Technical Advisory Group Recommendation

Meeting Date: 6/21/2016

RECOMMENDATION FOR ACTION:

The Technical Advisory Group has reviewed and recommends approval of the following Contract Action(s).

SUMMARY OF CONTRACTING ACTION:

The Owner's Representative prepared the following Contract Action(s) for the Technical Staff team:

List description of Contract Action(s):

Houston-Moore Group, LLC

MFDA – Task Order 13, Amendment 13 – Levee Design and Design Support $340,723

- Close two design tasks and unencumber remaining, unused budget
- Incorporate AWD-00057: Add design of access ladders and lights to 4th St. Pump Station Design (WP-42A.1) and preparation of demolition plans for one residence in OHB ring levee area (WP-43E.2C)
- Add scope and budget for four (4) existing WP-42 design subtasks
- Add Scope and budget for new design subtask WP-42E
- Add scope and budget for one (1) existing WP-43 design subtask
- Add scope and budget for demolition of a 2nd residence in OHB ring levee area (WP-43E.2C)
- Extend Period of Performance to July 31, 2017

BACKGROUND:

Houston-Moore Group, LLC (HMG) is the Engineer of Record for the design of the levees along the Red River (WP-42 In-Town Levees) and OHB Ring Levee (WP-43), and has provided levee design and design support services under Task Order 13 from November 8, 2012, to the present time. See the table below for a summary of the amendments to the Task Order.

Summary of Contracting History and Current Contract Action:

Original Agreement or Amendment	Budget ($) Change	Original Project Cost	Revised Project Cost	Agreement Execution Date	Project Completion	Comments
Task Order 13 Amendment 0	-	$425,000	-	8-Nov-12	30-Sep-13	Initial authorization of 2.B.i and 2.B.ii.
Task Order 13 Amendment 1	$150,000	-	$575,000	13-Dec-12	30-Sep-13	Added Ring Levee Evaluations for Oxbow/Hickson/Bakke; Comstock; Christine; and Wolverton. Added Non-Structural Improvement Evaluation for staging area, and public meeting support.
Task Order 13 Amendment 2	$4,090,000	-	$4,665,000	8-Aug-13	31-May-15	Added Red River Levees-Phase 2, and VES reports for WP-43A, WP-43C, WP-43D, and WP-43E. Add mapping of impacted residential structures in Staging Area.

Task Order 13 Amendment 3	$135,000	-	$4,800,000	14-Nov-13	30-Sep-14	Added landscape architecture and master planning for 2nd St. corridor. Added master planning svcs for Mickelson to the 4th St. levee.
Task Order 13 Amendment 4	$600,000	-	$5,400,000	13-Feb-14	30-Sep-14	Added 4th St. Levee Pump Station Replacement.
Task Order 13 Amendment 5	$55,000	-	$5,455,000	8-May-14	30-Sep-14	Added laboratory testing for Red River Levees – Phase 1 Design.
Task Order 13 Amendment 6	$549,000	-	$6,004,000	14-Aug-14	30-Sep-14	Added Phase 2-Design misc design work; misc design work and preparation of bid package for 4th St. Levee PS. Added land surveying for In-Town Levee and O/H/B Ring Levee.
Task Order 13 Amendment 7	$115,000	-	$6,119,000	9-Oct-14	30-Sep-15	Added O/H/B Ring Levee Design Modification – 100-Year Elevation.
Task Order 13 Amendment 8	$450,000	-	$6,569,000	5-Feb-15	31-Mar-16	Added Phase II ESAs for Case Plaza and City Hall; conceptual design for 2nd St. N pedestrian overpass; Mickelson Levee Extension.
Task Order 13 Amendment 9	$190,000	-	$6,759,000	12-Mar-15	31-Mar-16	Added El Zagal Phase 2 Design.
Task Order 13 Amendment 10	$602,000	-	$7,361,000	11-Jun-15	31-Mar-16	Added Phase 2 Design misc design work.
Task Order 13 Amendment 11	$418,000	-	$7,779,000	13-Aug-15	31-Mar-16	Added funding for Upstream Staging Area Ring Levees.
Task Order 13 Amendment 12	$610,000	-	$8,389,000	10-Jul-14	31-Dec-16	Added WP-43D (O/H/B Pump Station Design); WP-43 Wetland Mitigation Design; WP-43A (Levee inspection); Land Surveying for ROW Acquisition; extended POP to 31-Dec-16.
Task Order 13 Amendment 13	$340,723	-	$8,729,723	23-June-16	31-Dec-16	Close 2 subtasks, incorporate AWD-00057, add scope and budget for 6 existing subtasks, and add scope and budget for new subtask WP-42E.

DISCUSSION:

Close two design tasks and unencumber remaining, unused budget ($ -283,170)

The Phase 1 design for WP-42 along with the Mickelson Levee Extension detailed design have been completed under budget. This amendment unencumbers the remaining unused budgets and closes these subtasks.

Incorporate AWD-00057 ($18,500)

AWD-00057 previously authorized this work to begin. Amendment 13 incorporates the scope and budget into Task Order No. 13. The work includes design of access ladders and lights to 4th St. Pump Station Design (WP-42A.1) and preparation of demolition plans for one residence in O/H/B ring levee area (WP-43E.2C).

Add scope and budget for four (4) existing WP-42 design subtasks ($ 159,793)

The following subtasks required additional scope and budget to complete. This amendment closes these subtasks. Attached HMG cost proposals for the work were reviewed and found to be acceptable:

- Landscape Architecture/Master Planning – 2nd St. Corridor: Additional sub-consultant design services for the 2nd Street levee recreation plan. ($ 13,082)
    - The original budget for this task was $35,000 and covered the ongoing coordination with the City of Fargo and the City Hall Architect on landscape design items. The focus of this

task covered 2nd Street to the River. This included the aesthetic for the floodwalls and pump stations for 2nd Street Downtown. HMG had regular coordination meetings with City Staff and TL Stroh Architects to discuss project features. The effort ended up being more than originally scoped and this amendment will cover the overage. There was a lot of overlap with this task and the Master Planning task. It also included planning for the 2nd Street/1st Avenue plaza; coordination with the Fargo Park District on planned use for the river corridor; and planning for the wall layout/indentations for the WP42A3 and WP42F1 floodwall segments.

- Master Planning Services – Michelson to 4th St.: Additional sub-consultant design services for the 2nd Street Riverfront Master Plan Study. ($ 47,737)
    - This was a broader master planning task order for the river corridor. There was quite a bit of overlap with the Landscape Architecture task, but it also included engaging Image Group as a subconsultant to assist with this effort. The fee for Image Group to date was $66,371. The $100,000 budget included in the task was a rough time and material estimate because HMG did not have a SOW or budget for the work to be performed by Image Group.
- 4th Street Pump Station Replacement: Additional HMG and sub-consultant design services for the interior drainage, pump size modifications, gatewell layout, building layout, geotechnical analysis and address USACE review comments. ($ 67,320)
    - The original budget amount for this work was ~$600,000 (February, 2014). In August, 2014, HMG submitted an $89,000 amendment request that include design changes for increased emergency generator capacity and modifications to the generator and pump station buildings. This budget was accounted for in general the Red River levees Phase 2 task instead of the 4th St. Pump Station subtask. The current Red River levees Phase 2 design task work is tracking below budget but it is premature to conclude it will be completed below budget. Therefore, it is recommended to authorize this budget adjustment now and when WP-42 designs are completed, unencumber remaining budget.
- El Zagal Phase 2 Levee Design: Additional meetings and mangagement do to design duration extension, requested design changes, revised grading plan, and deductions for scope changes. ($ 31,654)

<u>Add Scope and budget for new design subtask WP-42E ($ 430,000)</u>
The 2nd St. South roadway closure and stormwater pump station project is a component of In-Town levees that was conceptually evaluated as part of the July 16, 2012 report entitled “Final Technical Memorandum, AWD-002 – Flows Through Flood Damage Reduction Area”. It is being developed as a separate design and construction package to align schedule with the adjacent City of Fargo Main Avenue roadway project. Attached HMG cost proposal for the work was reviewed and found to be acceptable. The Period of Performance for this task will extend to July 31, 2017.

<u>Add scope and budget for one (1) existing WP-43D design subtask ($ 12,600)</u>
Additional design work was required to incorporate turning lanes at the intersection of Hwy 81 and CR-18 (WP-43D). The addition of the turning lanes will improve traffic flow and safety. Attached HMG cost proposal for the work was reviewed and found to be acceptable.

<u>Add scope and budget for demolition of second residence in OHB ring levee area, WP-43E.2C ($ 3,000)</u>
A second residence in the staging area became available to the Diversion Authority and the PMC was directed to include it in the correction salvage/demolition design package. If possible, this home will be salvaged and moved, otherwise usable items will be salvaged and the remaining structures demolished. Attached HMG cost proposal for the work was reviewed and found to be acceptable.

In addition to the scope and budge changes identified above, the amendment corrections several activity ID numbers and extends the Period of Performance to July 31, 2017. The table below summarizes the cost changes for this amendment.

TO13 Levee Design and Design Support Budgets by Work Package:

Work Package	Activity ID	Current Budget ($)	Amendment 13 ($)	Total ($)
Red River Levees – Phase 1 Design	DE-7430	490,000	(71,538)	418,462
Landscape Arch/MP – 2nd St. Corridor	DE-7430	35,000	13,082	48,082
Master Planning Svcs – Mickelson to 4th	DE-7430	100,000	47,737	147,737
Red River Levees – Phase 2 Design	DE-7430	3,064,000	-	3,064,000
Red River Levees – VES	DE-7430	30,000	-	30,000
4th St. PS Replacement	DE-7430	600,000	81,320	681,320
Michelson Levee Ext	DE-7430	328,000	(211,632)	116,368
El Zagal Phase 2 Levee Design	DE-7430	0	31,654	221,654
WP-42E 2nd St. So. Closure and Pump Station	DE-7430	190,000	430,000	430,000
Upstream Staging Area Ring Levees	DE-10150	440,000	-	440,000
WP-43A Design	DE-10150	362,499	-	362,499
WP-43C Design	DE-10150	210,747	-	210,747
WP-43D Design	DE-10150	1,893,332	12,600	1,905,932
WP-43E Design	DE-10150	260,000	7,500	267,500
O/H/B Ring Levee – VES	DE-10150	33,694	-	33,694
O/H/B Ring Levee Design Mod	DE-10150	127,240	-	127,240
O/H/B Wetland Mitigation Design	DE-10150	92,000	-	92,000
WP-43A Levee Inspection	DE-10150	5,0000	-	5,000
Land Surveying for ROW Acquisition	DE-10150	127,488	-	127,488
TOTAL		**8,389,000**	**340,723**	**8,729,723**

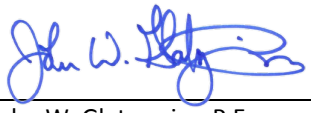
The PMC reviewed HMG's revised cost proposals and found it to be acceptable.

This change amount of $340,723 is included in the FY-2016 MFDA budget.

ATTACHMENT(S):

1. Draft Task Order 13, Amendment 13
2. AWD-00057
3. HMG Cost Proposals

Presented by:



June 21, 2016

John W. Glatzmaier, P.E.
CH2M HILL
Project Manager
Metro Flood Diversion Project

Date

Keith Berndt, Cass County Administrator
Concur: *June 21, 2016* *Non-Concur:* _____

April Walker, Fargo City Engineer
Concur: _____ *Non-Concur* _____

Mark Bittner, Fargo Director of Engineering
Concur: *June 21, 2016* *Non-Concur:* _____

Jason Benson, Cass County Engineer
Concur: _____ *Non-Concur* _____

David Overbo, Clay County Engineer
Concur: *June 21, 2016* *Non-Concur:* _____

Robert Zimmerman, Moorhead City Engineer
Concur: *June 21, 2016* *Non-Concur* _____

Nathan Boerboom, Diversion Authority Project Manager
Concur: *June 21, 2016* *Non-Concur:* _____

This is Task Order No. 13, Amendment 13, consisting of 23 pages.

Houston-Moore Group, LLC

Task Order No. 13, Amendment ~~12~~13

Levee Design and Design Support

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

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

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

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2. Services of Engineer

A. General

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

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

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

B. Scope of Work

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

f. Additional design work to accommodate requested project changes:

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

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

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

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

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

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

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

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

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

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

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

ix. Provide soil characterization for Case Plaza lot, conduct geo-probes and soil characterization to determine if soil is suitable for re-use on the project.

x. Provide additional design services for flood wall including wall aesthetics and accommodation of future pedestrian bridge.

xi. Provide additional planning and design services and coordination to integrate design with the new Fargo City Hall project.

xii. Provide additional design services to prepare multiple bid packages to accommodate construction phasing of flood control features. This includes additional design, plan preparation, and design reviews.

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:

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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. Additional design work to accommodate requested project changes:
    i. Increase capacity of the back-up power generator to accommodate power for adjacent sanitary sewer lift station.
    ii. Modify the pump station and generator building design including: addition/modification of transoms and lintels, lower pump station slab, deletion of fuel storage, addition of louvers, removal of windows and parapets, and modification of brick veneer. Include design of wet well access ladders and lights in plans, to eliminate the need to lower staff into wet well on a harness for routine maintenance.

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

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e. Work not included in this Scope of Services:

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

5. Mickelson Levee Extension

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

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

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

2. 65 Percent Design Submittal – evaluate and incorporate 35 percent review comments into the design documents, advance the detailed design to 65 percent and submit the design report, plans and specifications for review by the Owner, PMC, and USACE Consistency and ATR review teams.

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

4. Cost Estimate – prepare a cost estimate for the project based on the 65 percent and 95 percent submittal documents.

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

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

c. Additional design work to accommodate requested project changes:

ii. None.

d. Deliverables:

iii. Detailed Plans and Specifications

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

iv. 65 Percent Cost Estimate
v. 95 Percent Cost Estimate
vi. Operation and Maintenance Plan

6. El Zagal Phase 2 Levee Design

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

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 El Zagal Phase 2 Levee. Include required surveying, removals and demolition, geotechnical and hydraulic analyses, internal flood control and pumping, levee systems, roadway revisions, public and private utility relocations, landscaping, drawings and specifications, internal QA/QC, design documentation, operation and maintenance plan, and project management and coordination. Major milestone deliverables include:

1. 65 Percent Design Submittal – advance the detailed design to 65 percent and submit the design report, plans and specifications for review by the Owner, PMC, and USACE Consistency and ATR review teams.

2. 95 Percent Design Submittal – evaluate and incorporate 65 percent review comments into the design documents, advance the detailed design to 95 percent and submit the design report, plans and specifications for review by the Owner, PMC, and USACE Consistency and ATR review teams.

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

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4. 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.

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

c. Additional design work to accommodate requested project changes:

i. None.

d. Deliverables:

i. Detailed Plans and Specifications
ii. 65 Percent Design Submittal
iii. 95 Percent Design Submittal
iv. 95 Percent Cost Estimate
v. Bid Documents
vi. Operation and Maintenance Plan

7. WP-42E: 2nd St. So. Closure and Pump Station Design

a. Background: The 2nd St. South roadway closure and stormwater pump station project is a component of In-Town levees that was conceptually evaluated as part of the July 16, 2012 report entitled "Final Technical Memorandum, AWD-00002 – Flows Through Flood Damage Reduction Area". It is being developed as a separate design and construction package to align schedule with other adjacent projects.

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 (use and refer to City of Fargo Specifications) for the2nd St. So. Closure and Pump Station project. Include required surveying, removals and demolition, geotechnical and hydraulic analyses, internal flood control and pumping, levee systems, roadway revisions, public and private utility relocations, landscaping, drawings and specifications, internal QA/QC, design documentation, operation and maintenance plan, and project management and coordination. Major milestone deliverables include:

1. 35 Percent Design Submittal – provide 35 percent preliminary design and submit the design report, and plans for review by the Owner, PMC, and USACE Consistency and ATR review teams.

2. 65 Percent Design Submittal – evaluate and incorporate 35 percent review comments into the design documents, advance the detailed design to 65 percent and submit the design report, plans and specifications for review by the Owner, PMC, and USACE Consistency and ATR review teams.

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

4. BCOE Design Submittal - evaluate and incorporate 95 percent review comments into the design documents, and submit the design report, plans and specifications for comment back check and close-out by the Owner, PMC, and USACE Consistency and ATR review teams.

5. Cost Estimate – prepare a cost estimates for the project based on the 65 and 95 percent submittal documents, and Final Bid Documents.

6. 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.

7. Bid Document Development – prepare final plans and technical specifications and assist the PMC with development of bid documents.

c. Additional design work to accommodate requested project changes:

i. None.

d. Deliverables:

i. 35 Percent Design Submittal
ii. 65 Percent Design Submittal with cost estimate
iii. 95 Percent Design Submittal with cost estimate
iv. BCOE Submittal
v. Plans and Technical Specifications for Bid Documents
~~i.~~vi. Operation and Maintenance Plan

ii. Upstream Staging Area Ring Levees:

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

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

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

c. Determine existing utilities and utility relocation requirements.

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

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

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

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

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

c. Initial Survey and Geotechnical Activities for Levee Design:

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

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

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

    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

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

d. WP-43A – Levee Section from Riverbend Road to CR81 (southeast): Design approximately 7,300 lineal feet (lf) of levee, interior buffer zone, and interior drainage swale (if required – based on interior drainage developed in WP-43D), including geotechnical design, civil design, permitting, cost estimates, and preparation of drawings and technical specifications; coordinate design of interior levee buffer zone (drainage swale, snow drop area, and tree screen) and recreational features with O/H/B community and developer/golf course designer; determine effect 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

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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

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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.

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

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

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

g. WP-43E – Demolition and Utility Relocations: Develop demolition plan for WP-43C Levee area (CR-81 (northeast) to Riverbend Road, including utility identification, identification of structures to be sold or demolished in place, environmental Phase 1, permitting, and required remediation. Develop Plans and Technical Specifications package for demolition of two (2) residences that are outside of the OHB ring levee (but within project staging area). 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.

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

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

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

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

    i. Update interior flood control model based on 100-year levee earthwork quantities.

    ii. Update WP-43D plans to include 100-year levee design.

    iii. Update WP-43C plans to include 100-yr levee design.

    iv. Calculate earthwork balance for 100-year levee design.

    v. Update stormwater pond designs for 100-year levee earthwork quantities.

    vi. Provide roadway replacement plans and traffic control for gravity drain construction area on Cass County Highway 81.

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

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

    ix. Provide QA/QC review of design modifications.

j. WP-43A – ~~SDC~~Levee Inspection

The WP-43A levee was constructed in 2014, and has not been formally inspected or maintained since that time. Anecdotal observations suggest that the levee could benefit from maintenance in 2016. This subtask will provide for the Engineer to inspect the levee and determine the needed maintenance activities. The Engineer's recommendation will be provided to the Owner in the form of a technical brief.

k. WP-43D – O/H/B Pump Station Redesign

Prepare revised engineering contract documents for the O/H/B pump station, based on the full-height 100 year flood elevation. Modify design elements as required to be compliant with building classification (e.g., non-explosion proof wetwell equipment changes).

l. WP-~~43D~~ 43G – Wetland Mitigation Design

Perform wetland delineation for existing conditions on the current site. Provide design for the OHB Wetland Mitigation

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site located on the former Oxbow Country Club. Provide environmental and design assistance on the wetland mitigation for the Diversion Inlet and CH16/CH17 bridge/roadway.

3. Comstock – Ring Levee Evaluation:
    a. Prepare a proposed ring levee system to reduce flood risk to Comstock, MN during operation of the Diversion Project and staging of water. Show the location of a potential ring levee, develop height required for rink levee, and evaluate access during periods of Diversion operation.
4. Christine – Ring Levee Evaluation:
    a. Prepare a proposed ring levee system to reduce flood risk to Christine, ND during operation of the Diversion Project and staging of water. Show the location of a potential ring levee, develop height required for rink levee, and evaluate access during periods of Diversion operation.
5. Wolverton – Ring Levee Evaluation:
    a. Prepare a proposed ring levee system to reduce flood risk to Wolverton, MN during operation of the Diversion Project and staging of water. Show the location of a potential ring levee, develop height required for rink levee, and evaluate access during periods of Diversion operation.
6. Staging Area – Non-Structural Improvement Evaluation:
    a. Identify individual residential properties within the staging area and evaluate the potential benefit from non-structural improvements to reduce flood risk to residential structures during operation of the Diversion Project and staging of water. Show the location of potential improvements and evaluate access during periods of Diversion operation.
        i. Provide mapping of residential structures and farmsteads impacted by the Staging Area for the 100-year event, and include estimated depth of impact for the structures with and without the project.
        ii. Where technically feasible, provide concept for non-structural improvements and estimate cost of improvements.
        iii. Develop database of impacted properties that includes relevant project information (such as depth of impact with and without project, etc.)
        iv. Assist in preparation, provide meeting materials, and attend one-on-one meetings with impacted landowners.
7. Assist with preparation of materials for public meetings.

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

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34 partial takes for the OHB Ring Levee and 17 certificates for the In Town Levee project.

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

iv. Deliverables

1. Red River Levees – Phase 1

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

2. Red River Levees - Phase 2

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

3. Red River Levees – VES reports

4. Support for Upstream Staging Area Levees

    a. Oxbow/Hickson/Bakke TM
    b. WP-43A
        i. 35 Percent Design Submittal
        ii. 65 Percent Design Submittal
        iii. 95 Percent Design Submittal
        iv. Cost Estimates
        v. 2016 Engineer's Inspection Report
    c. WP-43C
        i. 35 Percent Design Submittal
        ii. 65 Percent Design Submittal
        iii. 95 Percent Design Submittal
        iv. Cost Estimates

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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
k. WP-43D O/H/B-Diversion Inlet-CH16/CH17 Wetland Mitigation Design
    i. 30 Percent Design Submittal
    ii. 90 Percent Design Submittal
    iii. Cost Estimates
    iv. Additional design and permitting assistance

v. Work not included in this Scope of Services, unless noted otherwise

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

3. Owner's Responsibilities

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

4. Times for Rendering Services

Subtask	**Start Time**	**Completion Time**
2.B.i Red River Levees – Phase 1	November 8, 2012	September 30, 2013
2.B.ii Upstream Staging Area Ring Levees	November 8, 2012	September 30, 2013
Amendment 1 all work	December 13, 2012	September 30, 2013
2.B.ii.2.d WP-43A Bid Documents	August 8, 2013	May 4, 2014
Amendment 2 other work	August 8, 2013	May 31, 2015
Amendment 3 all work	November 14, 2013	September 30, 2014
Amendment 4 all work	February 13, 2014	September 30, 2014
Amendment 5 all work	May 8, 2014	September 30, 2014
Amendment 6 all work	August 14, 2014	September 30, 2015
Amendment 7 all work	October 9, 2014	September 30, 2015
Amendment 8 all work	February 5, 2015	March 31, 2016
Amendment 9 all work	March 12, 2015	March 31, 2016
Amendment 10 all work	June 11, 2015	March 31, 2016

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Subtask	Start Time	Completion Time
Amendment 11 all work	August 13, 2015	March 31, 2016
Amendment 12 all work	February 2, 2016	December 31, 2016
Amendment 13 all work	June 23, 2016	July 31, 2017

5. Payments to Engineer

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

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

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

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

1. Engineer will notify Owner when eighty percent (80%) of the budget on Subtask 2.B.ii, Upstream Staging Area Levees/Ring Dikes, is expended.

2. Engineer will prepare and submit an amendment for additional compensation when ninety percent (90%) of budget on Subtask 2.B.ii, Upstream Staging Area Levees/Ring Dikes, is expended.

3. Engineer will not perform work beyond one hundred percent (100%) of the budget for Subtask 2.B.ii, Upstream Staging Area Levees/Ring Dikes, without Owner's authorization by an amendment to this Task Order.

Subtask	Activity ID	Current Budget ($)	Change ($)	Revised Budget ($)
2.B.i.1 Red River Levees – Phase 1 Design	DE-7430	490,000	(71,538)~~0~~	418,462~~490,000~~
2.B.i.1.o.i Landscape Architecture/Master Planning - 2nd St. Corridor from NP Ave. to 4th Ave.	DE-7430	35,000	13,082~~0~~	48,082~~35,000~~
2.B.i.1.o.ii Master Planning Services - Mickelson to the 4th St. Levee	DE-7430	100,000	47,737~~0~~	147,737~~100,000~~
2.B.i.2 Red River Levees – Phase 2 Design	DE-7430	3,064,000	0	3,064,000
2.B.i.3 Red River Levees – VES	DE-7430	30,000	0	30,000

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Subtask	Activity ID	Current Budget ($)	Change ($)	Revised Budget ($)
2.B.i.4 4th Street Levee Pump Station Replacement	DE-7430	600,000	81,3200	681,320600,000
2.B.i.5 Michelson Levee Extension	DE-7430	328,000	(211,632)0	116,368328,000
2.B.i.6 El Zagal Phase 2 Levee Design	DE-7430	190,000	31,6540	221,654190,000
2.B.i.7 2nd St. So. closure and Pump Station Design	DE-7430	0	430,000	430,000
2.B.ii Upstream Staging Area Ring Levees (Allowance)	DE-10150CN-6860	440,000	0	440,000
2.B.ii.2.d WP-43A Design	DE-10150CN-6860	362,499	0	362,499
2.B.ii.2.e WP-43C Design	DE-10150CN-6860	210,747	0	210,747
2.B.ii.2.f WP-43D Design	DE-10150CN-6860	1,893,3321,439,332	12,600454,000	1,905,9321,893,332
2.B.ii.2.g WP-43E Design	DE-10150CN-6860	260,000	4,5000	264,500260,000
2.B.ii.2.h OHB Ring Levee – VES	DE-10150CN-6860	33,694	0	33,694
2.B.ii.2.h.i OHB Ring Levee Design Modification - 100-Year Elevation	DE-10150CN-6860	127,240	0	127,240
2.B.ii.2.i O/H/B Wetland Mitigation Design	DE-10150CN-6860	92,0000	092,000	92,000
2.B.ii.2.j WP-43A Levee Inspection	DE-10150CN-6860	5,0000	05,000	5,000
2.B.iii Right of Way Surveying	DE-10150CN-6860	127,48868,488	059,000	127,488
TOTAL		**8,389,0007,779,000**	**340,723610,000**	**8,729,7238,389,000**

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

C. When invoicing work, Engineer shall note the Activity ID (shown in the table above) associated

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with each invoiced activity.

D. Provide monthly invoice and status report

i. Status report will accompany invoice, and detail work completed during the invoice period.

ii. Status report will be organized by subtask, and provide narrative of work completed on each subtask.

iii. Status of work completed will include:

1. Outstanding issues to resolve, expected steps to progress work, outstanding items required from Owner, Owner's Representative, or others to progress work, anticipated completion date of subtasks.
2. Dates of on-call services provided, and description of the activities performed by Engineer, including any deliverables produced.
3. Dates of deliverables otherwise required under the Project Management task.

6. Consultants:

a. Braun Intertec Corporation
b. Northern Technologies, Inc.
c. Robert Trent Jones II, LLC

7. Other Modifications to Agreement: None

8. Attachments: None

9. Documents Incorporated By Reference:

A. AWD-00045, REV-0, WP - 42F.1 Phase II Environmental Site Assessment (ESA), dated December 11, 2014.

B. AWD-00047, REV-0, El Zagal Phase 2 Levee Design, dated February 5, 2015.

C. AWD-00049, REV-0, Soil Characterization for Case Plaza for Work Package 42F.1S, dated June 11, 2015.

~~C.~~D. AWD-00057, REV-0, WP-42A.1 4th Street Pump Station Wet Well Design Modifications, and WP-43E.2C OHB Ring Levee Home Demolition

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.

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

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

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METRO FLOOD DIVERSION PROJECT

AUTHORITY WORK DIRECTIVE AWD-00057 REV-0

Task Order 13 – Levee Design and Design Support, WP42A.1 (4th St. Pump Station) and WP43E.2C (Demolition)

		WORK TYPE:	WIK
TO:	Houston-Moore Group, LLC	DATE INITIATED:	3/31/2016
PROJECT:	Fargo-Moorhead Diversion Engineering Design		
OWNER:	Metro Flood Diversion Authority		

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

OBJECTIVE:

WP-42A.1 – Prepare plans and technical specifications for enhanced access into the 4th Street pump station wetwell.

WP-43E.2C – Prepare plans, technical specifications, and Engineer's Opinion of Probable Cost for the demolition of one (1) home site.

BACKGROUND:

WP-42A.1 – The current design of the 4th Street pump station requires maintenance staff to be lowered into the wetwell on a harness. The Owner directed that plans be prepare so that the Contractor can prepare a price proposal for furnishing and installing enhanced access features such as ladders and lights to eliminate the use of a harness for access.

WP-43E.2C – A Diversion Authority-owned home in the OHB ring levee area has sustained damage and estimated costs to make repairs are prohibitively expensive. The home is located outside the OHB ring levee and within the project staging area. Ultimately, removal of the home from the staging area is required. Due to damages, the Owner has directed the removal begin as soon as possible.

SCOPE:

WP-42A.1 – Provide engineering services to prepare plans and specifications for Owner-requested pump station access enhancements. Plans to be sufficiently detailed to allow Contractor to prepare a cost proposal to furnish and install the enhanced access features. Estimated cost of proposed services is $14,000.

WP-43E.2C - Provide engineering services to prepare plans, specifications, and Engineer's Opinion of Probable Cost for Owner-requested demolition of residence. Plans to be sufficiently detailed to allow Contractor to prepare a cost proposal to perform demolition and dispose of waste materials. Estimated cost of proposed services is $4,500.

DELIVERABLES:

WP-42A.1 – draft and final plans and technical specifications.

WP-43E.2C – draft and final plans, technical specifications, and Engineer's Opinion of Probable Cost.

SCHEDULE:

Begin upon receipt of AWD. The above scope of work will be incorporated into Task Order No. 13 -Levee Design and Design Support, which will supersede this AWD.

HOW WORK IS PERFORMED:

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

COST:

Cost incurred under this AWD is not to exceed $18,500, allocated as $14,000 for WP-42A.1 and $4,500 for WP-43E.2C. This limit will not be exceeded without further written approval. The above scope of work will be incorporated into a future Task Order No. 13 amendment, which will supersede this AWD. Costs associated with this AWD will be invoiced under Task Order 13 after the amendment has been executed.

REASON FOR CHANGE(S):

WP-42A.1 – Owner requested.

WP-43E.2C – No change to plan for property, but timeline accelerated due to property damage.

ATTACHMENTS (List Supporting Documents):

WP-42A.1 – Engineer's fee estimate.

WP-43E.2C: Engineer's fee estimate.

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

Recommended by: CH2M HILL
Program Management Consultant

John Glatzmaier, P.E.	Project Manager
Name	Title
Signature	April 1, 2016
	Date

Ordered by: Board of Authority
Owner

Darrell Vanyo	Board Chair
Name	Title
Signature	Date

HMG

FM Metro Risk Management Project

Task Order 17 Amendment - WP42A1/A3 SDC

Task	Activity Description	Cost Per Task
Additional Services During Construction Support for WP42A1/A3		
	Amendment request from HDR ($13,309) for additional design work on WP42A1 to address comments from Fargo Public Works regarding access as outlined in attached detail plus HMG markup (5%)	$ 13,974
	Total	$ 13,974
	Grand Totals	$ 13,974

HMG

FM Metro Risk Management Project
Kaspari Property - Demolition Plan

Task	Activity Description	Personnel Costs: Project Manager Hours	Project Manager Cost	Senior Project Engineer Hours	Senior Project Engineer Cost	Professional Engineer Hours	Professional Engineer Cost	CADD Technician III Hours	CADD Technician III Cost	GIS Technician III Hours	GIS Technician III Cost	Administrative Hours	Administrative Cost	Cost Per Task
Additional Services														
Task 1	Develop Demo Plans - Kaspari Property													
A.1	Site visit/inspection	0	$ -	0	$ -	3	$ 438	0	$ -	0	$ -	0	$ -	$ 438
A.2	Develop plan set - cover sheet, vicinity map, location map, removal plan, and details	2	$ 314	0	$ -	8	$ 1,168	8	$ 920	0	$ -	2	$ 144	$ 2,546
A.3	Develop technical specifications and review front end documents provided by the PMC	2	$ 314	0	$ -	2	$ 292	0	$ -	0	$ -	2	$ 144	$ 750
A.4	Develop Engineer's Opinion of Probable Cost	1	$ 157	0	$ -	2	$ 292	0	$ -	0	$ -	0	$ -	$ 449
	Total	5	$ 785	0	$ -	15	$ 2,190	8	$ 920	0	$ -	4	$ 288	$ 4,183
	Grand Totals													$ 4,183

FM Metro Flood Risk Management Project

Task Order No. 13 - Amendment No. 13

Task	Activity Description	Cost Per Task
Additional Engineering Services		
Task 101 - Landscape Architecture - 2nd Street Corridor	Additional sub-consultant design services for the 2nd Street levee recreation plan. $12,459 plus 5% markup. Sub-consultants: SRF Consulting Group	$ 13,082
Task 102 - Master Planning - Mickelson to 4th Street Levee	Additional sub-consultant design services for the 2nd Street Riverfront Master Plan Study. $45,464 plus 5% markup. Sub-consultants: SRF Consulting Group and Image Group	$ 47,737
Task 111 - 4th Street Pump Station Replacement	Additional HMG and sub-consultant design services for the interior drainage, pump size modifications, gatewell layout, building layout, geotechnical analysis and address USACE review comments. Sub-consultants: Braun Intertec and HDR	$ 67,320
	Total	$ 128,139
	Grand Totals	$ 128,139

Actual cost of proposed work was $31,654

HMG

FM Metro Risk Management Project
HMG Task Order No. 13 - El Zagal Phase 2

Task	Activity Description	Personnel Costs												Cost Per Task
		Senior Project Manager		Project Manager		Senior Project Engineer		Graduate Engineer		CADD Technician III		Senior Administrative		
		Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	
WP42H.2 (El Zagal Levee Phase 2) Design Services														
Task 1	Project Administration - Long period (seven months) between 95% submittal and bid set due to acquisition schedule. This resulted in additional meetings, additional time to manage the design team, etc.	0	$ -	84	$ 13,188		$ -		$ -		$ -		$ -	$ 13,188
Task 2	Preliminary Engineering & Public Meetings - did not utilize allocated budget	0	$ -		$ -		$ -		$ -		$ -		$ -	$ (2,472)
Task 3	Design and plan preparation Long period (seven months) between 95% submittal and bid set due to acquisition schedule. The estimated budget was nearly spent at the time of the 95% submittal. After the 95% submittal, design changes were requested for intersection modifications, bike path modifications, sanitary lift station modifications including the addition of flow monitoring equipment with telemetry. Also, with the delay in the bid schedule, the grading plan for adjacent to the new golf course club house had to be completely revised. Also, several additional meetings were held to discuss milestones and completions dates which were revised throughout the year as the potential bid dates changed	0	$ -		$ -	172	$ 27,864	54	$ 5,940	96	$ 11,040	16	$ 1,152	$ 44,844
Task 4	Project Closeout and Preliminary O&M Development This item is included in the proposal for Services During Construction		$ -		$ -		$ -		$ -		$ -		$ -	$ (10,698)
Task 5	Develop Demolition Plans, Specifications, and Asbestos testing for 8 residential lots. Asbestos testing was coordinated by the PMC. Portions of the demolitions plans were incorporated into the Task 3 design scope.		$ -		$ -		$ -		$ -		$ -	0	$ -	$ (10,500)
	Total	0	$ -	84	$ 13,188	172	$ 27,864	54	$ 5,940	96	$ 11,040	16	$ 1,152	$ 34,362

FM Metro Risk Management Project

Cost Proposal for Task Order 13 - WP42E - 2nd St. S. Closure and Stormwater Pump Station

Task	Activity Description	Personnel Costs														Other /Expenses	Cost Per Task
		Senior Project Manager ($174)		Project Manager ($157)		Professional Engineer ($146)		Project Engineer ($128)		2M Crew		CADD Technician II ($105)		GIS Technician III			
		Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost		
Geotechnical Studies	**$15,000 plus 5% HMG markup**																**$ 15,750**
Operation and Maintenance Plan	**Develop Operation and Maintenance Plan**	**8**	**$ 1,392**	**0**	**$ -**	**20**	**$ 2,920**	**8**	**$ 880**		**$ -**		**$ -**	**12**	**$ 1,476**	**$ 500**	**$ 7,168**
35% Design submittal	**30% Design Submittal for WP42E**	**51**	**$ 8,874**	**8**	**$ 1,256**	**270**	**$ 39,420**	**414**	**$ 45,540**	**16**	**$ 3,712**	**148**	**$ 15,540**	**24**	**$ 2,952**	**$ 1,000**	**$ 143,294**
Public Involvement/Landowner Coordination/Meetings	Coordination with owners 2 meetings	4	$ 696		$ -	12	$ 1,752		$ -		$ -	4	$ 420	8	$ 984		$ 3,852
Surveying	Topo Surveys		$ -		$ -	4	$ 584	2	$ 220	16	$ 3,712	4	$ 420		$ -	$ 500	$ 5,436
Permitting	Permit needs identification	1	$ 174	2	$ 314	8	$ 1,168		$ -		$ -		$ -		$ -		$ 1,656
Hydraulics	Hydraulic Analysis for stormwater and and No-Rise - Include for 30% and update for 95%	2	$ 348		$ -	80	$ 11,680	280	$ 30,800		$ -		$ -	8	$ 984		$ 43,812
Removals/Demolition	Demolition/Removal Plan Development includes 1 meeting with city staff	2	$ 348		$ -	20	$ 2,920	40	$ 4,400		$ -	8	$ 840		$ -		$ 8,508
Civil Design	Levee, transportation and public utiltiy design	2	$ 348	2	$ 314	16	$ 2,336	60	$ 6,600		$ -	20	$ 2,100		$ -		$ 11,698
Civil Structural - Floodwall and Closure	Structural floodwall and closure design, including Main Avenue Bridge Floodwall	10	$ 1,740	0	$ -	40	$ 5,840	0	$ -		$ -	40	$ 4,200		$ -		$ 11,780
Civil Structural -Stormwater Pump Sta.	Structural for Stormwater Pump Station	10	$ 1,740	0	$ -	40	$ 5,840	0	$ -		$ -	40	$ 4,200		$ -		$ 11,780
Civil Structural -Stormwater Gatewell	Structural for Stormwater Gatewell (includes CIP box culvert)	10	$ 1,740	0	$ -	30	$ 4,380	0	$ -		$ -	24	$ 2,520		$ -		$ 8,640
Landscaping	Include as part of 95% and Final	0	$ -	0	$ -		$ -	0	$ -		$ -		$ -		$ -		$ -
Electrical Engineering	Include from SRF	0	$ -	0	$ -		$ -	0	$ -		$ -		$ -		$ -		$ 25,000
Cost Estimating	Construction Cost Estimate (Not included for 35%)		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -
Specifications	Use City of Fargo Specs. None included in 30% submittal		$ -	0	$ -	0	$ -		$ -		$ -		$ -		$ -		$ -
Technical Review – QA/QC	Internal HMG QA/QC and Response to USACE and PMC Reviews	8	$ 1,392		$ -	12	$ 1,752	16	$ 1,760		$ -	8	$ 840		$ -	$ 500	$ 6,244
Bid Document Development	PMC will develop Div 0 and Div 1, HMG will provide support. Nothing included for 35%	0	$ -		$ -	0	$ -	0	$ -		$ -	0	$ -		$ -		$ -
Design Documentation	TM and Design Documentation	2	$ 348	4	$ 628	8	$ 1,168	16	$ 1,760		$ -		$ -	8	$ 984		$ 4,888
65% Design Submittal	**65% Design Submittal for WP42E**	**34**	**$ 5,916**	**8**	**$ 1,256**	**245**	**$ 35,770**	**125**	**$ 13,750**	**8**	**$ 1,856**	**190**	**$ 19,950**	**4**	**$ 492**	**$ 1,000**	**$ 84,990**
Public Involvement/Landowner Coordination/Meetings	Coordination with owners 1 meeting	2	$ 348		$ -	4	$ 584		$ -		$ -	2	$ 210	4	$ 492		$ 1,634
Surveying	Topo Surveys		$ -		$ -	2	$ 292	1	$ 110	8	$ 1,856	4	$ 420		$ -	$ 500	$ 3,178
Removals/Demolition	Demolition/Removal Plan Development	2	$ 348		$ -	15	$ 2,190	20	$ 2,200		$ -	8	$ 840		$ -		$ 5,578
Civil Design	Levee, transportation and public utiltiy design	2	$ 348	2	$ 314	16	$ 2,336	36	$ 3,960		$ -	24	$ 2,520		$ -		$ 9,478
Civil Structural - Floodwall and Closure	Structural floodwall and closure design, including Main Avenue Bridge Floodwall	4	$ 696	0	$ -	40	$ 5,840	0	$ -		$ -	40	$ 4,200		$ -		$ 10,736
Civil Structural -Stormwater Pump Sta.	Structural for Stormwater Pump Station	4	$ 696	0	$ -	60	$ 8,760	0	$ -		$ -	60	$ 6,300		$ -		$ 15,756
Civil Structural -Stormwater Gatewell	Structural for Stormwater Gatewell (includes CIP box culvert)	4	$ 696	2	$ 314	60	$ 8,760	0	$ -		$ -	40	$ 4,200		$ -		$ 13,970
Landscaping	Include as part of 95% and Final	0	$ -	0	$ -		$ -	0	$ -		$ -		$ -		$ -		$ -
Electrical Engineering	Include from SRF	0	$ -	0	$ -		$ -	0	$ -		$ -		$ -		$ -		$ 5,000
Cost Estimating	Construction Cost Estimate	2	$ 348		$ -	4	$ 584	8	$ 880		$ -	4	$ 420		$ -		$ 2,232
Specifications	Use City of Fargo Specs.	2	$ 348	0	$ -	16	$ 2,336	24	$ 2,640		$ -		$ -		$ -		$ 5,324
Technical Review – QA/QC	Internal HMG QA/QC and Response to USACE and PMC Reviews	8	$ 1,392		$ -	16	$ 2,336	24	$ 2,640		$ -	8	$ 840		$ -	$ 500	$ 7,708
Bid Document Development	PMC will develop Div 0 and Div 1, HMG will provide support. Nothing included for 65%	0	$ -		$ -	0	$ -	0	$ -		$ -	0	$ -		$ -		$ -
Design Documentation	TM and Design Documentation	4	$ 696	4	$ 628	12	$ 1,752	12	$ 1,320		$ -		$ -		$ -		$ 4,396
95% Design Submittal	**95% Design Submittal for WP42E**	**51**	**$ 8,874**	**8**	**$ 1,256**	**278**	**$ 40,588**	**189**	**$ 20,790**	**8**	**$ 1,856**	**114**	**$ 11,970**	**20**	**$ 2,460**	**$ 1,000**	**$ 106,294**
Public Involvement/Landowner Coordination/Meetings	Coordination with owners 1 meeting	2	$ 348		$ -	4	$ 584		$ -		$ -	2	$ 210	4	$ 492		$ 1,634
Surveying	Topo Surveys		$ -		$ -	2	$ 292	1	$ 110	8	$ 1,856	4	$ 420		$ -	$ 500	$ 3,178
Permitting	Permit needs identification (Include for 35% and 95%)	1	$ 174	2	$ 314		$ -		$ -		$ -		$ -		$ -		$ 488
Removals/Demolition	Demolition/Removal Plan Development includes 1 meetings with city staff	2	$ 348		$ -	12	$ 1,752	20	$ 2,200		$ -	6	$ 630		$ -		$ 4,930
Hydraulics	Hydraulic Analysis and No-Rise - Include for 35% and update for 95%	2	$ 348		$ -	24	$ 3,504	40	$ 4,400		$ -		$ -	16	$ 1,968		$ 10,220
Civil Design	Levee, transportation and public utiltiy design	2	$ 348	2	$ 314	24	$ 3,504	40	$ 4,400		$ -	30	$ 3,150		$ -		$ 11,716
Civil Structural - Floodwall and Closure	Structural floodwall and closure design, including Main Avenue Bridge Floodwall	4	$ 696	0	$ -	60	$ 8,760	0	$ -		$ -	20	$ 2,100		$ -		$ 11,556
Civil Structural -Stormwater Pump Sta.	Structural for Stormwater Pump Station	4	$ 696	0	$ -	40	$ 5,840	0	$ -		$ -	20	$ 2,100		$ -		$ 8,636
Civil Structural -Stormwater Gatewell.	Structural for Stormwater Gatewell (includes CIP box culvert)	4	$ 696	0	$ -	40	$ 5,840	0	$ -		$ -	20	$ 2,100		$ -		$ 8,636
Landscaping	Include as part of 95% and Final	0	$ -	0	$ -		$ -	0	$ -		$ -		$ -		$ -		$ 7,500
Electrical Engineering	Include from SRF	0	$ -	0	$ -		$ -	0	$ -		$ -		$ -		$ -		$ 10,000
Cost Estimating	Construction Cost Estimate	2	$ 348		$ -	12	$ 1,752	20	$ 2,200		$ -	4	$ 420		$ -		$ 4,720
Specifications	Use City of Fargo Specs.	4	$ 696	0	$ -	12	$ 1,752	20	$ 2,200		$ -		$ -		$ -		$ 4,648
Technical Review – QA/QC	Internal HMG QA/QC and Response to USACE and PMC Reviews	8	$ 1,392		$ -	16	$ 2,336	16	$ 1,760		$ -	8	$ 840		$ -	$ 500	$ 6,828
Bid Document Development	PMC will develop Div 0 and Div 1, HMG will provide support.	8	$ 1,392		$ -	16	$ 2,336	16	$ 1,760		$ -	0	$ -		$ -		$ 5,488
Design Documentation	TM and Design Documentation	8	$ 1,392	4	$ 628	16	$ 2,336	16	$ 1,760		$ -		$ -		$ -		$ 6,116
BCOE Design Submittal	**BCOE Design Submittal for WP42E**	**33**	**$ 5,742**	**3**	**$ 471**	**110**	**$ 16,060**	**62**	**$ 6,820**	**0**	**$ -**	**80**	**$ 8,400**	**0**	**$ -**	**$ 250**	**$ 40,243**

Task	Activity Description	Personnel Costs														Other /Expenses	Cost Per Task
		Senior Project Manager ($174)		Project Manager ($157)		Professional Engineer ($146)		Project Engineer ($128)		2M Crew		CADD Technician II ($105)		GIS Technician III			
		Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost		
Public Involvement/Landowner Coordination/Meetings	Coordination with owners (Assume none for BCOE)		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -
Civil Design	Levee, transportation and public utiltiy design	2	$ 348	2	$ 314	20	$ 2,920	40	$ 4,400		$ -	24	$ 2,520		$ -		$ 10,502
Civil Structural - Floodwall and Closure	Structural floodwall and closure design, including Main Avenue Bridge Floodwall	8	$ 1,392	0	$ -	24	$ 3,504	0	$ -		$ -	16	$ 1,680		$ -		$ 6,576
Civil Structural -Stormwater Pump Sta.	Structural for Stormwater Pump Station	8	$ 1,392	0	$ -	24	$ 3,504	0	$ -		$ -	20	$ 2,100		$ -		$ 6,996
Civil Structural -Stormwater Gatewell	Structural for Stormwater Gatewell (includes CIP box culvert)	8	$ 1,392	0	$ -	24	$ 3,504	0	$ -		$ -	20	$ 2,100		$ -		$ 6,996
Electrical Engineering	Include from SRF	0	$ -	0	$ -		$ -	0	$ -		$ -		$ -		$ -		$ 2,500
Cost Estimating	Construction Cost Estimate (Not included for BCOE)	0	$ -		$ -	0	$ -	0	$ -		$ -	0	$ -		$ -		$ -
Specifications	Use City of Fargo Specs.	2	$ 348	0	$ -	8	$ 1,168	12	$ 1,320		$ -		$ -		$ -		$ 2,836
Technical Review – QA/QC	Internal HMG QA/QC and Response to USACE and PMC Reviews	4	$ 696		$ -	6	$ 876	6	$ 660		$ -		$ -		$ -	$ 250	$ 2,482
Bid Document Development	PMC will develop Div 0 and Div 1, HMG will provide support. (Assume none for BCOE Submittal)		$ -		$ -		$ -		$ -		$ -	0	$ -		$ -		$ -
Design Documentation	TM and Design Documentation	1	$ 174	1	$ 157	4	$ 584	4	$ 440		$ -		$ -		$ -		$ 1,355
Final Design Submittal	**Final Design Submittal for WP42E**	**16**	**$ 2,784**	**4**	**$ 628**	**74**	**$ 10,804**	**36**	**$ 3,960**	**0**	**$ -**	**44**	**$ 4,620**	**4**	**$ 492**	**$ 250**	**$ 31,038**
Public Involvement/Landowner Coordination/Meetings	Coordination with owners 1 meeting	2	$ 348		$ -	4	$ 584		$ -		$ -	2	$ 210	4	$ 492		$ 1,634
Civil Design	Levee, transportation and public utiltiy design	1	$ 174	2	$ 314	8	$ 1,168	12	$ 1,320		$ -	8	$ 840		$ -		$ 3,816
Civil Structural - Floodwall and Closure	Structural floodwall and closure design, including Main Avenue Bridge Floodwall	1	$ 174	0	$ -	12	$ 1,752	0	$ -		$ -	8	$ 840		$ -		$ 2,766
Civil Structural -Stormwater Pump Sta.	Structural for Stormwater Pump Station	1	$ 174	0	$ -	12	$ 1,752	0	$ -		$ -	12	$ 1,260		$ -		$ 3,186
Civil Structural -Stormwater Gatewell	Structural for Stomwater Gatewell (Includes CIP box culvert)	1	$ 174	0	$ -	12	$ 1,752	0	$ -		$ -	12	$ 1,260		$ -		$ 3,186
Landscaping	Include as part of 95% and Final	0	$ -	0	$ -		$ -	0	$ -		$ -		$ -		$ -		$ 5,000
Electrical Engineering	Include from SRF	0	$ -	0	$ -		$ -	0	$ -		$ -		$ -		$ -		$ 2,500
Cost Estimating	Construction Cost Estimate	1	$ 174		$ -	2	$ 292	4	$ 440		$ -	2	$ 210		$ -		$ 1,116
Specifications	Use City of Fargo Specs.	1	$ 174	0	$ -	8	$ 1,168	4	$ 440		$ -		$ -		$ -		$ 1,782
Technical Review – QA/QC	Internal HMG QA/QC and Response to USACE and PMC Reviews	2	$ 348		$ -	4	$ 584	4	$ 440		$ -		$ -		$ -	$ 250	$ 1,622
Bid Document Development	PMC will develop Div 0 and Div 1, HMG will provide support.	4	$ 696		$ -	8	$ 1,168	8	$ 880		$ -	0	$ -		$ -		$ 2,744
Design Documentation	TM and Design Documentation	2	$ 348	2	$ 314	4	$ 584	4	$ 440		$ -		$ -		$ -		$ 1,686
	Grand Totals	193	$ 33,582	31	$ 4,867	997	$ 145,562	834	$ 91,740	32	$ 7,424	576	$ 60,480	64	$ 7,872	$ 4,000	$ 428,777

HMG

FM Metro Risk Management Project

Task Order 13, WP-43D - Addition of Turn Lanes to Cass Highway 81

Task	Activity Description	Personnel Costs												Cost Per Task
		Project Manager		Senior Project Engineer		Professional Engineer		CADD Technician III		GIS Technician III		Subconsultant		
		Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost		Cost	
Additional Services														
Task 1	Includes collection of additional topo survey, additional Highway 81 modeling to include turn lanes, and incorporation of turn lanes into WP-43D plan set. Cost includes KLJ cost plus 5%.	0	$ -	0	$ -	0	$ -	0	$ -	0	$ -		$12,600	$ 12,600
	Total	0	$ -	0	$ -	0	$ -	0	$ -	0	$ -		$12,600	$ 12,600
	Grand Totals													$ 12,600

3203 32nd Avenue South Suite 201
PO Box 9767
Fargo, ND 58106-9767
701 232 5353
kljeng.com

KLJ Estimate	$12,000
HMG 5% mark-up	$ 600
Total Estimate	$12,600

May 16, 2016

Chris Gross, PE
Project Manager
Moore Engineering, Inc.
925 10th Avenue East
West Fargo, ND 58078

Re: WP-43D - Turn Lane Additions
CR 81/18 Road Raise

Dear Mr. Gross:

The below information summarizes a budget amendment for the referenced project. The proposed cost would account for additional survey and design efforts required for right and left turn lanes on CR 81 at the Clubhouse Drive and Schnell Drive approaches in Oxbow.

The following design changes would be required:

- Additional topographic survey
- Additional CR 81 roadway modeling
- Plan updates to Sections 4,8,10,20,30,60,76,77,82,110,200 to accommodate changes

Attached you will find a breakdown of the hours we are requesting for the various tasks. The total additional amount we are requesting is $12,000.

We appreciate your consideration for this contract amendment. Please feel free to contact me with any questions at 701.271.4883 or kris.bakkegard@kljeng.com.

Sincerely,

KLJ

Kris Bakkegard, PE
Project Manager

Enclosure(s): Fee Summary
Project #: 14612100.1
cc: project file

FEE SUMMARY
FM Metro Diversion
WP-43D Turn Lane Additions - Budget Amendment
KL&J Project No. 14612100

	STAFF TYPE	Engineer IV	Engineer III	Engineer II	Engineer I	Surveyor IV	Surveyor III	Surveyor II	Surveyor I	DIRECT LABOR
	Hourly Rate	$ 193.00	$ 154.25	$ 128.50	$ 116.25	$ 146.50	$ 131.25	$ 120.75	$ 92.75	
Phase	Project Assignment									
	Labor Code									
	TASK									
1	**Topographic Survey**									
1.1	Field Data Collection					2	12	12		$ 3,317.00
	Subtotal	0	0	0	0	2	12	12	0	**$ 3,317.00**
2										
2.1	Turn Lane Design		16	40						$ 7,608.00
2.2	Survey CAD Editing			8						$ 1,028.00
										$ -
										$ -
										$ -
										$ -
										$ -
										$ -
										$ -
										$ -
										$ -
	Total Hours	0	16	48	0	2	12	12	0	**$ 11,953.00**
	LABOR	$ -	$ 2,468.00	$ 6,168.00	$ -	$ 293.00	$ 1,575.00	$ 1,449.00	$ -	**$ 11,953.00**

SUBCONSULTANTS

FIRM NAME	ACTIVITY	FEE
	TOTAL SUBCONSULTANTS:	$ -

Summary of Costs:

Total Labor	$ 11,953.00
Direct Expenses	$ -
Subcontractors	$ -
Per Diem	$ -
Total Estimated Engineering Costs	**$ 11,953.00**

Revised 8/6/2014

HMG

FM Metro Risk Management Project

Romine Property - Demolition Plan

Task	Activity Description	Personnel Costs												Cost Per Task
		Project Manager		Senior Project Engineer		Professional Engineer		CADD Technician III		GIS Technician III		Administrative		
		Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	
Additional Services														
Task 1	Develop Demo Plans - Romine Property													
A.1	Site visit/inspection	0	$ -	0	$ -	3	$ 438	0	$ -	0	$ -	0	$ -	$ 438
A.2	Add to Kaspari plan set - location map, removal plan, and details	1	$ 157	0	$ -	4	$ 584	4	$ 460	0	$ -	2	$ 144	$ 1,345
A.3	Develop technical specifications and review front end documents provided by the PMC	1	$ 157	0	$ -	2	$ 292	0	$ -	0	$ -	2	$ 144	$ 593
A.4	Develop Engineer's Opinion of Probable Cost	1	$ 157	0	$ -	2	$ 292	0	$ -	0	$ -	0	$ -	$ 449
	Total	3	$ 471	0	$ -	11	$ 1,606	4	$ 460	0	$ -	4	$ 288	$ 2,825
	Grand Totals													$ 2,825