

FLOOD DIVERSION BOARD OF AUTHORITY
Thursday, March 13, 2014
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
 - b. PMC (CH2MHill) Task Orders Item 5b.
6. Technical Information/action
 - a. Design Contracts/Task Orders/Authority Work Directives Item 6a.
 - i. Task Order No. 9 Amendment 10-Hydrology/Hydraulic Modeling Item 6a. (i)
 - ii. Task Order No. 13 Amendment 4-Levee Design and Support Item 6a. (ii)
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. Voucher approval Item 9b.
10. Other Business
11. Next Meeting – April 10, 2014
12. Adjournment

cc: Local Media

**FLOOD DIVERSION BOARD OF AUTHORITY
FEBRUARY 13, 2014—3:30 PM**

Item 2.

1. MEETING TO ORDER

A meeting of the Flood Diversion Board of Authority was held Thursday, February 13, 2014, at 3:30 PM in the Fargo City Commission Room with the following members present: Cass County Commissioner Vern Bennett; West Fargo City Commissioner Mike Thorstad; Fargo Mayor Dennis Walaker; Fargo City Commissioner Tim Mahoney; Fargo City Commissioner Brad Wimmer; Cass County Joint Water Resource District Manager Rodger Olson; Clay County Commissioner Kevin Campbell; 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; Clay County Administrator Brian Berg; Moorhead City Engineer Bob Zimmerman; Cass County Engineer Jason Benson; Bruce Spiller, CH2MHill; Tom Dawson, Chairman, Chamber of Commerce Business Leader Task Force for Permanent Flood Protection; and Terry Williams, Project Manager, Corps of Engineers.

2. MINUTES APPROVED

MOTION, passed

Mr. Mahoney moved and Mr. Walaker seconded to approve minutes from the January 21, 2014, meeting as presented. Motion carried.

3. AGENDA ORDER

MOTION, passed

Mr. Mahoney moved and Ms. Otto seconded to approve the order of the agenda. Motion carried.

4. MANAGEMENT UPDATE

Program management consultant (PMC) report

Bruce Spiller provided an update on activities over the last month including ongoing geotechnical and survey work on the Oxbow/Hickson/Bakke (O/H/B) levee; continued work on land acquisition activities and policies; coordination with the new Fargo City Hall project regarding in-town levees; and monitoring of the WRDA/WRRDA bills, which are in conference committee.

Corps of Engineers report

Terry Williams provided an update of activities by Corps of Engineers staff including continued support for the Minnesota EIS (Environmental Impact Statement) process; continued design work associated with the O/H/B levee and participated in value engineering studies for the O/H/B levee and In-Town Levee projects; received approval to execute the Construction MOU; and presented at the Red River Basin Commission Conference in January. The project continues to await federal authorization.

5. ADMINISTRATIVE/LEGAL UPDATE

Election of Chair and Vice Chair for 2014

Erik Johnson reviewed the by-laws for electing a Chairman and Vice Chairman for the Board of Authority. The by-laws state the election should take place at the first regular meeting of each year.

MOTION, passed

Mr. Campbell moved and Mr. Thorstad seconded to elect Mr. Vanyo as Chairman of the Flood Diversion Board of Authority for 2014. Motion carried.

MOTION, passed

Mr. Campbell moved and Ms. Otto seconded to elect Mr. Mahoney as the Vice Chairman of the Flood Diversion Board of Authority for 2014. Motion carried.

Construction MOU

The Memorandum of Understand (MOU) between the Department of the Army, the cities of Fargo and Moorhead and the Flood Diversion Board of Authority was presented and allows the construction process to move forward.

MOTION, passed

Mr. Campbell moved and Mr. Wimmer seconded enter into the Memorandum of Understanding with the Department of the Army, the cities of Fargo and Moorhead and the Flood Diversion Board of Authority. Discussion: Ms. Otto asked for clarification that at this time there are no set dollar amounts; rather the MOU is an understanding allowing the sponsoring entities to work with the Corps. It was clarified that the MOU is an understanding to work with the Corps. Motion carried.

6. TECHNICAL UPDATE**Design Contracts / Task Orders / Authority Work Directives (AWD)**

Mr. Spiller reviewed Task Orders with Houston Moore Group (HMG) as follows: Task Order No. 1 Amendment 4 for project management at a cost of \$65,000; Task Order No. 6 Amendment 4 for land management services for Minnesota right of way funding at no cost; Task Order No. 8 Amendment 6 for work-in-kind related to the Minnesota EIS preparation support at a cost of \$129,345; and Task Order No. 10 Amendment 4 for utilities design of sanitary sewer relocation associated with the O/H/B levee at no cost.

Mr. Spiller reviewed AWD-00035 with HMG for the 4th Street levee pump station replacement to begin preliminary work on soil borings and planning for the design at a cost not to exceed \$100,000.

MOTION, passed

Mr. Mahoney moved and Ms. Otto seconded to approve Task Order No. 1 Amendment 4, Task Order No. 6 Amendment 4, Task Order No. 8 Amendment 6, and Task Order No. 10 Amendment 4 for a total cost of \$194,345 and AWD-00035 for the 4th Street levee pump station replacement at a cost not to exceed \$100,000. On roll call vote, the motion carried unanimously.

Decision Paper for Utilities Relocation Compensation Policy

Mr. Spiller reviewed DP-00034 which is a policy for Utilities Relocation Compensation. The policy states that once the utilities to be relocated are identified by the technical team, the information on those utilities is given to the Corps for compensability determination.

MOTION, passed

Mr. Campbell moved and Mr. Mahoney seconded to approve a policy to compensate utility owners, public and private within reaches one through seven for costs associated with relocation of utilities due to the diversion project, whether or not such costs are determined to be “compensable” by the U.S. Army Corps of Engineers (USACE) for purposes of crediting. Discussion: Mr. Olson said it is important that utility owners understand that action taken today and that the lines of communication remain open. On roll call vote, the motion carried unanimously.

Red River Basin Commission update

Jeff Lewis from the Red River Basin Commission was present and gave an update which included the conference held in January. He has met with and briefed two of the Canadian Ministers within Manitoba, and an engineering group in St. Paul. Mr. Lewis said they are working with representatives of the federal farm bill in an effort to be identified within the bill which was recently passed.

Zach Herman, Houston Engineering, gave a presentation on the Halstad Upstream Retention Study. They are reviewing the models and will fine tune the process as needed.

7. PUBLIC OUTREACH UPDATE***Committee report***

Rodger Olson said the Public Outreach Committee met on February 12th. He discussed numerous outreach activities including: attending the Upstream Coalition Meeting with Mr. Wimmer; continued communication with federal congressional offices regarding project authorization through the WRDA/WRRDA legislation; and developing an online and media presence through an E-Newsletter which is distributed to legislators from both North Dakota and Minnesota.

Business Leaders Task Force update

Tom Dawson from the Business Leaders Task Force said they plan to have information available at the next Diversion Board meeting.

8. LAND MANAGEMENT UPDATE***Committee report***

Mr. Walaker said the Land Management Committee met earlier this afternoon. He said the committee is recommending hiring Pifer’s Land Management for farmland management services.

MOTION, passed

Mr. Campbell moved and Mr. Wimmer seconded to hire Pifer’s Land Management for Farmland Management Services. On roll call vote, the motion carried unanimously.

CCJWRD update

Mark Brodshaug said they have been acquiring farmland; most of it is in the four and five reaches. He distributed maps outlining the land which has been recommended for purchase and includes 1029.49 acres at a recommended purchase price of \$4,966,801.20.

MOTION, passed

Mr. Wimmer moved and Mr. Olson seconded to proceed with the land acquisition for the recommended cost of \$4,966,801.20. On roll call vote, the motion carried unanimously.

Mr. Brodshaug said the appraisers are scheduled to start at Oxbow, Hickson, and Bakke next week.

9. FINANCE UPDATE

Committee report

Michael Montplaisir, Cass County Auditor, said the Finance Committee met on February 12th. He said they had discussion on the special assessment process regarding laying out the expectations for people should special assessments be needed.

The state has not been reimbursing land purchases at Oxbow; however, they are continuing to work with the state and will do the same with the farmland purchases.

Local funds have been used as the funding source and to date about \$40 million has been spent on the diversion project.

Voucher approval

MOTION, passed

Mr. Mahoney moved and Mr. Wimmer seconded to approve the vouchers for January, 2014. On roll call vote, the motion carried unanimously.

10. NEXT MEETING DATE

The next meeting will be held on Thursday, March 13, 2014, at 3:30 PM.

11. ADJOURNMENT

MOTION, passed

On motion by Mr. Walaker, seconded by Ms. Otto, and all voting in favor, the meeting was adjourned at 4:55 PM.

DRAFT

**AMENDMENT ONE to
CH2M HILL Task Order No. 3
Diversion Board of Authority
Metro Flood Diversion Project
Pre-Authorization Technical, Public Outreach, and Land Support Services**

This Amendment No. 1 is to CH2M HILL’s Task Order No. 3, Pre-Authorization Technical, 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. 3, 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: March 15, 2014” with “End: September 13, 2014”.
4. Modify the Payments to ENGINEER as follows:
 - a. Period of Performance – Replace “Six and one-half (6 1/2) Months” with “Twelve and one-half (12 1/2) Months”
 - b. Total Compensation and Budget –
 - i. Monthly Rate – no change.
 - ii. Increase Budget by “\$900,000.”
5. Modify the Other Modifications to the Agreement: no change.

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 _____

Name Darrell Vanyo _____

Title Chairman _____

Date 15 March 2014 _____

Signature _____

Name Thomas J. Helgeson _____

Title Vice President and Area Manager _____

Date _____

DRAFT

**AMENDMENT ONE to
CH2M HILL Task Order No. 4
Diversion Board of Authority
Metro Flood Diversion Project
Pre-Authorization Program Services**

This Amendment No. 1 is to CH2M HILL's Task Order No. 4, Pre-Authorization Program 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. 4, 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: March 15, 2014" with "End: September 13, 2014".
4. Modify the Payments to ENGINEER as follows:
 - a. Period of Performance – Replace "Six and one-half (6 1/2) Months" with "Twelve and one-half (12 1/2) Months"
 - b. Total Compensation and Budget –
 - i. Monthly Rate – no change.
 - ii. Increase Budget by "\$180,000."
5. Modify the Other Modifications to the Agreement: no change.

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 15 March 2014 _____

Date _____



Item 6a.

Task Order Summary

Date: March 13, 2014

Task Order Summary	Budget Estimate (\$)
HMG Task Order No. 9, Amendment 10 – Hydrology and Hydraulic Modeling <ul style="list-style-type: none">Incorporate AWD-00034 (Update River and Drain Structures in HEC-RAS Model)	\$ 25,000
HMG Task Order No. 13, Amendment 4 – Levee Design and Design Support <ul style="list-style-type: none">Incorporate AWD-00035 (Add 4th St Levee Pump Station Design)	\$ 600,000
Total of Task Orders	\$ 625,000

TASK ORDER SUMMARY

HMG – Task Order No. 9 – Amendment 10 Hydrology and Hydraulic Modeling

Increase \$ 25,000

Description:

Subtask 2.I.V.i – Services of Engineer

- i. Update HEC-RAS unsteady flow model geometry to reflect most current layout of the Maple River Aqueduct and Spillway being used by the physical modeling team. The Maple River overbank berms near the structure will also be updated. Using the latest project designs, update the layouts and inlet structure geometry for the Rush and Lower Rush Rivers, as well as Drain 30.
 - a. Update HEC-RAS unsteady flow existing conditions and project conditions for the 10-, 50-, 100-, and 500-year Red River peak events. No diversion gate optimizations will be conducted, as this will be completed as part of the Phase 8 model updates.
 - b. Update HEC-RAS unsteady flow existing conditions and project conditions for the 10-, 50-, 100-, and 500-year Tributary peak events. No diversion gate optimizations will be conducted, as this will be completed as part of the Phase 8 model updates.

Background:

The USACE, St. Paul District, is requesting Houston-Moore Group's (HMG's) assistance in updating the geometry for river, aqueduct, and drain inlet structures in the HEC-RAS model as listed below in the Scope. This model update work was not included in the Phase 7.1 model update, but should be done now so that the HEC-RAS model matches the Maple River Aqueduct numerical and physical models.

Cost = \$ 25,000

Recommendation:

PMC recommends authorization for Task Order No. 9, Amendment 10 for \$ 25,000.

**HMG – Task Order No. 13 – Amendment 4
Levee Design and Design Support**

Increase \$ 600,000

Description:

Subtask 2.B.i.4 – Services of Engineer

- a. Provide design services and prepare detailed plans and specifications for the replacement of the 4th Street Levee Pump Station.
- b. Deliverables include 35% and 95% design submittals, 35% and 95% cost estimates, draft and final operation and maintenance plan, and assisting the PMC with development of bid documents.

Background:

At the November 8, 2012 Diversion Board meeting, the Board requested the USACE add levees along the Red River to allow increased flow, at a stage of 35 feet, 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.

Cost = \$ 600,000

Recommendation:

PMC recommends authorization for Task Order No. 13, Amendment 4 for \$ 600,000.

Task Order No. 9, Amendment 910

Item 6a. (i)

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. 9 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: HYDROLOGY AND HYDRAULIC MODELING
- B. Description: Provide hydrology and hydrologic modeling services in order to advance design components of the Diversion Channel. Specific modeling subtasks include: modeling of Diversion inlets to determine design flows, modeling to evaluate hydraulic impacts of various Diversion Channel sizes, extending model geometry of the Rush and Lower Rush Rivers, providing technical assistance and support for the physical modeling of the Maple and Sheyenne River aqueduct structures, and on-call services as requested.

2. Services of Engineer

A. HMS DIVERSION INLET MODELING:

The objective of this subtask is to develop an HMS model for each Diversion inlet subbasin using synthetic rainfall events, and to obtain parameters for an estimate of discharge-frequency using a methodology coordinated with the U.S. Army Corps of Engineers..

- I. Discharge frequency curve at Amenia.
- II. Adopted discharge frequencies at the inlet location after the initial HMS simulations.

Scope:

- I. Model Diversion inlet inflows for 1.3-, 1.5-, and 2-yr rain events. Inlets to be modeled are:
 - 1. Diversion Inlet
 - 2. Local Drain 1
 - 3. Drain 50
 - 4. Drain 21C
 - 5. Local Drain 2
 - 6. Local Drain 3
 - 7. Local Drain 4
 - 8. Drain 14 (new location)
 - 9. Original Drain 14
 - 10. Local Drain 5
 - 11. Maple River
 - 12. Lower Rush River
 - 13. Local Drain 6
 - 14. Rush River

15. Drain 30
16. Drain 29
17. Drain 13

- II. Calibrate model to match each subbasin's adopted discharge-frequency to obtain HMS hydrographs for each inlet to the Diversion.
- III. Obtain the following parameters: Clark's T_c , R , $R/(T_c+R)$, CN , slopes, and drainage area. Parameters to be used to estimate Diversion inlet discharge-frequency using the NRCS method for small subbasins, as per the ND Hydrology Guide.

Deliverables:

- I. HMS hydrographs at each inlet to the Diversion in a separate DSSVue file.
 - II. List of parameters used or determined such as: precipitation, Clark's T_c , R , $R/(T_c+R)$, CN , slopes, and drainage area.
 - III. Schematic showing drainage area for each inlet, with the Diversion alignment.
 - IV. Brief report describing method, assumptions, parameters used, maps, and results.
- B. UPDATES TO THE RUSH/LOWER RUSH:

The objective of this subtask is to produce working HEC-RAS models using updated HEC-HMS hydrology for local peak flows in the Rush and Lower Rush areas for use in project design.

Scope:

- I. Red River Peak Flood - Modified Rush River hydrographs from the existing conditions model will be input into the Phase 6 LPP model, which initially will be conducted for the 100-year flood event.
- II. Rush River and Red River Peak Flood - The updated hydrographs from the HEC-HMS models developed for existing conditions will be run for the Red River Peak 10 and 100-year flood events in the Phase 6 LPP model.
- III. RAS Mapper will be used to map the floodplain outside of the diversion channel for the peak tributary event on the Rush and Lower Rush Rivers.

Deliverables: Updated existing conditions and with-project HEC-RAS unsteady models.

C. EVALUATION OF CHANNEL SIZE:

The objective of this subtask is to evaluate various Diversion Channel width sizes to determine hydraulic impacts based on channel size.

Scope:

- I. Evaluate alternatives using the criteria below to assess the size of the Diversion Channel and conduct a Screening Analysis using the HEC-RAS steady state software with the objective of determining the most favorable alternatives:
 1. Bottom width of the main Diversion Channel.
 2. Channel bottom elevation of the Diversion Channel.
 3. Considerations of the water surface profile in the Diversion Channel with respect to existing ground elevations.
 4. Modification of the Hydraulic Structure at the Maple River.
 5. Other criteria can be applied at a later time if it is determined that optimizing the Diversion Channel is justified with this initial evaluation.

6. The 100 and 500-year events for the Red River peak flood event will be analyzed.
 7. Peak discharge values from the current Phase 6 unsteady model will be used, which is also being applied to the bridge analysis (MFR-001) currently being updated by the USACE.
- II. Conduct an Impact Analysis using the HEC-RAS unsteady state software for the most favorable alternatives identified in Task 1.
 1. The 100 and 500-year events for the Red River peak flood event will be analyzed using the latest Phase 6 unsteady flow model.
 2. River impacts will focus only on the Red River upstream, downstream, and throughout Fargo-Moorhead. Impacts will be compared to those determined in Phase 4 and Phase 5, which may require that the gate operations may be modified to obtain similar impacts.
 3. Additional impacts can be further evaluated at a later time if it is determined that optimizing the Diversion Channel is justified with this initial evaluation.
 - III. Develop a preliminary cost estimate for the most favorable alternative identified for optimizing the Diversion Channel.
 2. Quantify the cost savings based on unit-cost savings using the Feasibility Study unit prices, focusing primarily on costs associated with earth work and at the Maple River Hydraulic Structure.
 3. Additional cost detail can be further evaluated at a later time if it is determined that optimizing the Diversion Channel is justified with this initial evaluation.
 - IV. Prepare a Technical Memorandum (TM) summarizing whether the size of the Diversion Channel warrants additional and more detailed study.

Deliverables:

- I. Draft report.
- II. Final report.

D. EXTEND RAS GEOMETRY OF THE RUSH/LOWER RUSH

The objective of this subtask is to account for break-out flows between the Rush and Lower Rush Rivers by extending the RAS model geometry of the Rush and Lower Rush Rivers upstream to the beach ridge of Glacial Lake Agassiz.

Scope:

- I. Extend existing conditions Rush River HEC-RAS model approximately 10 miles upstream from Amenia and add model detail between the Rush and Lower Rush Rivers to incorporate breakout discharges.

Deliverables:

- I. Updated existing conditions and with-project HEC-RAS unsteady models.

E. PHYSICAL MODELING ASSISTANCE:

Provide ongoing assistance to the Diversion Authority during the transition for Feasibility Study to Preliminary Engineering and Design (PED) in support of the Maple and Sheyenne River aqueduct structures.

Scope:

- I. Participate in USACE design team meetings, Local Sponsor/Local Consultants Technical Team (LSLCTT) meetings, and workshops as requested.
- II. Provide technical assistance for physical modeling of hydraulic structures.
- III. Provide hydrology information, as requested, to USACE.
- IV. Provide additional assistance as requested.

Deliverables: Meeting minutes.

F. 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. EXTREME RAINFALL EVENTS – Complete the work originally authorized in AWD-00016 and deliver the final report. The scope of work specified in AWD-00016 was:
 1. Develop a Technical Memorandum (TM) that determines whether or not a meander belt width of 200 feet is sufficient to allow establish a low-flow channel that is in dynamic equilibrium, and if so, provide sufficient information and criteria for others to design the four (4) low-flow channel reaches:
 - a. Diversion Outlet to Lower Rush
 - b. Lower Rush to Drain 14
 - c. Drain 14 to Drain 21C
 - d. Drain 21C to Diversion Inlet

The focus of this meander belt width analysis is on the reach Diversion Outlet to Lower Rush. Meander belt width for other reaches will be confirmed in subsequent analyses.

The Final Feasibility Report includes a grade control feature across the entire width of the main section of the diversion channel every 5,000 feet along the length of the diversion. The use of grade control to set some constraints on the low-flow channel migration rates within the meander belt width should be considered as part of this study. The distance between grade control features can be modified if warranted. Discuss, and if appropriate, recommend other methods to limit meander belt width.

The following data will be provided by the Diversion Authority at the commencement of the work effort:

- a. Soil test data to include Atterberg limits and gradations, boring log plates, boring location diagrams, and boring profile plates
- b. Sediment grain size distribution and sediment transport (both as bedload and in suspension) data that has been collected recently by the US Geological Survey and West Consultants, including low and high flow events, for streams near the proposed diversion, including the Rush, Lower Rush, Maple and Sheyenne rivers

- c. Current, and if available, also historical cross sections for streams near the proposed diversion, including the Rush, Lower Rush, Maple and Sheyenne rivers
- d. Required diversion profile information along the centerline of the diversion
- e. Typical cross-sections for the low-flow channel and main section of the diversion channel for the four reaches referred to above (i.e., 1) Mouth to Lower Rush, 2) Lower Rush to Drain 14, 3) Drain 14 to Drain 21C, and 4) Drain 21C to Diversion Inlet)
- f. Current, and if available, also historical general slope and sinuosity information for streams near the proposed diversion, including the Rush, Lower Rush, Maple and Sheyenne rivers
- g. Current, and if available, also historical digitized information (GIS format) on planform alignments for streams near the proposed diversion, including the Rush, Lower Rush, Maple and Sheyenne rivers
- h. Stage (water depth)-discharge, flow velocity-discharge, discharge-duration and discharge-frequency information for the four reaches referred to above (i.e., 1) Mouth to Lower Rush, 2) Lower Rush to Drain 14, 3) Drain 14 to Drain 21C, and 4) Drain 21C to Diversion Inlet)
- i. Typical flood hydrographs for the four reaches referred to above (i.e., 1) Mouth to Lower Rush, 2) Lower Rush to Drain 14, 3) Drain 14 to Drain 21C, and 4) Drain 21C to Diversion Inlet)
- j. Compilation of frequency and duration of operation, typical cross sections, slopes, erosion protection measures, and sedimentation records for the two existing diversions on the Sheyenne River (Horace to West Fargo, and West Fargo)

Deliverables:

1. Prepare a first Draft Technical Memorandum to include:
 - Outline approach for meander belt width analysis
 - Brief literature review on constructed meandering channels
 - Preliminary summary of data available
 - Initial thoughts on feasibility of meander belt width concept
2. Prepare a second Draft Technical Memorandum to include:
 - Description of approach for meander belt width analysis
 - Processing of data for input in meander belt width analysis
 - Meander belt width analysis
 - Stabilization alternatives, including grade-control measures, non-structural measures (e.g., vegetation), widening of main diversion channel in certain reaches, among other considerations, to ensure low-flow channel migration occurs within prescribed meander belt width
 - Determination of need for rock toe protection along the entire length of the inner diversion toe to prevent erosion
 - Suggestions for future field investigations
 - Recommended design criteria for Final Design
3. Consult with Professor Gary Parker (University of Illinois at Urbana-Champaign) during development of the meander belt width analysis and recommendations.

4. Develop a brief, graphics-rich, PowerPoint presentation of the background and results. This presentation must be suitable for a non-technical audience.
5. Determine timing of tributary contributions to the low flow channel by reviewing and comparing the Phase 1 HEC-HMS model results for the Rush and Lower Rush Rivers, and Drains 14 and 21C for the 2-year and 5-year 24-hour rainfall events. Compare model results to low flow channel hydrology developed by USACE.
6. Prepare a Technical Memorandum presenting summarizing results.

II. EXTREME EVENT EVALUATIONS

1. Evaluate the following for extreme (103,000 cfs and Probable Maximum Flood (PMF)) events
 - a. Adequacy of aqueduct openings
 - b. Lowering the left EMB to reduce the amount of flow in the Diversion Channel
 - c. Head differential across raised road in the staging area
 - d. For VE-13 Option D, sloping the Diversion Channel from the Wild Rice River toward the Diversion Inlet

III. TRIBUTARY PEAK MODEL RUNS TO SUPPORT THE MAPLE RIVER AQUEDUCT PHYSICAL MODEL

Background: To provide 10-, 50-, 100-, and 500-year tributary peak hydrographs in the current version of the unsteady RAS model to obtain the best available tributary peak flow information for the Maple River physical modeling effort. These updated tributary peak model runs will aid in the effort of determining the flow combinations to be modeled during maple River physical modeling effort.

Scope: Perform model runs for the 10-, 50-, 100-, and 500-year tributary peak hydrographs to support the USACE's physical and numeric modeling of the Maple River Aqueduct Structure. Provide modeling results to USACE.

IV. ADDITIONAL ASSISTANCE FOR THE MAPLE RIVER AQUEDUCT PHYSICAL MODEL

Scope: Additional assistance includes participating in bi-weekly conference calls, providing additional technical information and support from Feasibility Study team to USACE's physical modeling team, and attending a four-day value-based design charrette.

V. UNSTEADY HEC-RAS MODELING OF EXISTING PMF INFLOWS

Background: The existing Probably Maximum Flood (PMF) was developed almost 30 years ago (1984) and is based on simple hydrologic routing that likely does not account for the full effects of floodplain storage and cross-basin flow that occurs upstream of Fargo-Moorhead. USACE has updated the unsteady HEC-RAS model upstream of the unsteady HEC-RAS model currently being used for the FMMFRM project so that it has the extents and connections necessary to model the PMF event. The portion of the FMMFRM unsteady HEC-RAS model from Abercrombie, ND (the upstream extents of the unsteady HEC-RAS model being used for the FMMFRM study) through Fargo-Moorhead has been added to the upstream model to create the unsteady HEC-RAS model required for this PMF analysis. To avoid confusion, the unsteady HEC-RAS model being used for the PMF analysis will be referred to as the "Upstream" model,

while the unsteady HEC-RAS model generally being used for most of the FMMFRM study will be referred to as the “FMMFRM” model.

To get an idea of how much the PMF might change, the Corps and the Project Sponsor previously decided that it would be useful to investigate routing the existing PMF inflows using the Upstream model. The Corps has set up the Upstream model with the proper inflows.

Scope:

- a) Perform a technical review of the model
- b) Address the instability issues related to running the model with very large inflows
- c) Produce final model runs using the 1984 hydrology that provide the PMF at the Fargo gage.

Deliverables:

- a) Draft unsteady HEC-RAS models.
- b) Draft technical memorandum (hard copy and electronic).
- c) Final unsteady HEC-RAS input and output files for the PMF event.
- d) Final technical memorandum.

Phase 2 - Numerical Modeling Scope:

- a) Set Up Unsteady HEC-RAS Model for New PMF Inflows
USACE has developed a number of new inflow locations for the unsteady HEC-RAS model that are associated with HMS output hydrographs. These inflow locations have been provided separately in an HEC-RAS unsteady flow data file. Develop a draft unsteady HEC-RAS model with updated inflow locations. If requested, modify names of certain reaches and storage areas to be consistent with the final unsteady HEC-RAS model used for the PMF flow routing.

Deliverables:

- i. Draft unsteady HEC-RAS model with updated inflow locations.
- b) Unsteady HEC-RAS Modeling of New PMF Inflows
Using the updated unsteady HEC-RAS model with the updated inflow locations, model two sets of hydrographs representing two different runoff scenarios. USACE will provide the two sets of inflow hydrographs. Evaluate the inflow locations and the magnitude and shape of the hydrographs for reasonableness and model stability. Modify as required, in consultation with USACE, to allow the model to run successfully.

Once any model instabilities have been addressed and the model runs are complete, evaluate, in consultation with USACE, the hydrographs at the Fargo gage location to determine whether additional sets of hydrographs representing other runoff scenarios are required to determine the PMF at the Fargo gage location (to be performed under subtask c).

Deliverables:

- i. Preliminary unsteady HEC-RAS models.
- ii. Draft Technical Memorandum. Prepare a Technical Memorandum that summarizes the work effort and the resulting hydrograph at the Fargo gage location.

- c) Additional Unsteady HEC-RAS Modeling of New PMF Inflows (if authorized).
If additional sets of hydrographs need to be developed to determine the PMF at the Fargo gage location, as determined in subtask b, USACE will provide one to four additional sets of hydrographs to be modeled with HEC-RAS. Prepare update of draft Technical Memorandum prepared in subtask b.

Deliverables:

- i. Preliminary unsteady HEC-RAS.
- ii. Second draft Technical Memorandum.

- d) Final Technical Memorandum.
Upon review of the model results and draft Technical Memorandum by USACE, finalize the HEC-RAS models and prepare a Final Technical Memorandum, addressing comments provided by USACE.

Deliverables:

- i. Final unsteady HEC-RAS input and output files for the PMF event.
- ii. Final Technical Memorandum.

VI. UPDATE HEC-RAS MODEL

- a) Update the HEC-RAS model geometry for the revised western alignment from the Maple River to the Sheyenne River and the proposed upstream staging area ring levees.
- b) Provide on-going hydrology and hydraulic modeling services as requested in order to keep HEC-RAS model consistent with project features.

VII. CONNECTING CHANNEL AND 20-YEAR EXISTING CONDITIONS

Scope:

- a) Connecting Channel Geometry: Update the HEC-RAS model geometry to incorporate the geometry of the connecting channel between the Wild Rice and Red Rivers. Complete the 10-yr, 20-yr, and 50-yr model runs to determine the proper model modifications and to determine the impacts of the updated geometry. If the modifications affect the 50-yr model results, complete the 100-yr, 500-yr, SPF, and PMF model runs to determine the impact of the updated geometry. If the modifications do not affect the 50-yr model results, the updated 100-yr, 500-yr, SPF, and PMF model runs will be made under a future authorization. Develop flooded outline polygons and depth grids for the 10-yr, 20-yr, 50-yr, 100-yr, 500-yr, SPF, and PMF events.
- b) 20-year Existing Conditions Modeling: Develop 20-year Existing Conditions models and provide floodplain mapping for the Staging Area.

Deliverables:

- a) Preliminary unsteady HEC-RAS models.
- b) Final unsteady HEC-RAS input and output files.
- c) 20-year existing conditions model results.

VIII. MAPLE RIVER AQUEDUCT FLOW ANALYSIS

- a) Conduct modeling of Maple River flows across the proposed Maple River Aqueduct and into the Risk Reduction Area.
 - i. Use the latest HEC-RAS model for the FMMFRM Project and the best available topographic data.

- ii. The study area is the area within the Risk Reduction Area that is affected by the flow coming across the Maple River Aqueduct.
 - iii. Account for coincident flows on the Sheyenne River and other local drains and ditches.
 - iv. Select Maple River design flows such that insurable structures in the Risk Reduction Area, and within the expected future 1% Maple River floodplain, are minimally affected by the Maple River design flows and the coincident flows on the Sheyenne River and the other local drains and ditches in the Risk Reduction Area.
- b) Establish Maple River design flows across the Maple River Aqueduct for the 1% and 0.2% flood events.
 - c) Recommend a maximum Maple River flow across the Maple River Aqueduct for the Standard Project Flood (SPF) event.

Deliverables:

- a) Preliminary unsteady HEC-RAS models.
- b) Final unsteady HEC-RAS input and output files.
- c) 20-year existing conditions model results.
- d) Final Technical Memorandum.

IX. UPDATE HEC-RAS MODELS – MAPLE RIVER AQUEDUCT AND REACH 6 BRIDGE

- a) Modify the unsteady-flow HEC-RAS model to reflect the lateral structure and spillway changes recommended by the Maple River aqueduct study team.
- b) Update the flow profile information (1% and 0.2% chance events, and 103,000 cfs event) needed for the bridge design effort, using the current Phase 7 unsteady-flow HEC-RAS model as the source of the geometry for the steady-flow HEC-RAS model. Continue to use the bridge design criteria provided in MFR-005 (General Bridge Re-Assessment for the Diversion from Inlet to Outlet) to determine the low-chord elevation and hydraulic opening of bridges in the Diversion Channel.

Deliverables:

- a) Draft Technical Memorandum.
- b) Final Technical Memorandum.

X. WATER MONITORING GAGE SURVEYING

- a) Prepare and provide maps and coordinates of installation locations for 10 HOBO gages to USGS installation teams.
- b) After HOBO gages are installed, survey the elevations of the installed gages and provide survey data to USGS.

Deliverables:

- a) Maps and coordinates of installation locations for 10 HOBO gages.
- b) Surveyed elevations of 10 HOBO gages.

G. BASIN-WIDE RETENTION SUPPORT

- I. Objective: Assist Owner in supporting retention projects by others in the region.
- II. Background: The Diversion Board has authorized up to \$25 million for Basin-wide Retention Projects that are compatible with, and provide benefits for, the Diversion Project. An initial study is underway by the Red River Basin Commission (RRBC).

This subtask is not creditable by USACE.

- III. Scope:
 - a. Assist Owner with developing a method of evaluating existing, planned, or potential regional retention projects' potential benefits to the Diversion Project. Scope to include up to two (2) site evaluations.
 - b. Provide technical assistance to the RRBC in its study "Halstad Upstream Retention (HUR) Modeling – Phase 1".
- IV. Deliverables
 - a. As requested.

H. PHASING PLAN INTERIM MODELING

- I. Objective: Incorporate the Phase 1 and Phase 2 project features into the hydraulic model, evaluate project benefits, and determine interim measures needed for a phased project.
- II. Background: The original project execution plan assumed unconstrained funding, an approximate 8 year project schedule, and project design and construction starting on the downstream (north) end of the project and progressing sequentially upstream. Currently, it is anticipated that Federal funding will be constrained and, therefore, a phased plan was developed to allow the project to proceed with limited Federal funding and provide benefits as early as practical. This results in a three phased project. Phase 1 includes the Diversion Channel from the Outlet to downstream of the Maple River and associated bridges, in-town levees, and the Oxbow-Hickson-Bakke area levee. Phase 2 includes the Red River and Wild Rice River control structures, the Staging Area embankment, overflow embankment, tie-back levee, the Diversion Inlet structure, staging area land, associated bridges and transportation improvements, and associated mitigation projects. Phase 3 includes the Diversion Channel from the Maple River to the Diversion Inlet structure, associated bridges, the Maple River Aqueduct, the Sheyenne River Aqueduct, and associated mitigation projects.

There may be a lag of several years between completion of Phases 1 and 2, and the completion of Phase 3, and, therefore, modeling and evaluation is needed to 1) determine project benefits and 2) the need for and extent of temporary measures between phases of the project.
- III. Scope: Perform 100-year and 500-year modeling evaluations of Phase 1 and Phase 2 project components, quantify interim benefits, and determine what interim measures are needed until completion of Phase 3.
- IV. Deliverables:
 - a. Draft Technical Memorandum.
 - b. Final Technical Memorandum.

I. PHASE 7.1 MODEL UPDATE

- I. Task 1 - Update the Red River peak flow model geometry. Complete modeling for the Red River peak flood events, including the 10-, 2-, 1-, 0.2-percent chance events and the 103kcfs and PMF flood events for both existing conditions and with-project conditions. Geometry updates include:
 - a. Update storage connections for the existing and with-project model in the area west of the diversion between the Maple River and the Sheyenne River. to better reflect floodplain impacts and diversion side inlet sizing.

- b. Revise the Wild Rice River Control Structure and embankment alignment (combine bridges).
 - c. Analyze the removal of the connecting channel between the Wild Rice River and Red River. Replace with storage areas.
 - d. Analyze Hwy 81/Hwy 75/Red River Control Structure Bridge/Culvert Sensitivity at the tie back levee.
 - e. Change the channel size from the Wild Rice River to the Diversion Inlet based on cross section volume of the southern embankment.
 - f. Account for staging area levees including the proposed Oxbow/Hickson/Bakke and Comstock levees.
 - g. Verify the eastern staging area tieback is modeled as being used in storage. Add detail to check if culverts are adequate to convey water west to the Red River Control Structure.
 - h. Revise Maple River south bank near the Maple River Aqueduct. Set elevation to 901.0.
 - i. Investigate diversion gate operations for events larger than the 0.2% chance event.
 - j. Update the Drain 14 inlet at the diversion.
 - k. Extend the Red River model from Grand Forks, ND to Drayton, ND.
- II. Task 2 – Update tributary peak flow models with geometry developed in Task 1. Complete modeling for the 10-, 2-, 1-, 0.2-percent chance flood events for both existing conditions and with-project conditions.
- III. Task 3 - Conduct a higher volume sensitivity analysis using the Red River peak flow geometry from Task 1 and the high volume hydrology developed as part of the Phase 5 unsteady modeling effort. Complete evaluations for the 1- and 0.2-percent chance flood events for both existing conditions and with-project conditions. The main objective of this task is to determine how the diversion system would operate with higher volumes and if the higher volumes would affect the staging area elevation. No mapping is required; however, calculate impacts and compare to Phase 7.0. For comparison purposes, match Phase 7.1 downstream impacts, flows through town, and diversion flows to the targeted values from Phase 7.0. The variable parameter will be the staging area elevation. Prepare a technical memorandum to summarize the sensitivity analysis.
- IV. Task 4 – QA/QC of Phase 7.1 modeling.
- V. Task 5 – Complete additional modeling and mapping tasks as part of the Phase 7.0 modeling effort. These items include details such as:
- a. Update geometry to include the City of Fargo Comprehensive Flood Protection Plan.
 - b. Additional mapping for existing and project conditions.
 - c. Development of Tributary Peak models.
 - d. Add detail to Interstate 94 near the Red River and also to Drain 27 area.
 - e. Update weir coefficients, culverts, initial elevations, and cross section duplication.
 - f. Diversion centerline alignment rectification due to Microstation and GIS formats.
 - g. Add Excavated Material Berms into project geometry.
 - h. Add designed bridges for Reaches 1 through 5 into the geometry.

- i. Update HEC-RAS unsteady flow model geometry to reflect most current layout of the Maple River Aqueduct and Spillway being used by the physical modeling team. The Maple River overbank berms near the structure will also be updated. Using the latest project designs, update the layouts and inlet structure geometry for the Rush and Lower Rush Rivers, as well as Drain 30.
 - a. Update HEC-RAS unsteady flow existing conditions and project conditions for the 10-, 50-, 100-, and 500-year Red River peak events. No diversion gate optimizations will be conducted, as this will be completed as part of the Phase 8 model updates.
 - a.b. Update HEC-RAS unsteady flow existing conditions and project conditions for the 10-, 50-, 100-, and 500-year Tributary peak events. No diversion gate optimizations will be conducted, as this will be completed as part of the Phase 8 model updates.

VI. Deliverables:

- a. Updated phase 7.1 model for the Red River peak flood events, including the 10-, 2-, 1-, 0.2-percent chance events and the 103kcfs and PMF flood events for both existing conditions and with-project conditions.
- b. Updated phase 7.1 tributary peak flow models with geometry developed in Task 1, for the 10-, 2-, 1-, 0.2-percent chance flood events for both existing conditions and with-project conditions.
- c. Higher volume sensitivity analysis:
- d. Updated phase 7.0 model.

J. UPDATE PMF WITH REVISED DISTRIBUTION OF SNOWMELT RUNOFF:

I. Background:

- a. Initial results from the current PMF study for the USGS Gage at Fargo, ND indicate that the peak flow is about 25% higher than what was determined during the 1985 study. Comparisons with the 1985 study indicate that the Wild Rice, North Dakota basin requires further investigation. Contributing drainage area for the PMF also requires further investigation. Two HMS model runs (two storm centerings) are available from the USACE St. Paul District for each of the eight sub-basins that are included in the PMF study. The HMS models that were used in the initial PMF work were modified from the Phase 1 HMS final product by peaking unit hydrograph parameters for each subbasin, re-incorporating the entire drainage area, and extending several storage outflow relationships that were exceeded with the magnitude of discharges generated from the PMF simulations.
- b. It has been proposed that GIS can be used in conjunction with the HMS models to better estimate the amount of runoff occurring during a PMF event. The GIS/HMS effort would determine areas that contribute runoff, areas that do not contribute runoff, and areas that partially contribute runoff for the events investigated.

II. Scope:

- a. Discuss the GIS/HMS effort with USACE before proceeding with this work.
- b. Update the USACA-provided HMS model runs in conjunction with the GIS/HMS-based runoff-determination effort. Determine the order of HMS model simulations and account for the breakout flows between the various models. Coordinate between the HMS model simulations and RES-SIM with USACE. Save Reservoir inflows for Traverse and Orwell in DSS and submit to USACE for simulation. Forward the regulated flow DSS records for inclusion into the RAS Model.

- c. Upon completion of the update to the Wild Rice River basin HMS model by USACE,, perform final model runs. Perform work that can be accomplished in advance to prepare for the final HMS models runs.
- d. Use the HMS results as input for an updated unsteady HEC-RAS model run for each storm centering. Complete the existing scope of work [can we cite a Paragraph here?] for the PMF study using the updated unsteady HEC-RAS model runs.
- e. Prepare a report section documenting the GIS/HMS-based runoff-determination effort and comparing the 1985 PMF study to this current study, including input assumptions. Incorporate this draft report section into the overall current PMF study report.

III. Deliverables

- a. Updated runoff grids resulting from the GIS/HMS-based runoff-determination effort.
- b. Draft report .
- c. Updated HMS models (16 models: 2 storms centering for 8 sub-basins.)
- d. Updated unsteady HEC-RAS models (2 models, one for each storm centering).

K. PHASE 8 MODEL UPDATE

I. Background:

- a. The Phase 8 modeling will incorporate higher volume hydrology developed by the USACE. It will also include the development of the 20-year event model and investigate additional model updates in the staging area based on culvert connections, connecting channel investigations, and tieback embankment alignment adjustments. The downstream model limit will be Drayton, ND.
- b. The most recent independent QA/QC review of the FM Diversion project unsteady HEC-RAS model occurred during the Phase 4 modeling (February 28, 2011). Subsequent model updates included peer reviews by modelers, but did not included a full independent review.

II. Scope:

- a. Update geometry in the upstream staging area based on culvert details and the local drainage plan (currently under development).
- b. Update synthetic model hydrology for the 10-, 50-, 100-, and 500-year flood events and develop new 20-year hydrology using new higher volume hydrographs developed by the USACE for the peak Red River flood event. Local inflow development will utilize the Phase 1 HEC-HMS models.
- c. Update the existing conditions tributary peak unsteady model using updated hydrology developed by the USACE for the 10-, 50-, 100-, and 500-year flood events and new 20-year hydrology.
- d. Conduct QA/QC review of the Phase 8 Existing conditions models for the RRN and tributary peak conditions.
- e. Conduct with-project modeling for the 10-, 20-, 50-, 100-, and 500-year events for the RRN peak flood event.
- f. Conduct with-project modeling for the 10-, 20-, 50-, 100-, and 500-year events for the tributary peak flood events.
- g. Conduct QA/QC of the Phase 8 with-project model runs.

- h. Prepare floodplain mapping for the 10-, 20-, 50-, 100-, and 500-year events for existing conditions and with-project for both the RRN and tributary peak flood events.
- i. Prepare draft and final Technical Memorandums summarizing Phase 8 modeling results.
- j. Conduct an independent QA/QC review of the unsteady HEC-RAS model.
 - i. Part 1 – Conduct an independent QA/QC review of the Phase 7.1 unsteady HEC-RAS model geometry and general assumptions. Include a kick-off review meeting, a review of the technical memorandums and previous District Quality Control (DQC) and Agency Technical Review (ATR) reviews developed for the model updates subsequent to Phase 4, and a review of geometry files through Phase 7.1 of the model. Commence review following completion of the Phase 7.1 update.
 - ii. Upon completion of the Phase 7.1 model review, provide recommendations for additional QC review of the Phase 8 model updates.
 - iii. Document the review findings and recommendations in Technical Memorandum.

III. Deliverables:

- a. Updated phase 8 model for the Red River peak flood events, including the 10-, 20-, 50-, 100-, and 500-year events for both existing conditions and with-project conditions.
- b. Updated phase 8 models for the tributary peak flood events, including the 10-, 20-, 50-, 100-, and 500-year events for both existing conditions and with-project conditions.
- c. Floodplain maps for the 10-, 20-, 50-, 100-, and 500-year events for existing conditions and with-project for both the RRN and tributary peak flood events.
- d. Draft and Final Phase 8 Technical Memorandum.
- e. Draft and Final QA/QC Technical Memorandum, Kick-off meeting minutes, and Quality Review Form (QRF) summarizing review comments for the Phase 7.1 QC review.

L. UPDATE THE BALANCED HYDROGRAPHS AT HICKSON, ND

I. Background:

- a. The USACE, St. Paul District, requested assistance to update the Red River of the North (RRN) balanced hydrographs at the USGS gage at Hickson, ND. This effort is required prior to starting the Phase 8 model update, and involves working with both the hydrologic (HEC-ResSIM) and hydraulic (unsteady HEC-RAS) routing models to determine the proper ungaged inflow hydrographs and hydrologic modeling parameters such that similar results are obtained from the two methods.

II. Scope:

- a. Hydrologic Model Development: Use the unsteady HEC-RAS model to determine peak flows at Hickson and Abercrombie ND and identify breakout flow locations.
- b. Initial Storage Outflow Curve Development: Develop storage outflow curves for the hydrologic model reaches determined in above task, and identify bankfull discharges for each routing reach.

- c. Quality Control Check on Unregulated Record Generated by Hydrologic Model: Run five test historic, unregulated events through the unsteady HEC-RAS model to check the validity of the unregulated record being developed by the hydrologic modeler.
- d. Routed Synthetic-Event Unregulated Hydrographs and Report: Using information developed in previous tasks, provide the resulting unregulated hydrographs at Fargo, ND and Wahpeton, ND, which are produced in concert with the 10-yr, 50-yr, 100-yr, 200-yr, 500-yr synthetic events at Hickson, ND.
- e. Fine Tune the Regulated Synthetic Event Analysis: Run the five HEC-RAS models (10-yr, 50-yr, 100-yr, 200-yr, 500-yr synthetic events) for regulated conditions using the outflow hydrographs from the reservoirs developed by USACE using the hydrologic model.
- f. Final Technical Memorandum: Develop an overall Technical Memorandum summarizing the work accomplished for Tasks 1-5.

III. Deliverables:

- a. Breakout Flow and Hydrologic Routing Reach Report
- b. Upstream Input Test Hydrographs and Routed Test Hydrographs at Critical Locations
- c. Storage Outflow Curves and bankfull discharges for each routing reach
- d. Routed Historic Hydrographs
- e. Routed Synthetic-Event Regulated Hydrographs and Report
- f. Final Technical Memorandum

3. Owner's Responsibilities

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

4. Times for Rendering Services

<u>Subtask</u>	<u>Start Time</u>	<u>Completion Time</u>
A. HMS Diversion Inlet Model	April 1, 2012	July 31, 2012
B. Updates to Rush/Lower Rush	March 8, 2012	May 31, 2012
C. Evaluation of channel size	March 8, 2012	May 31, 2012
D. Extend RAS geometry of Rush/Lower Rush	March 8, 2012	May 31, 2012
E. Physical Modeling Assistance	April 26, 2012	September 30, 2012
F. On-Call Services	June 14, 2012	September 30, 2014
F.I Extreme Rainfall Events	September 13, 2012	November 30, 2012
F.II. Extreme Event Evaluations	September 13, 2012	November 30, 2012
F.III. Tributary Peak HEC-RAS Model Runs	September 14, 2012	December 31, 2012
F.IV. Additional Assistance for the Maple River Aqueduct Physical Model	September 14, 2012	September 30, 2014
F.V. Unsteady HEC-RAS Modeling of Existing PMF Inflows	November 8, 2012	January 31, 2013
F.V. Phase 2 Numerical Modeling	February 14, 2013	September 30, 2013

<u>Subtask</u>	<u>Start Time</u>	<u>Completion Time</u>
F.VI. Update HEC-RAS Model	December 13, 2012	January 31, 2014
F.VII. Connecting Channel and 20-year Existing Conditions	December 18, 2012	September 30, 2013
F.VIII. Maple River Aqueduct Flow Analysis	March 14, 2013	September 30, 2013
F.IX. Update HEC-RAS Models – Maple River Aqueduct & Reach 6 Bridge	April 18, 2013	September 30, 2013
F.X. Water Monitoring Gage Survey	April 9, 2013	May 31, 2013
G. Basin-Wide Retention Support	December 13, 2012	September 30, 2014
H. Phasing Plan Interim Modeling	April 24, 2013	September 30, 2014
I. Phase 7.1 Model Update	July 11, 2013	April 30, 2014
J. Update PMF Study with Revised Distribution of Snowmelt Runoff	July 11, 2013	December 31, 2013
K. Phase 8 Model Update	September 12, 2013	September 30, 2014
L. Update the Balanced Hydrographs at Hickson, ND	October 10, 2013	September 30, 2014

5. Payments to Engineer

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

- I. Compensation for services 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 is not-to-exceed the amount as defined in the table below.
- III. Estimated budget for Subtask F. On-Call Services, and G. Basin-Wide Retention Support, is based on an allowance.
 1. Engineer will notify Owner when eighty percent (80%) of the budget on Subtask F. On-Call Services, and G. Basin-Wide Retention Support, is expended.
 2. Engineer will prepare and submit an amendment for additional compensation when ninety percent (90%) of budget on Subtask F. On-Call Services, and G. Basin-Wide Retention Support, is expended.
 3. Engineer will not perform work beyond one hundred percent (100%) of the budget for Subtask F. On-Call Services, and G. Basin-Wide Retention Support, without Owner's authorization by an amendment to this Task Order.

Subtask	Current Budget (\$)	Change (\$)	Revised Budget (\$)
A. HMS Diversion Inlet Modeling	22,121	0	22,121
B. Updates to Rush/Lower Rush	16,401	0	16,401
C. Evaluation of Channel Size	27,605	0	27,605

Subtask	Current Budget (\$)	Change (\$)	Revised Budget (\$)
D. Extend RAS Geometry of Rush/Lower Rush	17,714	0	17,714
E. Physical Modeling Assistance	10,500	0	10,500
F. ON-CALL SERVICES (ALLOWANCE)	94,900	0	94,900
F.I. Extreme Rainfall Events	7,500	0	7,500
F.II. Extreme Event Evaluations	26,600	0	26,600
F.III Tributary Peak Model Runs to Support the Maple River Aqueduct Physical Model	20,000	0	20,000
F.IV Additional Assistance for the Maple River Aqueduct Physical Model	79,000	0	79,000
F.V Unsteady HEC-RAS Modeling of Existing PMF Inflows	50,000	0	50,000
F.V Phase 2 Numeric Modeling	60,000	0	60,000
F.VI Update HEC-RAS Model	36,000	0	36,000
F.VII Connecting Channel and 20-year Existing Conditions	9,000	0	9,000
F.VIII Maple River Aqueduct Flow Analysis	15,000	0	15,000
F.IX Update HEC-RAS Models – Maple River Aqueduct & Reach 6 Bridge	15,000	0	15,000
F.X Water Monitoring Gage Survey	5,000	0	5,000
G. Basin-Wide Retention Support	55,000	0	55,000
H. Phasing Plan Interim Modeling	90,000	0	90,000
I. Phase 7.1 Model Update	140,000	25,000	165,000
J. Update PMF Study with Revised Distribution of Snowmelt Runoff	80,000	0	80,000
K. Phase 8 Model Update	331,000	0	331,000
L. Update the Balanced Hydrographs at Hickson, ND	105,000	0	105,000
TOTAL	1,313,341	25,000	1,338,341

Subtask	Current Budget (\$)	Change (\$)	Revised Budget (\$)
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- B. The terms of payment are set forth in Article 4 of the Agreement and in Exhibit C.
- 6. Consultants: None
 - 7. Other Modifications to Agreement: None
 - 8. Attachments: None
 - 9. Documents Incorporated By Reference: None

DRAFT

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:

Houston-Moore Group, LLC

OWNER:

Fargo-Moorhead Metro Diversion Authority

Signature Date
Jeffry J. Volk

Name

President

Title

DESIGNATED REPRESENTATIVE FOR
TASK ORDER:

C. Gregg Thielman

Name

Sr. Project Manager

Title

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Signature Date
Darrell Vanyo

Name

Chairman, Flood Diversion Board of Authority

Title

DESIGNATED REPRESENTATIVE FOR
TASK ORDER:

Keith Berndt

Name

Cass County Administrator

Title

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Fax

Task Order No. 13, Amendment 43

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.

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.
 - 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 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.
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
 - 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. 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

d. 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

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 ring 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 up to 20 geotechnical borings on portions of the alternative alignments that are common to all alternatives.
 - 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 WP-43A and WP-43C, WP-43D, and WP-43E will be combined into one weekly meeting.
- 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 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.
- 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.
- 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 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).
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 ring 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 ring 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 ring 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.
- iii. 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
 - 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
- iv. 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

<u>Subtask</u>	<u>Start Time</u>	<u>Completion Time</u>
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

5. Payments to Engineer

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

- i. Compensation for services ~~identified under Subtasks 2.B.i through 2.B.ii~~ 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 2.B.i through 2.B.ii 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	435,000	0	435,000
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	2,000,000	0	2,000,000
2.B.i.3 Red River Levees – VES	30,000	0	30,000
2.B.i.4 4 th Street Levee Pump Station Replacement	0	600,000	600,000

Subtask	Current Budget (\$)	Change (\$)	Revised Budget (\$)
2.B.ii Upstream Staging Area Ring Levees (Allowance)	425,000	0	425,000
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	1,020,000	0	1,020,000
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
TOTAL	4,800,000	600,000	5,400,000

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.
 - c. Robert Trent Jones II, LLC
7. Other Modifications to Agreement: None
8. Attachments: Figure 1
9. Documents Incorporated By Reference: None

DRAFT

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:

Houston-Moore Group, LLC

OWNER:

Fargo-Moorhead Metro Diversion Authority

Signature Date
Jeffry J. Volk

Name

President

Title

Signature Date
Darrell Vanyo

Name

Chairman, Flood Diversion Board of Authority

Title

DESIGNATED REPRESENTATIVE FOR
TASK ORDER:

C. Gregg Thielman

Name

Sr. Project Manager

Title

925 10th Avenue East
West Fargo, ND 58078

Address

DESIGNATED REPRESENTATIVE FOR
TASK ORDER:

Keith Berndt

Name

Cass County Administrator

Title

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

FM Diversion Authority
 Fiscal Accountability Report Design Phase (Fund 790)
 As of 2/28/2014

	2011	2012	2013	2014	Cumulative Totals
Revenues					
City of Fargo	443,138	7,652,681	7,072,961	3,670,716	18,839,496
Cass County	443,138	7,652,681	7,072,961	3,670,716	18,839,496
State Water Commission	-	-	3,782,215	-	3,782,215
Other Agencies	98,475	1,700,595	1,571,769	815,715	4,186,554
Lease/Rental Payments	-	-	17,358	-	17,358
Asset Sales	-	-	-	8,440	8,440
Miscellaneous	-	-	1,705	-	1,705
Total Revenues	984,750	17,005,957	19,518,970	8,165,587	45,675,265
Expenditures					
7905 Army Corp Payments	-	-	875,000	525,000	1,400,000
7910 WIK - Administration	107,301	331,321	77,614	7,901	524,136
7915 WIK - Project Design	149,632	5,366,147	3,220,859	649,793	9,386,431
7920 WIK - Project Management	679,037	7,223,650	4,695,477	360,000	12,958,164
7925 WIK - Recreation	-	163,223	-	-	163,223
7930 LERRDS - North Dakota	48,664	3,843,620	2,763,404	6,622,370	13,278,058
7931 LERRDS - Minnesota	-	27,996	289,387	523	317,906
7940 WIK Mitigation - North Dakota	-	-	-	-	-
7941 WIK Mitigation - Minnesota	-	-	-	-	-
7950 Construction - North Dakota	-	-	-	-	-
7951 Construction - Minnesota	-	-	-	-	-
7955 Construction Management	-	-	-	-	-
7990 Project Financing	-	50,000	70,000	-	120,000
7995 Project Eligible - Off Formula Costs	-	-	-	-	-
7999 Non Federal Participating Costs	116	-	-	-	116
0000 Advance to City of Oxbow	-	-	7,527,231	-	7,527,231
Total Expenditures	984,750	17,005,957	19,518,970	8,165,587	45,675,265

FM Diversion Authority
FY 2014 Summary Budget Report (In Thousands)
February, 2014

	FY 2014 Approved Budget	Current Month	Fiscal Year To Date	% Expended	Outstanding Encumbrances	Remaining Budget Balance
Revenue Sources						
City of Fargo	19,530	2,185	7,696			11,834
Cass County	19,530	2,185	7,696			11,834
State of ND - 50% Match	-	-	3,764			(3,764)
State of ND - 100% Match	26,600	-	19			26,581
State of Minnesota	-	-	-			-
Other Agencies	4,340	486	1,710			2,630
Financing Proceeds	-	-	-			-
Sale of Assets	-	8	8			(8)
Property Income	-	-	9			(9)
Miscellaneous	-	-	1			(1)
Total Revenue Sources	70,000	4,864	20,903			49,097
Funds Appropriated						
Army Corp Local Share	-	-	1,050	100%	1,050	(2,100)
Management Oversight	2,300	187	1,753	76%	962	(414)
Technical Activities	7,900	650	2,568	33%	6,725	(1,393)
Land Acquisitions	37,700	4,027	15,532	41%	1,788	20,381
Construction	18,700	-	-	0%	-	18,700
Other Costs	3,400	-	-	0%	20	3,380
Total Appropriations	70,000	4,864	20,903	30%	10,544	38,553

**FM Diversion Authority
Summary of Cash Disbursements
February 2014**

Period/Year: 02/2014

Date: 3/3/2014

Account Number	Check Date	Check Number	Vendor Name	Transaction Amount	Description 1	Project Number	Project Description
790-7910-429.33-20	3/3/2014	JB02140015	CITY OF FARGO	\$ 800.00	FISCAL SERVICES	V00102	General & Admin. WIK
Total WIK - General & Admin - Accounting Services				800.00			
790-7910-429.33-25	2/19/2014	246968	ERIK R JOHNSON & ASSOCIATES	4,760.85	JAN 2014 METRO FLOOD PROJ	V00102	General & Admin. WIK
	2/19/2014	246968	ERIK R JOHNSON & ASSOCIATES	1,739.95	JAN 2014 METRO FLOOD PROJ	V00102	General & Admin. WIK
Total WIK - General & Admin. - Legal Services				6,500.80			
790-7915-429.33-05	2/19/2014	247049	OXBOW, CITY OF	10,568.10	OXBOW OHB LEVEE PROJECT	V02401	OXBOW MOU-PROJ MGMT ADMIN
	2/19/2014	247049	OXBOW, CITY OF	20,054.15	OXBOW OHB LEVEE PROJECT	V02402	OXBOW MOU-PRELIM ENGINRNG
	2/19/2014	247049	OXBOW, CITY OF	8,288.38	OHB LEVEE PROJECT	V02403	OXBOW MOU-CONCEPT LAYOUTS
	2/5/2014	246606	MINNESOTA DNR	598,670.00	EIS SCOPING PHASE BALANCE	V00701	MN DNR EIS
	2/19/2014	247103	URS CORPORATION	12,212.59	12/14/13-1/17/14	V01003	CULTURAL RESOURCES INVEST
Total WIK - Project Design - Engineering Services				649,793.22			
790-7920-429.33-79	2/19/2014	246952	CH2M HILL ENGINEERS INC	180,000.00	FEB 2014	V00204	CH2M Hill-9.1.13-2.28.14
Total WIK Construction Mgmt. - Construction Management				180,000.00			
790-7930-429.33-05	2/19/2014	247058	PROSOURCE TECHNOLOGIES, INC	166.40	JUL 2013	V01901	LAND ACQUISITION SERVICES
	2/19/2014	247058	PROSOURCE TECHNOLOGIES, INC	2,966.58	OCT 2013	V01901	LAND ACQUISITION SERVICES
Total LERRDS - North Dakota - Engineering Services				3,132.98			
790-7930-429.33-25	2/13/2014	246749	ERIK R JOHNSON & ASSOCIATES	51.00	METRO FLOOD PROJ-LEERDS	V00103	General & Admin. LERRDS
Total LERRDS - North Dakota - Legal Services				51.00			
790-7930-429.33-91	2/26/2014	247152	COLDWELL BANKER	1,619.25	346 SCHNELL DR/PROP MGMT	V02001	PROPERTY MANAGEMENT
Total LERRDS - North Dakota - Property Management				1,619.25			
790-7930-429-71-30	2/5/2014	246594	Kennelly & Okeeffe (Acquisitions)	512,970.73	346 Schnell Dr Oxbow	V01702	ND Land Purchases - Hardship
	2/18/2014	WIRE	Cass County Joint WRD	3,458,980.70	Rust Land Purchase	V01701	ND Land Purchases
	2/18/2014	WIRE	Cass County Joint WRD	49,545.36	Diekrager Earnest Money	V01701	ND Land Purchases
Total - Land Purchases				4,021,496.79			

**FM Diversion Authority
Summary of Cash Disbursements
February 2014**

Period/Year: 02/2014

Date: 3/3/2014

Account Number	Check Date	Check Number	Vendor Name	Transaction Amount	Description 1	Project Number	Project Description
790-7931-429.34-65	2/13/2014	246867	OHNSTAD TWICHELL PC	205.00	ROE/LAND ACQUISITION	V01301	City of Moorhead ROE
Total LERRDS - Minnesota - Right of Entry Requests				205.00			
790-7931-429.62-51	2/26/2014	247238	RED RIVER VALLEY COOPERATIVE ASSO	41.93	1/10-2/10/14 SVC	V02302	MN LAND PURCHASE-HARDSHIP
Total LERRDS - Minnesota - Electricity				41.93			
Total Disbursed for Period \$				4,863,640.97			

**FM Diversion Authority
Summary of Cash Disbursements
Period 14 2013**

Period/Year: 14/2013

Date: 3/3/2014

Account Number	Check Date	Check Number	Vendor Name	Transaction Amount	Description 1	Project Number	Project Description
790-7915-429.33-05	2/19/2014	247063	RED RIVER BASIN COMMISSION	\$ 63,616.10	HUR PROJECT	V02101	STUDY UPPER RR RETENTION
	2/19/2014	247049	OXBOW, CITY OF	14,079.74	OHB LEVEE PROJECT	V02403	OXBOW MOU-CONCEPT LAYOUTS
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	2,450.06	NOV 2013	V01607	RECREATION/USE MASTER PLN
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	9,749.25	DEC 2013	V01607	RECREATION/USE MASTER PLN
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	41,596.87	NOV 2013	V01609	HYDROLOGY/HYDRAULIC MODEL
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	62,540.03	DEC 2013	V01609	HYDROLOGY/HYDRAULIC MODEL
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	102,180.67	NOV 2013	V01613	LEVEE DESIGN & SUPPORT
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	179,466.40	DEC 2013	V01613	LEVEE DESIGN & SUPPORT
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	43,792.75	NOV 2013	V01614	TRANS/DRAINAGE MASTER PLN
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	40,129.10	DEC 2013	V01614	TRANS/DRAINAGE MASTER PLN
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	28,592.80	NOV 2013	V01615	DRAFT OPERATIONS PLAN
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	21,973.50	DEC 2013	V01615	DRAFT OPERATIONS PLAN
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	1,623.50	NOV 2013	V01616	PERMIT SUBMITTAL PREP
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	5,932.50	DEC 2013	V01616	PERMIT SUBMITTAL PREP
	Total WIK - Project Design - Engineering Services				617,723.27		
790-7920-429.33-05	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	52,670.04	NOV 2013	V01601	HMG - PROJECT MANAGEMENT
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	50,554.01	DEC 2013	V01601	HMG - PROJECT MANAGEMENT
Total WIK Construction Mgmt. - Engineering Services				103,224.05			
790-7930-429.33-05	2/19/2014	246947	CASS COUNTY JOINT WATER RESOURCE DI	1,121.89	ACCESS & DIVERSION PROJ	V01201	Cass Joint Water ROE
	2/19/2014	246947	CASS COUNTY JOINT WATER RESOURCE DI	64,776.16	ACCESS & DIVERSION PROJ	V01202	Cass Joint Water DPAC
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	1,729.09	NOV 2013	V01602	CR-31 BRIDGE DESIGN
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	384.04	DEC 2013	V01602	CR-31 BRIDGE DESIGN
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	5,363.00	NOV 2013	V01604	CR-32 & CR-22 BRIDGE DSGN
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	2,485.25	NOV 2013	V01604	CR-32 & CR-22 BRIDGE DSGN
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	875.08	DEC 2013	V01604	CR-32 & CR-22 BRIDGE DSGN
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	21,208.81	NOV 2013	V01606	LAND MANAGEMENT SERVICES
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	7,263.40	DEC 2013	V01606	LAND MANAGEMENT SERVICES
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	1,122.00	NOV 2013	V01610	UTILITIES DESIGN
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	5,065.46	NOV 2013	V01611	REACH 6 & CR20 BRIDGE
	2/19/2014	246994	HOUSTON-MOORE GROUP LLC	11,290.13	DEC 2013	V01611	REACH 6 & CR20 BRIDGE
	Total LERRDS - North Dakota - Engineering Services				122,684.31		

**FM Diversion Authority
Summary of Cash Disbursements
Period 14 2013**

Period/Year: 14/2013

Date: 3/3/2014

Account Number	Check Date	Check Number	Vendor Name	Transaction Amount	Description 1	Project Number	Project Description
790-7930-429.33-25	2/19/2014	246947	CASS COUNTY JOINT WATER RESOURCE DI	30,626.27	ACCESS & DIVERSION PROJ	V01201	Cass Joint Water ROE
	2/19/2014	246947	CASS COUNTY JOINT WATER RESOURCE DI	3,120.00	ACCESS & DIVERSION PROJ	V01202	Cass Joint Water DPAC
Total LERRDS - North Dakota - Legal Services				33,746.27			
790-7930-429.33-79	2/19/2014	246947	CASS COUNTY JOINT WATER RESOURCE DI	110,467.38	ACCESS & DIVERSION PROJ	V01201	Cass Joint Water ROE
Total LERRDS - North Dakota - Construction Management				110,467.38			
790-7930-429.34-65	2/19/2014	246947	CASS COUNTY JOINT WATER RESOURCE DI	5,500.00	ACCESS & DIVERSION PROJ	V01201	Cass Joint Water ROE
Total LERRDS - North Dakota - Right of Entry Requests				5,500.00			
790-7930-429.62-51	2/19/2014	246947	CASS COUNTY JOINT WATER RESOURCE DI	420.40	ACCESS & DIVERSION PROJ	V01701	ND LAND PURCHASES
Total LERRDS - North Dakota - Electricity				420.40			
790-7930-429.68-10	2/19/2014	246947	CASS COUNTY JOINT WATER RESOURCE DI	1,320.57	ACCESS & DIVERSION PROJ	V01201	Cass Joint Water ROE
	2/19/2014	246947	CASS COUNTY JOINT WATER RESOURCE DI	23.83	ACCESS & DIVERSION PROJ	V01202	Cass Joint Water DPAC
Total LERRDS - North Dakota - Miscellaneous				1,344.40			
790-7930-429.71-31	2/19/2014	246947	CASS COUNTY JOINT WATER RESOURCE DI	3,000.00	ACCESS & DIVERSION PROJ	V01201	Cass Joint Water ROE
Total LERRDS - North Dakota - Easements				3,000.00			
Total Disbursed for Period				\$998,110.08			

**FM Diversion Authority
Outstanding Contracts
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Date: 3/4/2014

Project Number	Division	PO No.	Vendor No.	P.O. Date	Vendor Name	Approved Contract/Invoice Amount	Liquidated	Outstanding Encumbrance
V00101	7910	F12217	9367	12/31/2011	DORSEY & WHITNEY LLP	\$ 52,102.12	\$ 52,102.12	\$ -
V00101	7910	146629	9367	1/18/2012	DORSEY & WHITNEY LLP	52,679.63	52,679.63	-
V00101	7910	F12289	9367	2/21/2012	DORSEY & WHITNEY LLP	58,693.38	58,693.38	-
V00101	7910	F12293	9367	2/21/2012	DORSEY & WHITNEY LLP	1,600.00	1,600.00	-
V00101	7910	156087	9367	10/15/2012	DORSEY & WHITNEY LLP	86,960.88	86,960.88	-
V00101	7910	157021	9367	11/9/2012	DORSEY & WHITNEY LLP	27,111.94	27,111.94	-
V00101	7910	157608	9367	11/29/2012	DORSEY & WHITNEY LLP	9,138.50	9,138.50	-
V00101	7910	159215	9367	1/14/2013	DORSEY & WHITNEY LLP	15,177.50	15,177.50	-
V00101	7910	160364	9367	2/20/2013	DORSEY & WHITNEY LLP	20,559.60	20,559.60	-
V00101	7910	161130	9367	3/18/2013	DORSEY & WHITNEY LLP	10,442.50	10,442.50	-
V00101	7910	163408	9367	6/12/2013	DORSEY & WHITNEY LLP	21,936.50	21,936.50	-
V00101	7910	164302	9367	7/17/2013	DORSEY & WHITNEY LLP	35,507.00	35,507.00	-
V00101	7910	164852	9367	8/12/2013	DORSEY & WHITNEY LLP	4,353.75	4,353.75	-
V00101	7930	165352	9367	9/5/2013	DORSEY & WHITNEY LLP	21,732.00	21,732.00	-
V00101	7930	165933	9367	9/30/2013	DORSEY & WHITNEY LLP	19,416.00	19,416.00	-
V00101	7930	166666	9367	10/31/2013	DORSEY & WHITNEY LLP	21,699.00	21,699.00	-
V00101	7930	167420	9367	12/6/2013	DORSEY & WHITNEY LLP	45,518.80	45,518.80	-
V00101	7930	167892	9367	12/27/2013	DORSEY & WHITNEY LLP	75,307.63	75,307.63	-
V00101	7930	168263	9367	1/15/2014	DORSEY & WHITNEY LLP	66,721.77	66,721.77	-
V00102	7910	F11738	20660	11/15/2011	GALLAGHER BENEFIT SERVICES INC	250.00	250.00	-
V00102	7910	F11749	646	11/15/2011	FORUM COMMUNICATIONS (ADVERT)	494.24	494.24	-
V00102	7910	F11750	646	11/15/2011	FORUM COMMUNICATIONS (ADVERT)	345.97	345.97	-
V00102	7910	F11751	646	11/15/2011	FORUM COMMUNICATIONS (ADVERT)	296.56	296.56	-
V00102	7910	F11752	646	11/15/2011	FORUM COMMUNICATIONS (ADVERT)	17.05	17.05	-
V00102	7999	PCARD	18009	12/20/2011	GOOGLE LOVEINTHEOVEN	116.00	116.00	-
V00102	7910	F12082	647	12/31/2011	FORUM COMMUNICATIONS (LEGALS)	2,224.20	2,224.20	-
V00102	7910	F12079	8645	12/31/2011	SEIGEL COMMUNICATIONS SERVICE	1,490.00	1,490.00	-
V00102	7910	F12218	13981	12/31/2011	NORTH DAKOTA TELEPHONE CO	81.20	81.20	-
V00102	7910	AJ	COF	2/1/2012	CITY OF FARGO	1,300.00	1,300.00	-

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Date: 3/4/2014

Project Number	Division	PO No.	Vendor No.	P.O. Date	Vendor Name	Approved Contract/Invoice Amount	Liquidated	Outstanding Encumbrance
V00102	7910	F12256	20829	2/14/2012	BROKERAGE PRINTING	153.85	153.85	-
V00102	7910	F12256	20829	2/14/2012	BROKERAGE PRINTING	202.10	202.10	-
V00102	7910	F12595	1772	4/16/2012	WARNER & CO	4,975.00	4,975.00	-
V00102	7910	AJ	COF	5/25/2012	CITY OF FARGO	1,850.00	1,850.00	-
V00102	7910	151789	16872	6/15/2012	ERIK R JOHNSON & ASSOCIATES	673.20	673.20	-
V00102	7910	151876	16872	6/19/2012	ERIK R JOHNSON & ASSOCIATES	1,309.00	1,309.00	-
V00102	7910	AJ	COF	6/25/2012	CITY OF FARGO	340.00	340.00	-
V00102	7910	152528	1286	7/10/2012	OHNSTAD TWICHELL PC	1,903.50	1,903.50	-
V00102	7910	AJ	COF	7/27/2012	CITY OF FARGO	240.00	240.00	-
V00102	7910	153237	1286	7/31/2012	OHNSTAD TWICHELL PC	728.50	728.50	-
V00102	7910	153670	13981	8/9/2012	NORTH DAKOTA TELEPHONE CO	71.60	71.60	-
V00102	7910	154211	13981	8/23/2012	NORTH DAKOTA TELEPHONE CO	90.60	90.60	-
V00102	7910	AJ	COF	8/30/2012	CITY OF FARGO	280.00	280.00	-
V00102	7910	AJ	COF	9/26/2012	CITY OF FARGO	320.00	320.00	-
V00102	7910	155381	13981	9/27/2012	NORTH DAKOTA TELEPHONE CO	87.40	87.40	-
V00102	7910	AJ	COF	10/30/2012	CITY OF FARGO	410.00	410.00	-
V00102	7910	AJ	COF	11/28/2012	CITY OF FARGO	220.00	220.00	-
V00102	7910	157670	16872	11/30/2012	ERIK R JOHNSON & ASSOCIATES	16,826.60	16,826.60	-
V00102	7910	158387	13981	12/20/2012	NORTH DAKOTA TELEPHONE CO	76.20	76.20	-
V00102	7910	AJ	COF	12/27/2012	CITY OF FARGO	260.00	260.00	-
V00102	7910	159214	16872	1/14/2013	ERIK R JOHNSON & ASSOCIATES	26,922.05	26,922.05	-
V00102	7910	AJ	COF	1/29/2013	CITY OF FARGO	160.00	160.00	-
V00102	7910	AJ	COF	1/29/2013	CITY OF FARGO	180.00	180.00	-
V00102	7910	159926	12961	2/5/2013	FEDERAL EXPRESS CORPORATION	71.89	71.89	-
V00102	7910	160367	16872	2/20/2013	ERIK R JOHNSON & ASSOCIATES	7,606.58	7,606.58	-
V00102	7910	160461	1772	2/25/2013	WARNER & CO	4,975.00	4,975.00	-
V00102	7910	AJ	COF	2/27/2013	CITY OF FARGO	260.00	260.00	-
V00102	7910	161131	16872	3/18/2013	ERIK R JOHNSON & ASSOCIATES	4,769.78	4,769.78	-
V00102	7910	AJ	COF	3/27/2013	CITY OF FARGO	200.00	200.00	-

**FM Diversion Authority
Outstanding Contracts
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Date: 3/4/2014

Project Number	Division	PO No.	Vendor No.	P.O. Date	Vendor Name	Approved Contract/Invoice Amount	Liquidated	Outstanding Encumbrance
V00102	7910	161699	16872	4/8/2013	ERIK R JOHNSON & ASSOCIATES	2,366.41	2,366.41	-
V00102	7910	161972	13981	4/17/2013	NORTH DAKOTA TELEPHONE CO	49.20	49.20	-
V00102	7910	162044	14216	4/19/2013	BRIGGS & MORGAN PA	1,616.36	1,616.36	-
V00102	7910	162074	21621	4/22/2013	PFM PUBLIC FINANCIAL MANAGEMEN	140,000.00	120,000.00	20,000.00
V00102	7910	AJ	COF	4/26/2013	CITY OF FARGO	460.00	460.00	-
V00102	7910	162703	16872	5/14/2013	ERIK R JOHNSON & ASSOCIATES	3,219.38	3,219.38	-
V00102	7910	163136	13981	5/30/2013	NORTH DAKOTA TELEPHONE CO	95.00	95.00	-
V00102	7910	AJ	COF	5/31/2013	CITY OF FARGO	340.00	340.00	-
V00102	7910	163409	16872	6/12/2013	ERIK R JOHNSON & ASSOCIATES	7,161.68	7,161.68	-
V00102	7910	163410	14216	6/12/2013	BRIGGS & MORGAN PA	11,111.20	11,111.20	-
V00102	7910	AJ	COF	6/30/2013	CITY OF FARGO	260.00	260.00	-
V00102	7910	163969	13981	7/8/2013	NORTH DAKOTA TELEPHONE CO	39.40	39.40	-
V00102	7910	164303	16872	7/17/2013	ERIK R JOHNSON & ASSOCIATES	3,498.60	3,498.60	-
V00102	7910	AJ	COF	7/29/2013	CITY OF FARGO	220.00	220.00	-
V00102	7910	164736	20829	8/7/2013	BROKERAGE PRINTING	117.38	117.38	-
V00102	7910	164853	16872	8/12/2013	ERIK R JOHNSON & ASSOCIATES	5,829.31	5,829.31	-
V00102	7910	165165	13981	8/23/2013	NORTH DAKOTA TELEPHONE CO	34.20	34.20	-
V00102	7910	AJ	COF	8/31/2013	CITY OF FARGO	1,020.00	1,020.00	-
V00102	7910	165353	16872	9/5/2013	ERIK R JOHNSON & ASSOCIATES	5,511.83	5,511.83	-
V00102	7910	AJ	COF	9/25/2013	CITY OF FARGO	400.00	400.00	-
V00102	7910	166296	16872	10/16/2013	ERIK R JOHNSON & ASSOCIATES	4,513.51	4,513.51	-
V00102	7910	AJ	COF	10/28/2013	CITY OF FARGO	620.00	620.00	-
V00102	7910	PCARD	646	11/1/2013	FORUM COMMUNICATIONS (ADVERT)	589.95	589.95	-
V00102	7910	166903	16872	11/12/2013	ERIK R JOHNSON & ASSOCIATES	3,468.00	3,468.00	-
V00102	7910	AJ	COF	11/27/2013	CITY OF FARGO	300.00	300.00	-
V00102	7910	167497	16872	12/10/2013	ERIK R JOHNSON & ASSOCIATES	3,590.36	3,590.36	-
V00102	7910	AJ	COF	12/27/2013	CITY OF FARGO	1,000.00	1,000.00	-
V00102	7910	168179	16872	1/10/2014	ERIK R JOHNSON & ASSOCIATES	2,118.54	2,118.54	-
V00102	7910	AJ	COF	2/3/2014	CITY OF FARGO	600.00	600.00	-

**FM Diversion Authority
Outstanding Contracts
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Date: 3/4/2014

Project Number	Division	PO No.	Vendor No.	P.O. Date	Vendor Name	Approved Contract/Invoice Amount	Liquidated	Outstanding Encumbrance
V00102	7910	168777	16872	2/6/2014	ERIK R JOHNSON & ASSOCIATES	4,760.85	4,760.85	-
V00102	7910	168778	16872	2/6/2014	ERIK R JOHNSON & ASSOCIATES	1,739.95	1,739.95	-
V00102	7910	169295	1772	2/28/2014	WARNER & CO	4,975.00	-	4,975.00
V00102	7910	AJ	COF	3/3/2014	CITY OF FARGO	800.00	800.00	-
V00103	7930	166296	16872	10/16/2013	ERIK R JOHNSON & ASSOCIATES	3,317.55	3,317.55	-
V00103	7930	166903	16872	11/12/2013	ERIK R JOHNSON & ASSOCIATES	1,856.40	1,856.40	-
V00103	7930	167497	16872	12/10/2013	ERIK R JOHNSON & ASSOCIATES	3,063.83	3,063.83	-
V00103	7930	168180	16872	1/10/2014	ERIK R JOHNSON & ASSOCIATES	4,019.61	4,019.61	-
V00103	7930	168776	16872	2/6/2014	ERIK R JOHNSON & ASSOCIATES	51.00	51.00	-
V00201	7920	144170	20663	11/18/2011	CH2M HILL ENGINEERS INC	1,908,938.41	1,908,938.41	-
V00202	7920	148611	20663	3/15/2012	CH2M HILL ENGINEERS INC	3,422,306.58	3,422,306.58	-
V00203	7920	154940	20663	9/17/2012	CH2M HILL ENGINEERS INC	5,000,000.00	4,789,574.02	210,425.98
V00204	7920	166165	20663	10/10/2013	CH2M HILL ENGINEERS INC	1,080,000.00	1,080,000.00	-
V00301	7910	143936	11604	11/16/2011	ADVANCED ENGINEERING INC	50,000.00	50,000.00	-
V00401	7920	143937	165	11/16/2011	BRAUN INTERTEC CORP	54,060.00	43,620.00	10,440.00
V00501	7915	143938	165	11/16/2011	BRAUN INTERTEC CORP	36,150.00	34,009.00	2,141.00
V00601	7915	144975	20729	12/13/2011	IN SITU ENGINEERING	54,800.00	47,973.00	6,827.00
V00701	7915	144866	20723	12/9/2011	MINNESOTA DNR	1,492,718.00	944,770.00	547,948.00
V00801	7915	146973	801	1/27/2012	HOUSTON ENGINEERING INC	92,424.03	92,424.03	-
V00802	7915	146974	801	1/27/2012	HOUSTON ENGINEERING INC	70,742.30	70,742.30	-
V00803	7915	146975	801	1/27/2012	HOUSTON ENGINEERING INC	47,124.46	47,124.46	-
V00804	7925	148054	801	2/29/2012	HOUSTON ENGINEERING INC	163,222.91	163,222.91	-
V00805	7915	148058	801	2/29/2012	HOUSTON ENGINEERING INC	94,786.00	94,786.00	-
V00806	7915	148078	801	2/29/2012	HOUSTON ENGINEERING INC	108,369.87	108,369.87	-
V00901	7915	146976	1118	1/27/2012	MOORE ENGINEERING INC	92,291.55	92,291.55	-
V00902	7915	146977	1118	1/27/2012	MOORE ENGINEERING INC	135,231.99	135,231.99	-
V00903	7915	146978	1118	1/27/2012	MOORE ENGINEERING INC	142,924.27	142,924.27	-
V00904	7930	148055	1118	2/29/2012	MOORE ENGINEERING INC	78,760.62	78,760.62	-
V00905	7930	148056	1118	2/29/2012	MOORE ENGINEERING INC	32,727.08	32,727.08	-

**FM Diversion Authority
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Project Number	Division	PO No.	Vendor No.	P.O. Date	Vendor Name	Approved Contract/Invoice Amount	Liquidated	Outstanding Encumbrance
V00906	7915	148057	1118	2/29/2012	MOORE ENGINEERING INC	8,326.50	8,326.50	-
V00907	7915	148077	1118	2/29/2012	MOORE ENGINEERING INC	164,867.66	164,867.66	-
V01002	7915	148086	17791	2/29/2012	URS CORPORATION	480,488.42	480,488.42	-
V01003	7915	163308	17791	6/6/2013	URS CORPORATION	495,000.00	172,064.41	322,935.59
V01101	7905	AJ	CORP	6/19/2013	ARMY CORP OF ENGINEERS	350,000.00	350,000.00	-
V01101	7905	AJ	CORP	8/13/2013	ARMY CORP OF ENGINEERS	2,100,000.00	1,050,000.00	1,050,000.00
V01201	7930	F12069	19734	12/31/2011	CASS COUNTY JOINT WATER RESOUR	16,708.86	16,708.86	-
V01201	7930	F12069	19734	12/31/2011	CASS COUNTY JOINT WATER RESOUR	22,452.50	22,452.50	-
V01201	7930	149405	19734	4/10/2012	CASS COUNTY JOINT WATER RESOUR	20,652.04	20,652.04	-
V01201	7930	149405	19734	4/10/2012	CASS COUNTY JOINT WATER RESOUR	62,467.05	62,467.05	-
V01201	7930	156814	19734	11/5/2012	CASS COUNTY JOINT WATER RESOUR	48,138.28	48,138.28	-
V01201	7930	156814	19734	11/5/2012	CASS COUNTY JOINT WATER RESOUR	23,113.23	23,113.23	-
V01201	7930	156814	19734	11/5/2012	CASS COUNTY JOINT WATER RESOUR	8,250.00	8,250.00	-
V01201	7930	157055	19734	11/9/2012	CASS COUNTY JOINT WATER RESOUR	55,312.46	55,312.46	-
V01201	7930	157055	19734	11/9/2012	CASS COUNTY JOINT WATER RESOUR	26,500.00	26,500.00	-
V01201	7930	157055	19734	11/9/2012	CASS COUNTY JOINT WATER RESOUR	13,500.00	13,500.00	-
V01201	7930	160369	19734	2/20/2013	CASS COUNTY JOINT WATER RESOUR	24,990.57	24,990.57	-
V01201	7930	161700	19734	4/8/2013	CASS COUNTY JOINT WATER RESOUR	52,735.94	52,735.94	-
V01201	7930	164075	19734	7/10/2013	CASS COUNTY JOINT WATER RESOUR	65,419.85	65,419.85	-
V01201	7930	166046	19734	10/3/2013	CASS COUNTY JOINT WATER RESOUR	145,998.06	145,998.06	-
V01201	7930	168966	19734	2/14/2014	CASS COUNTY JOINT WATER RESOUR	152,036.11	152,036.11	-
V01202	7930	166046	19734	10/3/2013	CASS COUNTY JOINT WATER RESOUR	84,505.69	84,505.69	-
V01202	7930	168966	19734	2/14/2014	CASS COUNTY JOINT WATER RESOUR	67,919.99	67,919.99	-
V01301	7915	147745	1118	2/17/2012	MOORE ENGINEERING INC	5,558.50	5,558.50	-
V01301	7931	F12593	1286	4/16/2012	OHNSTAD TWICHELL PC	1,408.00	1,408.00	-
V01301	7931	149869	1118	4/23/2012	MOORE ENGINEERING INC	1,780.00	1,780.00	-
V01301	7931	150230	1286	5/3/2012	OHNSTAD TWICHELL PC	2,029.50	2,029.50	-
V01301	7931	150961	1286	5/23/2012	OHNSTAD TWICHELL PC	220.50	220.50	-
V01301	7931	151790	1122	6/15/2012	MOORHEAD, CITY OF	15,062.90	15,062.90	-

**FM Diversion Authority
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V01301	7931	152058	1286	6/27/2012	OHNSTAD TWICHELL PC	410.00	410.00	-
V01301	7931	154504	1286	9/4/2012	OHNSTAD TWICHELL PC	1,373.50	1,373.50	-
V01301	7931	154505	1286	9/4/2012	OHNSTAD TWICHELL PC	676.50	676.50	-
V01301	7931	156088	1286	10/15/2012	OHNSTAD TWICHELL PC	1,102.50	1,102.50	-
V01301	7931	157054	1286	11/9/2012	OHNSTAD TWICHELL PC	2,685.00	2,685.00	-
V01301	7931	159216	1286	1/14/2013	OHNSTAD TWICHELL PC	1,247.16	1,247.16	-
V01301	7931	160365	1286	2/20/2013	OHNSTAD TWICHELL PC	1,148.00	1,148.00	-
V01301	7931	160797	1286	3/7/2013	OHNSTAD TWICHELL PC	738.00	738.00	-
V01301	7931	161824	1286	4/11/2013	OHNSTAD TWICHELL PC	471.50	471.50	-
V01301	7931	162447	1286	5/6/2013	OHNSTAD TWICHELL PC	102.50	102.50	-
V01301	7931	163135	1286	5/30/2013	OHNSTAD TWICHELL PC	164.00	164.00	-
V01301	7931	164693	1286	8/5/2013	OHNSTAD TWICHELL PC	266.50	266.50	-
V01301	7931	165314	1286	9/3/2013	OHNSTAD TWICHELL PC	61.50	61.50	-
V01301	7931	PCARD	339	11/1/2013	OHNSTAD TWICHELL PC	246.00	246.00	-
V01301	7931	167297	1286	12/2/2013	OHNSTAD TWICHELL PC	410.00	410.00	-
V01301	7931	PCARD	351	12/4/2013	OHNSTAD TWICHELL PC	102.50	102.50	-
V01301	7931	PCARD	370	2/3/2014	OHNSTAD TWICHELL PC	225.50	225.50	-
V01301	7931	168719	1286	2/5/2014	OHNSTAD TWICHELL PC	205.00	205.00	-
V01501	7915	150960	19581	5/23/2012	GEOKON INC	33,815.36	33,815.36	-
V01601	7920	151232	21007	5/31/2012	HOUSTON-MOORE GROUP LLC	2,487,675.00	1,751,995.41	735,679.59
V01602	7930	151233	21007	5/31/2012	HOUSTON-MOORE GROUP LLC	891,000.00	875,733.30	15,266.70
V01603	7915	151234	21007	5/31/2012	HOUSTON-MOORE GROUP LLC	2,448,300.00	2,448,034.90	265.10
V01604	7930	151235	21007	5/31/2012	HOUSTON-MOORE GROUP LLC	1,566,000.00	1,530,340.66	35,659.34
V01605	7915	151236	21007	5/31/2012	HOUSTON-MOORE GROUP LLC	905,000.00	845,983.45	59,016.55
V01606	7930	151237	21007	5/31/2012	HOUSTON-MOORE GROUP LLC	538,103.00	536,897.48	1,205.52
V01607	7915	152022	21007	6/25/2012	HOUSTON-MOORE GROUP LLC	240,000.00	190,464.21	49,535.79
V01608	7915	152023	21007	6/25/2012	HOUSTON-MOORE GROUP LLC	856,675.00	493,453.65	363,221.35
V01609	7915	152024	21007	6/25/2012	HOUSTON-MOORE GROUP LLC	1,313,341.00	688,619.52	624,721.48
V01610	7930	152025	21007	6/25/2012	HOUSTON-MOORE GROUP LLC	338,000.00	84,971.75	253,028.25

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Project Number	Division	PO No.	Vendor No.	P.O. Date	Vendor Name	Approved Contract/Invoice Amount	Liquidated	Outstanding Encumbrance
V01611	7930	155529	21007	10/2/2012	HOUSTON-MOORE GROUP LLC	771,000.00	227,478.72	543,521.28
V01612	7930	155530	21007	10/2/2012	HOUSTON-MOORE GROUP LLC	665,000.00	-	665,000.00
V01613	7915	157599	21007	11/29/2012	HOUSTON-MOORE GROUP LLC	4,800,000.00	1,170,938.79	3,629,061.21
V01614	7915	160644	21007	3/1/2013	HOUSTON-MOORE GROUP LLC	605,000.00	483,542.69	121,457.31
V01615	7915	165854	21007	9/25/2013	HOUSTON-MOORE GROUP LLC	500,000.00	51,134.30	448,865.70
V01616	7915	167178	21007	11/22/2013	HOUSTON-MOORE GROUP LLC	205,000.00	7,556.00	197,444.00
V01701	7930	155627	7198	10/3/2012	NORTHERN TITLE CO	484,016.00	484,016.00	-
V01701	7930	159217	201	1/14/2013	CASS COUNTY TREASURER	84,832.36	84,832.36	-
V01701	7930	167423	201	12/6/2013	CASS COUNTY TREASURER	83,421.43	83,421.43	-
V01701	7930	AJ	JB01140008	1/23/2014	CASS COUNTY JOINT WATER RESOUR	1,636,230.00	1,636,230.00	-
V01701	7930	AJ	JB01140007	1/23/2014	CASS COUNTY JOINT WATER RESOUR	959,840.00	959,840.00	-
V01701	7930	168966	19734	2/14/2014	CASS COUNTY JOINT WATER RESOUR	420.40	420.40	-
V01701	7930	AJ	JB02140005	2/18/2014	CASS COUNTY JOINT WATER RESOUR	3,458,980.70	3,458,980.70	-
V01701	7930	AJ	JB02140005	2/18/2014	CASS COUNTY JOINT WATER RESOUR	49,545.36	49,545.36	-
V01702	7930	157394	20529	11/21/2012	KENNELLY & OKEEFFE	216,401.85	216,401.85	-
V01702	7930	157470	20529	11/26/2012	KENNELLY & OKEEFFE	342,601.87	342,601.87	-
V01702	7930	F13677	11046	11/26/2012	RED RIVER TITLE SERVICES INC	250.00	250.00	-
V01702	7930	F13678	11046	11/26/2012	RED RIVER TITLE SERVICES INC	170.00	170.00	-
V01702	7930	158252	21423	12/18/2012	HUBER, STEVE	1,056.43	1,056.43	-
V01702	7930	159217	201	1/14/2013	CASS COUNTY TREASURER	6,825.95	6,825.95	-
V01702	7930	164432	20529	7/24/2013	KENNELLY & OKEEFFE	375,581.20	375,581.20	-
V01702	7930	165248	21845	8/29/2013	MCKINZIE METRO APPRAISAL	3,200.00	3,200.00	-
V01702	7930	167423	201	12/6/2013	CASS COUNTY TREASURER	7,045.72	7,045.72	-
V01702	7930	168720	20529	2/5/2014	KENNELLY & OKEEFFE	512,970.73	512,970.73	-
V01801	7930	155531	1714	10/2/2012	ULTEIG ENGINEERS INC	100,000.00	-	100,000.00
V01901	7930	155469	21258	10/1/2012	PROSOURCE TECHNOLOGIES, INC	100,000.00	8,324.94	91,675.06
V02001	7930	157598	10078	11/29/2012	COLDWELL BANKER	4,346.77	4,346.77	-
V02001	7930	158046	10078	12/12/2012	COLDWELL BANKER	8,000.00	8,000.00	-
V02001	7930	160366	10078	2/20/2013	COLDWELL BANKER	2,600.00	2,600.00	-

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Outstanding Contracts
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Project Number	Division	PO No.	Vendor No.	P.O. Date	Vendor Name	Approved Contract/Invoice Amount	Liquidated	Outstanding Encumbrance
V02001	7930	161153	10078	3/18/2013	COLDWELL BANKER	1,000.00	1,000.00	-
V02001	7930	164785	10078	8/8/2013	COLDWELL BANKER	11,000.00	11,000.00	-
V02001	7930	167177	10078	11/22/2013	COLDWELL BANKER	4,500.00	4,500.00	-
V02001	7930	169174	10078	2/25/2014	COLDWELL BANKER	1,619.25	1,619.25	-
V02101	7930	157607	12775	11/29/2012	RED RIVER BASIN COMMISSION	500,000.00	417,583.53	82,416.47
V02201	7915	163309	18968	6/6/2013	US GEOLOGICAL SURVEY	46,920.00	46,920.00	-
V02302	7931	166597	20529	10/30/2013	KENNELLY & OKEEFFE	281,554.91	281,554.91	-
V02302	7931	166725	3841	11/4/2013	DAWSON INSURANCE AGENCY	1,867.81	1,867.81	-
V02302	7931	166975	11046	11/14/2013	RED RIVER TITLE SERVICES INC	255.00	255.00	-
V02302	7931	167042	21974	11/18/2013	RED RIVER VALLEY COOPERATIVE A	332.06	332.06	-
V02302	7931	167421	17677	12/6/2013	FERRELLGAS	496.00	496.00	-
V02302	7931	167422	296	12/6/2013	CURTS LOCK & KEY SERVICE INC	138.10	138.10	-
V02302	7931	167501	12673	12/10/2013	DONS PLUMBING	240.00	240.00	-
V02302	7931	167633	13109	12/16/2013	TRIO ENVIRONMENTAL CONSULTING	747.60	747.60	-
V02302	7931	167750	21974	12/19/2013	RED RIVER VALLEY COOPERATIVE A	44.60	44.60	-
V02302	7931	168368	21974	1/17/2014	RED RIVER VALLEY COOPERATIVE A	50.99	50.99	-
V02302	7931	169117	21974	2/21/2014	RED RIVER VALLEY COOPERATIVE A	41.93	41.93	-
V02401	7915	167179	16980	11/22/2013	OXBOW, CITY OF	371,123.00	96,443.70	274,679.30
V02402	7915	167180	16980	11/22/2013	OXBOW, CITY OF	154,046.00	102,214.68	51,831.32
V02403	7915	167828	16980	12/23/2013	OXBOW, CITY OF	74,922.31	50,227.90	24,694.41
V02404	0000	AJ	22024	12/16/2013	COMMERCIAL TITLE LLC	3,869,270.00	3,869,270.00	-
V02404	0000	F15616	22024	12/17/2013	COMMERCIAL TITLE LLC	271.00	271.00	-
V02404	0000	F15620	196	12/19/2013	CASS COUNTY RECORDER	68.00	68.00	-
V02404	0000	F15617	2265	12/19/2013	TITLE COMPANY	3,641,500.00	3,641,500.00	-
V02404	0000	F15619	22035	12/19/2013	INNOVATIVE ABSTRACT & TITLE CO	15,921.53	15,921.53	-
V02404	0000	F15639	20529	12/23/2013	KENNELLY & OKEEFFE	200.00	200.00	-
						\$ 56,219,203.63	\$ 45,675,265.33	\$ 10,543,938.30

**FM Diversion Authority
Cumulative Vendor Payments Since Inception
As of February 28, 2014**

Vendor Name	Approved Contract/Invoice Amount	Liquidated	Outstanding Encumbrance	Purpose
HOUSTON-MOORE GROUP LLC	\$ 19,130,094.00	\$ 11,387,144.83	\$ 7,742,949.17	Engineering Services
CH2M HILL ENGINEERS INC	11,411,244.99	11,200,819.01	210,425.98	Project Management
CASS COUNTY JOINT WATER RESOUR	6,995,717.09	6,995,717.09	-	Land Purchases, DPAC, and Right of Entry
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	1,400,000.00	1,050,000.00	Local Share
KENNELLY & OKEEFFE	1,729,310.56	1,729,310.56	-	Home Buyouts
MINNESOTA DNR	1,492,718.00	944,770.00	547,948.00	EIS Scoping
URS CORPORATION	975,488.42	652,552.83	322,935.59	Engineering Services
MOORE ENGINEERING INC	662,468.17	662,468.17	-	Engineering Services
DORSEY & WHITNEY LLP	646,658.50	646,658.50	-	Legal Services
OXBOW, CITY OF	600,091.31	248,886.28	351,205.03	City of Oxbow - MOU
HOUSTON ENGINEERING INC	576,669.57	576,669.57	-	Engineering Services
RED RIVER BASIN COMMISSION	500,000.00	417,583.53	82,416.47	Engineering Services
NORTHERN TITLE CO	484,016.00	484,016.00	-	Land Purchases
CASS COUNTY TREASURER	182,125.46	182,125.46	-	Property Tax
PFM PUBLIC FINANCIAL MANAGEMEN	140,000.00	120,000.00	20,000.00	Financial Advisor
ERIK R JOHNSON & ASSOCIATES	118,194.02	118,194.02	-	Legal Services
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
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
US GEOLOGICAL SURVEY	46,920.00	46,920.00	-	Stage Gages
GEEKON INC	33,815.36	33,815.36	-	Vibrating Wire Piezometer Equipment
COLDWELL BANKER	33,066.02	33,066.02	-	Property Management Services
OHNSTAD TWICHELL PC	17,925.66	17,925.66	-	ROE and Bonding Legal Fees
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	9,950.00	4,975.00	General Liability Insurance
BRIGGS & MORGAN PA	12,727.56	12,727.56	-	Legal Services
CITY OF FARGO	12,040.00	12,040.00	-	Accounting 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
SEIGEL COMMUNICATIONS SERVICE	1,490.00	1,490.00	-	Public Outreach
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 TITLE SERVICES INC	675.00	675.00	-	Abstract Updates
NORTH DAKOTA TELEPHONE CO	624.80	624.80	-	Communication
FERRELLGAS	496.00	496.00	-	Propane - Home Buyouts
BROKERAGE PRINTING	473.33	473.33	-	Custom Printed Forms
RED RIVER VALLEY COOPERATIVE A	469.58	469.58	-	Electricity - Home Buyouts
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	\$ 56,219,203.63	\$ 45,675,265.33	\$ 10,543,938.30	

**FM Diversion Authority
Lands Expense - Life To Date
As of February 28, 2014**

Property Address	Purchase Date	Purchase Price	Down Payment	Appraisal	Abstract	Tax Payment	Property Management Expense	Property Management Income	Sale Proceeds	Total
Hayden Heights Land, West Fargo ND	10/12/2012	484,016.00		-	-	166,874.29	-	-		650,890.29
105 Oxbow Drive, Oxbow ND	11/28/2012	216,401.85		-	250.00	4,993.72	13,751.48	(16,826.78)		218,570.27
744 Riverbend, Oxbow ND	12/3/2012	343,658.30		-	170.00	7,296.43	13,513.09	(17,100.00)		347,537.82
121 Oxbow Drive, Oxbow ND	7/31/2013	375,581.20		3,200.00	-	1,581.52	18,420.89	-		398,783.61
333 Schnell Drive, Oxbow ND	9/20/2013	104,087.79		-	-	1,379.50	420.40	-		105,887.69
387 170th Ave SW, Moorhead MN	11/1/2013	281,554.91		-	255.00	-	2,479.80	-	(8,440.00)	275,849.71
SE 1/4 11-140-50 (Raymond Twp) - Ueland	1/20/2014	959,840.00								959,840.00
2 Tracts in the E 1/2-2-137-49 - Sorby/Maier	1/24/2014	1,636,230.00								1,636,230.00
346 Schnell Dr, Oxbow ND	2/13/2014	512,970.73								512,970.73
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								3,458,980.70
11-140-50 NE1/4 (Raymond Twp) - Diekrager	2/18/2014	-	49,545.36							49,545.36
Total		8,373,321.48	49,545.36	3,200.00	675.00	182,125.46	48,585.66	(33,926.78)	(8,440.00)	8,615,086.18

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

Time Period for This Request: February 1, 2014 - February 28, 2014

Drawdown Request No: 4	
Requested Amount:	\$ -
Total Funds Expended This Period:	\$ -
SB 2020 Matching Requirements	50%
Total Funds Requested at 50% Match	\$ -
Total Funds Requested:	\$ -

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 #25 - City of Fargo	(44,653,522)
Less: Payment #1 - Cass County	(136,039)
Less: Payment #1 - FM Diversion Authority	(18,600)
Less: Payment #2 - FM Diversion Authority	(3,722,125)
Less: Payment #3 - FM Diversion Authority	(41,490)
Total Funds Reimbursed	\$ (48,571,776)
Total State Fund Balances Remaining	\$ 126,428,224

LOCAL MATCHING FUNDS SUMMARY:	
Matching Funds Expended To Date - City of Fargo	\$ 42,964,663
Matching Funds Expended To Date - Cass County	291,500
Matching Funds Expended To Date - FM Diversion Authority	85,488
Total Matching Funds Expended To Date	\$ 43,341,651
Less: Match Used on Payment #1 through #25 - City of Fargo	(34,124,076)
Less: Match used on Payment #1 - Cass County	(136,039)
Less: Match Used on Payment #1 - FM Diversion Authority	(18,600)
Balance of Local Matching Funds Available	\$ 9,062,936

Finance Committee Bills for February 2014

	A	B	C	D
3	Erik Johnson	Legal Fees	\$4,888.35	
4	Dorsey & Whitney	Legal Fees	\$95,270.80	
5				
6				
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9				
10	Total Bills for February 2014		\$100,159.15	
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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

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

Invoice

Date	2/25/2014
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Description	Qty	Rate	Amount
Metro Flood Project -- LEERDS matters: Erik Johnson--Jan 26 thru Feb 25th - see itemization	1.6	195.50	312.80
Nancy J Morris--Jan 26 thru Feb 25th - see itemization	4.3	170.00	731.00
TOTAL:			\$1,043.80

We appreciate your business.

Client: City of Fargo
Job: Metro Flood - LEERDS

Atty	DATE	DESCRIPTION	TIME
E	2/10/2014	Meeting with Bunde, Spiller, Dodds re: flowage easements; utility relocation matters and land purchase in MN	1.2
E	2/25/2014	Telephone conference with attorney David Hauff of Oxbow Country Club	0.4
Total Time			1.6
Hourly Rate \$			195.50
Total Fees - ERJ \$			312.80
N	1/27/2014	Phone call w/ Jim Sandau re: Kuntz closing; correspondence re: status	0.3
N	2/3/2014	Correspondence re: hardship acquisition; revise & review docs	0.6
N	2/5/2014	Correspondence re: Kuntz closing	0.5
N	2/12/2014	Review correspondence re: Insurance Indemnity	0.5
N	2/13/2014	Review correspondence re: easements & sale	0.4
N	2/14/2014	Correspondence re: property acquisition	0.3
N	2/15/2014	Correspondence re: closing documents property acquisition	0.3
N	2/24/2014	Phone call w/ T. Fasteen about hardship acquisition; review file materials	0.6
N	2/25/2014	Review hardship buyout for Crowe & correspond w/ Jim Sandau	0.8
Total Time			4.30
Hourly Rate \$			170.00
Total Fees - NJM \$			731.00

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

Invoice

Date	2/25/2014
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Description	Qty	Rate	Amount
Metro Flood Project -- General matters: Erik Johnson--Jan 26 thru Feb 25th - see itemization	16.1	195.50	3,147.55
Nancy J Morris--Jan 26 thru Feb 25th - see itemization	4.1	170.00	697.00
TOTAL:			\$3,844.55

We appreciate your business.

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

Atty	DATE	DESCRIPTION	TIME
E	1/28/2014	Conference call with Cattanach and call to Zimmerman	0.5
E	1/29/2014	Conference call with Cattanach, Drysdale, Zimmerman	0.7
E	1/30/2014	Telephone conference with Bruce Spiller and followup	0.6
E	1/30/2014	Call with Bruce, Bob and Mike	0.5
E	1/31/2014	Review draft of Reply Brief - email to Cattanach and circulate draft for comments	1.5
E	1/31/2014	Wilkin County letter matters	0.5
E	1/31/2014	Review Cost Participation Agreement and email to Darrell and meeting re: cost participation agreement	1.5
E	2/4/2014	Telephone conference with Cattanach	0.5
E	2/5/2014	Review material in anticipation of conference call, call with Cattanach and conference call and followup call	1.5
E	2/10/2014	Telephone conference with Cattanach re: litigation and other	0.5
E	2/11/2014	Miscellaneous communication; telephone conference with Bob and Mike	1
E	2/12/2014	Telephone conference with Cattanach re: various issues and related tasks	0.6
E	2/13/2014	Attend Diversion Authority meeting	1.6
E	2/14/2014	Prepare for meeting re: PPA draft; review and meeting with Mayor Nyhof and attend meeting	3.7
E	2/15/2015	Review FEIS and Supp EA	0.9
Total Time			16.10
Hourly Rate - ERJ \$			195.50
Total Fees - ERJ \$			3147.55
N	2/13/2014	Diversion Authority Meeting	2.3
N	2/20/2014	Administrative Meeting	1.8
Total Time			4.10
Hourly Rate - NJM \$			170.00
Total Fees - NJM \$			697.00



Office of the City Attorney

City Attorney
Erik R. Johnson

Assistant City Attorneys
Nancy J. Morris
Jason T. Loos

March 3, 2014

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 February 21, 2014 from the Dorsey & Whitney Firm in Minneapolis for their professional services rendered through January 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,

A handwritten signature in black ink, appearing to be "ERJ", with a long horizontal flourish extending to the right.

Erik R. Johnson

ERJ/jmf
Enclosure
cc: Pat Zavoral





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

February 21, 2014
Invoice No. 1929485

RECEIVED
BY _____ DATE 2-24-14

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

For Legal Services Rendered Through January 31, 2014

INVOICE TOTAL

Total For Current Legal Fees	\$95,160.50
Total For Current Disbursements and Service Charges	\$110.30
Total For Current Invoice	\$95,270.80

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