



1 **TO:** FINANCE COMMITTEE  
2 **FROM:** EXECUTIVE DIRECTOR'S OFFICE  
3 **SUBJECT:** COTTONWOOD RANCH DESIGN AND CONSTRUCTION OVERSIGHT  
4 CONTRACT AMENDMENT #2 JUSTIFICATION  
5 **DATE:** JUNE 19, 2019

6  
7  
8 The Program entered into an agreement with HDR Engineering, Inc. to perform design and  
9 construction oversight services for the Cottonwood Ranch (CWR) Broad-Scale Recharge (BSR)  
10 Project. The contract was executed by both parties on April 11, 2017 and expires on December  
11 31, 2019. Enclosed with this memorandum is a contract amendment that would increase the not-  
12 to-exceed amount of the contract by \$33,399 (from \$537,230 to \$570,629). This is the second  
13 contract amendment (the first is enclosed as an attachment to this amendment).  
14

15 The need for the additional funds is due to an extension of the substantial and final completion  
16 dates by 75 days largely due to harsh working conditions during the winter and spring  
17 construction period. The number of logged weather days (84) from October to April was about  
18 double what was expected (42 via HDR/NRCS) between October and April, when the  
19 construction period extension was granted. Rain, snow, freezing conditions and associated runoff  
20 extended the affected period beyond just the 84 days of occurrence.  
21

22 The EDO believes that a 75-day extension is fair to the contractor and to the Program. The need  
23 for additional funds for HDR and their sub-consultant is justified because the overall level of  
24 oversight between HDR and their sub-consultant during a given time period (i.e., month) has and  
25 will remain the same due to the non-typical working conditions. For example, hours were used  
26 by HDR and their sub-consultant during weather days to monitoring groundwater and surface  
27 water levels, and monitor site conditions. Changes are described in detail in the enclosed  
28 amendment and its attachments.



HDR Engineering, Inc.  
8404 Indian Hills Dr.  
Omaha, NE 68114  
TIN# 47-0680568  
DUNS# 18-729-4624

Nebraska Community Foundation  
PO Box 83107  
Lincoln, NE 68501-3107  
FEIN: 47-0769903

## PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM

### SECOND AMENDMENT

#### **To Agreement between Nebraska Community Foundation, Platte River Recovery Implementation Program, and HDR Engineering, Inc.**

#### **1. Parties.**

This is the Second Amendment to the Agreement entered into by and between Nebraska Community Foundation (“Foundation”) of Lincoln, Nebraska, representing all signatories to the Platte River Recovery Implementation Program (“Program”), and HDR Engineering, Inc. (“Consultant”) executed by both parties on April 11, 2017. The following persons are authorized to represent the parties through this Agreement: Diane Wilson of the Foundation, Jason Farnsworth of the Program; and Patrick Engelbert of the Consultant.

#### **2. Purpose and Authority.**

This Second Amendment to the Agreement between the Foundation and Consultant is being made for the following purposes:

- (1) Increase the approved not-to-exceed amount of the contract by \$33,399 (from \$537,230 to \$570,629). Budget and scope modifications are associated with an increase in the length and timing of the construction period described in Task Series 600 (Construction Administration) and are shown in detail in Attachment A and Attachment B. Task Series 600 is the only place where modifications are being made.

All other terms of the original agreement remain in effect as originally written.

This is the Second Amendment to the Agreement. Exhibit C includes the First Amendment, which was executed on December 4, 2018.



IN WITNESS WHEREOF, the Parties have executed this Agreement.

Nebraska Community Foundation

HDR Engineering, Inc.

By \_\_\_\_\_  
DIANE M. WILSON, Manager Public Private  
Partnerships

By \_\_\_\_\_  
MATTHEW B. TONDL, Sr. Vice President

Date: \_\_\_\_\_

Date: \_\_\_\_\_



**ATTACHMENT A:**

**SCOPE WITH MARKUP OF MODIFICATIONS (ALL IN TASK SERIES 600)**

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55  
56  
57



1 **Scope of Work**  
2 **Platte River Recovery Implementation Program**  
3 **Cottonwood Ranch Broad-Scale Recharge**  
4 **Engineering Design and Construction Administration Services**  
5 **Modification No. 1-2 DRAFT**  
6

7 **BACKGROUND AND BASIS FOR PROPOSAL**

8 The Platte River Recovery Implementation Program (Program) was initiated on January 1, 2007  
9 between Nebraska, Wyoming, Colorado, and the Department of the Interior to address  
10 endangered species issues in the central and lower Platte River basin. The species considered  
11 in the Program, referred to as “target species”, are the whooping crane, piping plover, interior  
12 least tern, and pallid sturgeon. A key milestone for the First Increment of the Program (2007 to  
13 2019) is reducing deficits to United States Fish and Wildlife Service (USFWS) target flows by an  
14 average of 130,000 – 150,000 acre-ft annually.  
15

16 One of the Program’s Water Action Plan (WAP) projects to achieve the reduction to deficits is  
17 retiming of excess flows through groundwater recharge. The Program’s Cottonwood Ranch  
18 (CWR) complex near Overton, NE has been selected as a priority location for implementation of  
19 a broad-scale groundwater recharge (BSR) project. Water will be delivered to the CWR complex  
20 from the Central Nebraska Public Power and Irrigation District’s (CNPPID) Phelps County Canal.  
21 A series of conveyance structures, berms and/or small dams will be used to create and deliver  
22 water to ponds that will function as recharge cells and wetland roosting habitat for the  
23 endangered whooping crane. The purpose of this effort is to provide engineering services to  
24 support preliminary and final design, and bid phase and construction phase services for the  
25 CWR BSR (Project).  
26

27 The infiltration analyses and groundwater modeling are inter-related. The scope and budget  
28 presented below assumes that the EDO will be responsible for these analyses. The potential  
29 variability of the soils and geology across the project area will be considered in locating soil  
30 sampling and infiltration test sites. These locations will be coordinated with the EDO to provide  
31 information useful in assessments of initial and long-term infiltration rates for input into the  
32 GW modeling to be done by the EDO. The results of the GW modeling to be performed by the  
33 EDO, including the potential for mounding, could affect the layout of the cells and the details of  
34 the berm and/or dam designs. With the EDO performing the groundwater modeling and  
35 infiltration analyses, it is assumed that the EDO will assume all responsibility for the  
36 performance of the project in terms of recharge rates, timing of flows back to the river,  
37 potential for long-term mounding, other hydrologic and physical effects and assignment of  
38 reductions to shortages to target flows. Optional field work to support the EDO’s groundwater  
39 modeling work is presented at the end of this Scope of Work.  
40



## 41 **TASK SERIES 100 – PROJECT SCOPING MEETING AND SITE VISIT**

42 **Objective** Transfer all necessary information from the EDO to the Consultant and have both  
43 parties agree on a clear path towards successful project completion.

### 44 **Activities**

#### 45 **Task 110 Project Scoping Meeting and Site Visit**

- 46 • Prepare and present project work plan including draft scope, fee, and  
47 schedule.
- 48 • Attend Project scoping meeting and site visit.
- 49 • Modify draft scope, fee, and schedule as necessary and mutually agreeable  
50 based on Scoping Meeting discussion.

#### 51 **Task 120 Data Collection and Review**

- 52 • Review existing Program information, as well as other publically available  
53 information, and determine data gaps and requirements.
- 54 • Miller and Associates to perform site topographic survey as necessary to  
55 determine flow line elevations of swales and ground profiles along proposed  
56 alignments to inform the design.

### 57 58 **Deliverables**

- 59 • Detailed project work plan comprised of a final scope, schedule and budget.

### 60 **Meetings**

- 61 • Combined scoping meeting and site visit.

### 62 **Key Understandings**

- 63 • HDR Team will attend a project kickoff meeting at the EDO office in Kearney,  
64 Nebraska. Three Team Members from HDR will attend: Project Manager,  
65 Project Engineer, and Construction Administrator.
- 66 • Background information and information that has been specifically  
67 developed for preparing the current concepts for the Project will be provided  
68 by the EDO and the Consultant will be able to rely on the accuracy of the  
69 information without independent verification and will not need to collect  
70 additional information from other sources except as specifically identified in  
71 the tasks below.
- 72 • Available water quality, field investigation, and soils and construction  
73 material properties information does not require additional lab testing and is



appropriate for use in developing preliminary and final designs. If found inadequate, additional water and soil samples will be provided by the Program, or the costs and effort will be provided as additional service.

- Flow line topographic survey to assist in determining embankment maximum height for dam safety permit requirements. It is assumed that two days of survey is required.

## **Information/Services**

### **Provided by Program**

- Meeting scheduling and coordination.
- Collection and organization of existing information including:
  - Geologic and soils mapping; location, scope and results of previous field investigations including boring types and locations and infiltration and percolation tests; and laboratory testing reports
  - Topographic data including LiDAR;
  - Water quality data of supply water; and,
  - Time series information on water delivery flow rates.

## **TASK SERIES 200 – PROJECT MANAGEMENT AND MEETINGS**

**Objective** Conduct general project management tasks consisting of a development and execution of project management, quality control and safety plans; monthly invoicing; monthly progress reports; project close out activities and other administrative activities. Manage the Project meetings and communication between the EDO such that the project moves forward effectively.

### **Activities**

- Prepare meeting materials (presentations, handouts, and meeting summaries).
- Attend and participate in Project meetings, Program Advisory Committee meetings, and Governance Committee meetings.
- Participate in periodic updates via phone call.

### **Deliverables**

- Meeting agenda, materials, and notes.
- Monthly invoices and progress reports.

### **Meetings**



- 108 • Monthly Project meetings
- 109 • Technical advisory meetings
- 110 • Governance Committee meetings

## 111 **Key Understandings**

- 112 • Progress meetings will be held with EDO staff. It is anticipated that fourteen
- 113 (14) meetings will be held via phone/web meeting.
- 114 • Two (2) presentations will be made to each of the Program Advisory
- 115 Committees (Kearney and/or Ogallala). One (1) presentation for the
- 116 preliminary designs of each alternative, and one (1) presentation for the final
- 117 design of the selected alternative.
- 118 • Two (2) presentations will be made to the Governance Committee meeting
- 119 (location and date TBD). One (1) presentation for the preliminary designs of
- 120 each alternative, and one (1) presentation for the final design of the selected
- 121 alternative.
- 122 • Project will be complete December, 2018.

## 123 **Information/Services**

### 124 **Provided by Program**

- 125 • Meeting scheduling and coordination.

126

## 127 **TASK SERIES 300 – ENGINEERING DESIGN AND COST ESTIMATING**

- 128 **Objective** Develop preliminary designs and opinions of probable construction costs for the
- 129 two alternatives and a final design and opinion of probable construction cost for
- 130 the selected alternative.

### 131 **Activities**

#### 132 **Task 310 Field Test**

- 133 • Based on review of background information provided by EDO in Task 120,
- 134 prepare field investigation plan to include field permeability test locations.
- 135 • Review and interpret results of field permeability tests, and incorporate into
- 136 Land and Vegetation plan, and inform preliminary design.

#### 137 **Task 320 Land and Vegetation Management Plans**

- 138 • Evaluate land and vegetation management practices to maximize and
- 139 maintain infiltration potential, based on review of existing data and Tasks
- 140 310 and 330.





## Task 330

### Geotechnical Analysis

- Conduct subsurface geotechnical investigation and conduct geotechnical engineering analyses for the earthen embankment alternatives and foundation soils. It is intended that the geotechnical design elements will be advanced to approximately the 90 percent design level. It is intended that this geotechnical investigation will be adequate to support the preliminary and the final design of the berm and dam alternatives.
  - Task 330.1 Data Collection and Review. Acquire, review, and interpret publicly available geotechnical data from adjacent roadway projects and from Soil Survey maps prepared by the Natural Resource Conservation Survey (NRCS).
  - Task 330.2 Subsurface Investigation Plan. Conduct a geotechnical investigation to evaluate the subsurface conditions within the project area that will cover alternatives for berms or dams as well as the borrow areas for the embankments. Prepare an investigation plan showing the location of the borings and test pits and describing a laboratory testing program assigning tests to specific samples. The lab testing program is anticipated to include:
    - Atterberg Limits (silts and clays, per ASTM D 4318). A total of 30 tests are assumed.
    - Grain size analyses (sieves with hydrometer on sands, silts, and clays per ASTM D 422). A total of 30 tests are assumed.
    - Moisture Content/Dry Density tests (tube samples, per ASTM D 2166, ASTM D 7263). A total of 60 moisture and 40 dry density tests are assumed.
    - Unconfined Compressive Strength tests (tube samples, per ASTM D 2166). A total of 8 tests are assumed.
    - Consolidation tests (tube samples, per ASTM D 2435). A total of 4 tests are assumed.
    - Pin-hole dispersion tests. A total of 4 tests are assumed.
  - Task 330.3 Subsurface Investigation Exploration. Mid States to conduct field exploration and sampling, perform the laboratory tests and prepare geotechnical data report. Geotechnical data report includes boring and test pit logs and laboratory test data. The field investigation to include soil borings and sampling with the Standard Penetration test drive sampler for granular soils and push sampler for cohesive soils. Cone penetration testing (CPT) may be performed as a means to define very thin lenses of sand or soft clay that may be



present beneath the berms or dams that may pose underseepage and stability issues. Up to 8 test pits will be excavated to evaluate near-surface soils conditions and the soil profile to support Consultant's recommendations on cell management to maintain infiltration rates and for the EDO's use in simulating infiltration and ground water flow. Miller and Associates will survey the location and the ground surface elevation of the test pit and borings (pre- and then post-drilling).

- A total of 36 boreholes anticipated to the following count and depth: 20 boreholes advanced to 20-ft depth, 14 boreholes advanced to 30-ft depth; and 2 boreholes advanced to 40-ft depth.
- Task 330.4 Preliminary Geotechnical Design and Analysis. Preliminary geotechnical design will be performed and applied for each alternative. The design includes the following tasks:
  - Review and interpret field and lab data.
  - Prepare geologic cross-sections
  - Assign lab testing to substantiate field classifications of soils
  - Develop design parameters for shear strength, permeability and compressibility
  - Select design foundation sections for analyses and shear strengths
  - Select trial embankment sections
  - Perform slope stability analyses for end of construction, rapid drawdown and steady seepage cases
  - Perform embankment foundation seepage analyses (EDO to preform cell infiltration and groundwater flow analyses)
  - Perform settlement analyses along the centerline and transverse to the earth embankments:

The analyses will be performed in accordance with NRCS methodology and design criteria.

- Task 330.5 Final Geotechnical Design and Analysis. Following completion of the preliminary geotechnical analyses and the selection of the alternative, final design will be performed. The final design tasks includes establishing the configuration of the final embankment section (upstream and downstream side slopes, crest width assuming homogenous sections without complicated internal zoning and filter and drain features), and foundation preparation that may be required



217 for stability, underseepage and settlement for a final embankment  
218 section that meets the stability criteria.  
219 ○ Task 330.6 Geotechnical Investigation and Evaluation Documentation.  
220 Following the completion of the above tasks, prepare a geotechnical  
221 evaluation report documenting the results of the field explorations,  
222 lab testing program and the final geotechnical and design.

- 223
- 224 **Task 340 Hydrologic and Hydraulic Analysis**
- 225 • Perform hydrologic and hydraulic analysis to:
- 226 ○ Determine type, size, and location of water control structures; and,
- 227 ○ Conduct a breach analysis to determine population at risk and Risk
- 228 Indexes for Alternate #1 and Alternate #2.
- 229 • Prepare a letter summary of findings and present to Nebraska DNR Dam
- 230 Safety for review and comment.
- 231 • Coordinate with CNPPID on delivery pipe configuration, operation, and
- 232 location.
- 233 • Perform floodplain analysis to determine existing and proposed conditions in
- 234 support of floodplain development permit application.

- 235 **Task 350 Preliminary Design**
- 236 • Develop preliminary design, approximate quantities, and opinion of probable
- 237 construction costs of Alternative #1 and Alternative #2.
- 238 • Prepare a memorandum describing the preliminary design of Alternative #1
- 239 and Alternative #2 including the Engineer's opinion of probable construction
- 240 costs.
- 241 • Embankments annotated as Berm 5 and Berm 6 in Alternative #1 have the
- 242 same general alignment as the embankments annotated as Berm 3 in
- 243 Alternative #2. Preliminary and final design of these berm sized
- 244 embankments will be conducted to accommodate a potential fall 2017
- 245 construction schedule, contingent on the status of permitting activities. In
- 246 addition, the designs will also accommodate potential conversion from
- 247 berms to small dam embankments if directed by EDO.

- 248
- 249 **Task 360 Final Design**
- 250 • Advance the alternative selected by EDO and incorporate review comments
- 251 into final design.
- 252 • Prepare a memorandum describing the final design including the Engineer's
- 253 opinion of probable construction costs (OPCCs).



## **Deliverables**

- Preliminary design technical memorandum presenting quantities and OPCC for preliminary designs.
- Draft and Final Geotechnical Investigation and Design Reports
- Final design technical memorandum presenting design and quantity/cost estimates of the selected alternative.

## **Meetings**

- See Task Series 200.

## **Key Understandings**

- As directed by EDO, embankments labeled as Berm 9 and Berm 10 (Alternative #1) and Berm 6 and Berm 7 (Alternative #2) will be removed from the preliminary and final design.
- The hydraulic analysis will be performed to develop control structure sizes, in conjunction with grade work to obtain depths for suitable habitat. HEC-RAS 5.0.3 will be used to perform the hydraulic analysis.
- The hydraulic analysis for floodplain permitting will be based on the latest one dimensional model of the Platte River to be provided by the EDO. This model is considered the best available information.
- Hydrologic analyses for Alternative #1 will be based on NRCS 24-hour duration design storms for 10-, 25-, 50-, and 100-year average recurrence intervals to evaluate performance and for evaluation of county road structures. Hydraulic analyses for Alternative #2 will include the above design storms as well as principal spillway and auxiliary spillway precipitation amounts and durations required for evaluation of low hazard potential dams.
- Runoff from frequently occurring precipitation events (more frequent than 10-year average recurrence interval) is assumed to be conveyed in the county road ditches around the site and is not included in storm routing through the detention cells of the Project.
- Field exploration and lab testing methods will be performed in accordance with current ASTM procedures and level of practice appropriate for low-hazard impoundments.
- It is assumed that the field exploration and lab testing programs will be adequate to complete the preliminary design of each alternative and for the final design of the selected alternative.



- MidStates, as a subconsultant to HDR, will conduct field investigation and laboratory testing programs.
- Fee estimate is based on: 1) a total of approximately 880 feet (and up to 100 feet of contingency) of borings drilled and 150 feet of cone penetrometer tests, and 2) up to 8 shallow test pits.
- Miller and Associates, as a subconsultant to HDR, will survey the pre- and post locations of the bore hole locations.
- Geotechnical investigation and final design will be completed to approximately to a 90 percent level.
- The preliminary and final designs will be presented in the form of a design memo.
- Preliminary designs for Alternative #1 and Alternative #2 will be prepared using arials, topographic data gathered from LiDAR and ground surveys, and geotechnical investigation and hydrologic and hydraulic assessment results.
- An OPCC will be developed for each preliminary design using bid tabulations from recent similar projects in the area and other sources.
- An evaluation matrix will be used to determine a recommended alternative based on metrics chosen to be reviewed with, and selected by, the EDO.
- The preliminary design memorandum and recommendation will be presented to the EDO, advisory committee and the Governance Committee for consideration. Comments and other input received will be incorporated into the final design.
- It is assumed that the water control structures will be manually operated.

#### **Information/Services**

##### **Provided by Program**

- Provide existing information, coordinate, and review designs.

#### **TASK SERIES 400 – PERMITTING**

**Objective** Obtain construction permits and clearances typically obtained by the owner through its design consultant prior to commencement of construction with a preliminary list of potential permits that the construction contractor will be required to obtain.

#### **Activities**

##### **Task 410 Program Coordination**

- Develop comprehensive project permit plan that addresses permits needed, sequencings and scheduling of submittals, associated fees, and anticipated



timeframes for permit authorizations. The permit plan will include Section 404 Permitting and integration with overall project design and construction schedule.

- Coordinate with EDO on status of permit development and submittals.

#### **Task 420 Permit Development and Submission**

- Develop required permits for submission. The following permit submittals are anticipated:
  - NDNR Permit to Impound Water;
  - NDNR Permit for Recharge Water;
  - NDNR Permit to Appropriate Water for Induced Groundwater Recharge;
  - Phelps County Floodplain Development Permit;
  - NDEQ NPDES Construction Storm Water Permit requirements.
- Requirements for the NDNR permit to appropriate water for induced groundwater recharge include:
  - Prepare and submit “Petition to the DNR for Leave to File or Consider an Application for a New Surface Water Appropriation Within a Moratorium or Stay Area” to the DNR.
  - Prepare and submit “Application for a Permit to Appropriate Water” to the DNR.
  - Prepare one “Narrative on Public Interest Benefit”.
  - Prepare associated maps in coordination with the Program.
  - Determine divertible flow excess in conjunction with the Program. Analysis will draw upon “Evaluation of Historic Platte River Streamflow in Excess of State Protected Flows and Target Flows – Supplement to December 2010 Report” prepared by HDR in March 2013.
- Phelps County Floodplain Development Permit Requirements
  - Determine existing condition water surface elevation for the one-percent annual chance exceedance flood.
  - Determine the full build out condition water surface elevation for the one-percent annual chance exceedance flood.
  - Evaluate if proposed condition is within Phelps County floodplain permit requirements, and determine mitigation strategies if necessary.



**Task 430 Agency Coordination**

- Coordinate with federal, state and local agencies and authorities on necessary permit submittals
- Response to comments on permit submittals

**Deliverables**

- Permits and clearances needed for project construction.

**Meetings**

- See Task Series 200.

**Key Understandings**

- For the purpose of permitting scope and effort, both effort for dams and berms are considered.
- Agency coordination with NDNR is assumed to be limited to 16 hours of Senior Water Resource Engineer effort
  - Section 404 Permitting and related Section 401 Water Quality Certification is addressed under a separate scope of work.
- Two mitigation alternatives will be evaluated if necessary to meet floodplain development permit requirements.

**Information/Services  
Provided by Program**

- Any fees associated with permit submittals.
- Coordination with HDR staff.

**TASK SERIES 500 – BID PACKAGE DEVELOPMENT AND BID LETTING**

**Objective** Develop bid package for the Project

**Activities**

**Task 510 Final Design Documents**

- Prepare Final Design documents (plans and specifications) suitable for obtaining bids from contractors for construction of the Project.
- Prepare an operation and maintenance manual (O&M) for the water control operations of the Project.



- 394 **Task 520** **Bid Phase Services**
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- 396
- 397
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- Prepare bid advertisement documents for publication, address questions from perspective bidders, participate in the pre-bid meeting and bid opening, evaluate the bids, prepare recommended action for consideration by the EDO, and negotiate a contract for construction services.

- 399
- 400 **Deliverables**
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- Bid package for construction services.
  - O&M Manual.

- 403 **Meetings**
- 404
- See Task Series 200.

- 405 **Key Understandings**
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- Final Design documents will serve as the basis for supporting documentation for submittal with Permit Applications.
  - Program is responsible plan room submittal, advertising in paper, and printing hard copies as required.
  - O&M manual will be developed based on past Bureau of Reclamation (BOR) manuals for similar projects.

- 413 **Information/Services**
- 414 **Provided by Program**
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- 417
- Provide input and assistance.
  - Modified EJCDC documents.
  - Example BOR O&M manuals for similar project.

## 418 **TASK SERIES 600 – CONSTRUCTION ADMINISTRATION**

- 419 **Objective** Monitor contractor and document work so that it is consistent with the final
- 420 design and technical specifications of the CWR BSR project.

- 421 **Activities**
- 422 **Task 610** **Construction Observation and Quality Assurance**
- 423
- 424
- Construction observation and quality assurance, review of construction contractor payment applications and coordinating with EDO staff.

425





- 426 **Task 620** **Quality Assurance**
- 427 • Provide construction quality assurance services to assist EDO in determining
- 428 compliance with contract documents.
- 429 **Task 630** **Construction Observation Reports**
- 430 • Prepare weekly construction reports including photographic documentation.
- 431 **Task 640** **Monthly Pay Request Review**
- 432 • Review the monthly pay requests and provide recommendations regarding
- 433 payment.
- 434
- 435 **Deliverables**
- 436 • Weekly construction reports and progress update memos.
- 437 • Monthly recommendations regarding contractor payments.
- 438 **Meetings**
- 439 • See Task Series 200.
- 440 **Key Understandings**
- 441 • HDR Team will have a qualified construction observer on site as necessary to
- 442 document construction compliance and progress.
- 443 • The duration and timing of the construction observation will be determined
- 444 in cooperation with the EDO office. However, it is anticipated that full-time
- 445 observation will be required for critical items such as construction of the
- 446 water level control structures and earth berms and periodically for less
- 447 critical items that do not require continuous observation or for which
- 448 compliance can be determined after the work is performed (such as fence
- 449 removal or fence construction and seeding and mulching).
- 450 • ~~It is assumed construction activities for earthwork and construction of water~~
- 451 ~~level control structures will occur concurrently.~~
- 452 • The Project will be constructed from October 2018 through May, 2018
- 453 August 15, 2019.
- 454 • The contractor will have limited operation times during the crane migration
- 455 season.
- 456 • Resident will be on site full time approximately 45 65days, and part time (2
- 457 hours/day) approximately 95 125days.
- 458 • —



- ~~• The Project will be constructed in phases. Phase I will include construction of Berm 5 and Berm 6 (Alternative #1) and Berm 4 and Berm 3 (Alternative #2); Phase II will consist of the remainder of the complex west of I RD; and Phase III will consist of the portion of the complex east of I RD.~~
- ~~• Project duration of Phase I is assumed to be four (4) weeks, with seven (7) days full time resident and thirteen (13) days part time resident (2 hours/day). Project duration of Phase II is assumed to be 6 weeks, with ten (10) days full time resident and twenty (20) days part time resident (2 hours/day). Project duration of Phase III is assumed to be 6 weeks, with ten (10) days full time resident and twenty (20) days part time resident (2 hours/day).~~

#### Information/Services Provided by Program

- All surveying during or after will be provided by the Program. If survey is required from the HDR Team, it will be provided as additional service.
- All groundwater level monitoring (including monitoring well installation, if any) and the associated analysis will be performed by the Program.
- Coordinate with HDR Team to incorporate potential design changes based on monitoring and analysis.
- Design changes during construction would be provided as an additional service.

### SUPPLEMENTARY INVESTIGATIONS TO SUPPORT INFILTRATION ASSESSMENTS AND GROUNDWATER MODELING FOR THE EDO

#### Task 710 Field Test Soil Permeability Testing and Ground Water Level Monitoring

- The purpose of this task is to collect field data on soil permeability and seasonal ground water levels to obtain information to estimate infiltration capacity of the site. This information will assist in designing the recharge facility to optimize infiltration capacity.
- Develop brief work plan describing locations and methods for field testing including test pits, soil sample collections and ground water monitoring well installation.
- Mobilize backhoe or small trackhoe to excavate up to 80 test pits to a depth of 8 to 10 feet over the 400 acres of proposed inundation area. Log the soil profile according to the Unified Soil Classification (UCS) system and note the



depth to ground water if present. Collect two representative samples from the soil; one of the upper organic soil layer and a second from the vadose zone and a third from the bottom of the test pit. Submit soil samples to a soils laboratory for grain-size evaluations using the screening and hydrometer methods (ASTM D6913 - 04e1 and D7928 - 16e1 Methods). Calculate the estimated hydraulic conductivity and saturated infiltration rate using appropriate empirical formulas.

- Install eight ground water monitoring wells to identify the depth of ground water. It is assumed that ground water monitoring wells will be installed to a maximum depth of 50 feet and ground water will be encountered between 20 to 40 feet below ground surface. Ground water monitoring wells will be installed with a track mounted hollow-stem auger drilling rig. Soil samples will be collected continuously during drilling and logged according to the USCS system. A 2-inch diameter PVC monitoring well will be installed in the borehole with a 10-ft length screen and up to 40 ft long screen. The borehole annulus will be grouted with bentonite and a cement seal will be placed at the ground surface. All other aspects of well construction will follow the State of Nebraska standards for monitoring wells. A metal above-ground protector will be placed at the ground surface. The depth to ground water will be measured using an electronic probe and the top of casing elevation will be measured using a high-performance GPS unit to an accuracy of plus or minus 1 feet. Ground water level electronic recording instruments will be placed in the wells to record ground water fluctuations on an hourly basis.
- Install one surface stage recorder along the Platte River adjacent to the proposed infiltration location and install a water level recording electronic pressure transducer. The purpose of this is to collect seasonal river stage levels to compare river stage and ground water fluctuations and determine effects of high river stage on ground water levels.
- After two months of data collection, download the ground water and surface water level instruments and prepare graphs showing the recorded water levels. Prepare a ground water potentiometric surface map showing the depth to ground water and the ground water elevation and the ground water flow direction over the site.
- Develop a Technical Memorandum documenting the results of the field soil permeability testing and ground level monitoring. Estimate the soil saturated infiltration rates. Provide recommendations on locations with



higher and lower infiltration rates for consideration in the design of the recharge basins.

**Task 720      Develop Approach to Optimize Recharge Operations and Management to Meet Multi-Objective Goals**

- Identify the key recharge goals and land-use and wildlife needs. Identify recharge quantity goals, vegetation requirements, wildlife needs, water quality considerations and other requirements needed for success of the project.
- Develop an approach and specific recommendations for design and operation of the recharge basins to meet these requirements. Specific items that may be addressed include:
  - Evaluate vegetation management practices to maximize and maintain infiltration potential.
  - Identify inundation periods and levels needed to support wildlife habitat goals.
  - Identify any water quality requirements for both surface water and ground water.
  - Develop recommendations for maintenance of infiltration rates in soils including wetting/drying cycles, recharge periods, and ground water mounding. This will be developed as appropriate to support multi-objective uses of the recharge project.
- Prepare a brief Technical Memorandum that presents the results of the items above.



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**ATTACHMENT B:**  
**MODIFIED BUDGET AND FEE SCHEDULE**

PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM COTTONWOOD RANCH BROAD-SCALE RECHARGE FEE ESTIMATE - MOD 2 DRAFT																	
TASKS		Labor									Expenses				Subconsultants (Miller and Associates / Geotech)	Est. Total Cost	
		Project Manager	Sr WR Engineer/ QC	Project Engineer	Sr Geotech. Engineer/ Hydrogeo	Geotech. Engineer/ Hydrogeo	Envrion. Scientist	Technical Support	Clerical	Total Hours	Total Labor Cost	Printing	Travel	Misc.			Total Expenses
TASK SERIES 100 – PROJECT SCOPING MEETING AND SITE VISIT																	
Task 110	Project Scoping Meeting and Site Visit	12		12						24	\$4,429		\$300		\$300		\$4,729
Task 120	Review Existing Information	8	2	8	16					34	\$7,117				\$0		\$7,117
Estimated Task Hours Subtotal		20	2	20	16	0	0	0	0	58							
Estimated Task Cost Subtotal		\$4,589	\$502	\$2,792	\$3,662	\$0	\$0	\$0	\$0		\$11,546	\$0	\$300	\$0	\$300	\$0	\$11,846
TASK SERIES 200 – PROJECT MANAGEMENT AND MEETINGS																	
Task 210	Project Management	80	14		8		14			116	\$25,754	\$50		\$50	\$100		\$25,854
Task 220	Project Meetings	80	62							142	\$33,928	\$150	\$1,800		\$1,950		\$35,878
Estimated Task Hours Subtotal		160	76	0	8	0	14	0	0	258							
Estimated Task Cost Subtotal		\$36,715	\$19,086	\$0	\$1,831	\$0	\$2,049	\$0	\$0		\$59,682	\$200	\$1,800	\$50	\$2,050	\$0	\$61,732
TASK SERIES 300 – ENGINEERING DESIGN AND COST																	
Task 310	Develop Field Test and Review Results	6	8		16			8		38	\$7,852		\$300		\$300	\$6,000	\$14,152
Task 320	Land and Vegetation Management Plans	6	8		4	40	12	8		78	\$10,972		\$150		\$150		\$11,122
Task 330	Geotechnical Analysis	6	8		60	160		8		242	\$34,363		\$150		\$150	\$39,500	\$74,013
Task 340	Hydraulic Analysis	6	20	140				24		190	\$28,356		\$150	\$50	\$200		\$28,556
Task 350	Preliminary Design	6	20	140	20	12	36	72	16	322	\$45,927	\$100			\$100		\$46,027
Task 360	Final Design	6	20	80	4	4	2	40	4	160	\$23,624	\$100			\$100		\$23,724
Estimated Task Hours Subtotal		36	84	360	104	216	50	160	20	1,030							
Estimated Task Cost Subtotal		\$8,261	\$21,095	\$50,257	\$23,804	\$22,193	\$7,319	\$16,079	\$2,084		\$151,093	\$200	\$750	\$50	\$1,000	\$45,500	\$197,593
TASK SERIES 400 – PERMITTING																	
Task 410	Program Coordination	4	8				24			36	\$6,440		\$150		\$150		\$6,590
Task 420	Permit Development and Submission	2	28	80			2			112	\$18,952	\$100			\$100		\$19,052
Task 430	Agency Coordination	2	16				8			26	\$5,648		\$150		\$150		\$5,798
Estimated Task Hours Subtotal		8	52	80	0	0	34	0	0	174							
Estimated Task Cost Subtotal		\$1,836	\$13,059	\$11,168	\$0	\$0	\$4,977	\$0	\$0		\$31,040	\$100	\$300	\$0	\$400	\$0	\$31,440
TASK SERIES 500 – BID PACKAGE DEVELOPMENT AND BID LETTING																	
Task 510	Final Design Documents	4	28	150	14		4	172	24	396	\$52,466	\$50			\$50		\$52,516
Task 520	Bid Phase Services	2	24						4	30	\$6,903				\$0	\$5,000	\$11,903
Estimated Task Hours Subtotal		6	52	150	14	0	4	172	28	426							
Estimated Task Cost Subtotal		\$1,377	\$13,059	\$20,941	\$3,204	\$0	\$586	\$17,285	\$2,917		\$59,369	\$50	\$0	\$0	\$50	\$5,000	\$64,419
TASK SERIES 600 – CONSTRUCTION ADMINISTRATION																	
Task 610	Construction Observation and Quality Assurance	4	110		72				28	214	\$47,940		\$1,600		\$1,600	\$101,500	\$151,040
Task 620	Quality Assurance	4	74		36					114	\$27,742		\$525		\$525		\$28,267
Task 630	Weekly Construction Observation Reports	4	36						28	68	\$12,876				\$0		\$12,876
Task 640	Monthly Pay Request Review	4	36						14	54	\$11,417				\$0		\$11,417
Estimated Task Hours Subtotal		16	256	0	108	0	0	0	70	450							
Estimated Task Cost Subtotal		\$3,671	\$64,290	\$0	\$24,720	\$0	\$0	\$0	\$7,293		\$99,974	\$0	\$2,125	\$0	\$2,125	\$101,500	\$203,599
TOTAL HOURS		246	522	610	250	216	102	332	118	2,396							
TOTAL COST		\$ 56,449	\$ 131,092	\$ 85,158	\$ 57,222	\$ 22,193	\$ 14,931	\$ 33,365	\$ 12,293		\$412,704	\$550	\$5,275	\$100	\$5,925	\$152,000	\$570,629



**PRRIP – ED OFFICE FINAL**

**06/19/2019**

**ATTACHMENT C:**

**EXISTING CONTRACT DATED 3/29/2017 AND AMENDED 12/4/2018**

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HDR Engineering, Inc.  
8404 Indian Hills Dr.  
Omaha, NE 68114  
TIN# 47-0680568  
DUNS# 18-729-4624

Nebraska Community Foundation  
PO Box 83107  
Lincoln, NE 68501-3107  
FEIN: 47-0769903

## PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM

### FIRST AMENDMENT

#### **To Agreement between Nebraska Community Foundation, Platte River Recovery Implementation Program, and HDR Engineering, Inc.**

#### **1. Parties.**

This is the First Amendment to the Agreement entered into by and between Nebraska Community Foundation (“Foundation”) of Lincoln, Nebraska, representing all signatories to the Platte River Recovery Implementation Program (“Program”), and HDR Engineering, Inc. (“Consultant”) executed by both parties on April 11, 2017. The following persons are authorized to represent the parties through this Agreement: Diane Wilson of the Foundation, Jason Farnsworth of the Program; and Patrick Engelbert of the Consultant.

#### **2. Purpose and Authority.**

This First Amendment to the Agreement between the Foundation and Consultant is being made for the following purposes:

- (1) Increase the approved not-to-exceed amount of the contract by \$72,871 (from \$464,359 to \$537,230). Budget and scope modifications are associated with an increase in the length and timing of the construction period described in Task Series 600 (Construction Administration) and are shown in detail in Attachment A and Attachment B. Task Series 600 is the only place where modifications are being made.
- (2) Extend the term of the existing Contract between the Foundation and Consultant through 12/31/2019, including contract compensation through payment for time and materials “not-to-exceed”. The existing Contract expires on 12/31/2018, and is included in Attachment B.

All other terms of the original agreement remain in effect as originally written.






IN WITNESS WHEREOF, the Parties have executed this Agreement.

Nebraska Community Foundation

HDR Engineering, Inc.

By   
DIANE M. WILSON, Manager Public Private  
Partnerships

By   
MATTHEW B. TONDL, Sr. Vice President

Date: 12/04/2018

Date: 11/28/18



**ATTACHMENT A:**

SCOPE WITH MARKUP OF MODIFICATIONS (ALL IN TASK SERIES 600)

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1 **Scope of Work**  
2 **Platte River Recovery Implementation Program**  
3 **Cottonwood Ranch Broad-Scale Recharge**  
4 **Engineering Design and Construction Administration Services**  
5 **Modification No. 1 DRAFT**  
6

7 **BACKGROUND AND BASIS FOR PROPOSAL**

8 The Platte River Recovery Implementation Program (Program) was initiated on January 1, 2007  
9 between Nebraska, Wyoming, Colorado, and the Department of the Interior to address  
10 endangered species issues in the central and lower Platte River basin. The species considered  
11 in the Program, referred to as “target species”, are the whooping crane, piping plover, interior  
12 least tern, and pallid sturgeon. A key milestone for the First Increment of the Program (2007 to  
13 2019) is reducing deficits to United States Fish and Wildlife Service (USFWS) target flows by an  
14 average of 130,000 – 150,000 acre-ft annually.  
15

16 One of the Program’s Water Action Plan (WAP) projects to achieve the reduction to deficits is  
17 retiming of excess flows through groundwater recharge. The Program’s Cottonwood Ranch  
18 (CWR) complex near Overton, NE has been selected as a priority location for implementation of  
19 a broad-scale groundwater recharge (BSR) project. Water will be delivered to the CWR complex  
20 from the Central Nebraska Public Power and Irrigation District’s (CNPPID) Phelps County Canal.  
21 A series of conveyance structures, berms and/or small dams will be used to create and deliver  
22 water to ponds that will function as recharge cells and wetland roosting habitat for the  
23 endangered whooping crane. The purpose of this effort is to provide engineering services to  
24 support preliminary and final design, and bid phase and construction phase services for the  
25 CWR BSR (Project).  
26

27 The infiltration analyses and groundwater modeling are inter-related. The scope and budget  
28 presented below assumes that the EDO will be responsible for these analyses. The potential  
29 variability of the soils and geology across the project area will be considered in locating soil  
30 sampling and infiltration test sites. These locations will be coordinated with the EDO to provide  
31 information useful in assessments of initial and long-term infiltration rates for input into the  
32 GW modeling to be done by the EDO. The results of the GW modeling to be performed by the  
33 EDO, including the potential for mounding, could affect the layout of the cells and the details of  
34 the berm and/or dam designs. With the EDO performing the groundwater modeling and  
35 infiltration analyses, it is assumed that the EDO will assume all responsibility for the  
36 performance of the project in terms of recharge rates, timing of flows back to the river,  
37 potential for long-term mounding, other hydrologic and physical effects and assignment of  
38 reductions to shortages to target flows. Optional field work to support the EDO’s groundwater  
39 modeling work is presented at the end of this Scope of Work.  
40



## 41 **TASK SERIES 100 – PROJECT SCOPING MEETING AND SITE VISIT**

42 **Objective** Transfer all necessary information from the EDO to the Consultant and have both  
43 parties agree on a clear path towards successful project completion.

### 44 **Activities**

#### 45 **Task 110 Project Scoping Meeting and Site Visit**

- 46 • Prepare and present project work plan including draft scope, fee, and  
47 schedule.
- 48 • Attend Project scoping meeting and site visit.
- 49 • Modify draft scope, fee, and schedule as necessary and mutually agreeable  
50 based on Scoping Meeting discussion.

#### 51 **Task 120 Data Collection and Review**

- 52 • Review existing Program information, as well as other publically available  
53 information, and determine data gaps and requirements.
- 54 • Miller and Associates to perform site topographic survey as necessary to  
55 determine flow line elevations of swales and ground profiles along proposed  
56 alignments to inform the design.

### 57 58 **Deliverables**

- 59 • Detailed project work plan comprised of a final scope, schedule and budget.

### 60 **Meetings**

- 61 • Combined scoping meeting and site visit.

### 62 **Key Understandings**

- 63 • HDR Team will attend a project kickoff meeting at the EDO office in Kearney,  
64 Nebraska. Three Team Members from HDR will attend: Project Manager,  
65 Project Engineer, and Construction Administrator.
- 66 • Background information and information that has been specifically  
67 developed for preparing the current concepts for the Project will be provided  
68 by the EDO and the Consultant will be able to rely on the accuracy of the  
69 information without independent verification and will not need to collect  
70 additional information from other sources except as specifically identified in  
71 the tasks below.
- 72 • Available water quality, field investigation, and soils and construction  
73 material properties information does not require additional lab testing and is



appropriate for use in developing preliminary and final designs. If found inadequate, additional water and soil samples will be provided by the Program, or the costs and effort will be provided as additional service.

- Flow line topographic survey to assist in determining embankment maximum height for dam safety permit requirements. It is assumed that two days of survey is required.

## **Information/Services**

### **Provided by Program**

- Meeting scheduling and coordination.
- Collection and organization of existing information including:
  - Geologic and soils mapping; location, scope and results of previous field investigations including boring types and locations and infiltration and percolation tests; and laboratory testing reports
  - Topographic data including LiDAR;
  - Water quality data of supply water; and,
  - Time series information on water delivery flow rates.

## **TASK SERIES 200 – PROJECT MANAGEMENT AND MEETINGS**

**Objective** Conduct general project management tasks consisting of a development and execution of project management, quality control and safety plans; monthly invoicing; monthly progress reports; project close out activities and other administrative activities. Manage the Project meetings and communication between the EDO such that the project moves forward effectively.

### **Activities**

- Prepare meeting materials (presentations, handouts, and meeting summaries).
- Attend and participate in Project meetings, Program Advisory Committee meetings, and Governance Committee meetings.
- Participate in periodic updates via phone call.

### **Deliverables**

- Meeting agenda, materials, and notes.
- Monthly invoices and progress reports.

### **Meetings**



- 108 • Monthly Project meetings
- 109 • Technical advisory meetings
- 110 • Governance Committee meetings

## 111 **Key Understandings**

- 112 • Progress meetings will be held with EDO staff. It is anticipated that fourteen
- 113 (14) meetings will be held via phone/web meeting.
- 114 • Two (2) presentations will be made to each of the Program Advisory
- 115 Committees (Kearney and/or Ogallala). One (1) presentation for the
- 116 preliminary designs of each alternative, and one (1) presentation for the final
- 117 design of the selected alternative.
- 118 • Two (2) presentations will be made to the Governance Committee meeting
- 119 (location and date TBD). One (1) presentation for the preliminary designs of
- 120 each alternative, and one (1) presentation for the final design of the selected
- 121 alternative.
- 122 • Project will be complete December, 2018.

## 123 **Information/Services**

### 124 **Provided by Program**

- 125 • Meeting scheduling and coordination.

126

## 127 **TASK SERIES 300 – ENGINEERING DESIGN AND COST ESTIMATING**

- 128 **Objective** Develop preliminary designs and opinions of probable construction costs for the
- 129 two alternatives and a final design and opinion of probable construction cost for
- 130 the selected alternative.

### 131 **Activities**

#### 132 **Task 310 Field Test**

- 133 • Based on review of background information provided by EDO in Task 120,
- 134 prepare field investigation plan to include field permeability test locations.
- 135 • Review and interpret results of field permeability tests, and incorporate into
- 136 Land and Vegetation plan, and inform preliminary design.

#### 137 **Task 320 Land and Vegetation Management Plans**

- 138 • Evaluate land and vegetation management practices to maximize and
- 139 maintain infiltration potential, based on review of existing data and Tasks
- 140 310 and 330.

## Task 330

### Geotechnical Analysis

- Conduct subsurface geotechnical investigation and conduct geotechnical engineering analyses for the earthen embankment alternatives and foundation soils. It is intended that the geotechnical design elements will be advanced to approximately the 90 percent design level. It is intended that this geotechnical investigation will be adequate to support the preliminary and the final design of the berm and dam alternatives.
  - Task 330.1 Data Collection and Review. Acquire, review, and interpret publicly available geotechnical data from adjacent roadway projects and from Soil Survey maps prepared by the Natural Resource Conservation Survey (NRCS).
  - Task 330.2 Subsurface Investigation Plan. Conduct a geotechnical investigation to evaluate the subsurface conditions within the project area that will cover alternatives for berms or dams as well as the borrow areas for the embankments. Prepare an investigation plan showing the location of the borings and test pits and describing a laboratory testing program assigning tests to specific samples. The lab testing program is anticipated to include:
    - Atterberg Limits (silts and clays, per ASTM D 4318). A total of 30 tests are assumed.
    - Grain size analyses (sieves with hydrometer on sands, silts, and clays per ASTM D 422). A total of 30 tests are assumed.
    - Moisture Content/Dry Density tests (tube samples, per ASTM D 2166, ASTM D 7263). A total of 60 moisture and 40 dry density tests are assumed.
    - Unconfined Compressive Strength tests (tube samples, per ASTM D 2166). A total of 8 tests are assumed.
    - Consolidation tests (tube samples, per ASTM D 2435). A total of 4 tests are assumed.
    - Pin-hole dispersion tests. A total of 4 tests are assumed.
  - Task 330.3 Subsurface Investigation Exploration. Mid States to conduct field exploration and sampling, perform the laboratory tests and prepare geotechnical data report. Geotechnical data report includes boring and test pit logs and laboratory test data. The field investigation to include soil borings and sampling with the Standard Penetration test drive sampler for granular soils and push sampler for cohesive soils. Cone penetration testing (CPT) may be performed as a means to define very thin lenses of sand or soft clay that may be



present beneath the berms or dams that may pose underseepage and stability issues. Up to 8 test pits will be excavated to evaluate near-surface soils conditions and the soil profile to support Consultant's recommendations on cell management to maintain infiltration rates and for the EDO's use in simulating infiltration and ground water flow. Miller and Associates will survey the location and the ground surface elevation of the test pit and borings (pre- and then post-drilling).

- A total of 36 boreholes anticipated to the following count and depth: 20 boreholes advanced to 20-ft depth, 14 boreholes advanced to 30-ft depth; and 2 boreholes advanced to 40-ft depth.
- Task 330.4 Preliminary Geotechnical Design and Analysis. Preliminary geotechnical design will be performed and applied for each alternative. The design includes the following tasks:
  - Review and interpret field and lab data.
  - Prepare geologic cross-sections
  - Assign lab testing to substantiate field classifications of soils
  - Develop design parameters for shear strength, permeability and compressibility
  - Select design foundation sections for analyses and shear strengths
  - Select trial embankment sections
  - Perform slope stability analyses for end of construction, rapid drawdown and steady seepage cases
  - Perform embankment foundation seepage analyses (EDO to perform cell infiltration and groundwater flow analyses)
  - Perform settlement analyses along the centerline and transverse to the earth embankments:

The analyses will be performed in accordance with NRCS methodology and design criteria.

- Task 330.5 Final Geotechnical Design and Analysis. Following completion of the preliminary geotechnical analyses and the selection of the alternative, final design will be performed. The final design tasks includes establishing the configuration of the final embankment section (upstream and downstream side slopes, crest width assuming homogenous sections without complicated internal zoning and filter and drain features), and foundation preparation that may be required



217 for stability, underseepage and settlement for a final embankment  
 218 section that meets the stability criteria.  
 219 ○ Task 330.6 Geotechnical Investigation and Evaluation Documentation.  
 220 Following the completion of the above tasks, prepare a geotechnical  
 221 evaluation report documenting the results of the field explorations,  
 222 lab testing program and the final geotechnical and design.

- 223
- 224 **Task 340 Hydrologic and Hydraulic Analysis**
- 225 • Perform hydrologic and hydraulic analysis to:
- 226 ○ Determine type, size, and location of water control structures; and,
- 227 ○ Conduct a breach analysis to determine population at risk and Risk
- 228 Indexes for Alternate #1 and Alternate #2.
- 229 • Prepare a letter summary of findings and present to Nebraska DNR Dam
- 230 Safety for review and comment.
- 231 • Coordinate with CNPPID on delivery pipe configuration, operation, and
- 232 location.
- 233 • Perform floodplain analysis to determine existing and proposed conditions in
- 234 support of floodplain development permit application.

- 235 **Task 350 Preliminary Design**
- 236 • Develop preliminary design, approximate quantities, and opinion of probable
- 237 construction costs of Alternative #1 and Alternative #2.
- 238 • Prepare a memorandum describing the preliminary design of Alternative #1
- 239 and Alternative #2 including the Engineer's opinion of probable construction
- 240 costs.
- 241 • Embankments annotated as Berm 5 and Berm 6 in Alternative #1 have the
- 242 same general alignment as the embankments annotated as Berm 3 in
- 243 Alternative #2. Preliminary and final design of these berm sized
- 244 embankments will be conducted to accommodate a potential fall 2017
- 245 construction schedule, contingent on the status of permitting activities. In
- 246 addition, the designs will also accommodate potential conversion from
- 247 berms to small dam embankments if directed by EDO.

- 248
- 249 **Task 360 Final Design**
- 250 • Advance the alternative selected by EDO and incorporate review comments
- 251 into final design.
- 252 • Prepare a memorandum describing the final design including the Engineer's
- 253 opinion of probable construction costs (OPCCs).

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**Deliverables**

- Preliminary design technical memorandum presenting quantities and OPCC for preliminary designs.
- Draft and Final Geotechnical Investigation and Design Reports
- Final design technical memorandum presenting design and quantity/cost estimates of the selected alternative.

**Meetings**

- See Task Series 200.

**Key Understandings**

- As directed by EDO, embankments labeled as Berm 9 and Berm 10 (Alternative #1) and Berm 6 and Berm 7 (Alternative #2) will be removed from the preliminary and final design.
- The hydraulic analysis will be performed to develop control structure sizes, in conjunction with grade work to obtain depths for suitable habitat. HEC-RAS 5.0.3 will be used to perform the hydraulic analysis.
- The hydraulic analysis for floodplain permitting will be based on the latest one dimensional model of the Platte River to be provided by the EDO. This model is considered the best available information.
- Hydrologic analyses for Alternative #1 will be based on NRCS 24-hour duration design storms for 10-, 25-, 50-, and 100-year average recurrence intervals to evaluate performance and for evaluation of county road structures. Hydraulic analyses for Alternative #2 will include the above design storms as well as principal spillway and auxiliary spillway precipitation amounts and durations required for evaluation of low hazard potential dams.
- Runoff from frequently occurring precipitation events (more frequent than 10-year average recurrence interval) is assumed to be conveyed in the county road ditches around the site and is not included in storm routing through the detention cells of the Project.
- Field exploration and lab testing methods will be performed in accordance with current ASTM procedures and level of practice appropriate for low-hazard impoundments.
- It is assumed that the field exploration and lab testing programs will be adequate to complete the preliminary design of each alternative and for the final design of the selected alternative.

- 289 • MidStates, as a subconsultant to HDR, will conduct field investigation and
- 290 laboratory testing programs.
- 291 • Fee estimate is based on: 1) a total of approximately 880 feet (and up to 100
- 292 feet of contingency) of borings drilled and 150 feet of cone penetrometer
- 293 tests, and 2) up to 8 shallow test pits.
- 294 • Miller and Associates, as a subconsultant to HDR, will survey the pre- and
- 295 post locations of the bore hole locations.
- 296 • Geotechnical investigation and final design will be completed to
- 297 approximately to a 90 percent level.
- 298 • The preliminary and final designs will be presented in the form of a design
- 299 memo.
- 300 • Preliminary designs for Alternative #1 and Alternative #2 will be prepared
- 301 using aerials, topographic data gathered from LiDAR and ground surveys, and
- 302 geotechnical investigation and hydrologic and hydraulic assessment results.
- 303 • An OPCC will be developed for each preliminary design using bid tabulations
- 304 from recent similar projects in the area and other sources.
- 305 • An evaluation matrix will be used to determine a recommended alternative
- 306 based on metrics chosen to be reviewed with, and selected by, the EDO.
- 307 • The preliminary design memorandum and recommendation will be
- 308 presented to the EDO, advisory committee and the Governance Committee
- 309 for consideration. Comments and other input received will be incorporated
- 310 into the final design.
- 311 • It is assumed that the water control structures will be manually operated.
- 312

### 313 **Information/Services**

#### 314 **Provided by Program**

- 315 • Provide existing information, coordinate, and review designs.

### 316 **TASK SERIES 400 – PERMITTING**

317 **Objective** Obtain construction permits and clearances typically obtained by the owner  
 318 through its design consultant prior to commencement of construction with a  
 319 preliminary list of potential permits that the construction contractor will be  
 320 required to obtain.

### 321 **Activities**

#### 322 **Task 410 Program Coordination**

- 323 • Develop comprehensive project permit plan that addresses permits needed,
- 324 sequencings and scheduling of submittals, associated fees, and anticipated



timeframes for permit authorizations. The permit plan will include Section 404 Permitting and integration with overall project design and construction schedule.

- Coordinate with EDO on status of permit development and submittals.

#### **Task 420 Permit Development and Submission**

- Develop required permits for submission. The following permit submittals are anticipated:
  - NDNR Permit to Impound Water;
  - NDNR Permit for Recharge Water;
  - NDNR Permit to Appropriate Water for Induced Groundwater Recharge;
  - Phelps County Floodplain Development Permit;
  - NDEQ NPDES Construction Storm Water Permit requirements.
- Requirements for the NDNR permit to appropriate water for induced groundwater recharge include:
  - Prepare and submit “Petition to the DNR for Leave to File or Consider an Application for a New Surface Water Appropriation Within a Moratorium or Stay Area” to the DNR.
  - Prepare and submit “Application for a Permit to Appropriate Water” to the DNR.
  - Prepare one “Narrative on Public Interest Benefit”.
  - Prepare associated maps in coordination with the Program.
  - Determine divertible flow excess in conjunction with the Program. Analysis will draw upon “Evaluation of Historic Platte River Streamflow in Excess of State Protected Flows and Target Flows – Supplement to December 2010 Report” prepared by HDR in March 2013.
- Phelps County Floodplain Development Permit Requirements
  - Determine existing condition water surface elevation for the one-percent annual chance exceedance flood.
  - Determine the full build out condition water surface elevation for the one-percent annual chance exceedance flood.
  - Evaluate if proposed condition is within Phelps County floodplain permit requirements, and determine mitigation strategies if necessary.



362 **Task 430 Agency Coordination**

- 363
- Coordinate with federal, state and local agencies and authorities on necessary permit submittals
- 364
- Response to comments on permit submittals
- 365

366

367 **Deliverables**

- 368
- Permits and clearances needed for project construction.

369 **Meetings**

- 370
- See Task Series 200.

371 **Key Understandings**

- 372
- For the purpose of permitting scope and effort, both effort for dams and berms are considered.
- 373
- Agency coordination with NDNR is assumed to be limited to 16 hours of Senior Water Resource Engineer effort
- 374
- Section 404 Permitting and related Section 401 Water Quality Certification is addressed under a separate scope of work.
- 375
- Two mitigation alternatives will be evaluated if necessary to meet floodplain development permit requirements.
- 376
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381 **Information/Services**

382 **Provided by Program**

- 383
- Any fees associated with permit submittals.
- 384
- Coordination with HDR staff.

385 **TASK SERIES 500 – BID PACKAGE DEVELOPMENT AND BID LETTING**

386 **Objective** Develop bid package for the Project

387 **Activities**

388 **Task 510 Final Design Documents**

- 389
- Prepare Final Design documents (plans and specifications) suitable for obtaining bids from contractors for construction of the Project.
- 390
- Prepare an operation and maintenance manual (O&M) for the water control operations of the Project.
- 391
- 392

393



- 394 **Task 520** **Bid Phase Services**
- 395
- 396
- 397
- 398
- Prepare bid advertisement documents for publication, address questions from perspective bidders, participate in the pre-bid meeting and bid opening, evaluate the bids, prepare recommended action for consideration by the EDO, and negotiate a contract for construction services.

- 399
- 400 **Deliverables**
- 401
- 402
- Bid package for construction services.
  - O&M Manual.

- 403 **Meetings**
- 404
- See Task Series 200.

- 405 **Key Understandings**
- 406
- 407
- 408
- 409
- 410
- 411
- 412
- Final Design documents will serve as the basis for supporting documentation for submittal with Permit Applications.
  - Program is responsible plan room submittal, advertising in paper, and printing hard copies as required.
  - O&M manual will be developed based on past Bureau of Reclamation (BOR) manuals for similar projects.

- 413 **Information/Services**
- 414 **Provided by Program**
- 415
- 416
- 417
- Provide input and assistance.
  - Modified EJCDC documents.
  - Example BOR O&M manuals for similar project.

## 418 **TASK SERIES 600 – CONSTRUCTION ADMINISTRATION**

- 419 **Objective** Monitor contractor and document work so that it is consistent with the final
- 420 design and technical specifications of the CWR BSR project.

- 421 **Activities**
- 422 **Task 610** **Construction Observation and Quality Assurance**
- 423
- 424
- Construction observation and quality assurance, review of construction contractor payment applications and coordinating with EDO staff.

425



- 426 **Task 620** **Quality Assurance**
- 427 • Provide construction quality assurance services to assist EDO in determining
- 428 compliance with contract documents.
- 429 **Task 630** **Construction Observation Reports**
- 430 • Prepare weekly construction reports including photographic documentation.
- 431 **Task 640** **Monthly Pay Request Review**
- 432 • Review the monthly pay requests and provide recommendations regarding
- 433 payment.
- 434
- 435 **Deliverables**
- 436 • Weekly construction reports and progress update memos.
- 437 • Monthly recommendations regarding contractor payments.
- 438 **Meetings**
- 439 • See Task Series 200.
- 440 **Key Understandings**
- 441 • HDR Team will have a qualified construction observer on site as necessary to
- 442 document construction compliance and progress.
- 443 • The duration and timing of the construction observation will be determined
- 444 in cooperation with the EDO office. However, it is anticipated that full-time
- 445 observation will be required for critical items such as construction of the
- 446 water level control structures and earth berms and periodically for less
- 447 critical items that do not require continuous observation or for which
- 448 compliance can be determined after the work is performed (such as fence
- 449 removal or fence construction and seeding and mulching).
- 450 ~~• It is assumed construction activities for earthwork and construction of water~~
- 451 ~~level control structures will occur concurrently.~~
- 452 • The Project will be constructed from October 2018 through May, 2018.
- 453 • The contractor will have limited operation times during the crane migration
- 454 season.
- 455 • Resident will be on site full time approximately 45 days, and part time (2
- 456 hours/day) approximately 95 days.
- 457 •
- 458 ~~• The Project will be constructed in phases. Phase I will include construction of~~
- 459 ~~Berm 5 and Berm 6 (Alternative #1) and Berm 2 and Berm 3 (Alternative #2);~~

~~Phase II will consist of the remainder of the complex west of I RD; and Phase III will consist of the portion of the complex east of I RD.~~

- ~~• Project duration of Phase I is assumed to be four (4) weeks, with seven (7) days full time resident and thirteen (13) days part time resident (2 hours/day). Project duration of Phase II is assumed to be 6 weeks, with ten (10) days full time resident and twenty (20) days part time resident (2 hours/day). Project duration of Phase III is assumed to be 6 weeks, with ten (10) days full time resident and twenty (20) days part time resident (2 hours/day).~~

## Information/Services Provided by Program

- All surveying during or after will be provided by the Program. If survey is required from the HDR Team, it will be provided as additional service.
- All groundwater level monitoring (including monitoring well installation, if any) and the associated analysis will be performed by the Program.
- Coordinate with HDR Team to incorporate potential design changes based on monitoring and analysis.
- Design changes during construction would be provided as an additional service.

## SUPPLEMENTARY INVESTIGATIONS TO SUPPORT INFILTRATION ASSESSMENTS AND GROUNDWATER MODELING FOR THE EDO

### Task 710 Field Test Soil Permeability Testing and Ground Water Level Monitoring

- The purpose of this task is to collect field data on soil permeability and seasonal ground water levels to obtain information to estimate infiltration capacity of the site. This information will assist in designing the recharge facility to optimize infiltration capacity.
- Develop brief work plan describing locations and methods for field testing including test pits, soil sample collections and ground water monitoring well installation.
- Mobilize backhoe or small trackhoe to excavate up to 80 test pits to a depth of 8 to 10 feet over the 400 acres of proposed inundation area. Log the soil profile according to the Unified Soil Classification (UCS) system and note the depth to ground water if present. Collect two representative samples from the soil; one of the upper organic soil layer and a second from the vadose



zone and a third from the bottom of the test pit. Submit soil samples to a soils laboratory for grain-size evaluations using the screening and hydrometer methods (ASTM D6913 - 04e1 and D7928 - 16e1 Methods). Calculate the estimated hydraulic conductivity and saturated infiltration rate using appropriate empirical formulas.

- Install eight ground water monitoring wells to identify the depth of ground water. It is assumed that ground water monitoring wells will be installed to a maximum depth of 50 feet and ground water will be encountered between 20 to 40 feet below ground surface. Ground water monitoring wells will be installed with a track mounted hollow-stem auger drilling rig. Soil samples will be collected continuously during drilling and logged according to the USCS system. A 2-inch diameter PVC monitoring well will be installed in the borehole with a 10-ft length screen and up to 40 ft long screen. The borehole annulus will be grouted with bentonite and a cement seal will be placed at the ground surface. All other aspects of well construction will follow the State of Nebraska standards for monitoring wells. A metal above-ground protector will be placed at the ground surface. The depth to ground water will be measured using an electronic probe and the top of casing elevation will be measured using a high-performance GPS unit to an accuracy of plus or minus 1 feet. Ground water level electronic recording instruments will be placed in the wells to record ground water fluctuations on an hourly basis.
- Install one surface stage recorder along the Platte River adjacent to the proposed infiltration location and install a water level recording electronic pressure transducer. The purpose of this is to collect seasonal river stage levels to compare river stage and ground water fluctuations and determine effects of high river stage on ground water levels.
- After two months of data collection, download the ground water and surface water level instruments and prepare graphs showing the recorded water levels. Prepare a ground water potentiometric surface map showing the depth to ground water and the ground water elevation and the ground water flow direction over the site.
- Develop a Technical Memorandum documenting the results of the field soil permeability testing and ground level monitoring. Estimate the soil saturated infiltration rates. Provide recommendations on locations with higher and lower infiltration rates for consideration in the design of the recharge basins.

**Task 720      Develop Approach to Optimize Recharge Operations and Management to Meet Multi-Objective Goals**

- Identify the key recharge goals and land-use and wildlife needs. Identify recharge quantity goals, vegetation requirements, wildlife needs, water quality considerations and other requirements needed for success of the project.
- Develop an approach and specific recommendations for design and operation of the recharge basins to meet these requirements. Specific items that may be addressed include:
  - Evaluate vegetation management practices to maximize and maintain infiltration potential.
  - Identify inundation periods and levels needed to support wildlife habitat goals.
  - Identify any water quality requirements for both surface water and ground water.
  - Develop recommendations for maintenance of infiltration rates in soils including wetting/drying cycles, recharge periods, and ground water mounding. This will be developed as appropriate to support multi-objective uses of the recharge project.
- Prepare a brief Technical Memorandum that presents the results of the items above.



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**ATTACHMENT B:**  
**ORIGINAL AND MODIFIED BUDGET AND FEE SCHEDULE**

PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM COTTONWOOD RANCH BROAD-SCALE RECHARGE FEE ESTIMATE - MOD 1 DRAFT																	
TASKS		Labor									Expenses				Subconsultants (Miller and Associates / Geotech)	Est. Total Cost	
		Project Manager	Sr WR Engineer/ QC	Project Engineer	Sr Geotech. Engineer/ Hydrogeo	Geotech. Engineer/ Hydrogeo	Envrion. Scientist	Technical Support	Clerical	Total Hours	Total Labor Cost	Printing	Travel	Misc.			Total Expenses
TASK SERIES 100 – PROJECT SCOPING MEETING AND SITE VISIT																	
Task 110	Project Scoping Meeting and Site Visit	12		12						24	\$4,429		\$300		\$300		\$4,729
Task 120	Review Existing Information	8	2	8	16					34	\$7,117				\$0		\$7,117
Estimated Task Hours Subtotal		20	2	20	16	0	0	0	0	58							
Estimated Task Cost Subtotal		\$4,589	\$502	\$2,792	\$3,662	\$0	\$0	\$0	\$0		\$11,546	\$0	\$300	\$0	\$300	\$0	\$11,846
TASK SERIES 200 – PROJECT MANAGEMENT AND MEETINGS																	
Task 210	Project Management	80	14		8		14			116	\$25,754	\$50		\$50	\$100		\$25,854
Task 220	Project Meetings	80	62							142	\$33,928	\$150	\$1,800		\$1,950		\$35,878
Estimated Task Hours Subtotal		160	76	0	8	0	14	0	0	258							
Estimated Task Cost Subtotal		\$36,715	\$19,086	\$0	\$1,831	\$0	\$2,049	\$0	\$0		\$59,682	\$200	\$1,800	\$50	\$2,050	\$0	\$61,732
TASK SERIES 300 – ENGINEERING DESIGN AND COST																	
Task 310	Develop Field Test and Review Results	6	8		16			8		38	\$7,852		\$300		\$300	\$6,000	\$14,152
Task 320	Land and Vegetation Management Plans	6	8		4	40	12	8		78	\$10,972		\$150		\$150		\$11,122
Task 330	Geotechnical Analysis	6	8		60	160		8		242	\$34,363		\$150		\$150	\$39,500	\$74,013
Task 340	Hydraulic Analysis	6	20	140				24		190	\$28,356		\$150	\$50	\$200		\$28,556
Task 350	Preliminary Design	6	20	140	20	12	36	72	16	322	\$45,927	\$100			\$100		\$46,027
Task 360	Final Design	6	20	80	4	4	2	40	4	160	\$23,624	\$100			\$100		\$23,724
Estimated Task Hours Subtotal		36	84	360	104	216	50	160	20	1,030							
Estimated Task Cost Subtotal		\$8,261	\$21,095	\$50,257	\$23,804	\$22,193	\$7,319	\$16,079	\$2,084		\$151,093	\$200	\$750	\$50	\$1,000	\$45,500	\$197,593
TASK SERIES 400 – PERMITTING																	
Task 410	Program Coordination	4	8				24			36	\$6,440		\$150		\$150		\$6,590
Task 420	Permit Development and Submission	2	28	80			2			112	\$18,952	\$100			\$100		\$19,052
Task 430	Agency Coordination	2	16				8			26	\$5,648		\$150		\$150		\$5,798
Estimated Task Hours Subtotal		8	52	80	0	0	34	0	0	174							
Estimated Task Cost Subtotal		\$1,836	\$13,059	\$11,168	\$0	\$0	\$4,977	\$0	\$0		\$31,040	\$100	\$300	\$0	\$400	\$0	\$31,440
TASK SERIES 500 – BID PACKAGE DEVELOPMENT AND BID LETTING																	
Task 510	Final Design Documents	4	28	150	14		4	172	24	396	\$52,466	\$50			\$50		\$52,516
Task 520	Bid Phase Services	2	24						4	30	\$6,903				\$0	\$5,000	\$11,903
Estimated Task Hours Subtotal		6	52	150	14	0	4	172	28	426							
Estimated Task Cost Subtotal		\$1,377	\$13,059	\$20,941	\$3,204	\$0	\$586	\$17,285	\$2,917		\$59,369	\$50	\$0	\$0	\$50	\$5,000	\$64,419
TASK SERIES 600 – CONSTRUCTION ADMINISTRATION																	
Task 610	Construction Observation and Quality Assurance	4	84		68				28	184	\$40,495		\$1,600		\$1,600	\$85,000	\$127,095
Task 620	Quality Assurance	4	56		32					92	\$22,306		\$525		\$525		\$22,831
Task 630	Weekly Construction Observation Reports	4	28						28	60	\$10,867				\$0		\$10,867
Task 640	Monthly Pay Request Review	4	28						14	46	\$9,408				\$0		\$9,408
Estimated Task Hours Subtotal		16	196	0	100	0	0	0	70	382							
Estimated Task Cost Subtotal		\$3,671	\$49,222	\$0	\$22,889	\$0	\$0	\$0	\$7,293		\$83,075	\$0	\$2,125	\$0	\$2,125	\$85,000	\$170,200
TOTAL HOURS		246	462	610	242	216	102	332	118	2,328							
TOTAL COST		\$ 56,449	\$ 116,024	\$ 85,158	\$ 55,391	\$ 22,193	\$ 14,931	\$ 33,365	\$ 12,293		\$395,805	\$550	\$5,275	\$100	\$5,925	\$135,500	\$537,230

PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM  
COTTONWOOD RANCH BROAD-SCALE RECHARGE  
FEE ESTIMATE

TASKS		Labor									Expenses				Subconsultants (Miller and Associates / Geotech)	Est. Total Cost	
		Project Manager	Sr WR Engineer/ QC	Project Engineer	Sr Geotech. Engineer/ Hydrogeo	Geotech. Engineer/ Hydrogeo	Envrion. Scientist	Technical Support	Clerical	Total Hours	Total Labor Cost	Printing	Travel	Misc.			Total Expenses
TASK SERIES 100 – PROJECT SCOPING MEETING AND SITE VISIT																	
Task 110	Project Scoping Meeting and Site Visit	12		12						24	\$4,429		\$300		\$300		\$4,729
Task 120	Review Existing Information	8	2	8	16					34	\$7,117				\$0		\$7,117
Estimated Task Hours Subtotal		20	2	20	16	0	0	0	0	58							
Estimated Task Cost Subtotal		\$4,589	\$502	\$2,792	\$3,662	\$0	\$0	\$0	\$0		\$11,546	\$0	\$300	\$0	\$300	\$0	\$11,846
TASK SERIES 200 – PROJECT MANAGEMENT AND MEETINGS																	
Task 210	Project Management	80	14		8		14			116	\$25,754	\$50		\$50	\$100		\$25,854
Task 220	Project Meetings	80	62							142	\$33,928	\$150	\$1,800		\$1,950		\$35,878
Estimated Task Hours Subtotal		160	76	0	8	0	14	0	0	258							
Estimated Task Cost Subtotal		\$36,715	\$19,086	\$0	\$1,831	\$0	\$2,049	\$0	\$0		\$59,682	\$200	\$1,800	\$50	\$2,050	\$0	\$61,732
TASK SERIES 300 – ENGINEERING DESIGN AND COST																	
Task 310	Develop Field Test and Review Results	6	8		16			8		38	\$7,852		\$300		\$300	\$6,000	\$14,152
Task 320	Land and Vegetation Management Plans	6	8		4	40	12	8		78	\$10,972		\$150		\$150		\$11,122
Task 330	Geotechnical Analysis	6	8		60	160		8		242	\$34,363		\$150		\$150	\$39,500	\$74,013
Task 340	Hydraulic Analysis	6	20	140				24		190	\$28,356		\$150	\$50	\$200		\$28,556
Task 350	Preliminary Design	6	20	140	20	12	36	72	16	322	\$45,927	\$100			\$100		\$46,027
Task 360	Final Design	6	20	80	4	4	2	40	4	160	\$23,624	\$100			\$100		\$23,724
Estimated Task Hours Subtotal		36	84	360	104	216	50	160	20	1,030							
Estimated Task Cost Subtotal		\$8,261	\$21,095	\$50,257	\$23,804	\$22,193	\$7,319	\$16,079	\$2,084		\$151,093	\$200	\$750	\$50	\$1,000	\$45,500	\$197,593
TASK SERIES 400 – PERMITTING																	
Task 410	Program Coordination	4	8				24			36	\$6,440		\$150		\$150		\$6,590
Task 420	Permit Development and Submission	2	28	80			2			112	\$18,952	\$100			\$100		\$19,052
Task 430	Agency Coordination	2	16				8			26	\$5,648		\$150		\$150		\$5,798
Estimated Task Hours Subtotal		8	52	80	0	0	34	0	0	174							
Estimated Task Cost Subtotal		\$1,836	\$13,059	\$11,168	\$0	\$0	\$4,977	\$0	\$0		\$31,040	\$100	\$300	\$0	\$400	\$0	\$31,440
TASK SERIES 500 – BID PACKAGE DEVELOPMENT AND BID LETTING																	
Task 510	Final Design Documents	4	28	150	14		4	172	24	396	\$52,466	\$50			\$50		\$52,516
Task 520	Bid Phase Services	2	24						4	30	\$6,903				\$0	\$5,000	\$11,903
Estimated Task Hours Subtotal		6	52	150	14	0	4	172	28	426							
Estimated Task Cost Subtotal		\$1,377	\$13,059	\$20,941	\$3,204	\$0	\$586	\$17,285	\$2,917		\$59,369	\$50	\$0	\$0	\$50	\$5,000	\$64,419
TASK SERIES 600 – CONSTRUCTION ADMINISTRATION																	
Task 610	Construction Observation and Quality Assurance	2	48						16	66	\$14,180		\$900		\$900	\$62,000	\$77,080
Task 620	Quality Assurance	2	32							34	\$8,495		\$300		\$300		\$8,795
Task 630	Weekly Construction Observation Reports	2	16						16	34	\$6,144				\$0		\$6,144
Task 640	Monthly Pay Request Review	2	16						8	26	\$5,311				\$0		\$5,311
Estimated Task Hours Subtotal		8	112	0	0	0	0	0	40	160							
Estimated Task Cost Subtotal		\$1,836	\$28,127	\$0	\$0	\$0	\$0	\$0	\$4,167		\$34,130	\$0	\$1,200	\$0	\$1,200	\$62,000	\$97,330
TOTAL HOURS		238	378	610	142	216	102	332	88	2,106							
TOTAL COST		\$ 54,614	\$ 94,929	\$ 85,158	\$ 32,502	\$ 22,193	\$ 14,931	\$ 33,365	\$ 9,168		\$346,859	\$550	\$4,350	\$100	\$5,000	\$112,500	\$464,359



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**PRRIP – ED OFFICE FINAL**

**10/25/2018**

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**ATTACHMENT C:**

EXISTING CONTRACT DATED 3/29/2017



HDR Engineering, Inc.  
8404 Indian Hills Dr.  
Omaha, NE 68114  
TIN# 47-0680568  
DUNS # 18-729-4624

Nebraska Community Foundation  
PO Box 83107  
Lincoln, NE 68501-3107  
FEIN 47-0769903

## PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM

### Contract between Nebraska Community Foundation, Platte River Recovery Implementation Program, and HDR Engineering, Inc.

#### P17-003: Cottonwood Ranch Broad-Scale Recharge Engineering Design and Construction Administration Services

**1. Parties.** This Contract is made and entered into by and between Nebraska Community Foundation (“**Foundation**”) of Lincoln, Nebraska, representing all signatories to the Platte River Recovery Implementation Program (“**Program**”) and HDR Engineering, Inc. (“**Consultant**”). The following persons are authorized to represent the parties through this Contract: Diane Wilson of the Foundation, Dr. Jerry Kenny of the **Program**; and Patrick Engelbert of the **Consultant**.

**2. Purpose of Contract.** The purpose of this Contract is to allow the **Foundation**, acting as the fiscal agent for the Governance Committee (GC) of the **Program**, to retain the services of the **Consultant** to render certain technical or professional services hereinafter described in connection with an undertaking to be financed by the **Program**, and to delegate the Executive Director’s Office (“**ED Office**”) through its Executive Director or his designee the authority to administer this Contract.

**3. Term of Contract and Required Approvals.** This Contract is effective when all parties have executed it. The term of this Contract is from 3/24/2017 through 12/31/2018. The services to be performed under this Contract will commence upon signing of this Contract. All services shall be completed during this term.

If the **Consultant** has been delayed and as a result will be unable, in the opinion of the **Program**, to complete performance fully and satisfactorily within this Contract period, the **Consultant** may be granted an extension of time, upon submission of evidence of the causes of delay satisfactory to the **Program**. An extension of the contract term must be in writing, signed by both Parties in order to be valid.

**4. Payment.**

**A. Reimbursement of Expenses.** The **Program** agrees to pay the **Consultant** an amount based on the approved hourly rate and reimbursable expenses price schedules depicted in Exhibit B, attached to and incorporated by reference as part of this Contract, for the services described in Exhibit A, attached to and incorporated by reference as part of this Contract. Total payment under this Contract shall not exceed four hundred and sixty four thousand three hundred and fifty nine dollars (\$464,359).

**B. Project Budget.** The Project budget for each task and subtask is included in Exhibit B. The amounts for each task are estimates only, but are not to be exceeded unless authorized in writing by the **Program**. The Contract total amount is controlling, and is a ceiling price that Consultant exceeds at its own risk. Payment shall be made directly to the **Consultant**. The **Consultant** shall maintain hourly records of time worked by its personnel to support any audits the **Program** may require. Billing reports shall be submitted no more often than monthly for activities and costs accrued since the last billing report. A brief project progress report summarizing project activities in the billing period must be submitted with each billing.

**C. Billing Procedures.** The **Consultant** shall send billing reports for services performed for the various tasks outlined in Exhibit A to the **ED Office** (address included below). The Program's Executive Director, upon receiving the billing report, will review the bill and advance the invoice to the Bureau of Reclamation who will advise the **Foundation** of approval. The **Foundation** will make payment of these funds directly to the **Consultant** within 30 days of receiving notice of approval. Payments are due within 60 days after the billing date.

**Billing Point of Contact (Program):**

Dr. Jerry F. Kenny, Executive Director  
Platte River Recovery Implementation Program  
Headwaters Corporation  
4111 4<sup>th</sup> Avenue, Suite 6  
Kearney, Nebraska 68845  
Phone: (308) 237-5728  
Fax: (308) 237-4651  
Email: [kennyj@headwaterscorp.com](mailto:kennyj@headwaterscorp.com)



#### **D. Withholding of Payment.**

(i) When the **Program** has reasonable grounds for believing that the **Consultant** will be unable to perform this Contract fully and satisfactorily within the time fixed for performance, then the **Program** may withhold payment of such portion of any amount otherwise due and payable to the **Consultant** reasonably deemed appropriate to protect the **Program** against such loss. These amounts may be withheld until the cause for the withholding is cured to the **Program's** satisfaction or this Contract is terminated pursuant to Section 8.U. Any amount so withheld may be retained by the **Program** for such period as it may deem advisable to protect the **Program** against any loss. This provision is intended solely for the benefit of the **Program** and no person shall have any right against the **Program** or **Foundation** by reason of the **Program's** failure or refusal to withhold monies. No interest shall be payable by the **Program** or **Foundation** on any amounts withheld under this provision. This provision is not intended to limit or in any way prejudice any other right of the **Program** or **Foundation**.

(ii) If a work element has not been received by the **Program** by the dates established in Exhibit A, the **Program** may withhold all payments beginning with the month following that date until such deficiency has been corrected.

**F. Final Completion and Payment.** The final payment shall be made upon acceptance of the final report, receipt of the final billing, and if applicable, execution of the final contract amendment documenting the final contract amount.

#### **5. Responsibilities of Consultant.**

**A. Scope of Services.** The **Consultant** shall perform the specific services required under this Contract in a satisfactory and proper manner as outlined in Exhibit A. If there is any conflict between this Contract and the provisions of the specific requirements of Exhibit A, the specific requirements shall prevail.

**B. Personnel.** All of the services required hereunder will be performed by the **Consultant** or under its supervision, and all personnel engaged in the work shall be fully qualified and shall be authorized, licensed, or permitted under state law to perform such services, if state law requires such authorization, license, or permit.

#### **C. Subcontracts.**

(i) **Approval Required for Subcontracts.** Any subcontractors and outside associates or consultants required by the **Consultant** in connection with the services, work performed or rendered under this Contract will be limited to such individuals or firms as were specifically identified in the proposal and agreed to during negotiations or are specifically authorized by the **Program** during the performance of this Contract. The **Consultant** shall submit a list of the proposed subcontractors, associates or consultants; the scope and extent of each subcontract; and the

dollar amount of each subcontract prior to Contract execution to the **Program** for approval. During the performance of the Contract, substitutions in or additions to such subcontracts, associates, or consultants will be subject to the prior approval of the **Program**. The **Program** approval of subcontractors will not relieve the **Consultant** from any responsibilities outlined in this Contract. The **Consultant** shall be responsible for the actions of the subcontractors, associates, and subconsultants.

(ii) **Billings for Subcontractors.** Billings for subcontractor, associates or subconsultants services will not include any mark up. The subcontract costs will be billed to the **Program** at the actual costs as billed to the **Consultant**. Subcontract costs will be documented by attaching subcontractor billings to the **Consultant's** billing submittals.

(iii) **Copies of Subcontracts.** The **Consultant** shall provide to the **Program** copies of each subcontractor contract immediately following execution with the subcontractor. All subcontracts between the **Consultant** and a subcontractor shall refer to and conform to the terms of this Contract. However, nothing in this Contract shall be construed as making the **Program** a party to any subcontract entered between the **Consultant** and a subcontractor.

(iv) **Contracts for Subcontractors.** All subcontracts that Consultant enters into shall include any applicable provisions and certifications required by 2 CFR Part 200, including Appendix II thereto, and any other federal, state or local laws or regulations.

(v) **Debarment and Suspension.** Consultant shall not enter into subcontracts with any entity or individual that is suspended, debarred or otherwise excluded from participation in the transaction covered by this Contract.

**D. Requests from the Program.** The **Consultant** shall be responsible and responsive to the **Program** and the **ED Office** in their requests and requirements related to this Contract.

**E. Presentation of Data.** The **Consultant** shall select and analyze all data in a systematic and meaningful manner so as to contribute directly to meeting the objectives of the Project, and shall present this information clearly and concisely, in a professional and workmanlike manner.

**F. Draft of Final Report.** The **Consultant** shall present to the **Program** a draft of the final report covering all work elements of the Project including maps, charts, conclusions and recommendations prior to the publication of any final report and no later than the date specified in Exhibit A. The **Program** will respond with written comments to the **Consultant** as soon as possible. The **Consultant** will address the comments of the **Program** in the final report.

**G. Project Completion Report.** A final project completion report in the form described in Exhibit A shall be submitted to the **Program** by the date specified in Exhibit A.

**H. Reports, Maps, Plans, Models and Documents.** One (1) copy of maps, plans, worksheets, logs, field notes or other documents prepared under this Contract, and one (1) copy of each unpublished report prepared under this Contract shall be submitted to the **Program**. If the **Consultant** writes or uses a computer program or spreadsheet as a part of this project, the **Consultant** shall submit to the **Program** for approval all proposed program names and data formats prior to beginning work on that task. All data shall be submitted to **Program** in written and digital forms with the final report. Digital media shall be labeled by the **Consultant** to provide sufficient detail to access the information on the media. All user manuals providing complete documentation of computer programs developed under this Contract shall be submitted by the **Consultant** to **Program**. The user manual shall also specify the source code language and the type of computer equipment necessary to operate the program(s). Any programs or computer software generated as a part of this Contract shall be the sole property of the **Program**.

**I. Inspection and Acceptance.** All deliverables furnished by the Consultant shall be subject to rigorous review by the ED Office prior to acceptance.

**6. Responsibilities of the Program.**

**A. Designated Representative.** The Executive Director of the **Program** shall act as the **Program's** administrative representative with respect to the **Consultant's** service to be performed under this Contract and shall have complete authority to transmit instructions, receive information, and interpret and define the **Program's** policies and decisions with respect to services covered by this Contract.

**B. Data to be Furnished to the Consultant.** All information, data, reports, and maps as are available to the **Program** and necessary for the carrying out of the Scope of Services set forth herein shall be furnished to the **Consultant** without charge and the **ED Office** shall cooperate with the Consultant in every way possible in the carrying out of the project.

**C. Review Reports.** The **ED Office** shall examine all studies, reports, sketches, opinions of construction costs, and other documents presented by the **Consultant** to the **Program** and shall promptly render in writing the **Program's** decisions pertaining thereto within the time periods specified in Exhibit A.

**D. Provide Criteria.** The **ED Office** shall provide all criteria and full information regarding its requirements for the project.

**7. Special Provisions.**

**A. No Finder's Fees.** No finder's fee, employment agency fee, or other such fee related to the procurement of this Contract shall be paid by either party.

**B. Publication.** It is understood that the results of this work may be available to the **Consultant** for publication and use in connection with related work. Use of this work for publication and related work by the **Consultant** must be conducted with full disclosure to and coordination with the **Program's** Technical Point of Contact.

**C. Publicity.** Any publicity or media contact associated with the **Consultant's** services and the result of those services provided under this Contract shall be the sole responsibility of the **Program**. Media requests of the **Consultant** should be directed to the Director of Outreach and Operations in the **ED Office**.

**D. Monitor Activities.** The **Program** shall have the right to monitor all Contract-related activities of the **Consultant** and all subcontractors. This shall include, but not be limited to, the right to make site inspections at any time, to bring experts and consultants on site to examine or evaluate completed work or work in progress, and to observe all **Consultant** personnel in every phase of performance of Contract-related work.

**E. Kickbacks.** The **Consultant** certifies and warrants that no gratuities, kickbacks or contingency fees were paid in connection with this Contract, nor were any fees, commissions, gifts, or other considerations made contingent upon the award of this Contract. If the **Consultant** breaches or violates this warranty, the **Program** may, at its discretion, terminate this Contract without liability to the **Program**, or deduct from the Contract price or consideration, or otherwise recover, the full amount of any commission, percentage, brokerage, or contingency fee.

**F. Debarment and Suspension.** Consultant certifies by signing this Contract that neither Consultant nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded by any federal department or agency from participation in the transaction covered by this Contract.

**G. Anti-Lobbying.** Consultant makes the representations set forth on the Certification Regarding Lobbying, which is attached as Exhibit C and incorporated by reference as part of this Contract. Consultant shall execute such Certification at the time of executing this Contract.

**H. Office Space, Equipment, and Supplies.** The **Consultant** will supply its own office space, equipment, and supplies.

## **8. General Provisions.**

**A. Amendments.** Any changes, modifications, revisions or amendments to this Contract which are mutually agreed upon by the parties to this Contract shall be incorporated by written instrument, executed and signed by all Parties to this Contract.

**B. Applicable Law/Venue.** The construction, interpretation and enforcement of

this Contract shall be governed by the laws of the State of Nebraska. The Courts of the State of Nebraska shall have jurisdiction over this Contract and the parties.

**C. Assignment/Contract Not Used as Collateral.** Neither party shall assign or otherwise transfer any of the rights or delegate any of the duties set forth in this Contract without the prior written consent of the other party. The **Consultant** shall not use this Contract, or any portion thereof, as collateral for any financial obligation, without the prior written permission of the **Program**.

**D. Audit/Access to Records.** The **Program**, the **Foundation** and any of their representatives shall have access to any books, documents, papers, and records of the Consultant which are pertinent to this Contract. The **Consultant** shall, immediately upon receiving written instruction from the **Program** or the **Foundation**, provide to the Foundation or any governmental entity, independent auditor, accountant, or accounting firm, all books, documents, papers and records of the **Consultant** which are pertinent to this Contract. The **Consultant** shall cooperate fully with the **Foundation** or any such governmental entity, independent auditor, accountant, or accounting firm, during the entire course of any audit authorized by or required of the **Program**.

**E. Availability of Funds.** Each payment obligation of the **Program** is conditioned upon the availability of funds and continuation of the Platte River Recovery Implementation Program. If funds are not allocated and available for the continuance of the services performed by the **Consultant**, the contract may be terminated by the **Program** at the end of the period for which the funds are available. The **Program** shall notify the **Consultant** at the earliest possible time of the services which will or may be affected by a shortage of funds. No penalty shall accrue to the **Program** in the event this provision is exercised, and the **Program** shall not be obligated or liable for any future payments due or for any damages as a result of termination under this section. This provision shall not be construed to permit the **Program** to terminate this Contract to acquire similar services from another party.

**F. Award of Related Contracts.** The **Program** may undertake or award supplemental or successor contracts for work related to this Contract. The **Consultant** shall cooperate fully with other contractors and the **Program** in all such cases.

**G. Certificate of Good Standing.** **Consultant** shall provide Certificate of Good Standing verifying compliance with the unemployment insurance and workers' compensation programs prior to performing work under this Contract.

**H. Compliance with Law.** The **Consultant** shall keep informed of and comply with all applicable federal, state and local laws and regulations in the performance of this Contract.

**I. Confidentiality of Information.** All documents, data compilations, reports, computer programs, photographs, and any other work provided to or produced by the **Consultant** in the performance of this Contract shall be kept confidential by the **Consultant** unless written

permission is granted by the Program for its release.

## **J. Conflicts of Interest**

(i) Consultant shall not engage in providing consultation to or representation of clients, agencies or firms which may constitute a conflict of interest giving rise to a disadvantage to the Program or a disclosure which would adversely affect the interests of the Program. Consultant shall notify the Program of any potential or actual conflicts of interest arising during the course of the Consultant's performance under this Contract. This Contract may be terminated in the event a conflict of interest arises. Termination of the Contract will be subject to a mutual settlement of accounts. In the event the contract is terminated under this provision, the Consultant shall take steps to insure that the file, evidence, evaluation and data are provided to the Program or its designee. This does not prohibit or affect the Consultant's ability to engage in consultations, evaluations or representation under agreement with other agencies, firms, facilities, or attorneys so long as no conflict exists.

(ii) A conflict of interest warranting termination of the Contract includes, but is not necessarily limited to, representing a client in a adversarial proceeding against the Platte River Recovery Implementation Program, its signatories, boards, commissions, or the Foundation, or initiating suits in equity including injunctions, declaratory judgments, writs of prohibition or *quo warranto*.

**K. Entirety of Contract.** This Contract, consisting of twelve (12) pages, Exhibit A, consisting of seventeen (17) pages, Exhibit B, consisting of one (1) page, and Exhibit C, consisting of one (1) page, represents the entire and integrated Contract between the parties and supersedes all prior negotiations, representations, and agreements, whether written or oral.

**L. Force Majeure.** Neither party shall be liable for failure to perform under this Contract if such failure to perform arises out of causes beyond the control and without the fault or negligence of the nonperforming party. Such causes may include, but are not limited to, acts of God or the public enemy, fires, floods, epidemics, quarantine restrictions, freight embargoes, and unusually severe weather. This provision shall become effective only if the party failing to perform immediately notifies the other party of the extent and nature of the problem, limits delay in performance to that required by the event, and takes all reasonable steps to minimize delays. This provision shall not be effective unless the failure to perform is beyond the control and without the fault or negligence of the nonperforming party.

**M. Indemnification.** The Consultant shall indemnify and hold harmless the Foundation, the Program, the ED Office, and their officers, agents, employees, successors and assignees from any and all claims, lawsuits, losses and liability to the extent caused by or arising out of Consultant's failure to perform any of Consultant's duties and obligations hereunder or in connection with the negligent performance of Consultant's duties or obligations, including but not limited to any claims, lawsuits, losses or liability arising out of Consultant's malpractice. The



obligations of this paragraph shall survive termination of this Contract.

**N. Independent Contractor.** The **Consultant** shall function as an independent contractor for the purposes of this Contract, and shall not be considered an employee of the **Program, Foundation, or ED Office** for any purpose. The **Consultant** shall assume sole responsibility for any debts or liabilities that may be incurred by the **Consultant** in fulfilling the terms of this Contract, and shall be solely responsible for the payment of all federal, state and local taxes which may accrue because of this **Contract**. Nothing in this Contract shall be interpreted as authorizing the **Consultant** or its agents and/or employees to act as an agent or representative for or on behalf of the **Foundation** or the **Program**, or to incur any obligation of any kind on the behalf of the **Foundation** or the **Program**. The **Consultant** agrees that no health/hospitalization benefits, workers' compensation and/or similar benefits available to **Foundation, Program, or ED Office** employees will inure to the benefit of the **Consultant** or the **Consultant's** agents and/or employees as a result of this Contract.

**O. Notices.** All notices arising out of, or from, the provisions of this contract shall be in writing and given to the parties at the address provided under this Contract, either by regular mail, facsimile, e-mail, or delivery in person. Notice is effective upon delivery.

**P. Notice and Approval of Proposed Sale or Transfer of the Consultant.** The **Consultant** shall provide the **Program** with the earliest possible advance notice of any proposed sale or transfer or any proposed merger or consolidation of the assets of the **Consultant**. Such notice shall be provided in accordance with the notice provision of this Contract.

**Q. Ownership of Documents/Work Product/Materials.** All documents, reports, records, field notes, data, samples, specimens, and materials of any kind resulting from performance of this Contract are at all times the property of the **Program**.

**R. Patent or Copyright Protection.** The **Consultant** recognizes that certain proprietary matters or techniques may be subject to patent, trademark, copyright, license or other similar restrictions, and warrants that no work performed by the **Consultant** or its subcontractors will violate any such restriction.

**S. Proof of Insurance.** The **Consultant** shall not commence work under this Contract until the **Consultant** has obtained the following insurance coverages and provided the corresponding certificates of insurance:

(i) **Commercial General Liability Insurance.** **Consultant** shall provide coverage during the entire term of the Contract against claims arising out of bodily injury, death, damage to or destruction of the property of others, including loss of use thereof, and including products and completed operations in an amount not less than Two Hundred Fifty Thousand Dollars (\$250,000.00) per claimant and Five Hundred Thousand Dollars (\$500,000.00) per occurrence.

(ii) **Business Automobile Liability Insurance.** **Consultant** shall maintain,

during the entire term of the Contract, automobile liability insurance in an amount not less than Five Hundred Thousand Dollars (\$500,000.00) per occurrence. Coverage will include bodily injury and property damage covering all vehicles, including hired vehicles, owned and non-owned vehicles.

(iii) **Workers' Compensation and Employers' Liability Insurance.** The **Consultant** shall provide proof of workers' compensation coverage. Consultant's insurance shall include "Stop Gap" coverage in an amount not less than Five Hundred Thousand Dollars (\$500,000.00) per employee for each accident and disease.

(iv) **Professional Liability or Errors and Omissions Liability Insurance.** The **Consultant** shall provide proof of professional liability insurance or errors and omissions liability insurance to protect the **Foundation** and **Program** from any and all claims arising from the **Consultant's** alleged or real professional errors, omissions or mistakes in the performance of professional duties in an amount not less than One Million Dollars (\$1,000,000.00).

**T. Taxes.** The **Consultant** shall pay all taxes and other such amounts required by federal, state and local law, including but not limited to federal and state income taxes, social security taxes, workers' compensation, unemployment insurance and sales taxes.

**U. Termination of Contract.** This Contract may be terminated, without cause, by the **Program** upon fifteen (15) days written notice. This Contract may be terminated immediately for cause if the **Consultant** fails to perform in accordance with the terms of this Contract. In the event of a termination, **Program** shall pay Contractor for all reasonable work performed up to the effective date of the termination.

**V. Third Party Beneficiary Rights.** The parties do not intend to create in any other individual or entity the status of third party beneficiary, and this Contract shall not be construed so as to create such status. The rights, duties and obligations contained in this Contract shall operate only between the parties to this Contract, and shall inure solely to the benefit of the parties to this Contract. The provisions of this Contract are intended only to assist the parties in determining and performing their obligations under this Contract.

**W. Time is of the Essence.** Time is of the essence in all provisions of the Contract.

**X. Titles Not Controlling.** Titles of paragraphs are for reference only, and shall not be used to construe the language in this Contract.

**Y. Waiver.** The waiver of any breach of any term or condition in this Contract shall not be deemed a waiver of any prior or subsequent breach.



## **9. Contacts.**

### **Administrative Point of Contact (Foundation):**

Diane M. Wilson  
Manager of Public/Private Partnerships  
Nebraska Community Foundation  
PO Box 83107  
Lincoln, Nebraska 68501-3107  
Phone: (402) 323-7330  
Fax: (402) 323-7349  
Email: [dwilson@nebcommfound.org](mailto:dwilson@nebcommfound.org)

### **Technical Point of Contact (Program):**

Kevin Werbylo, Water Resources Engineer  
Platte River Recovery Implementation Prog.  
Headwaters Corporation  
405 Urban Street, Suite 401  
Lakewood, CO 80120  
Phone: (720) 524-6115  
Fax: (308) 237-4651  
Email: [werbylok@headwaterscorp.com](mailto:werbylok@headwaterscorp.com)

### **Administrative Point of Contact (Consultant):**

Patrick Engelbert, Water Resources Section  
Manager  
HDR Engineering, Inc.  
8404 Indian Hills Dr  
Omaha, NE 68845  
Phone: (402) 399-1000  
Fax: (402) 548-5015  
Email: [Pat.Engelbert@hdrinc.com](mailto:Pat.Engelbert@hdrinc.com)

### **Admin. Point of Contact (Program):**

Dr. Jerry F. Kenny, Executive Director  
Platte River Recovery Implementation Prog.  
Headwaters Corporation  
4111 4<sup>th</sup> Avenue, Suite 6  
Kearney, Nebraska 68845  
Phone: (308) 237-5728  
Fax: (308) 237-4651  
Email: [kennyj@headwaterscorp.com](mailto:kennyj@headwaterscorp.com)

### **Media Point of Contact (Program):**

Dr. Bridget Barron, Director of Outreach  
Platte River Recovery Implementation Prog.  
Headwaters Corporation  
4111 4<sup>th</sup> Avenue, Suite 6  
Kearney, Nebraska 68845  
Phone: (308) 237-5728  
Fax: (308) 237-4651  
Email: [barronb@headwaterscorp.com](mailto:barronb@headwaterscorp.com)


### **Technical Point of Contact (Consultant):**

Patrick Engelbert, Water Resources Section  
Manager  
HDR Engineering, Inc.  
8404 Indian Hills Dr  
Omaha, NE 68845  
Phone: (402) 399-1000  
Fax: (402) 548-5015  
Email: [Pat.Engelbert@hdrinc.com](mailto:Pat.Engelbert@hdrinc.com)

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**10. Signatures.** By signing this Contract, the undersigned certify that they have read and understood it, that they have the authority to sign it, and that their respective Party agrees to be bound by the terms of the Contract.

**NEBRASKA COMMUNITY FOUNDATION**

  
\_\_\_\_\_  
Diane M. Wilson  
Manager of Public/Private Partnerships

4/11/2017  
Date

**HDR ENGINEERING, INC.**

  
\_\_\_\_\_  
Matthew B. Tondl  
Sr. Vice President

4/8/17  
Date

**EXHIBIT “A”  
SCOPE OF SERVICES**



# Scope of Work

## Platte River Recovery Implementation Program

### Cottonwood Ranch Broad-Scale Recharge

#### Engineering Design and Construction Administration Services

#### BACKGROUND AND BASIS FOR PROPOSAL

The Platte River Recovery Implementation Program (Program) was initiated on January 1, 2007 between Nebraska, Wyoming, Colorado, and the Department of the Interior to address endangered species issues in the central and lower Platte River basin. The species considered in the Program, referred to as “target species”, are the whooping crane, piping plover, interior least tern, and pallid sturgeon. A key milestone for the First Increment of the Program (2007 to 2019) is reducing deficits to United States Fish and Wildlife Service (USFWS) target flows by an average of 130,000 – 150,000 acre-ft annually.

One of the Program’s Water Action Plan (WAP) projects to achieve the reduction to deficits is retiming of excess flows through groundwater recharge. The Program’s Cottonwood Ranch (CWR) complex near Overton, NE has been selected as a priority location for implementation of a broad-scale groundwater recharge (BSR) project. Water will be delivered to the CWR complex from the Central Nebraska Public Power and Irrigation District’s (CNPPID) Phelps County Canal. A series of conveyance structures, berms and/or small dams will be used to create and deliver water to ponds that will function as recharge cells and wetland roosting habitat for the endangered whooping crane. The purpose of this effort is to provide engineering services to support preliminary and final design, and bid phase and construction phase services for the CWR BSR (Project).

The infiltration analyses and groundwater modeling are inter-related. The scope and budget presented below assumes that the EDO will be responsible for these analyses. The potential variability of the soils and geology across the project area will be considered in locating soil sampling and infiltration test sites. These locations will be coordinated with the EDO to provide information useful in assessments of initial and long-term infiltration rates for input into the GW modeling to be done by the EDO. The results of the GW modeling to be performed by the EDO, including the potential for mounding, could affect the layout of the cells and the details of the berm and/or dam designs. With the EDO performing the groundwater modeling and infiltration analyses, it is assumed that the EDO will assume all responsibility for the performance of the project in terms of recharge rates, timing of flows back to the river, potential for long-term mounding, other hydrologic and physical effects and assignment of reductions to shortages to target flows. Optional field work to support the EDO’s groundwater modeling work is presented at the end of this Scope of Work.

#### TASK SERIES 100 – PROJECT SCOPING MEETING AND SITE VISIT

**Objective**      Transfer all necessary information from the EDO to the Consultant and have both parties agree on a clear path towards successful project completion.



## **Activities**

### **Task 110 Project Scoping Meeting and Site Visit**

- Prepare and present project work plan including draft scope, fee, and schedule.
- Attend Project scoping meeting and site visit.
- Modify draft scope, fee, and schedule as necessary and mutually agreeable based on Scoping Meeting discussion.

### **Task 120 Data Collection and Review**

- Review existing Program information, as well as other publically available information, and determine data gaps and requirements.
- Miller and Associates to perform site topographic survey as necessary to determine flow line elevations of swales and ground profiles along proposed alignments to inform the design.

## **Deliverables**

- Detailed project work plan comprised of a final scope, schedule and budget.

## **Meetings**

- Combined scoping meeting and site visit.

## **Key Understandings**

- HDR Team will attend a project kickoff meeting at the EDO office in Kearney, Nebraska. Three Team Members from HDR will attend: Project Manager, Project Engineer, and Construction Administrator.
- Background information and information that has been specifically developed for preparing the current concepts for the Project will be provided by the EDO and the Consultant will be able to rely on the accuracy of the information without independent verification and will not need to collect additional information from other sources except as specifically identified in the tasks below.
- Available water quality, field investigation, and soils and construction material properties information does not require additional lab testing and is appropriate for use in developing preliminary and final designs. If found inadequate, additional water and soil samples will be provided by the Program, or the costs and effort will be provided as additional service.



- Flow line topographic survey to assist in determining embankment maximum height for dam safety permit requirements. It is assumed that two days of survey is required.

## **Information/Services**

### **Provided by Program**

- Meeting scheduling and coordination.
- Collection and organization of existing information including:
  - Geologic and soils mapping; location, scope and results of previous field investigations including boring types and locations and infiltration and percolation tests; and laboratory testing reports
  - Topographic data including LiDAR;
  - Water quality data of supply water; and,
  - Time series information on water delivery flow rates.

## **TASK SERIES 200 – PROJECT MANAGEMENT AND MEETINGS**

**Objective** Conduct general project management tasks consisting of a development and execution of project management, quality control and safety plans; monthly invoicing; monthly progress reports; project close out activities and other administrative activities. Manage the Project meetings and communication between the EDO such that the project moves forward effectively.

### **Activities**

- Prepare meeting materials (presentations, handouts, and meeting summaries).
- Attend and participate in Project meetings, Program Advisory Committee meetings, and Governance Committee meetings.
- Participate in periodic updates via phone call.

### **Deliverables**

- Meeting agenda, materials, and notes.
- Monthly invoices and progress reports.

### **Meetings**

- Monthly Project meetings
- Technical advisory meetings
- Governance Committee meetings

## Key Understandings

- Progress meetings will be held with EDO staff. It is anticipated that fourteen (14) meetings will be held via phone/web meeting.
- Two (2) presentations will be made to each of the Program Advisory Committees (Kearney and/or Ogallala). One (1) presentation for the preliminary designs of each alternative, and one (1) presentation for the final design of the selected alternative.
- Two (2) presentations will be made to the Governance Committee meeting (location and date TBD). One (1) presentation for the preliminary designs of each alternative, and one (1) presentation for the final design of the selected alternative.
- Project will be complete December, 2018.

## Information/Services

### Provided by Program

- Meeting scheduling and coordination.

## TASK SERIES 300 – ENGINEERING DESIGN AND COST ESTIMATING

**Objective** Develop preliminary designs and opinions of probable construction costs for the two alternatives and a final design and opinion of probable construction cost for the selected alternative.

### Activities

#### Task 310 Field Test

- Based on review of background information provided by EDO in Task 120, prepare field investigation plan to include field permeability test locations.
- Review and interpret results of field permeability tests, and incorporate into Land and Vegetation plan, and inform preliminary design.

#### Task 320 Land and Vegetation Management Plans

- Evaluate land and vegetation management practices to maximize and maintain infiltration potential, based on review of existing data and Tasks 310 and 330.

#### Task 330 Geotechnical Analysis

- Conduct subsurface geotechnical investigation and conduct geotechnical engineering analyses for the earthen embankment alternatives and foundation soils. It is intended that the geotechnical design elements will be



advanced to approximately the 90 percent design level. It is intended that this geotechnical investigation will be adequate to support the preliminary and the final design of the berm and dam alternatives.

- Task 330.1 Data Collection and Review. Acquire, review, and interpret publicly available geotechnical data from adjacent roadway projects and from Soil Survey maps prepared by the Natural Resource Conservation Survey (NRCS).
- Task 330.2 Subsurface Investigation Plan. Conduct a geotechnical investigation to evaluate the subsurface conditions within the project area that will cover alternatives for berms or dams as well as the borrow areas for the embankments. Prepare an investigation plan showing the location of the borings and test pits and describing a laboratory testing program assigning tests to specific samples. The lab testing program is anticipated to include:
  - Atterberg Limits (silts and clays, per ASTM D 4318). A total of 30 tests are assumed.
  - Grain size analyses (sieves with hydrometer on sands, silts, and clays per ASTM D 422). A total of 30 tests are assumed.
  - Moisture Content/Dry Density tests (tube samples, per ASTM D 2166, ASTM D 7263). A total of 60 moisture and 40 dry density tests are assumed.
  - Unconfined Compressive Strength tests (tube samples, per ASTM D 2166). A total of 8 tests are assumed.
  - Consolidation tests (tube samples, per ASTM D 2435). A total of 4 tests are assumed.
  - Pin-hole dispersion tests. A total of 4 tests are assumed.
- Task 330.3 Subsurface Investigation Exploration. Mid States to conduct field exploration and sampling, perform the laboratory tests and prepare geotechnical data report. Geotechnical data report includes boring and test pit logs and laboratory test data. The field investigation to include soil borings and sampling with the Standard Penetration test drive sampler for granular soils and push sampler for cohesive soils. Cone penetration testing (CPT) may be performed as a means to define very thin lenses of sand or soft clay that may be present beneath the berms or dams that may pose underseepage and stability issues. Up to 8 test pits will be excavated to evaluate near-surface soils conditions and the soil profile to support Consultant's recommendations on cell management to maintain infiltration rates





and for the EDO's use in simulating infiltration and ground water flow. Miller and Associates will survey the location and the ground surface elevation of the test pit and borings (pre- and then post-drilling).

- A total of 36 boreholes anticipated to the following count and depth: 20 boreholes advanced to 20-ft depth, 14 boreholes advanced to 30-ft depth; and 2 boreholes advanced to 40-ft depth.

- Task 330.4 Preliminary Geotechnical Design and Analysis. Preliminary geotechnical design will be performed and applied for each alternative. The design includes the following tasks:

- Review and interpret field and lab data.
- Prepare geologic cross-sections
- Assign lab testing to substantiate field classifications of soils
- Develop design parameters for shear strength, permeability and compressibility
- Select design foundation sections for analyses and shear strengths
- Select trial embankment sections
- Perform slope stability analyses for end of construction, rapid drawdown and steady seepage cases
- Perform embankment foundation seepage analyses (EDO to perform cell infiltration and groundwater flow analyses)
- Perform settlement analyses along the centerline and transverse to the earth embankments:

The analyses will be performed in accordance with NRCS methodology and design criteria.

- Task 330.5 Final Geotechnical Design and Analysis. Following completion of the preliminary geotechnical analyses and the selection of the alternative, final design will be performed. The final design tasks includes establishing the configuration of the final embankment section (upstream and downstream side slopes, crest width assuming homogenous sections without complicated internal zoning and filter and drain features), and foundation preparation that may be required for stability, underseepage and settlement for a final embankment section that meets the stability criteria.

- Task 330.6 Geotechnical Investigation and Evaluation Documentation. Following the completion of the above tasks, prepare a geotechnical



evaluation report documenting the results of the field explorations, lab testing program and the final geotechnical and design.

#### **Task 340**

##### **Hydrologic and Hydraulic Analysis**

- Perform hydrologic and hydraulic analysis to:
  - Determine type, size, and location of water control structures; and,
  - Conduct a breach analysis to determine population at risk and Risk Indexes for Alternate #1 and Alternate #2.
- Prepare a letter summary of findings and present to Nebraska DNR Dam Safety for review and comment.
- Coordinate with CNPPID on delivery pipe configuration, operation, and location.
- Perform floodplain analysis to determine existing and proposed conditions in support of floodplain development permit application.

#### **Task 350**

##### **Preliminary Design**

- Develop preliminary design, approximate quantities, and opinion of probable construction costs of Alternative #1 and Alternative #2.
- Prepare a memorandum describing the preliminary design of Alternative #1 and Alternative #2 including the Engineer's opinion of probable construction costs.
- Embankments annotated as Berm 5 and Berm 6 in Alternative #1 have the same general alignment as the embankments annotated as Berm 3 in Alternative #2. Preliminary and final design of these berm sized embankments will be conducted to accommodate a potential fall 2017 construction schedule, contingent on the status of permitting activities. In addition, the designs will also accommodate potential conversion from berms to small dam embankments if directed by EDO.

#### **Task 360**

##### **Final Design**

- Advance the alternative selected by EDO and incorporate review comments into final design.
- Prepare a memorandum describing the final design including the Engineer's opinion of probable construction costs (OPCCs).



## **Deliverables**

- Preliminary design technical memorandum presenting quantities and OPCC for preliminary designs.
- Draft and Final Geotechnical Investigation and Design Reports
- Final design technical memorandum presenting design and quantity/cost estimates of the selected alternative.

## **Meetings**

- See Task Series 200.

## **Key Understandings**

- As directed by EDO, embankments labeled as Berm 9 and Berm 10 (Alternative #1) and Berm 6 and Berm 7 (Alternative #2) will be removed from the preliminary and final design.
- The hydraulic analysis will be performed to develop control structure sizes, in conjunction with grade work to obtain depths for suitable habitat. HEC-RAS 5.0.3 will be used to perform the hydraulic analysis.
- The hydraulic analysis for floodplain permitting will be based on the latest one dimensional model of the Platte River to be provided by the EDO. This model is considered the best available information.
- Hydrologic analyses for Alternative #1 will be based on NRCS 24-hour duration design storms for 10-, 25-, 50-, and 100-year average recurrence intervals to evaluate performance and for evaluation of county road structures. Hydraulic analyses for Alternative #2 will include the above design storms as well as principal spillway and auxiliary spillway precipitation amounts and durations required for evaluation of low hazard potential dams.
- Runoff from frequently occurring precipitation events (more frequent than 10-year average recurrence interval) is assumed to be conveyed in the county road ditches around the site and is not included in storm routing through the detention cells of the Project.
- Field exploration and lab testing methods will be performed in accordance with current ASTM procedures and level of practice appropriate for low-hazard impoundments.
- It is assumed that the field exploration and lab testing programs will be adequate to complete the preliminary design of each alternative and for the final design of the selected alternative.



- MidStates, as a subconsultant to HDR, will conduct field investigation and laboratory testing programs.
- Fee estimate is based on: 1) a total of approximately 880 feet (and up to 100 feet of contingency) of borings drilled and 150 feet of cone penetrometer tests, and 2) up to 8 shallow test pits.
- Miller and Associates, as a subconsultant to HDR, will survey the pre- and post locations of the bore hole locations.
- Geotechnical investigation and final design will be completed to approximately to a 90 percent level.
- The preliminary and final designs will be presented in the form of a design memo.
- Preliminary designs for Alternative #1 and Alternative #2 will be prepared using aeriels, topographic data gathered from LiDAR and ground surveys, and geotechnical investigation and hydrologic and hydraulic assessment results.
- An OPCC will be developed for each preliminary design using bid tabulations from recent similar projects in the area and other sources.
- An evaluation matrix will be used to determine a recommended alternative based on metrics chosen to be reviewed with, and selected by, the EDO.
- The preliminary design memorandum and recommendation will be presented to the EDO, advisory committee and the Governance Committee for consideration. Comments and other input received will be incorporated into the final design.
- It is assumed that the water control structures will be manually operated.

#### **Information/Services**

##### **Provided by Program**

- Provide existing information, coordinate, and review designs.

#### **TASK SERIES 400 – PERMITTING**

**Objective** Obtain construction permits and clearances typically obtained by the owner through its design consultant prior to commencement of construction with a preliminary list of potential permits that the construction contractor will be required to obtain.

#### **Activities**

##### **Task 410 Program Coordination**

- Develop comprehensive project permit plan that addresses permits needed, sequencings and scheduling of submittals, associated fees, and anticipated



timeframes for permit authorizations. The permit plan will include Section 404 Permitting and integration with overall project design and construction schedule.

- Coordinate with EDO on status of permit development and submittals.

#### **Task 420 Permit Development and Submission**

- Develop required permits for submission. The following permit submittals are anticipated:
  - NDNR Permit to Impound Water;
  - NDNR Permit for Recharge Water;
  - NDNR Permit to Appropriate Water for Induced Groundwater Recharge;
  - Phelps County Floodplain Development Permit;
  - NDEQ NPDES Construction Storm Water Permit requirements.
- Requirements for the NDNR permit to appropriate water for induced groundwater recharge include:
  - Prepare and submit “Petition to the DNR for Leave to File or Consider an Application for a New Surface Water Appropriation Within a Moratorium or Stay Area” to the DNR.
  - Prepare and submit “Application for a Permit to Appropriate Water” to the DNR.
  - Prepare one “Narrative on Public Interest Benefit”.
  - Prepare associated maps in coordination with the Program.
  - Determine divertible flow excess in conjunction with the Program. Analysis will draw upon “Evaluation of Historic Platte River Streamflow in Excess of State Protected Flows and Target Flows – Supplement to December 2010 Report” prepared by HDR in March 2013.
- Phelps County Floodplain Development Permit Requirements
  - Determine existing condition water surface elevation for the one-percent annual chance exceedance flood.
  - Determine the full build out condition water surface elevation for the one-percent annual chance exceedance flood.
  - Evaluate if proposed condition is within Phelps County floodplain permit requirements, and determine mitigation strategies if necessary.



360 **Task 430 Agency Coordination**

- 361
  - Coordinate with federal, state and local agencies and authorities on

362 necessary permit submittals

363
  - Response to comments on permit submittals

364

365 **Deliverables**

- 366
  - Permits and clearances needed for project construction.

367 **Meetings**

- 368
  - See Task Series 200.

369 **Key Understandings**

- 370
  - For the purpose of permitting scope and effort, both effort for dams and

371 berms are considered.

372
  - Agency coordination with NDNR is assumed to be limited to 16 hours of

373 Senior Water Resource Engineer effort

374
  - Section 404 Permitting and related Section 401 Water Quality

375 Certification is addressed under a separate scope of work.

376
  - Two mitigation alternatives will be evaluated if necessary to meet floodplain

377 development permit requirements.

378

379 **Information/Services**

380 **Provided by Program**

- 381
  - Any fees associated with permit submittals.

382
  - Coordination with HDR staff.

383 **TASK SERIES 500 – BID PACKAGE DEVELOPMENT AND BID LETTING**

384 **Objective** Develop bid package for the Project

385 **Activities**

386 **Task 510 Final Design Documents**

- 387
  - Prepare Final Design documents (plans and specifications) suitable for

388 obtaining bids from contractors for construction of the Project.

389
  - Prepare an operation and maintenance manual (O&M) for the water control

390 operations of the Project.

391



- 392 **Task 520** **Bid Phase Services**
- 393
- 394
- 395
- 396
- Prepare bid advertisement documents for publication, address questions from perspective bidders, participate in the pre-bid meeting and bid opening, evaluate the bids, prepare recommended action for consideration by the EDO, and negotiate a contract for construction services.

- 397
- 398 **Deliverables**
- 399
- 400
- Bid package for construction services.
  - O&M Manual.

- 401 **Meetings**
- 402
- See Task Series 200.

- 403 **Key Understandings**
- 404
- 405
- 406
- 407
- 408
- 409
- 410
- Final Design documents will serve as the basis for supporting documentation for submittal with Permit Applications.
  - Program is responsible plan room submittal, advertising in paper, and printing hard copies as required.
  - O&M manual will be developed based on past Bureau of Reclamation (BOR) manuals for similar projects.

- 411 **Information/Services**
- 412 **Provided by Program**
- 413
- 414
- 415
- Provide input and assistance.
  - Modified EJCDC documents.
  - Example BOR O&M manuals for similar project.

416 **TASK SERIES 600 – CONSTRUCTION ADMINISTRATION**

- 417 **Objective** Monitor contractor and document work so that it is consistent with the final
- 418 design and technical specifications of the CWR BSR project.

419 **Activities**

- 420 **Task 610** **Construction Observation and Quality Assurance**
- 421
- 422
- Construction observation and quality assurance, review of construction contractor payment applications and coordinating with EDO staff.

423



- 424 **Task 620** **Quality Assurance**
- 425 • Provide construction quality assurance services to assist EDO in determining
- 426 compliance with contract documents.
- 427 **Task 630** **Construction Observation Reports**
- 428 • Prepare weekly construction reports including photographic documentation.
- 429 **Task 640** **Monthly Pay Request Review**
- 430 • Review the monthly pay requests and provide recommendations regarding
- 431 payment.
- 432
- 433 **Deliverables**
- 434 • Weekly construction reports and progress update memos.
- 435 • Monthly recommendations regarding contractor payments.
- 436 **Meetings**
- 437 • See Task Series 200.
- 438 **Key Understandings**
- 439 • HDR Team will have a qualified construction observer on site as necessary to
- 440 document construction compliance and progress.
- 441 • The duration and timing of the construction observation will be determined
- 442 in cooperation with the EDO office. However, it is anticipated that full-time
- 443 observation will be required for critical items such as construction of the
- 444 water level control structures and earth berms and periodically for less
- 445 critical items that do not require continuous observation or for which
- 446 compliance can be determined after the work is performed (such as fence
- 447 removal or fence construction and seeding and mulching).
- 448 • It is assumed construction activities for earthwork and construction of water
- 449 level control structures will occur concurrently.
- 450 • The Project will be constructed in phases. Phase I will include construction of
- 451 Berm 5 and Berm 6 (Alternative #1) and Berm and Berm 3 (Alternative #2);
- 452 Phase II will consist of the remainder of the complex west of I RD; and Phase
- 453 III will consist of the portion of the complex east of I RD.
- 454 • Project duration of Phase I is assumed to be four (4) weeks, with seven (7)
- 455 days full time resident and thirteen (13) days part time resident (2
- 456 hours/day). Project duration of Phase II is assumed to be 6 weeks, with ten
- 457 (10) days full time resident and twenty (20) days part time resident (2





hours/day). Project duration of Phase III is assumed to be 6 weeks, with ten (10) days full time resident and twenty (20) days part time resident (2 hours/day).

#### **Information/Services Provided by Program**

- All surveying during or after will be provided by the Program. If survey is required from the HDR Team, it will be provided as additional service.
- All groundwater level monitoring (including monitoring well installation, if any) and the associated analysis will be performed by the Program.
- Coordinate with HDR Team to incorporate potential design changes based on monitoring and analysis.
- Design changes during construction would be provided as an additional service.

### **SUPPLEMENTARY INVESTIGATIONS TO SUPPORT INFILTRATION ASSESSMENTS AND GROUNDWATER MODELING FOR THE EDO**

#### **Task 710 Field Test Soil Permeability Testing and Ground Water Level Monitoring**

- The purpose of this task is to collect field data on soil permeability and seasonal ground water levels to obtain information to estimate infiltration capacity of the site. This information will assist in designing the recharge facility to optimize infiltration capacity.
- Develop brief work plan describing locations and methods for field testing including test pits, soil sample collections and ground water monitoring well installation.
- Mobilize backhoe or small trackhoe to excavate up to 80 test pits to a depth of 8 to 10 feet over the 400 acres of proposed inundation area. Log the soil profile according to the Unified Soil Classification (UCS) system and note the depth to ground water if present. Collect two representative samples from the soil; one of the upper organic soil layer and a second from the vadose zone and a third from the bottom of the test pit. Submit soil samples to a soils laboratory for grain-size evaluations using the screening and hydrometer methods (ASTM D6913 - 04e1 and D7928 - 16e1 Methods). Calculate the estimated hydraulic conductivity and saturated infiltration rate using appropriate empirical formulas.



- Install eight ground water monitoring wells to identify the depth of ground water. It is assumed that ground water monitoring wells will be installed to a maximum depth of 50 feet and ground water will be encountered between 20 to 40 feet below ground surface. Ground water monitoring wells will be installed with a track mounted hollow-stem auger drilling rig. Soil samples will be collected continuously during drilling and logged according to the USCS system. A 2-inch diameter PVC monitoring well will be installed in the borehole with a 10-ft length screen and up to 40 ft long screen. The borehole annulus will be grouted with bentonite and a cement seal will be placed at the ground surface. All other aspects of well construction will follow the State of Nebraska standards for monitoring wells. A metal above-ground protector will be placed at the ground surface. The depth to ground water will be measured using an electronic probe and the top of casing elevation will be measured using a high-performance GPS unit to an accuracy of plus or minus 1 feet. Ground water level electronic recording instruments will be placed in the wells to record ground water fluctuations on an hourly basis.
- Install one surface stage recorder along the Platte River adjacent to the proposed infiltration location and install a water level recording electronic pressure transducer. The purpose of this is to collect seasonal river stage levels to compare river stage and ground water fluctuations and determine effects of high river stage on ground water levels.
- After two months of data collection, download the ground water and surface water level instruments and prepare graphs showing the recorded water levels. Prepare a ground water potentiometric surface map showing the depth to ground water and the ground water elevation and the ground water flow direction over the site.
- Develop a Technical Memorandum documenting the results of the field soil permeability testing and ground level monitoring. Estimate the soil saturated infiltration rates. Provide recommendations on locations with higher and lower infiltration rates for consideration in the design of the recharge basins.

## **Task 720**

### **Develop Approach to Optimize Recharge Operations and Management to Meet Multi-Objective Goals**

- Identify the key recharge goals and land-use and wildlife needs. Identify recharge quantity goals, vegetation requirements, wildlife needs, water



quality considerations and other requirements needed for success of the project.

- Develop an approach and specific recommendations for design and operation of the recharge basins to meet these requirements. Specific items that may be addressed include:
  - Evaluate vegetation management practices to maximize and maintain infiltration potential.
  - Identify inundation periods and levels needed to support wildlife habitat goals.
  - Identify any water quality requirements for both surface water and ground water.
  - Develop recommendations for maintenance of infiltration rates in soils including wetting/drying cycles, recharge periods, and ground water mounding. This will be developed as appropriate to support multi-objective uses of the recharge project.
- Prepare a brief Technical Memorandum that presents the results of the items above.

**EXHIBIT “B”**  
**HOURLY RATE AND REIMBURSABLE EXPENSES**  
**FEE SCHEDULE 2017 – 2018**  
**&**  
**PROJECT BUDGET BY TASK**

HDR Engineering, Inc. Labor Rates			
Name	Title/Responsibility	Office	Billable Rate
<b><u>Project Manager</u></b>			
Engelbert, Pat	Project Engineer	Omaha	\$229.47
<b><u>Senior WR Engineering</u></b>			
Dwyer, Blaine	Senior Water Resources Engineer	Denver	\$350.47
Cambridge, John	Senior Water Resources Engineer	Lincoln	\$175.91
Engel, John	Senior Water Resources Engineer	Omaha	\$227.02
<b><u>Project Engineer</u></b>			
Fox, Amanda	Water Resources Engineer	Lincoln	\$120.26
Schubert, Mike	Water Resources Engineer	Des Moines	\$116.33
McConville, Matt	Water Resources Engineer	Omaha	\$146.59
Meyer, Troy	Civil Engineer	Omaha	\$175.24
<b><u>Sr. Geotech Engineering\Hydrogeologist</u></b>			
Poepsel, Pat	Senior Engineering/Technical	Omaha	\$245.97
Koreny, John	Senior Engineering/Technical	Bellevue, WA	\$211.81
<b><u>Geotech Engineering\Hydrogeologist</u></b>			
Gardels, Brandon	Geotechnical Engineer	Omaha	\$100.19
Rossmann, Nathan	Hydrogeologist	Omaha	\$105.31
<b><u>Environmental Scientist</u></b>			
Pillard, Matt	Senior Engineering/Technical	Omaha	\$183.32
Schnoor, Mehan	Senior Engineering/Technical	Omaha	\$109.43
<b><u>Technical Support</u></b>			
Kozak, Don	CAD	Omaha	\$81.85
Green, Brian	CAD	Omaha	\$147.62
Doll, Michael	CAD	Omaha	\$72.02
<b><u>Clerical</u></b>			
Clifton, Rachel	Billing Clerk	Omaha	\$104.18

HDR Estimated Standard Expenses		
Description	Est. Cost	Unit
Lodging per person	\$120.00	per day
Rental Car	\$75.00	per day
Daily meal allowance per person	\$40.00	per day
Ground Travel	\$0.575	per mile
Printing (B/W, Letter Size)	\$0.05	per sheet
Printing (B/W, 11 x 17 Size)	\$0.20	per sheet
Printing (Color Laser Jet, Letter)	\$0.15	per sheet
Printing (Color Laser Jet, 11")	\$0	per sheet

PLATTE RIVER RECOVERY IMPLEMENTATION PROGRAM  
COTTONWOOD RANCH BROAD-SCALE RECHARGE  
FEE ESTIMATE

TASKS		Labor									Expenses				Subconsultants (Miller and Associates / Geotech)	Est. Total Cost	
		Project Manager	Sr WR Engineer/ QC	Project Engineer	Sr Geotech. Engineer/ Hydrogeo	Geotech. Engineer/ Hydrogeo	Envrion. Scientist	Technical Support	Clerical	Total Hours	Total Labor Cost	Printing	Travel	Misc.			Total Expenses
TASK SERIES 100 – PROJECT SCOPING MEETING AND SITE VISIT																	
Task 110	Project Scoping Meeting and Site Visit	12		12						24	\$4,429		\$300		\$300		\$4,729
Task 120	Review Existing Information	8	2	8	16					34	\$7,117				\$0		\$7,117
Estimated Task Hours Subtotal		20	2	20	16	0	0	0	0	58							
Estimated Task Cost Subtotal		\$4,589	\$502	\$2,792	\$3,662	\$0	\$0	\$0	\$0		\$11,546	\$0	\$300	\$0	\$300	\$0	\$11,846
TASK SERIES 200 – PROJECT MANAGEMENT AND MEETINGS																	
Task 210	Project Management	80	14		8		14			116	\$25,754	\$50		\$50	\$100		\$25,854
Task 220	Project Meetings	80	62							142	\$33,928	\$150	\$1,800		\$1,950		\$35,878
Estimated Task Hours Subtotal		160	76	0	8	0	14	0	0	258							
Estimated Task Cost Subtotal		\$36,715	\$19,086	\$0	\$1,831	\$0	\$2,049	\$0	\$0		\$59,682	\$200	\$1,800	\$50	\$2,050	\$0	\$61,732
TASK SERIES 300 – ENGINEERING DESIGN AND COST																	
Task 310	Develop Field Test and Review Results	6	8		16			8		38	\$7,852		\$300		\$300	\$6,000	\$14,152
Task 320	Land and Vegetation Management Plans	6	8		4	40	12	8		78	\$10,972		\$150		\$150		\$11,122
Task 330	Geotechnical Analysis	6	8		60	160		8		242	\$34,363		\$150		\$150	\$39,500	\$74,013
Task 340	Hydraulic Analysis	6	20	140				24		190	\$28,356		\$150	\$50	\$200		\$28,556
Task 350	Preliminary Design	6	20	140	20	12	36	72	16	322	\$45,927	\$100			\$100		\$46,027
Task 360	Final Design	6	20	80	4	4	2	40	4	160	\$23,624	\$100			\$100		\$23,724
Estimated Task Hours Subtotal		36	84	360	104	216	50	160	20	1,030							
Estimated Task Cost Subtotal		\$8,261	\$21,095	\$50,257	\$23,804	\$22,193	\$7,319	\$16,079	\$2,084		\$151,093	\$200	\$750	\$50	\$1,000	\$45,500	\$197,593
TASK SERIES 400 – PERMITTING																	
Task 410	Program Coordination	4	8				24			36	\$6,440		\$150		\$150		\$6,590
Task 420	Permit Development and Submission	2	28	80			2			112	\$18,952	\$100			\$100		\$19,052
Task 430	Agency Coordination	2	16				8			26	\$5,648		\$150		\$150		\$5,798
Estimated Task Hours Subtotal		8	52	80	0	0	34	0	0	174							
Estimated Task Cost Subtotal		\$1,836	\$13,059	\$11,168	\$0	\$0	\$4,977	\$0	\$0		\$31,040	\$100	\$300	\$0	\$400	\$0	\$31,440
TASK SERIES 500 – BID PACKAGE DEVELOPMENT AND BID LETTING																	
Task 510	Final Design Documents	4	28	150	14		4	172	24	396	\$52,466	\$50			\$50		\$52,516
Task 520	Bid Phase Services	2	24						4	30	\$6,903				\$0	\$5,000	\$11,903
Estimated Task Hours Subtotal		6	52	150	14	0	4	172	28	426							
Estimated Task Cost Subtotal		\$1,377	\$13,059	\$20,941	\$3,204	\$0	\$586	\$17,285	\$2,917		\$59,369	\$50	\$0	\$0	\$50	\$5,000	\$64,419
TASK SERIES 600 – CONSTRUCTION ADMINISTRATION																	
Task 610	Construction Observation and Quality Assurance	2	48						16	66	\$14,180		\$900		\$900	\$62,000	\$77,080
Task 620	Quality Assurance	2	32							34	\$8,495		\$300		\$300		\$8,795
Task 630	Weekly Construction Observation Reports	2	16						16	34	\$6,144				\$0		\$6,144
Task 640	Monthly Pay Request Review	2	16						8	26	\$5,311				\$0		\$5,311
Estimated Task Hours Subtotal		8	112	0	0	0	0	0	40	160							
Estimated Task Cost Subtotal		\$1,836	\$28,127	\$0	\$0	\$0	\$0	\$0	\$4,167		\$34,130	\$0	\$1,200	\$0	\$1,200	\$62,000	\$97,330
TOTAL HOURS		238	378	610	142	216	102	332	88	2,106							
TOTAL COST		\$ 54,614	\$ 94,929	\$ 85,158	\$ 32,502	\$ 22,193	\$ 14,931	\$ 33,365	\$ 9,168		\$346,859	\$550	\$4,350	\$100	\$5,000	\$112,500	\$464,359

**EXHIBIT "C"**  
**Certification Regarding Lobbying**

The undersigned certifies, on behalf of Consultant, that to the best of his or her knowledge and belief:

1. No federal appropriated funds have been paid or will be paid, by or on behalf of Consultant, to any person for influencing or attempting to influence an officer or employee of any federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any federal contract, the making of any federal grant, the making of any federal loan, the entering into of any cooperative agreement, or the extension, continuation, renewal, amendment, or modification of any federal contract, grant, loan, or cooperative agreement.
2. No registrant under the Lobbying Disclosure Act of 1995 has made any lobbying contacts on behalf of the Consultant with respect to the federal grant or cooperative agreement under which the Consultant is receiving monies.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who makes an expenditure prohibited by Section 1 above or who fails to file or amend the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

**HDR Engineering, Inc. ("CONSULTANT")**  
**By: Matthew B. Tondl**

  
\_\_\_\_\_  
[Matthew B. Tondl, Sr. Vice President]

  
\_\_\_\_\_  
Date