,119,000~~**

B. The terms of payment are set forth in Article 4 of the Agreement and in Exhibit C.

6. Consultants:

a. Braun Intertec Corporation
b. Northern Technologies, Inc.

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c. Robert Trent Jones II, LLC

7. Other Modifications to Agreement: None

8. Attachments: None

9. Documents Incorporated By Reference: ~~None~~ AWD-00045, REV-0, WP - 42F.1 Phase II Environmental Site Assessment (ESA), dated December 11, 2014.

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~~10.~~9.

~~11.~~10. Terms and Conditions: Execution of this Task Order by Owner and Engineer shall make it subject to the terms and conditions of the Agreement (as modified above), which Agreement is incorporated by this reference. Engineer is authorized to begin performance upon its receipt of a copy of this Task Order signed by Owner.

The Effective Date of this Task Order is November 8, 2012.

ENGINEER:	OWNER:
Houston-Moore Group, LLC	**Fargo-Moorhead Metro Diversion Authority**
Signature Date	Signature Date
Jeffry J. Volk Name	Darrell Vanyo Name
President Title	Chairman, Flood Diversion Board of Authority Title
DESIGNATED REPRESENTATIVE FOR TASK ORDER:	DESIGNATED REPRESENTATIVE FOR TASK ORDER:
C. Gregg Thielman Name	Keith Berndt Name
Sr. Project Manager Title	Cass County Administrator Title
925 10th Avenue East West Fargo, ND 58078 Address	211 9th Street South PO Box 2806 Fargo, ND 58108-2806 Address
cgthielman@houstoneng.com E-Mail Address	berndtk@casscountynd.gov E-Mail Address
(701) 237-5065 Phone	(701) 241-5720 Phone
Fax	(701) 297-6020 Fax

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This is Task Order No. 1, Amendment ~~1~~2, consisting of 7 pages.

Task Order No. 1, Amendment ~~1~~2

In accordance with Paragraph 1.01 of the Agreement between Fargo-Moorhead Flood Diversion Authority ("Owner") and URS Corporation ("Engineer") for Professional Services – Task Order Edition, dated March 14, 2013 ("Agreement"), Owner and Engineer agree as follows:

The parties agree that in the event of a conflict between prior versions of this Task Order No. 1 and this Amendment, the terms and conditions in this Amendment shall prevail, provided however, nothing herein shall preclude ENGINEER from invoicing for work authorized under prior versions of this Task Order and performed prior to effective date of this Amendment, even to the extent such prior work was revised by this Amendment. All other terms and conditions shall remain the same and are hereby ratified and affirmed by the parties.

~~REPLACE Task Order No. 1, Amendment 0, in its entirety with the following:~~

1. SPECIFIC PROJECT DATA

   A. Title: Phase 1 Cultural Resources Investigations

   B. Description: Complete the cultural resources investigation of the Diversion Channel that was started in prior years. Perform investigations of additional locations identified due to project footprint changes and identification of excavated material piles and construction staging areas.

2. SERVICES OF ENGINEER

   A. MANAGEMENT AND COORDINATION – Conduct Phase I cultural resources investigations in accordance with the following stipulations:

      I. Engineer's key personnel shall meet the *Secretary of the Interiors Professional Qualification Standards* for Archaeology and Architectural History:
         a. Principal investigator
         b. Field and laboratory supervisor
         c. Field crew chiefs

      II. Obtain cultural resources permits from Minnesota and North Dakota, as appropriate.

      III. Conduct a survey of project area by pedestrian examination, documenting prehistoric and historic archaeological sites, as well as standing structures.

      IV. Establish and follow a health and safety program.

      V. Conduct subsurface testing:
         a. In areas where surface visibility is less than 30 percent or where the potential exists for buried cultural resources.
         b. Include shovel testing, coring, soil borings, cutbank profiling, or other appropriate methods.
         c. Use a subsurface testing interval of 15 m (50 ft).
         d. Excavate shovel tests to at least 60 cm (2 ft) or the C horizon.
         e. Conduct hand soil cores to at least 1 m (3 ft), spaced at 15 m (50 ft) intervals.
         f. Conduct deep testing using a 2-inch-diameter or larger coring device or bucket auger at river crossings to 3 m (10 ft).
         g. Screen excavated materials through ¼-inch mesh or smaller hardware cloth.

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h. Restore excavated areas to original condition. Engineer is liable for any crop or property damage that they cause.

VI. Record survey and testing results using field notes, maps, subsurface-testing forms, and photos.

VII. Delineate boundaries of sites and subsurface tests with GPS [provide GPS data in UTM projection, NAD83 horizontal datum, and units in meters].

VIII. Prepare state site forms.

IX. Provide recommendations for Phase II testing and evaluation measures, including time and cost estimates.

X. Evaluate buildings 50 years old or older for eligibility to the National Register of Historic Places.

XI. Cultural artifacts located during fieldwork belong to property owners. If property owners desire to donate the material(s) for curation, obtain a signed release form or donation agreement.

XII. Make curatorial arrangements with Minnesota Historical Society and State Historical Society of North Dakota, meeting requirements of 36 CFR Part 79.

XIII. Cease activity in the vicinity if human remains are found, associated and/or unassociated objects of cultural patrimony. Contact the appropriate authorities.

XIV. Provide a right-of-entry agent to facilitate notification of property owners and compliance with right-of-entry agreements. Attachment 7 provides detailed right-of-entry responsibilities.

B. CONDUCT PHASE I CULTURAL RESOURCES INVESTIGATIONS IN THE FOLLOWING LOCATIONS:

I. REACHES 1, 2, 4, 5, AND 6: Approximately 90 acres remaining from the 2012 season. Attachment 1 and 1A have been provided for reference only. Approximately 35 acres within the construction limits of Reach 6 (CR-20 Bridge and Channel). Shapefiles will be provided to Engineer prior to start of field work.

II. IN-TOWN LEVEES: Approximately 20 acres in the area along 2nd Street between the BNSF Railroad on the north and NP Avenue on the south and also south of Main Avenue. Attachment 2 has been provided for reference only. Shapefiles will be provided to Engineer prior to start of field work.

a. Conduct initial architectural survey investigation to determine number of buildings impacted and estimated level of effort to complete architectural survey and report writing. Review with Owner.

b. In accordance with the Programmatic Agreement (PA) executed between USACE, North Dakota and Minnesota State Historic Preservation Offices (SHPOs), historic structures and buildings within ½ mile of the project features (including levees and floodwalls) will be evaluated.

i. Conduct a GIS based viewshed analysis within ½ mile indirect Area of Potential Effect (APE) of the In-Town Levees 2nd Street floodwall project to determine the outer limits of the visual effects of the floodwall.

ii. Identify buildings 50 years old or older within the outer limits of the indirect APE and evaluate their eligibility to the National Register of Historic Places (NRHP).

iii. Conduct field surveys of identified buildings per North Dakota and Minnesota SHPO requirements.

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iv. Record findings in a Phase I Cultural Resources Inventory (CRI) draft report. Provide draft report to USACE and North Dakota and Minnesota SHPOs for review. Incorporate comments and provide final CRI report.

~~iv.~~c. Provide additional consultation with ND SHPO and MN SHPO to further delineate the field methodology and the appropriate level of effort for the survey and reporting for the portions of the Project within the indirect APE.

III. REACHES 4 AND 5: Proposed Excavated Material Piles (EMPs) and construction staging areas. Attachment 3 has been provided for reference only. Shapefiles will be provided to Engineer prior to start of field work.

a. Reach 4: Approximately 71 acres of EMPs, temporary work areas, and construction staging areas.

b. Reach 5: Approximately 112 acres of EMPs, temporary work areas, construction staging areas, and temporary by-pass channels.

IV. WESTERN ALIGNMENT CHANGE: If directed in writing, conduct Phase I cultural resources investigations on approximately 1800 acres of portions of the Diversion alignment from the Maple River south to the Sheyenne River. Attachment 4 has been provided for reference only. Shapefiles will be provided to Engineer prior to start of field work.

V. SOUTHERN ALIGNMENT CHANGE: Conduct Phase I cultural resources investigations on approximately 6,062 acres of the southern alignment, including the southern embankment, Wild Rice River control structure, Red River control structure, North Dakota tie-back levee, Minnesota tie-back levee, and the I-29 transportation corridor. Attachment 5 has been provided for reference only. Shapefiles will be provided to Engineer prior to start of field work.

VI. PROPOSED OXBOW-HICKSON-BAKKE LEVEE: Conduct Phase I cultural resources investigations on approximately 1,062 acres of the levee footprint and areas inside the levee, including a pedestrian survey in agricultural fields, borrow areas, levee construction, and a reconnaissance survey along CR-18. Attachment 6 has been provided for reference only. Shapefiles will be provided to Engineer prior to start of field work.

VII. STAGING AREA HISTORIC CEMETERIES: Conduct pedestrian surveys and Section 106 compliance reporting for nine (9) historic cemeteries located in Cass and Richland counties, North Dakota, and in Clay and Wilkin counties, Minnesota. U.S. Army Corps of Engineers (USACE) has identified these cemeteries as needing Phase I Cultural Resources survey for the Fargo-Moorhead Metro Flood Risk Management Project (Project).

a. Tasks related to the Phase I survey and reporting for the cemeteries include: Field Prep, Mobilization, and Demobilization; Fieldwork, preparation of Site Forms, preparation of Reports, ROE coordination, Agency coordination, and Project Management.

b. Deliverables include: draft report submittal to USACE/SHPOs, response to comments, and final deliverables to MFDA, USACE, ND SHPO, MN OSA, and MHS.

c. The nine (9) cemeteries are:

i. In Minnesota (5): Clara Cemetery, Roen Family Cemetery, Wolverton Cemetery, Hoff Cemetery, and Comstock Cemetery.

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ii. In North Dakota (4): North Pleasant Church Cemetery, Lower Wild Rice and Red River Cemetery, Hemnes Cemetery, and Eagle Valley Evangelical Cemetery.

~~VI.~~

C. ON-CALL SERVICES: when specifically authorized in writing by Owner or Owner's Project Management Consultant (PMC), provide cultural resource investigations as directed.

I. WILD RICE RIVER DAM: Approximately 4 acres on both banks of the Wild Rice River and within the construction limits area.

a. Conduct a Phase I cultural survey.

i. Conduct subsurface testing, including soil cores for the site.

b. Conduct a Phase II evaluation of the National Register of Historic Places eligibility of the existing Wild Rice Dam.

c. Proposed work schedule: complete field work by May 30, 2014, submit draft report June 30, 2014; thirty day North Dakota SHPO review ending July 30, 2014; and final report due August 29, 2014.

II. EL ZAGAL PHASE 2 LEVEE: complete the Phase I cultural resources survey and reporting for the El Zagal Phase 2 levee.

~~c. Cemetery …~~

D. DELIVERABLES:

I. Field notes—one copy

II. Field report(s)—letter report

III. Draft contract report

IV. Final contract report

3. OWNER'S RESPONSIBILITIES

A. Owner shall have those responsibilities set forth in Article 2 and in EXHIBIT B of the Agreement.

B. Acquire Rights of Entry for properties to be investigated.

4. TIMES FOR RENDERING SERVICES

Subtask	Start Time	Completion Time
A.	May 9, 2013	December 31, 2015
B.I and B.II	May 9, 2013	September 30, 2015
B.III through B.VII,	May 9, 2013	December 31, 2015
C.I	April 10, 2014	December 31, 2015
C.II	February 5, 2015	December 31, 2015

5. PAYMENTS TO ENGINEER

A. Owner shall pay Engineer for services rendered as follows:

I. Compensation for services identified under Subtasks A through C shall be on a Time and Material basis in accordance with the Standard Hourly Rates shown in Exhibit C of the Agreement.

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II. The total compensation for services identified under the Task Order for Subtasks A through C is not-to-exceed the amount in the table below.

III. Estimated budget for Subtask C, On-Call Services, is based on an allowance.

1. Engineer will notify Owner when eighty percent (80%) of the budget on Subtask C, On-Call Services, is expended.

2. Engineer will prepare and submit an amendment for additional compensation when ninety percent (90%) of budget on Subtask C, On-Call Services, is expended.

3. Engineer will not perform work beyond one hundred percent (100%) of the budget for Subtask C, On-Call Services, without Owner's authorization by an amendment to this Task Order.

Subtask	Current Budget ($)	Change ($)	Revised Budget ($)
A. MANAGEMENT and COORDINATION	43,000~~20,000~~	~~23,0000~~26,000	~~43~~69,000
B.I REACHES 1, 2, 4, 5 and 6	20,000~~15,000~~	~~5,0000~~ -3,528	~~20,000~~16,472
B.II IN-TOWN LEVEES	175,000~~25,000~~	~~150,000~~31,000	~~175~~206,000
B.III REACHES 4 and 5 EMPs	50,000	-5,370~~0~~	~~50,000~~44,630
B.IV WESTERN ALIGNMENT CHANGE	105,000	0	105,000
B.V SOUTHERN ALIGNMENT CHANGE	429,000~~140,000~~	~~289,0000~~	429,000
B.VI PROPOSED OXBOW-HICKSON-BAKKE LEVEE	129,000~~70,000~~	~~59,0000~~ 240	~~129,000~~128,760
B.VII STAGING AREA HISTORIC CEMETERIES	0	194,000	194,000
C. ON-CALL SERVICES (Allowance)	10,000~~70,000~~	~~60,00000~~	~~10~~10,000
C.I WILD RICE RIVER DAM	60,000	~~60,0000~~ 7,732	~~60,000~~52,268
C.II EL ZAGAL PHASE 2 LEVEE	0	10,000	10,000
TOTAL	**1,021,000~~495,000~~**	**~~526~~244,130~~,000~~**	**1,~~021~~265,130~~,000~~**

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B. The terms of payment are set forth in Article 4 of the Agreement and EXHIBIT C of the Agreement.

6. Consultants:

A. Land Services, Inc.

7. Other Modifications to Agreement: No additions or modifications

8. Attachments: None

9. Documents Incorporated By Reference: None

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10. Terms and Conditions: Execution of this Task Order by Owner and Engineer shall make it subject to the terms and conditions of the Agreement (as modified above), which Agreement is incorporated by this reference. Engineer is authorized to begin performance upon its receipt of a copy of this Task Order signed by Owner.

The Effective Date of this Task Order is May 9, 2013.

ENGINEER:	OWNER:
URS Corporation	**Fargo-Moorhead Metro Diversion Authority**
Signature Date	Signature Date
Wm. R. Killam Name	Darrell Vanyo Name
Vice President Title	Board Chair Title
DESIGNATED REPRESENTATIVE FOR TASK ORDER:	DESIGNATED REPRESENTATIVE FOR TASK ORDER:
Gordon C. Tucker, Jr. Name	Keith Berndt Name
Program Manager Title	Cass County Administrator Title
URS Corporation 8181 E. Tufts Avenue Denver, CO 80237 Address	211 9th Street South PO Box 2806 Fargo, ND 58108-2806 Address
Gordon.Tucker@urs.com E-Mail Address	berndtk@casscountynd.gov E-Mail Address
(303) 740-3850 Phone	(701) 241-5720 Phone
(303) 694-3946 Fax	(701) 297-6020 Fax

DRAFT

METRO FLOOD DIVERSION PROJECT

AUTHORITY WORK DIRECTIVE

AWD-00047 REV-0

El Zagal Phase 2 Levee Design

WORK TYPE: WIK

TO: Houston-Moore Group, LLC

DATE INITIATED: 2/5/2015

PROJECT: Fargo-Moorhead Diversion Engineering Design

OWNER: Metro Flood Diversion Authority

The following additions, deletions, or revisions to the Work have been ordered and authorized:

OBJECTIVE:

Begin work on El Zagal Phase 2 Levee design.

BACKGROUND:

The El Zagal Phase 2 Levee is a component of In-Town levees that was conceptually evaluated as part of the July 16, 2012 report entitled "*Final Technical Memorandum, AWD-00002 – Flows Through Flood Damage Reduction Area*" and includes an extension of recently completed El Zagal Phase 1 Levee to the south to tie into high ground.

SCOPE:

Begin detailed project engineering and design and provide plans and technical specifications (Division 2 and higher) for the El Zagal Phase 2 Levee. Include required surveying, permit list, removals and demolition, geotechnical and hydraulic analyses, internal flood control and pumping, levee systems, roadway revisions, public and private utility relocations, landscaping, drawings and specifications, internal QA/QC, design documentation, operation and maintenance plan, and project management and coordination.

DELIVERABLES:

As identified in future amendment.

SCHEDULE:

Begin upon receipt of AWD.

HOW WORK IS PERFORMED:

This work will be performed on a time and material basis.

COST:

Cost incurred under this AWD is not to exceed $50,000.00. This limit will not be exceeded without further written approval. The above scope of work will be incorporated into a future Task Order No. 13 amendment, which will supersede this AWD. Costs associated with this AWD will be invoiced under existing Task Order No. 13, Levee Design and Design Support.

REASON FOR CHANGE(S):

Due to work planning and contract scheduling, the El Zagal Phase 1 Levee design was completed under a City of Fargo contract. El Zagal levee work is a component of WP-42 (In Town Levees). El Zagal Phase 2 Levee design work to be incorporated into HMG's Diversion Authority task order.

ATTACHMENTS (List Supporting Documents):

None

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It is understood that this Authority Work Directive will not change the Contract Price or Times, but is evidence that the parties expect a Contract Amendment to be subsequently issued reflecting the changes.

Recommended by: CH2M HILL
Program Management Consultant

Bruce Spiller, P.E.	Program Manager
Name	Title
Signature	Date

Ordered by: Board of Authority
Owner

Darrell Vanyo	Board Chair
Name	Title
Signature	Date

DRAFT

Item 9b.

AMENDMENT ONE to

CH2M HILL Task Order No. 5
Diversion Board of Authority
Metro Flood Diversion Project
Pre-Project Partnership Agreement (PPA) Program, Technical, Legislative Support, Project Implementation, Public Outreach, and Land Support Services

This Amendment No. 1 is to CH2M HILL's Task Order No. 5, Pre-Project Partnership Agreement (PPA) Program, Technical, Legislative Support, Project Implementation, Public Outreach, and Land Support Services for the Fargo-Moorhead Metro Flood Diversion Project.

The purpose of this Amendment is to extend the period of performance for services under Task Order No. 5, as described in this Amendment.

1. Modify the Scope of Services as follows: no change.
2. Modify the Scope not included in this Task Order as follows: no change.
3. Modify the Time for Rendering Services as follows:
    a. Replace "End: February 27, 2015" with "End: February 26, 2016".
4. Modify the Payments to ENGINEER as follows:
    a. Period of Performance – Replace "Six (6) Months" with "Eighteen (18) Months"
    b. Total Compensation and Budget –
        i. Monthly Rate – no change.
        ii. Increase Budget by "$3,720,000."
5. Other Modifications to the Agreement: Subtask 5.D: Delete the sentence "A sub-consultant, Ernst and Young Infrastructure Advisors, will be retained to assist with this subtask".

DRAFT

This Amendment and the services covered by this Amendment will be performed in accordance with the Provisions and any attachments or schedules of the Agreement. This Amendment will become a part of the referenced Agreement when executed by both parties.

Diversion Board of Authority:		**CH2M HILL ENGINEERS, INC.:**	
Signature		Signature	
Name	Darrell Vanyo	Name	Thomas J. Helgeson
Title	Chairman	Title	Vice President and Area Manager
Date		Date	

Finance Committee Bills for February 2015

Erik R. Johnson & Associates, Ltd	Metro Flood Project - General legal matters	$7,612.60
Erik R. Johnson & Associates, Ltd	Metro Flood Project - LEERDS	$6,026.50
Fredrickson & Bryon, P.A.	Government Relations fee	$3,000.00
Dorsey & Whitney LLP	Legal Services Rendered through 12-31-2014	$101,258.53
Total Bills Received in January		**$117,897.63**

Erik R. Johnson & Associates, Ltd
Attorneys at Law
Erik R. Johnson - Nancy J. Morris - Jason T. Loos
505 Broadway - Suite 206
Fargo, ND 58102
(701) 280-1901

Invoice #
2209-

Invoice

Date	12/31/2014

City of Fargo -- Auditor's Office
Attn: Kent Costin
200 North 3rd Street
Fargo, ND 58102

Description	Qty	Rate	Amount
Metro Flood Project -- General legal matters: Erik Johnson-Nov 26 thru Dec 31, 2015-itemization attached	27.2	195.50	5,317.60
Nancy J Morris-Nov 26 thru Dec 31, 2015-itemization attached	13.5	170.00	2,295.00

We appreciate your business.

TOTAL: $7,612.60

December 31, 2014

Client: City of Fargo
Job: Metro Flood - General Legal

Atty	DATE	DESCRIPTION	TIME
E	12/1/2014	Emails with Cattanach, John S. and others	0.30
E	12/2/2014	Conference call with Bob Cattanach and Mike Drysdale and Zavoral; follow-up call with Zavoral and Email to Cattanach	0.80
E	12/2/2014	Prepare for state water commission meeting with Kent and Jamie; meet with Kent and Jamie regarding preparation for meeting in Bismarck	1.00
E	12/3/2014	Travel to Bismarck with deputy Mayor Mahoney to meet with state water commission regarding reimbursement and cost participation on one project and return to Fargo	8.50
E	12/4/2014	Telephone call with Cattanach	0.20
E	12/5/2014	Attend Admin Adv meeting	1.00
E	12/9/2014	Attend Admin Adv meeting; misc commun	1.90
E	12/10/2014	Research bylaws and communication re same	0.30
E	12/11/2014	Prepare for litigation report; review documents and briefs just filed; telephone conference with Bob and Mike; prepare comments	1.70
E	12/11/2014	Attend Diversion Authority meeting and give litigation report	2.00
E	12/15/2014	Review agenda and discuss tomorrow's meeting with Paul Tietz; followup	1.20
E	12/16/2014	Meeting re: P3 planning	0.80
E	12/16/2014	Meeting re: P3 planning	3.00
E	12/22/2014	Receive and review letter re: SWC participation	0.10
E	12/23/2014	Telephone conference with Eric Dodds re: record request; email Bob	0.40
E	12/23/2014	Telephone conference with Eric and communication re: record request	1.00
E	12/26/2014	Email to and from Norgard	0.20
E	12/29/2014	Communication with Eric Dodds; calls to Bob and Milke	0.50
E	12/29/2014	Call with Erik Dodds, Cattanach and Drysdale	0.70
E	12/30/2014	Communication with Rocky, Bob and Mike	0.10
E	12/30/2014	Telephone conference with Eric Dodds and communication	0.50
E	12/30/2014	Telephone conference with Cattanach and Drysdale re: miscellaneous issues and followup communication	1.00
		Total Time - ERJ	27.20
		Hourly Rate - ERJ $	195.50
		Total Fees - ERJ $	5317.60
N	12/2/2014	Prepare last resort information correspondence re: Oxbow reimbursement request; SWC meeting; prepare maps	2.5
N	12/3/2014	SWC meeting in Bismarck	9
N	12/9/2014	Administrative Advisory meeting	1.5
N	12/18/2014	Correspondence re: Open Records & Discovery requests	0.5
		Total Time - NJM	13.50
		Hourly Rate - NJM $	170.00
		Total Fees - NJM $	2295.00

Erik R. Johnson & Associates, Ltd
Attorneys at Law

Erik R. Johnson - Nancy J. Morris - Jason T. Loos
505 Broadway - Suite 206
Fargo, ND 58102
(701) 280-1901

Invoice #
2208-

Invoice

Date	12/31/2014

City of Fargo -- Auditor's Office
Attn: Kent Costin
200 North 3rd Street
Fargo, ND 58102

Description	Qty	Rate	Amount
Metro Flood Project -- LEERDS:	9	195.50	1,759.50
Erik Johnson-Nov 26 thru Dec 31, 2015-itemization attached	25.1	170.00	4,267.00
Nancy J Morris-Nov 26 thru Dec 31, 2015-itemization attached			

We appreciate your business.

TOTAL: $6,026.50

December 31, 2014

Client: City of Fargo
Job: Metro Flood - LEERDS

Atty	DATE	DESCRIPTION	TIME
E	12/2/2014	Prepare Oxbow country club documents	1.10
E	12/5/2014	Emails with David Hauff	0.30
E	12/10/2014	Emails with Lukas Andrud and Sean re comments on documents	0.30
E	12/15/2014	Email and telephone conference with David Hauff and conference with Nancy re: 2nd Street projects	0.60
E	12/17/2014	Conference call with David Hauff and Sean Fredricks re: Oxbow Country Club	0.30
E	12/18/2014	Oxbow Country Club - make final revisions; draft purchase agreements for for agent; review appraisal	0.50
E	12/21/2014	Work on purchase agreements, lease agreements and temporary construction easement language re: Oxbow Golf and Country Club family of documents	1.50
E	12/22/2014	Call to Turman, email to Sean and David Hauff; distribute drafts	0.50
E	12/24/2014	Telephone conference with David Hauff re: Oxbow agreement	0.20
E	12/26/2014	Revise Oxbow CC docs after comments received by David Hauff	0.70
E	12/29/2014	and Purchase Agreement and Master Agreement; work on Collateral Real Estate Mortgage Exhibits	2.00
E	12/29/2014	Research legal description for Jamie Bullock re: SWC cost participation questions	0.60
E	12/30/2014	Telephone conference with David and email documents	0.40
		Total Time - ERJ	9
		Hourly Rate $	195.50
		Total Fees - ERJ $	1759.50
N	11/26/2014	Revise Dike East & Park District Easements & correspondence	1.5
N	12/2/2014	Correspondence re: Dike East easements	0.4
N	12/4/2014	Correspond w/ Eric Dodd's re: evidence of housing of last resort	0.3
N	12/5/2014	Correspondence re: additional info re: housing of last resort	0.4
N	12/10/2014	Review correspondence re: status; Correspondence re: status of acquisition, review draft documents; correspondence re: FPS testing agreement; El Zagal Shrine docs & review pleadings	2
N	12/11/2014	Fargo Public Schools & El Zagal discussion re: status; Review correspondence re: funds request; Correspondence re: document request; Land Management meeting; Diversion Authority meeting; Phone call w/ Shawn Bondly re: El Zagal Shrine; Correspond w/ Mike Williams & April W.	4.8
N	12/12/2014	Review correspondence re: PA; Conference re: document request; review pleadings in litigation & discuss w/ Erik	0.7
N	12/16/2014	Fargo Public Schools communication; Park East Correspondence & phone call w/ Pat; Correspondence re: relocation benefits w/ M. Williams; Correspondence w/ K. Helvey & April; Dike East easement drafts & correspondence, review maps & revise	2.4

December 31, 2014

Client: City of Fargo
Job: Metro Flood - LEERDS

Atty	DATE	DESCRIPTION	TIME
N	12/17/2014	El Zagal correspondence re: appraisal & negoating Park East; correspondence re: status of negoation & tenants; Phone call w/ Ken Helvey re: Park East	0.7
N	12/18/2014	Review Access Agreement & correspond w/ Chris McShane; Park East conference; Park East re: negotiations/status; Park District easements; 2nd Street correspondence w/ G. Thelman; draft	4.7
N	12/19/2014	Park East correspondence re: rental reimbursement & Park District 2nd Street phone call w/ Luke Andrud & Eric Dodds; Park East correspondence re: demolition; Review revised Rent Reimburesment	1.9
N	12/29/2014	Park East correspondence review and phone calls Jo Grondahl & Shawn Bondly; Correspondence re: Park East and eligibility; Correspondence re: open records request, phone call w/ Mike Drysdale & correspondence re: status	1.9
N	12/30/2014	Review correspondence re: damage to townhomes; Correspondence re: 2nd Street & Dike East; Correspondence re: foundation damage; review status & correspond	2.5
N	12/31/2014	Eligibility correspondence w/ tenant; Correspondence re: El Zagal Shrine; Correspondence re: Park East & El Zagal Shrine	0.9
		Total Time	25.10
		Hourly Rate $	170.00
		Total Fees - NJM $	4267.00

Fredrikson & BYRON, P.A.

REMITTANCE PAGE

Diversion Board of Authority
211 9th Street South
P.O. Box 2806
Fargo, ND 58108-2806

Please remit this page with your payment. Thank you. We appreciate your business.

Invoice:	1299545
Client Account:	072720.0001
Regarding:	Government Relations LOB 30321
Invoice Date:	January 13, 2015

Total Fees:	$ 3,000.00
Total This Invoice	$ 3,000.00

Payment is due within 30 days from receipt of invoice

If you have any questions please email accounting@fredlaw.com or contact a client representative at 612.492.7574.

Communications concerning disputed debts, including an instrument tendered as full satisfaction of a debt, are to be sent to Fredrikson & Byron, PA, Attn: Credit Department, 200 South Sixth Street, Suite 4000, Minneapolis, MN 55402

main 612.492.7000
fax 612.492.7077
www.fredlaw.com
Tax ID No. 41-0971937

Fredrikson & Byron, P.A.
Attorneys & Advisors
P.O. Box 1484
Minneapolis, Minnesota
55480-1484

Fredrikson & BYRON, P.A.

INVOICE DETAIL

Diversion Board of Authority
211 9th Street South
P.O. Box 2806
Fargo, ND 58108-2806

Invoice: 1299545
Client Account: 072720.0001
Regarding: Government Relations LOB 30321
Invoice Date: January 13, 2015

Government Relations flat fee payment 2 of 7.

Total For Fees	**$ 3,000.00**
Total This Invoice	**$ 3,000.00**

***Please note that Fredrikson & Byron will be adjusting its standard hourly billing rate schedule for services rendered after January 1, 2015 If you have questions about the billing rates of specific individuals, please feel free to contact your attorney.*

Communications concerning disputed debts, including an instrument tendered as full satisfaction of a debt, are to be sent to Fredrikson & Byron, PA, Attn: Credit Department, 200 South Sixth Street, Suite 4000, Minneapolis, MN 55402

main 612.492.7000
fax 612.492.7077
www.fredlaw.com
Tax ID No. 41-0971937

Fredrikson & Byron, P.A.
Attorneys & Advisors
P.O. Box 1484
Minneapolis, Minnesota
55480-1484

DORSEY
DORSEY & WHITNEY LLP

MINNEAPOLIS OFFICE
612-340-2600

(Tax Identification No. 41-0223337)

STATEMENT OF ACCOUNT FOR PROFESSIONAL SERVICES

Fargo-Moorhead Flood Diversion Bd of Authority
c/o Erik R. Johnson & Associates, Ltd.
Attn: Erik Johnson
505 Broadway, Suite 206
Fargo, ND 58102

January 20, 2015
Invoice No. 1993359

BY DATE 1-23-15

Client-Matter No.: 491379-00001
Red River Diversion Project

For Legal Services Rendered Through December 31, 2014

INVOICE TOTAL

Total For Current Legal Fees	$99,697.00
Total For Current Disbursements and Service Charges	$1,561.53
Total For Current Invoice	**$101,258.53**
Summary of Account	
*Prior Balance Due	$25,122.06
Total Amount Due	$126,380.59

*If payment has been submitted for prior balance due, please disregard.

pd 12/31/14

For your convenience, please remit payment to the address below or we offer the option of remitting payment electronically by wire transfer. If you have any questions regarding this information, please contact the lawyer you are working with on this project or Dorsey's Accounts Receivable Department at 1-800-861-0760. Thank you.

Mailing Instructions:
Dorsey & Whitney LLP
P.O. Box 1680
Minneapolis, MN 55480-1680

Wire Instructions:
U.S. Bank National Association
800 Nicollet Mall
Minneapolis, MN 55402

ABA Routing Number: 091000022
Account Number: 1602-3010-8500
Swift Code: USBKUS44IMT

Please make reference to the invoice number

Service charges are based on rates established by Dorsey & Whitney. A schedule of those rates has been provided and is available upon request. Disbursements and service charges, which either have not been received or processed, will appear on a later statement.

ALL INVOICES ARE DUE 30 DAYS FROM DATE OF INVOICE UNLESS OTHERWISE EXPRESSLY AGREED BY DORSEY & WHITNEY

03053

CITY OF Fargo

Office of the City Attorney

City Attorney
Erik R. Johnson

Assistant City Attorneys
Nancy J. Morris
Jason T. Loos

January 27, 2015

Kent Costin
Finance Director
City of Fargo
200 North Third Street
Fargo, ND 58102

Re: Red River Diversion Project

Dear Kent:

I am enclosing a Summary Invoice dated January 20, 2015 from the Dorsey & Whitney Firm in Minneapolis for their professional services rendered through December 31, 2014 on the Red River Diversion Project. If you have any questions, please feel free to contact me. Please remit payment directly to Dorsey Whitney.

Sincerely,

Erik R. Johnson

ERJ/jmf
Enclosure
cc: Pat Zavoral

FM Diversion Authority
In-Town Levee Work
as of January 31, 2015

Vcode #	Vendor Name	Descriptions	Contract Amount	Amount Paid
V01204	CCJWRD	In-Town Levee Work	$ 469,747.10	$ 469,747.10
V01617	HMG	Services During Construction - Work Package 42	1,550,000.00	-
V01703	Various	In-Town Property Purchases	1,117,174.82	422,293.42
V02601	Terracon Consulting	WP-42 (In Town Levees) Materials Testing	50,000.00	-
V02801	Industrial Builders	2nd Street North Pump Station - Work Package 42.A2	8,135,920.00	1,337,260.00
V03001	Enventis	Relocation of fiber optic along 2nd Street North - WP-42A.2	115,685.62	115,685.62
V03101	702 Communications	Relocation of fiber optic along 2nd Street North	100,483.18	100,483.18
V03201	ICS	4th St Pump Station & Gatewell and 2nd St Floodwall S - WP-42A.1/A.3	17,361,616.35	185,209.00
			$ 28,900,627.07	$ 2,630,678.32

FM Diversion Authority
Fiscal Accountability Report Design Phase (Fund 790)
As of 1/31/2015

	2011	2012	2013	2014	2015	Cumulative Totals
Revenues						
City of Fargo	443,138	7,652,681	7,072,961	18,116,530	2,637,236	35,922,546
Cass County	443,138	7,652,681	7,072,961	18,116,530	2,637,236	35,922,546
State Water Commission	-	-	3,782,215	1,752,114	4,949,724	10,484,054
Other Agencies	98,475	1,700,595	1,571,769	4,025,896	586,052	7,982,787
Lease/Rental Payments	-	-	17,358	154,180	-	171,538
Asset Sales	-	-	-	616,774	-	616,774
Miscellaneous	-	-	1,705	626	-	2,331
Total Revenues	**984,750**	**17,005,957**	**19,518,970**	**42,782,650**	**10,810,248**	**91,102,576**
Expenditures						
7905 Army Corp Payments	-	-	875,000	1,050,000	-	1,925,000
7910 WIK - Administration	107,301	331,321	77,614	161,406	800	678,442
7915 WIK - Project Design	149,632	5,366,147	3,220,859	8,034,769	-	16,771,408
7920 WIK - Project Management	679,037	7,223,650	4,695,477	3,395,861	310,000	16,304,025
7925 WIK - Recreation	-	163,223	-	-	-	163,223
7930 LERRDS - North Dakota	48,664	3,843,620	2,763,404	16,798,643	10,499,448	33,953,779
7931 LERRDS - Minnesota	-	27,996	289,387	13,068	-	330,450
7940 WIK Mitigation - North Dakota	-	-	-	587,180	-	587,180
7941 WIK Mitigation - Minnesota	-		-	-	-	-
7950 Construction - North Dakota	-	-	-	1,738,638	-	1,738,638
7951 Construction - Minnesota	-	-	-	-	-	-
7952 Construction - O/H/B	-	-	-	11,282,504	-	11,282,504
7955 Construction Management	-	-	-	402,718	-	402,718
7990 Project Financing	-	50,000	70,000	216,376	-	336,376
7995 Project Eligible - Off Formula Costs	-	-	-	-	-	-
7999 Non Federal Participating Costs	116	-	-	-	-	116
0000 Advance to City of Oxbow	-	-	7,527,231	630	-	7,527,861
					-	
Total Expenditures	**984,750**	**17,005,957**	**19,518,970**	**43,681,794**	**10,810,248**	**92,001,719**

FM Diversion Authority
FY 2015 Summary Budget Report (In Thousands)
Period 13, 2014 and January 2015

	FY 2015 Approved Budget	Current Month	Fiscal Year To Date	% Expended	Outstanding Encumbrances	Remaining Budget Balance
Revenue Sources						
City of Fargo	59,040	3,172	8,370			50,670
Cass County	59,040	3,172	8,370			50,670
State of ND - 50% Match	57,200	5,635	7,585			49,615
State of ND - 100% Match	35,800		648			35,152
State of Minnesota	-	-	-			-
Other Agencies	13,120	705	1,860			11,260
Financing Proceeds	-	-	-			-
Sale of Assets	-	-	-			-
Property Income	-	-	12			(12)
Miscellaneous	-	-	-			-
Total Revenue Sources	**224,200**	**12,683**	**26,845**			**197,355**
Funds Appropriated						
Army Corp Local Share	525	-	-		525	-
Management Oversight	7,200	631	1,828	25%	2,913	2,459
Technical Activities	16,575	18	1,984	12%	5,514	9,077
Land Acquisitions	106,700	10,525	16,215	15%	3,664	86,821
Construction	91,300	1,662	7,066	8%	26,219	58,015
Mitigation	-	-	-		-	-
Other Costs	1,900	-	115	6%	350	1,435
Total Appropriations	**224,200**	**12,836**	**27,208**	**12%**	**39,184**	**157,808**

FM Diversion Authority
Summary of Cash Disbursements
January 2015

Account Number	Check Date	Check Number	Vendor Name	Transaction Amount	Description 1	Project Number	Project Description
790-7910-429.33-20	1/30/2015	JB01150012	CITY OF FARGO	$ 800.00	FISCAL SERVICES	V00102	General & Admin. WIK
			Total WIK - General & Admin. - Accounting Services	**800.00**			
790-7920-429.33-79	1/14/2015	255328	CH2M HILL ENGINEERS INC	310,000.00	JAN 2015 TASK ORDER #5	V00205	CH2M Hill-8.30.14-2.27.15
			Total WIK Construction Mgmt. - Construction Management	**310,000.00**			
790-7930-429.67-12	1/21/2015	WIRE	CASS COUNTY JOINT WATER RESOURCE DI	10,499,448.34	RELOCATION ASSISTANCE	V02414	OXBOW MOU-COMMERCIAL RLCTN
			Total LERRDS - North Dakota - Relocation Assistance - Commercial Buildings	**10,499,448.34**			
			Total Disbursed for Period	**$10,810,248.34**			

FM Diversion Authority
Summary of Cash Disbursements
Period 13, 2014

Date: 1/30/2015

Period/Year: 13/2014

Account Number	Check Date	Check Number	Vendor Name	Transaction Amount	Description 1	Project Number	Project Description
790-7910-429.38-68	1/14/2015	255353	FREDRIKSON & BYRON, PA	3,000.00	GOVERNMENT RELATIONS LOB	V00102	General & Admin. WIK
Total WIK - General & Admin. - Lobbyist				$3,000.00			
790-7910-429.38-99	1/28/2015	255791	NORTH DAKOTA TELEPHONE CO	142.20	DEC 2014 SETUP FEES/USE	V00102	General & Admin. WIK
Total WIK - General & Admin. - Other Services				$142.20			
790-7915-429.33-05	1/7/2015	255240	OXBOW, CITY OF	4,706.70	OHB LEVEE	V02401	OXBOW MOU-PROJ MGMT ADMI
	1/7/2015	255240	OXBOW, CITY OF	5,413.00	OXBOW OHB LEVEE	V02402	OXBOW MOU-PRELIM ENGINRN
	1/14/2015	255426	OXBOW, CITY OF	8,039.92	OHB OXBOW LEVEE	V02405	OXBOW MOU-DESN/CONST ENG
Total WIK - Project Design - Engineering Services				$18,159.62			
790-7920-429.33-79	1/7/2015	255240	OXBOW, CITY OF	7,083.33	FMDA-OXBOW MOU	V02410	OXBOW MOU - PROJ MGMT JDA
	1/14/2015	255328	CH2M HILL ENGINEERS INC	310,000.00	DEC 2014 TASK ORDER #5	V00205	CH2M Hill-8.30.14-2.27.15
Total WIK Construction Mgmt. - Construction Management				$317,083.33			
790-7930-429.33-25	1/14/2015	255340	DORSEY & WHITNEY LLP	25,122.06	SVCS THRU 11/30/14	V00101	Dorsey Whitney Legal
Total LERRDS - North Dakota - Legal Services				$25,122.06			
790-7950-429.73-52	1/14/2015	255375	INDUSTRIAL BUILDERS INC	1,337,260.00	2 ST N PUMP STATION	V02801	2ND ST NORTH PUMP STATION
	1/14/2015	255376	INDUSTRIAL CONTRACT SERVICES INC	185,209.00	4 ST PUMP STATION/2 ST FL	V03201	PUMP STATION & FLOODWALL
Total ND Construction - Flood Control				$1,522,469.00			
790-7952-429.73-53	1/14/2015	255426	OXBOW, CITY OF	28,344.67	DAKOTA UNDERGROUND CONTRA	V02409	OXBOW MOU-CONST RPLM ARE
	1/14/2015	255426	OXBOW, CITY OF	111,018.01	DAKOTA UNDERGROUND CONTRA	V02409	OXBOW MOU-CONST RPLM ARE
Total O/H/B Construction - Dams/Reservoirs/Diversion				$139,362.68			

FM Diversion Authority
Summary of Cash Disbursements
Period 13, 2014

Date: 1/30/2015

Period/Year: 13/2014

Account Number	Check Date	Check Number	Vendor Name	Transaction Amount	Description 1	Project Number	Project Description
Total Disbursed for Period				**$2,025,338.89**			

FM Diversion Authority
Cumulative Vendor Payments Since Inception
As of January 31, 2015

Vendor Name	Approved Contract/Invoice Amount	Liquidated	Outstanding Encumbrance	Purpose
CASS COUNTY JOINT WATER RESOUR	$ 30,537,236.66	$ 28,820,908.73	$ 1,716,327.93	Land Purchases, O/H/B Ring Levee, DPAC, & ROE
HOUSTON-MOORE GROUP LLC	24,877,077.45	16,515,378.04	8,361,699.41	Engineering Services
INDUSTRIAL CONTRACT SERVICES I	17,361,616.35	185,209.00	17,176,407.35	4th St Pump Station and 2nd Street Floodwall
CH2M HILL ENGINEERS INC	14,140,819.01	13,830,819.01	310,000.00	Project Management
OXBOW, CITY OF	13,566,755.87	11,496,166.68	2,070,589.19	City of Oxbow - MOU
INDUSTRIAL BUILDERS INC	8,135,920.00	1,337,260.00	6,798,660.00	2nd St North Pump Station Project
COMMERCIAL TITLE LLC	3,869,541.00	3,869,541.00	-	Oxbow MOU - Advance for Land Purchase
TITLE COMPANY	3,641,500.00	3,641,500.00	-	Oxbow MOU - Advance for Land Purchase
ARMY CORP OF ENGINEERS	2,450,000.00	1,925,000.00	525,000.00	Local Share
MINNESOTA DNR	2,188,007.43	1,292,414.71	895,592.72	EIS Scoping
KENNELLY & OKEEFFE	1,729,310.56	1,729,310.56	-	Home Buyouts
DORSEY & WHITNEY LLP	1,584,832.95	1,584,832.95	-	Legal Services
URS CORPORATION	1,501,488.42	1,081,242.16	420,246.26	Engineering Services
MOORE ENGINEERING INC	662,468.17	662,468.17	-	Engineering Services
DUCKS UNLIMITED	587,180.00	587,180.00	-	Wetland Mitigation Credits
HOUSTON ENGINEERING INC	576,669.57	576,669.57	-	Engineering Services
RED RIVER BASIN COMMISSION	500,000.00	447,747.40	52,252.60	Engineering Services
NORTHERN TITLE CO	484,016.00	484,016.00	-	Land Purchases
ERNST & YOUNG	350,000.00	-	350,000.00	Financial Advisor
CITY OF FARGO	287,461.66	287,461.66	-	Digital Imagery Project & Accounting Services
ERIK R JOHNSON & ASSOCIATES	253,224.21	239,585.11	13,639.10	Legal Services
CASS COUNTY TREASURER	242,998.81	182,125.46	60,873.35	Property Tax
ROBERT TRENT JONES	200,000.00	200,000.00	-	Oxbow MOU - Golf Course Consulting Agreement
US GEOLOGICAL SURVEY	151,520.00	46,920.00	104,600.00	Stage Gages & Water Level Discharge Collection
PFM PUBLIC FINANCIAL MANAGEMEN	146,460.00	146,460.00	-	Financial Advisor
ENVENTIS	115,685.62	115,685.62	-	Utility Relocation
702 COMMUNICATIONS	100,483.18	100,483.18	-	Utility Relocation
PROSOURCE TECHNOLOGIES, INC	100,000.00	8,324.94	91,675.06	Engineering Services
ULTEIG ENGINEERS INC	100,000.00	-	100,000.00	Engineering Services
BRAUN INTERTEC CORP	90,210.00	77,629.00	12,581.00	Quality Testing
EL ZAGAL TEMPLE HOLDING CO	68,040.72	68,040.72	-	Easement Purchase for El Zagal Levee
GRAY PANNELL & WOODWARD LLP	66,300.68	66,300.68	-	Legal Services
NDSU BUSINESS OFFICE-BOX 6050	64,495.00	-	64,495.00	Ag Risk Study Services
OHNSTAD TWICHELL PC	60,309.16	60,309.16	-	ROE and Bonding Legal Fees

FM Diversion Authority
Cumulative Vendor Payments Since Inception
As of January 31, 2015

Vendor Name	Approved Contract/Invoice Amount	Liquidated	Outstanding Encumbrance	Purpose
US BANK	59,020.65	59,020.65	-	Loan Advance Debt Service Payments
IN SITU ENGINEERING	54,800.00	47,973.00	6,827.00	Quality Testing
ADVANCED ENGINEERING INC	50,000.00	50,000.00	-	Public Outreach
TERRACON CONSULTING ENGINEERS	50,000.00	-	50,000.00	Materials Testing
GEOKON INC	33,815.36	33,815.36	-	Vibrating Wire Piezometer Equipment
COLDWELL BANKER	33,066.02	33,066.02	-	Property Management Services
NIXON PEABODY LLC	30,000.00	30,000.00	-	Legal Services
INNOVATIVE ABSTRACT & TITLE CO	15,921.53	15,921.53	-	Oxbow MOU - Advance for Land Purchase
MOORHEAD, CITY OF	15,062.90	15,062.90	-	ROE Legal Fees
WARNER & CO	14,925.00	14,925.00	-	General Liability Insurance
BRIGGS & MORGAN PA	12,727.56	12,727.56	-	Legal Services
FREDRIKSON & BYRON, PA	6,000.00	3,000.00	3,000.00	Lobbying Services
MCKINZIE METRO APPRAISAL	3,200.00	3,200.00	-	Appraisal Services
FORUM COMMUNICATIONS (LEGALS)	2,224.20	2,224.20	-	Advertising Services
DAWSON INSURANCE AGENCY	1,867.81	1,867.81	-	Property Insurance - Home Buyouts
FORUM COMMUNICATIONS (ADVERT)	1,743.77	1,743.77	-	Advertising Services
CLAY COUNTY AUDITOR	1,550.00	1,550.00	-	Property Tax
SEIGEL COMMUNICATIONS SERVICE	1,490.00	1,490.00	-	Public Outreach
NORTH DAKOTA TELEPHONE CO	1,328.20	1,328.20	-	Communication
RED RIVER TITLE SERVICES INC	1,305.00	1,305.00	-	Abstract Updates
HUBER, STEVE	1,056.43	1,056.43	-	Home Buyouts
TRIO ENVIRONMENTAL CONSULTING	747.60	747.60	-	Asbestos and LBP Testing - Home Buyouts
RED RIVER VALLEY COOPERATIVE A	536.96	536.96	-	Electricity - Home Buyouts
FERRELLGAS	496.00	496.00	-	Propane - Home Buyouts
BROKERAGE PRINTING	473.33	473.33	-	Custom Printed Forms
KOCHMANN, CARTER	315.00	315.00	-	Lawn Mowing Services
GALLAGHER BENEFIT SERVICES INC	250.00	250.00	-	Job Description Review
DONS PLUMBING	240.00	240.00	-	Winterize - Home Buyouts
CURTS LOCK & KEY SERVICE INC	138.10	138.10	-	Service Call - Home Buyouts
GOOGLE LOVEINTHEOVEN	116.00	116.00	-	Meeting Incidentals
FEDERAL EXPRESS CORPORATION	71.89	71.89	-	Postage
CASS COUNTY RECORDER	68.00	68.00	-	Oxbow MOU - Advance for Land Purchase
GRAND TOTAL	**$ 131,186,185.79**	**$ 92,001,719.82**	**$ 39,184,465.97**	

FM Diversion Authority
Lands Expense - Life To Date
As of January 31, 2015

Property Address	Purchase Date	Purchase Price	Appraisal	Abstract	Tax Payment	Property Management Expense	Property Management Income	Sale Proceeds	Total
Home Buyouts - Fargo									
1322 Elm St N, Fargo ND	11/19/2014	354,252.70	-	-	-	796.50	-	-	355,049.20
Home Buyouts - Moorhead									
387 170th Ave SW, Moorhead MN	11/1/2013	281,554.91	-	255.00	1,550.00	2,247.01	-	(8,440.00)	277,166.92
Home Buyouts - Oxbow									
105 Oxbow Drive, Oxbow ND	11/28/2012	216,401.85	-	250.00	4,993.72	13,695.77	(18,680.72)	(181,249.54)	35,411.08
744 Riverbend, Oxbow ND	12/3/2012	343,658.30	-	170.00	7,296.43	19,362.63	(33,117.16)	-	337,370.20
121 Oxbow Drive, Oxbow ND	7/31/2013	375,581.20	3,200.00	-	1,581.52	19,519.02	-	(186,918.33)	212,963.41
333 Schnell Drive, Oxbow ND	9/20/2013	104,087.79	-	-	1,379.50	2,039.75	-	-	107,507.04
346 Schnell Dr, Oxbow ND	2/13/2014	512,970.73	-	-	-	9,710.64	(13,500.00)	-	509,181.37
345 Schnell Dr, Oxbow ND	10/24/2014	478,702.98	-	-	-	-	-	-	478,702.98
Easements - Fargo									
Part of Lot 5 El Zagal Park, Fargo ND	10/9/2014	68,040.72	-	-	-	-	-	-	68,040.72
Easements - Oxbow									
Oxbow Parcel 57-0000-10356-070 - Pearson	10/13/2014	55,500.00							55,500.00
Farmland Purchases									
SE 1/4 11-140-50 (Raymond Twp) - Ueland	1/20/2014	959,840.00	-	-	-	-	(13,543.73)	-	946,296.27
2 Tracts in the E 1/2-2-137-49 - Sorby/Maier	1/24/2014	1,636,230.00	-	-	-	-	(28,882.99)	-	1,607,347.01
3 Tracts NW1/4 1-140-50, NW1/4 11-140-50, & S1/2 25-141-50 Rust	2/18/2014	3,458,980.70	-	-	-	-	(59,830.86)	-	3,399,149.84
11-140-50 NE1/4 (Raymond Twp) - Diekrager	4/15/2014	991,128.19	-	-	-	-	(15,654.86)	-	975,473.33
NW 1/4 36-141-50 - Monson	5/7/2014	943,560.05	-	-	-	-	(14,909.20)	-	928,650.85
SW 1/4-11-140-50 - Hoglund	7/21/2014	989,706.03	-	-	-	-	(3,725.49)	-	985,980.54
NW 1/4 14-140-50 - Hoglund	10/23/2014	948,782.22	-	-	-	-	(1,376.19)	-	947,406.03
SW 1/4 2-140-50 -Rust	10/29/2014	955,901.00	-	-	-	-	-	-	955,901.00
Fercho Family Farms, Oxbow ND	-	312,130.00	-	-	-	-	-	-	312,130.00
W 1/2 SE 1/4 SW 1/4 & SW 1/4 SW 1/4 2-137-49 - Gorder	5/13/2014	321,386.00	-	-	-	-	(1,822.72)	-	319,563.28
Land Purchases									
Hayden Heights Land, West Fargo ND	10/12/2012	484,016.00	-	-	166,874.29	-	-	(240,166.11)	410,724.18
	Total	14,792,411.37	3,200.00	675.00	183,675.46	67,371.32	(205,043.92)	(616,773.98)	14,225,515.25

FM Diversion Authority
State Water Commission Funds Reimbursement Worksheet
Fargo Flood Control Project Costs

Time Period for This Request: January 1, 2015 - January 31, 2015

Drawdown Request No: 10		
Requested Amount:	**$**	**685,111**
Total Funds Expended This Period:	$	1,370,222
SB 2020 Matching Requirements		50%
Total Funds Requested at 50% Match	$	685,111
Total Funds Requested:	**$**	**685,111**

STATE AID SUMMARY:		
Summary of State Funds Appropriated		
Appropriations from 2009 Legislative Session	$	45,000,000
Appropriations from 2011 Legislative Session		30,000,000
Appropriations from 2013 Legislative Session		100,000,000
Total State Funds Appropriated	$	175,000,000
Less: Payment #1 through #34 - City of Fargo		(53,818,982)
Less: Payment #1 - Cass County		(136,039)
Less: Payment #1 - FM Diversion Authority		(18,600)
Less: Payment #2 - FM Diversion Authority - REVISED		(782,908)
Less: Payment #3 - FM Diversion Authority - REVISED		(293,590)
Less: Payment #4 - FM Diversion Authority - REVISED		(2,905)
Less: Payment #5 - FM Diversion Authority - REVISED		-
Less: Payment #6 - FM Diversion Authority - REVISED		(238,241)
Less: Payment #7 - FM Diversion Authority		(1,206,310)
Less: Payment #8 - FM Diversion Authority		(1,153,978)
Less: Payment #9 - FM Diversion Authority		(4,949,724)
Less: Payment #10 - FM Diversion Authority		(685,111)
Total Funds Reimbursed	$	(63,286,388)
Total State Fund Balances Remaining	**$**	**111,713,612**

LOCAL MATCHING FUNDS SUMMARY:		
Matching Funds Expended To Date - City of Fargo	$	47,445,143
Matching Funds Expended To Date - Cass County		291,500
Matching Funds Expended To Date - FM Diversion Authority		733,743
Total Matching Funds Expended To Date	$	48,470,386
Less: Match Used on Payment #1 through #34 - City of Fargo		(40,263,332)
Less: Match used on Payment #1 - Cass County		(136,039)
Less: Match Used on Payment #1 - FM Diversion Authority		(18,600)
Less: Match Used on Payment #2 - FM Diversion Authority		(66,888)
Less: Match Used on Payment #6 - FM Diversion Authority		(238,241)
Less: Match Used on Payment #8 - FM Diversion Authority		(410,015)
Balance of Local Matching Funds Available	**$**	**7,337,271**

FM Diversion Authority
In-Town Levee Work
as of January 31, 2015

Vcode #	Vendor Name	Descriptions	Contract Amount	Amount Paid
V01204	CCJWRD	In-Town Levee Work	$ 469,747.10	$ 469,747.10
V01617	HMG	Services During Construction - Work Package 42	1,550,000.00	-
V01703	Various	In-Town Property Purchases	1,117,174.82	422,293.42
V02601	Terracon Consulting	WP-42 (In Town Levees) Materials Testing	50,000.00	-
V02801	Industrial Builders	2nd Street North Pump Station - Work Package 42.A2	8,135,920.00	1,337,260.00
V03001	Enventis	Relocation of fiber optic along 2nd Street North - WP-42A.2	115,685.62	115,685.62
V03101	702 Communications	Relocation of fiber optic along 2nd Street North	100,483.18	100,483.18
V03201	ICS	4th St Pump Station & Gatewell and 2nd St Floodwall S - WP-42A.1/A.3	17,361,616.35	185,209.00
			$ 28,900,627.07	$ 2,630,678.32

Land Management Summary

February 5, 2015

Acquisitions Completed Through January 31, 2015

Property Type	Complete	
	Properties	Acreage
Single-Family Residential	11	28
Subset: Medical Hardship	*5*	*27*
Agricultural	17	1,872
Commercial	1	160
Multi-Family Residential	--	--
Public	3	3
Other	--	--

Acquisition Budget Through January 31, 2015

Fiscal Year	No. Properties Acquired	Lands Budget ($000)	Lands Expenses ($000)	Remaining Budget ($000)
FY13	4	$28,000	$1,628	n/a
FY14	15	$37,700	$20,006	n/a
FY15	6	$106,700	$16,215	$90,485

Other News for month of December:

- The CH2M HILL / AE2S team has actively engaged with the residential property owners in Oxbow to present initial purchase offers and negotiate the replacement housing process. In January, 3 offers were presented to Oxbow area residents.
- Three offers have been presented for Opportunistic Farmland purchases, totaling approximately 380 acres. All three Owners have verbally accepted and are in the process of updating title information.
- Recieved approval from USACE on on one (1) In-Town appraisal this month.
- HMG did not submit any new appraisals for In-Town residential properties to USACE for review.
- ProSource has eleven (11) appraisals with USACE for review.
- Ulteig has two (2) appraisals with USACE for review.
- Appraisals continue for properties for the remaining Oxbow Ring Levee and In-Town Levee properties.
- The Oxbow Country Club property has closed.
- Purchases closed on one (1) residential property In-Town and one (1) property in Oxbow.
- HMG is being tasked with two (2) additional In-Town appraisals for residential properties associated with the El Zagal project.

Land Management Summary

February 5, 2015

Appraisals Complete or In Negotiation (sorted by closing date)

Street Address	USACE Orig ID No.	Type	Activity[1]	Land Acq Firm/ Appraiser	Est.Closing Date
130 Oxbow Drive (9 parcels for golf course)	2313, 2354, 9631, 9632, 9633, 9652, 9653, 9764, 9766	Commercial	Closed	Ulteig/Mueller	
1341 Oak Street, Fargo	9205	Residential	Closed	HMG/Britton	
336 Schnell Drive	9646	Residential	Closed	ProSource/Hraba	
Agricultural property *103ac – S2, T140, R50*	0884	Agricultural	Purchase Agreement Signed	Direct negotiations	February, 2015
1330 Elm Street, Fargo	9203	Residential	Purchase Agreement Signed	HMG/Britton	April, 2015
1333 Oak Street, Fargo	9204	Residential	Purchase Agreement Signed	HMG/Britton	February, 2015
748 Riverbend Rd	9591	Residential	Purchase Agreement Signed	ProSource/Hraba	June 30, 2015
752 Riverbend Road	9592	Residential	Purchase Agreement Signed	ProSource/Hraba	June 30, 2015
349 Schnell Drive	9664	Residential	Purchase Agreement Signed	ProSource/Hraba	June 30, 2015
353 Schnell Drive	9665	Residential	Purchase Agreement Signed	ProSource/Hraba	June 30, 2015
357 Schnell Drive	9666	Residential	Purchase Agreement Signed	ProSource/Hraba	June 30, 2015
361 Schnell Drive	9667	Residential	Purchase Agreement Signed	ProSource/Hraba	June 30, 2015
Agricultural property *49.5ac – S13, T137, R49*	1931, 1936	Agricultural	In Condemnation	Ulteig/Bock	
Agricultural property *75ac – S2, T141, R49*	0530	Agricultural	In Negotiations	Direct negotiations	
Agricultural property *45ac – S25, T138, R50*	1201	Agricultural	In Negotiation	Direct negotiations	
Agricultural property *214ac – S13, T137, R49; S14, T137, R49*	1930, 1940, 1941	Agricultural	In Negotiation	Ulteig/Bock	
Agricultural property *266ac – S23, T137, R49; S24, T137, R49*	1975, 1985	Agricultural	In Negotiation	Ulteig/Bock	
Agricultural property *140ac – S23, T137, R49; S24, T137, R49*	1979, 1987	Agricultural	In Negotiation	Ulteig/Bock	
17495 52nd St SE, Hickson	1989	Residential	In Negotiation	ProSource/Hraba	
5302 174 ½ Ave SE	1898	Residential	In Negotiation	HMG/Britton	
5059 Makenzie Cir, Horace (owner of 3 other parcels)	2150, 9669, 9672	Residential	In Negotiation	ProSource/Hraba	

Land Management Summary

February 5, 2015

Street Address	USACE Orig ID No.	Type	Activity[1]	Land Acq Firm/ Appraiser	Est.Closing Date
1318 Elm Street, Fargo	9200	Residential	In Negotiations	HMG/Britton	
829 Riverbend Road	9505	Residential	In Negotiation	ProSource/Hraba	
805 Riverbend Road	9510	Residential	In Negotiation	ProSource/Hraba	
350 Schnell Drive	9649	Residential	In Negotiation	ProSource/Hraba	
326 Schnell Drive	9641	Residential	In Negotiation	ProSource/Hraba	
328 Schnell Drive	9642	Residential	In Negotiation	ProSource/Hraba	
330 Schnell Drive	9643	Vacant Lot	In Negotiation	ProSource/Hraba	
332 Schnell Drive	9644	Residential	In Negotiation	ProSource/Hraba	
334 Schnell Drive	9645	Residential	In Negotiation	ProSource/Hraba	
338 Schnell Drive	9647	Residential	In Negotiation	ProSource/Hraba	
329 Schnell Drive	9659	Residential	In Negotiation	ProSource/Hraba	
Feder Realty Co.	9776	Commercial	In Negotiation	HMG/Britton	
City of Fargo - School District 1	9777	Commercial	In Negotiation	HMG/Britton	
Park East Apartments, LLC	9782	Commercial	In Negotiation	HMG/Britton	
BNSF	9259, 9779, 9780	Commercial	In Negotiation	HMG/Britton	
Agricultural property *157ac – S10, T141, R49; S10, T141, R49*	547, 548	Agricultural	Appraisal in Review	Ulteig/Bock	
821 Riverbend Road	9506	Residential	Appraisal in Review	ProSource/Hraba	
813 Riverbend Road	9508	Residential	Appraisal in Review	ProSource/Hraba	
810 Riverbend Road	9595	Residential	Appraisal in Review	ProSource/Hraba	
816 Riverbend Road	9596	Residential	Appraisal in Review	ProSource/Hraba	
828 Riverbend Road	9599	Residential	Appraisal in Review	ProSource/Hraba	
840 Riverbend Road	9600	Residential	Appraisal in Review	ProSource/Hraba	
844 Riverbend Road	9601	Residential	Appraisal in Review	ProSource/Hraba	
354 Schnell Drive	9650	Vacant Lot	Appraisal in Review	Ulteig/Bock	
313 Schnell Drive	9655	Residential	Appraisal in Review	ProSource/Hraba	

Land Management Summary

February 5, 2015

Street Address	USACE Orig ID No.	Type	Activity[1]	Land Acq Firm/ Appraiser	Est.Closing Date
317 Schnell Drive	9656	Residential	Appraisal in Review	ProSource/Hraba	
321 Schnell Drive	9657	Residential	Appraisal in Review	ProSource/Hraba	
337 Schnell Drive	9661	Residential	Appraisal in Review	ProSource/Hraba	
Case Plaza LLC	9770	Commercial	Appraisal in Review	HMG/Britton	
Northland Hospitality, LLC	9785	Commercial	Appraisal in Review	HMG/Britton	

[1] Activity sequence: 1) Appraisal in Review; 2) In Negotiation; 3) Purchase Agreement Signed, 4) Closed

Appraisals in Progress (sorted by Activity, then Original ID Number)

Street Address	USACE Orig ID No.	Type	Activity[1]	Land Acq Firm/ Appraiser
Agricultural Property *320ac – S28, T137, R48; S37, T137, R48*	1790,1811	Agricultural	Appraisal Initiated	Crown/Berg
16678 3rd St S	1802	Residential	Appraisal Initiated	HMG/Britton
18 North Terrace	9166	Residential	Appraisal Initiated	HMG/Britton
16 North Terrace	9167	Residential	Appraisal Initiated	HMG/Britton
12 North Terrace	9168	Residential	Appraisal Initiated	HMG/Britton
24 North Terrace	9195	Residential	Appraisal Initiated	HMG/Britton
26 North Terrace	9196	Residential	Appraisal Initiated	HMG/Britton
724 North River Road	9197	Residential	Appraisal Initiated	HMG/Britton
Professional Associates LLC	9213	Commercial	Appraisal Initiated	HMG/Britton
Mid America Steel	9215, 9216, 9217, 9218, 9783	Commercial	Appraisal Initiated	HMG/Britton
843 Riverbend Road	9502	Residential	Appraisal Initiated	ProSource/McKinzie
839 Riverbend Road	9503	Residential	Appraisal Initiated	ProSource/McKinzie
833 Riverbend Road	9504	Residential	Appraisal Initiated	ProSource/McKinzie
817 Riverbend Road	9507	Residential	Appraisal Initiated	ProSource/McKinzie
809 Riverbend Road	9509	Vacant Lot	Appraisal Initiated	Ulteig/Bock
749 Riverbend Road	9511	Residential	Appraisal Initiated	ProSource/McKinzie
724 Riverbend Road	9587	Residential	Appraisal Initiated	ProSource/McKinzie
808 Riverbend Road (2 parcels at this address)	9593, 9594	Residential	Appraisal Initiated	ProSource/McKinzie

Land Management Summary

February 5, 2015

Street Address	USACE Orig ID No.	Type	Activity[1]	Land Acq Firm/ Appraiser
848 Riverbend Road	9602	Residential	Appraisal Initiated	ProSource/McKinzie
852 Riverbend Road (owner of 3 other parcels)	9603	Residential	Appraisal Initiated	ProSource/McKinzie
856 Riverbend Road (owner at 852 Riverbend)	9604	Vacant Lot	Appraisal Initiated	Ulteig/Bock
860 Riverbend Road (owner at 852 Riverbend)	9605	Vacant Lot	Appraisal Initiated	Ulteig/Bock
864 Riverbend Road (owner at 852 Riverbend)	9606	Vacant Lot	Appraisal Initiated	Ulteig/Bock
872 Riverbend Road	9607	Vacant Lot	Appraisal Initiated	Ulteig/Bock
869 Riverbend Road	9608	Vacant Lot	Appraisal Initiated	Ulteig/Bock
873 Riverbend Road	9609	Vacant Lot	Appraisal Initiated	Ulteig/Bock
477 Oxbow Drive	9614	Vacant Lot	Appraisal Initiated	Ulteig/Bock
473 Oxbow Drive	9615	Vacant Lot	Appraisal Initiated	Ulteig/Bock
469 Oxbow Drive	9616	Vacant Lot	Appraisal Initiated	Ulteig/Bock
465 Oxbow Drive	9617	Vacant Lot	Appraisal Initiated	Ulteig/Bock
461 Oxbow Drive	9618	Vacant Lot	Appraisal Initiated	Ulteig/Bock
457 Oxbow Drive	9619	Vacant Lot	Appraisal Initiated	Ulteig/Bock
455 Oxbow Drive	9620	Vacant Lot	Appraisal Initiated	Ulteig/Bock
425 Oxbow Drive	9628	Vacant Lot	Appraisal Initiated	Ulteig/Bock
358 Schnell Drive	9651	Vacant Lot	Appraisal Initiated	Ulteig/Bock
309 Schnell Drive (owner of 2 other parcels)	9654	Residential	Appraisal Initiated	ProSource/McKinzie
325 Schnell Drive	9658	Residential	Appraisal Initiated	ProSource/McKinzie
341 Schnell Drive	9662	Residential	Appraisal Initiated	ProSource/McKinzie
365 Schnell Drive	9668	Vacant Lot	Appraisal Initiated	Ulteig/Bock
Rural address (owner at 5059 Makenzie?)	9670, 9671	Residential	Appraisal Initiated	Ulteig/Bock
City of Fargo	9768	Commercial	Appraisal Initiated	HMG/Britton
City of Fargo - Housing Authority	9769	Commercial	Appraisal Initiated	HMG/Britton
City of Fargo	9772	Commercial	Appraisal Initiated	HMG/Britton

[1] Activity stages: 1) Owner notified; 2) Appraisal Initiated

Easements in Progress on Publicly Owned Parcels (sorted by Activity, then Original ID Number)

Street Address	USACE Orig ID No.	Type	Activity[1]
City of Fargo - Park District	9212. 9771, 9781, 9784	Commercial	Easement in Process
Oxbow Job Development Authority *Permanent easement*	9581	Residential	Easement Identified

[1] Activity stages: 1) Easement Identified; 2) Easement in Process; 3) Easement Secured

[2] These Publicly Owned Parcels have entered into a MOU with the DA, therefore not requiring the parcels go through the appraisal process.

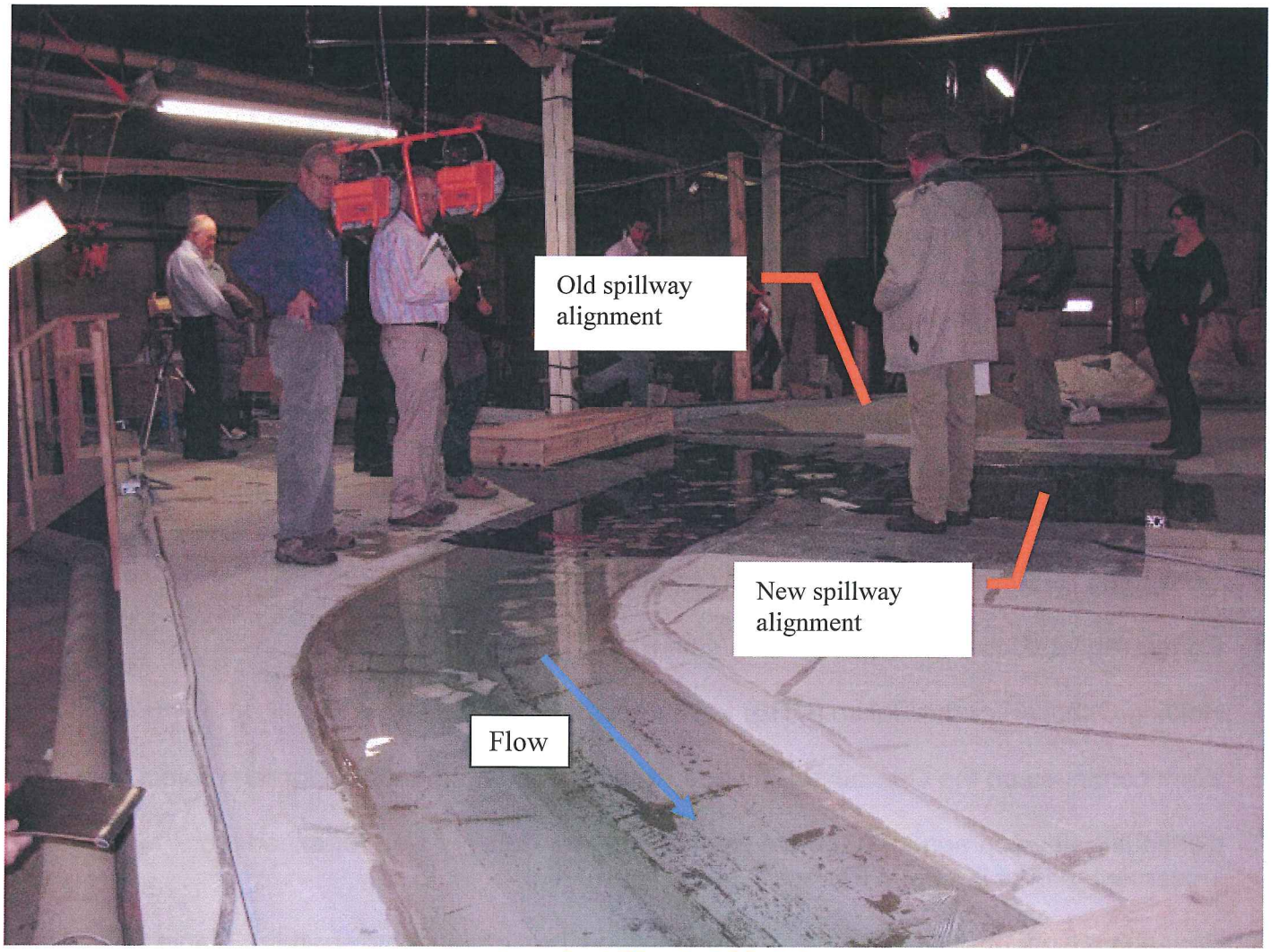
US Army Corps
of Engineers
St. Paul District

Monthly Update

February 5, 2015

Since the last Diversion Authority meeting, the following project-related activities were worked on.

1. Continued coordination and supply of requested data to the MN DNR in support of their EIS process.
2. Continuing the Maple River Physical Model work and preliminary design of the Aqueduct Structure and associated diversion channel.
3. Continuing In-Town Levees design and construction support.
4. Continuing work on the Cemetery Mitigation Plan.
5. Holding Oxbow/Hickson/Bakke (OHB) Levee coordination meetings.
6. Work continues on the Operation Plan and Adaptive Management plan for the project.
7. Continuing development of Alternate Resourcing and Delivery plan for expedited implementation of the FMM Project.
8. Continuing work on optimizing the channel and low flow channel between the Maple River and the Diversion Inlet Structure.
9. Geotechnical borings continue to be taken along the Southern Embankment alignment.
10. Preparing for General Wehr's visit to the area.



Aqueduct Physical Model

LONG TERM FLOOD SOLUTIONS

For the Red River Basin

Progress Report

January 2015

Background

In September 2011, the Red River Basin Commission published the **LONG TERM FLOOD SOLUTIONS (LTFS)** report. The LTFS report was the result of a several year effort to comprehensively compile the status of flooding problems in the U.S. portion of the Red River basin, to summarize the actions that had been taken to address these issues, and to develop recommendations for future actions and measures at the federal, state, regional and local levels to further address and reduce the risk of flood damages throughout the basin. The LTFS report was developed by extensive coordination and communication with federal, state, regional and local stakeholders. There were a total of 70 recommendations for action presented in the LTFS.

Purpose of the Progress Report

The LTFS report was developed to assist the basin's residents, community leaders, water managers and policy makers to understand the overall risk of flood damages throughout the basin and the potential benefits that could be achieved in making the basin less susceptible to future flood damages and more resilient from the impacts of future floods. This Progress report will provide an assessment of the progress being made to implement the recommendations of the LTFS and to identify where additional work remains to be done.

Summary of Progress

Progress has been made in many areas to reduce the risk of flood damages in the Red River basin since 2011. The highlights of the key areas of progress are summarized here.

Main Stem Red River:

1. **Wahpeton-Breckenridge:** The levees and flood diversion projects at Wahpeton and Breckenridge were essentially completed in 2011. Several minor upgrades to the levee heights were completed in 2014 to remain certifiable for the 100 year FEMA criteria.
2. **Fargo-Moorhead:** The Fargo-Moorhead metropolitan area has a comprehensive plan to reduce the flood risks to the metropolitan area to provide a 100 year or greater level of protection. The components of the plan include purchasing of flood prone homes near the river, raising of existing and the construction of new levees and floodwalls, and the construction of a flood diversion.

3. **Oxbow-Hickson-Bakke:** The City of Oxbow, and Hickson and Bakke subdivisions working with the Fargo-Moorhead Diversion Authority, are in the process of constructing a levee system. The first segment of the levee was completed in 2014, with the remaining segments scheduled for construction in 2015 through 2017.
4. **Georgetown, Perley and Hendrum:** The levee segments have been upgraded so that they would meet FEMA certification requirements, but the road crossings of the levees have not been modified and would need to be raised or road closures provided to meet certification requirements.
5. **Halstad:** The levee system at Halstad needs to be upgraded to maintain FEMA certification. The necessary upgrades will be completed in 2016.
6. **Oslo:** The City's levee system was upgraded during the period 2012 and 2014, with construction completed in 2014. The upgraded levee system provides a level of protection greater than 200 year.
7. **Pembina:** The City's levee/floodwall system is now being upgraded with completion scheduled for 2015. The upgraded system will provide a 100 year certifiable level of protection.

Minnesota Tributaries:

1. **Ada:** The levee system in Ada is being upgraded to meet FEMA 100 year levels of protection. The first phase has been constructed and the second phase is being designed and expected to be under construction in 2015.
2. **Alvarado:** The upgrades to the levee system were completed in 2014. The levees provide a 100 year level of protection.
3. **Crookston:** The City of Crookston has completed a levee, floodwall and channel cutoff system that provides FEMA certifiable 100 year flood protection. The system included the removal and relocation of a number of homes and the Community Ice Center. Final components were completed in 2013.
4. **Roseau:** A flood diversion channel project at the City of Roseau was authorized for construction in the Water Resources Development Act of 2007 and construction was started in 2009. The limit of Federal funds to the project was reached and construction was stopped until the Water Resources Reform and Development Act of 2014. The final phases of construction are now underway and the project is expected to be completed in 2015, providing a certifiable 100 year level of protection.

North Dakota Tributaries:

1. **Argusville:** Construction of required upgrades of levee system to meet FEMA requirements were completed in 2013.
2. **Devils Lake:** The flood risk reduction projects around Devils Lake have essentially been completed. These projects include:
   a. **Levees at the City of Devils Lake:** The levee/embankment system is more than 12 miles in length and was completed in 2014.
   b. **Raises of Major Highways and Railroads around the lake:** Major highways and the BNSF railroad that have been raised to elevations that will allow them to be functional if the level of Devils Lake continues to rise.
   c. **Outlets from Devils Lake:** The North Dakota State Water Commission has constructed and operates two pumped outlets from Devils Lake to the Sheyenne River. The west end outlet was operational in 2005 and the east end outlet was operational in 2012.The volume and timing of water pumped to the Sheyenne River is regulated based on the flows and the water quality in the Sheyenne River and only operates during ice free conditions.
   d. **Control Structure on the Natural Outlet to Devils Lake:** A control structure on the Tolna Coulee was constructed 2012 to prevent potential catastrophic erosion of the Tolna Coulee if the level of Devils Lake reached or exceeded the natural overflow level to the Sheyenne River.
3. **Grafton:** The USACE has an authorized flood risk reduction plan consisting of a flood bypass channel and levees to provide a 100 year or higher level of protection for the City of Grafton. The City of Grafton is proceeding with detailed design for the project and is considering construction of the project independent of the availability of federal funds. Detailed analyses and design are underway for a project essentially the same as the USACE authorized project with a projected construction completion timeline of 2017.
4. **Lisbon:** The City of Lisbon is developing plans for a levee project to meet the FEMA requirements. First phase that included levee upgrades is complete. Major challenges to meet FEMA requirements will include a highway crossing and railroad crossing that still need to be addressed.

5. **Valley City:** The City of Valley City has developed plans for a levee and floodwall project to reduce the flood risk. It is being designed to be certifiable and to remove the city from the 100 year FEMA regulatory floodplain. The project is planned for implementation in several stages, with the first segment being constructed in 2015 and the remaining segments scheduled for construction from 2016 through 2020.

Studies

1. **Hydrologic Model (HEC-HMS) Upgrades:**
   Hydrologic models for each of the tributary subbasins in the U.S. portion of the Red River basin have been upgraded. The upgraded HEC-HMS models for each of the tributary watersheds have been standardized using the same criteria to assure comparability of analysis throughout the Red River basin. The models for the tributary watersheds upstream of Halstad were completed and described in the 2011 LTFS report. All of the remaining watersheds in the basin now have upgraded HEC-HMS models.

2. **Hydraulic Model Upgrades:**
   The hydraulic model used to route flows for the 2011 LTFS report was the Mike 11 model and was based on using the 1997 flood. The hydraulic model for the Red River is being upgraded to a HEC-RAS model that extends from the headwaters of the Red River at Lake Traverse to the Canadian border at Emerson. The upgraded HEC-RAS model uses unsteady flow routing which accounts for the effects of floodplain storage on the flood flows as the flood progresses downstream. The reach of the Red River upstream of Halstad is complete and has been used to evaluate the potential effectiveness of upstream floodwater retention sites on flood flows on the Red River. The reach from Halstad to Emerson is still being developed. Discussions with the US Army COE to include this as part of the Basin Feasibility Study have occurred and the COE is attempting to get this completed.

3. **Flood Water Detention Sites:**
   a. **Subbasin Detention Site Plans:** Comprehensive plans have been or are being developed for each subbasin within the U.S. portion of the Red River basin that identifies 400 potential floodwater detention sites providing 2.6 million acre feet of storage. The subbasin Detention Plans also use the upgraded HEC-HMS hydrologic models to estimate the effectiveness of the identified sites in reducing flood flows at the downstream point on the tributary stream for the 25, 50 and 100 year runoff events. For most of the subbasins, these detention plans have identified that substantially more floodwater detention storage is potentially available than was originally assumed in the 2011 LTFS report.

4. **Pembina River Task Force:** A high level task team of 10 members (5 each appointed by the Governor of North Dakota and the Premier of Manitoba) and the Co-Chairs of the federal International Red River Board have been meeting with facilitation assistance from RRBC to recommend a course of action for MB and ND to consider to resolve the flooding issues associated with the Pembina road/dike. Additional modeling to clarify the most likely scenarios to be recommended is now underway with final results and recommendations are expected in early 2015.

Table 1. **Potential Floodwater Detention Storage Identified in Subbasin Plans**

Subbasin	Detention Study Completed (year)	Number of Potential Detention Sites Identified	Potential Floodwater Detention Storage Identified (Acre-Feet)
Minnesota			
Upstream of Halstad			
Bois de Sioux	2013	22	112,000
Buffalo/Red/Ottertail	2013	14	183,000
Wild Rice (MN)	2013	25	298,000
Subtotal		**61**	**593,000**
Downstream of Halstad			
Sandhill River	2013	8	64,000
Red Lake River	2013	66	291,000
Middle/Snake/Tamarac	2014	11	57,000
Two Rivers	2014	10	64,000
Joe River	2014	1	6,000
Roseau River	2013	21	289,000
Subtotal		**117**	**771,000**
Subtotal Minnesota		**178**	**1,364,000**
North Dakota			
Upstream of Halstad			
Wild Rice River (ND)	2013	32	187,000
Lower Sheyenne River	2013	20	94,000
Maple River	2014	40	160,000
Rush River	2014	6	32,000
Elm River	2013	7	47,000
Subtotal		**105**	**520,000**
Downstream of Halstad			
Goose River	2013	34	187,000
Buffalo/Wilson/Cole /English	2013	12	74,000
Turtle River	2013	21	84,000
Forest River	2013	19	105,000
Park River	*2015*	*22*	*134,000*
Pembina River	*2015*	*36*	*191,000*
Subtotal		**144**	**775,000**
Subtotal North Dakota		**249**	**1,295,000**
Subtotal Upstream of Halstad		**166**	**1,113,000**
Subtotal Downstream of Halstad		**261**	**1,546,000**
Total for Red River Basin		**427**	**2,659,000**

Legislation/Funding

1. **Water Resources Reform and Development Act of 2014 (WRRDA 2014):** WRRDA 2014 authorized the Fargo/Moorhead Flood Diversion project (which was one of only nine flood risk management projects authorized across the nation) and the authorization of project modifications to the Roseau River Flood Diversion project.

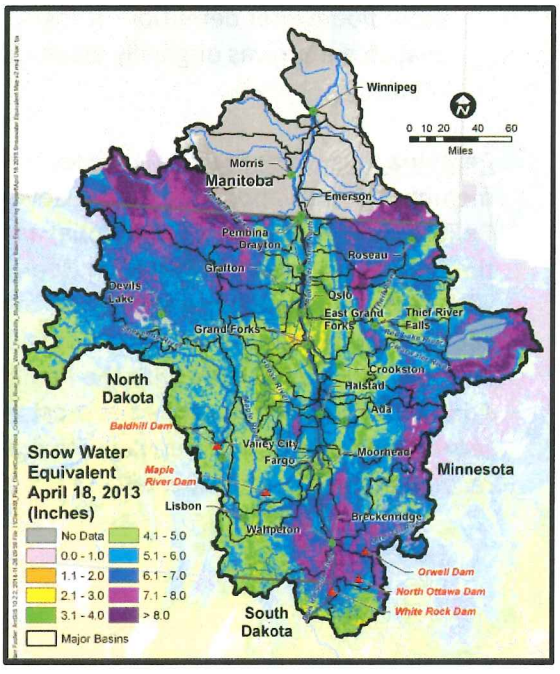
2. **Agricultural Act of 2014 (2014 Farm Bill):** The Farm Bill provides many programs that are important to the agricultural economy. The most significant to the flood risk reduction goals for the Red River basin is the section dealing with the Regional Conservation Partnership Program (RCPP). $12 million was awarded in January 2015 funding "PL-566 like" projects which will assist in the planning and then building of flood water storage impoundments. There also is a special $50 million allocation of funds that is targeted for the Red River Basin designated for use in current NRCS programs.

3. **Biggert-Waters Flood Insurance Reform Act of 2012:** There are two pieces of Federal: the Biggert-Waters Flood Insurance Reform Act of 2012 (BW-12 Act), and the Homeowner Flood Insurance Affordability Act of 2014 (FIAA-14 Act) are designed to eliminate the federal subsidies to the flood insurance program and will result in significant increases to flood insurance premiums.

4. **State/Regional/Local:**
   a. **North Dakota:** In September 2014, the North Dakota State Water Commission adopted a revised cost-sharing policy regarding state funding for water related projects. For the 2015-2017 biennium local member water districts from the Red River Joint Water Resource Districts submitted 18 impoundment projects for planning and preliminary engineering cost share.
   b. **Minnesota:** For the FY16 budget cycle the member watersheds of the Red River Water Management Board have 5 impoundment projects for which they are seeking funding. There are an additional 5 or 6 impoundment projects being studied that will seek funding in FY17 funding cycle.
   c. **Fargo/Moorhead Diversion Authority:** The Fargo/Moorhead Diversion Authority was formed in 2011 as a joint powers agreement to be the non-federal partner for the planning, design and management of USACE Fargo/Moorhead Flood Diversion project. The Diversion Authority members include City of Fargo, City of Moorhead, Cass County, ND, Clay County, MN, the Cass County Joint Water Resource District, and the Buffalo Red River Watershed District. The Diversion Authority provides project management support for the non-Federal responsibilities of the project, including the planning, engineering design, land acquisition, public involvement and other activities.

Flood Events that Occurred Since 2011

Flood of 2013: The spring of 2013 brought the threat of major flooding to several parts of the Red River basin. The water content of the snowpack on 18 April 2013 (just prior to the start of the melt) is shown in the adjacent figure. The area of high water content upstream of Fargo/Moorhead was more than measured for the recent floods of 2009 and 2011. Flood forecasts predicted major flooding for the locations downstream of the high water content areas and all along the Red River. For the northern tributaries of the Red River basin the forecasts achieved the normal reliability, resulting in near record flood levels in the Pembina and Park Rivers subbasins. However, for the Fargo/Moorhead area and several other locations downstream along the Red River, actual flood levels reached were significantly below forecast levels. For example at Fargo/Moorhead where flood levels approaching the record levels of 2009 were forecast, actual flood levels came in about seven feet lower than predicted. Similar differences were



experienced at Grand Forks/East Grand Forks and at Pembina/Emerson. Although the high forecasts were a concern at many locations, it was of special concern at Fargo/Moorhead. Fortunately, for most folks along the entire length of the Red River, the high forecast flood levels did not materialize, due primary to the slow gradual melt, shallow frost depths, dry soil moisture conditions and lack of rain during the melt period. As result of missing the forecast levels by such a significant amount, the flood forecast models and data input into the models is being reevaluated so that the forecasting models can more accurately reflect runoff conditions during the melting period.

Current Levels of Protection versus Needs in the Basin

Although progress has been made at a number of communities to reduce the risk of flood damage and to improve the levels of protection, that progress has not necessarily resulted in achieving the goals adopted by the RRBC in the LTFS report. Many locations are planning to increase their levels of protection, but in the next several years none are projected to achieve the levels of the RRBC guidelines. Although there are potential upstream floodwater detention projects planned, few are programmed to be completed in the near future that would measurably increase levels of protection along the Red River main stem. It is interesting to note that the Province of Manitoba and City of Winnipeg has completed an upgrade of the cities flood protection system. Winnipeg is currently protected to an estimated 1 in 700 year flood.

Potential Floodwater Detention Projects

Over 400 potential floodwater detention sites have been identified throughout the Red River basin in the individual watershed Distributed Storage Plans. The relative implementability and effectiveness of the sites are still being evaluated. However, progress is being made in continuing the implementation of sites in both Minnesota and North Dakota. Two sites, the Redpath project in the Bois de Sioux watershed in Minnesota and the Upper Maple River Dam on the Maple River in North Dakota are in design and programmed for construction in 2015. Two watershed districts on the Minnesota side have completed preliminary work on projects that when completed will be the first subwatersheds to meet their storage goals established as part of the 20% flood flow reduction initiative. The Roseau River Watershed District is working on two projects in conjunction with the Minnesota Department of Natural Resources. These two projects will reduce the 100 year flood at the Canadian border by approximately 30%. The Two Rivers Watershed District is also working on a large project that when constructed and in addition to projects already completed will result in an approximate 30% reduction in the 100 year flood on the Two River.

Potential Effects of Storage on Red River Flood Flows

The results from the analyses conducted for 2011 LTFS report showed that approximately 1.5 million acre-feet of appropriately placed floodwater detention storage spread throughout all of the tributary watersheds of the Red River could have reduced the peak flows of the 1997 flood from 17% to 24%.

Based on the analyses conducted in the "Halstad Upstream Retention" analysis which used the upgraded hydrologic and hydraulic models and updated information on potential storage sites available within each subbasin, it was found that potentially more storage sites were available upstream of Halstad than assumed in the 2011 LTFS report and that even though the peak flows for the synthetic 100 year flood might be greater than the 1997, peak flow reductions of 20% or greater were estimated at all locations on the Red River from Wahpeton/Breckenridge to Halstad.

Progress on LTFS Recommendations for Action

The Long Term Flood Solutions Report identified conclusions and specific recommendations for actions to be taken by local, state and federal interests that would advance the goals and objectives to reduce the risk of flood damages, minimize disruption and economic loss and facilitate and expedite recovery after spring and summer flood events in the Red River basin.

Conclusions on LTFS Implementation Progress

Substantial progress has been made on implementation of many of the recommendations presented in the Long Term Flood Solutions report. That progress can be summarized by the categories of the recommendations.

1. **Immediate Needs/Critical Risks:** Fargo/Moorhead and Devils Lake: Substantial progress has been achieved on both areas of identified immediate needs and critical risks. In the Fargo/Moorhead area, more that 700 floodprone structures have been purchased and removed from the floodplain, segments of permanent levees have been constructed and the preliminary design of the Fargo/Moorhead Flood Diversion project has continued and the Fargo/Moorhead Flood Diversion Project was authorized for construction in WRRDA 2014. Although not without controversy, the Flood Diversion project, which is the principal component to reducing the risk of catastrophic flooding in the Fargo/Moorhead area, continues to progress at a rapid pace. In the Devils Lake area, the most critical components to reduce the risk of flood damages due to the rising lake levels have been implemented. Coordination with international, federal, tribal, state, local and other stakeholders continues to address issues related to the high lake levels and the related effects on downstream areas.
2. **Cornerstone Solutions: Floodplain Management:**
   a. **Non-Structural Strategies**: Significant progress has been made on the acquisition and removal of flood prone structures at several communities, especially in the Fargo/Moorhead area. Additional work is needed to improve floodplain regulations and ordinances and other non-structural approaches to reduce the risk of future flood damages.
   b. **Raising Levels of Protection**: Increasing the levels of flood protection at communities throughout the basin has continued, with the focus on trying to achieve a 100 year level of protection that would be certifiable to FEMA standards.
   c. **Retention**: Planning, design and construction of floodwater retention projects throughout the basin has continued, with several projects advancing toward implementation. The development of hydrologic and hydraulic models has continued to support the evaluation of the retention projects.
3. **Information and Tools for Maximizing Efforts Going Forward**: Coordination related to flood risk reduction with stakeholders throughout the basin continues. The potential flood threat posed by the water content of the snowpack in 2013 and the challenges of flood forecasting have kept the need for flood risk reduction projects, data collection and education related to flooding as relatively high priority items for most communities and residents.
4. **Resources to Implement**: Funding at the state and local levels has continued to support flood risk reduction projects throughout the basin.

Public Outreach Committee Report
For Diversion Authority – Feb. 5, 2015

- Community Outreach
  - The Outreach Team hosted a booth at the Red River Basin Commission's Conference in Winnipeg in January. In addition, Aaron Snyder with the Corps and Mark Brodshaug with the CCJWRD spoke to an audience of several hundred at the conference about the Diversion Project.
  - The Outreach Team is taking part in the ND Rural Water Expo in Bismarck next week.
  - The Chamber's Business After Hours event in Moorhead is tonight and the Diversion Authority will be taking part in an effort to engage their membership and be available to answer questions on updates about the Project. Nancy Otto and Kevin Campbell will be working the booth there.
- Business Leaders Flood Taskforce
  - Representatives from the FM Area Association of Realtors, the Home Builders Association, and the Chamber now attend and take part in the discussion of the Outreach Committee. Each group is interested and active in the legislative sessions in North Dakota and Minnesota and want to be involved in Diversion-related legislative efforts when possible.
  - Each group has their own scheduled visits to Bismarck and St. Paul and as part of their trips are planning to actively advocate for the need for flood protection and the Diversion.
- North Dakota Legislature
  - The Committee is keeping tabs on several Diversion related bills in the North Dakota legislature, including Senate Bill 2020, which includes $69 million for the Diversion Project and reaffirmed the State's commitment to $450 million in total.
- E-Newsletter and FMDiversion.com
  - E-Newsletter Update: The newsletter publication list continues to grow and the click-through rate on the articles has been incredibly strong. In addition to members of the public who have signed up, the newsletter is distributed to legislators from both North Dakota and Minnesota.
  - FMDiversion.com continues to be a resource for a growing online population. The website is currently undergoing a review of its format to see if there are modernizations that it can take advantage of to better serve the growing needs of its visitors.