In 2016, HDR Engineering, Inc. was awarded a professional services contract for the Preliminary Design (Phase 1) of the Zorinsky Basin No. 2 (ZB2) project for a not to exceed amount of $470,200. Amendment 1 and 2 followed in April and November 2017 for the final design and construction administration as well as additional out of scope items bringing the total contract not to exceed amount to $1,335,860. ZB2 is the last of four planned water quality basins identified through a community planning session in 1999 to protect the water quality of Zorinsky Lake. See attached map. Amendment No. 3 addresses the following items:

- Revised 404 permitting and mitigation design
- Update of construction documents
- Additional survey
- Additional construction contract administration

The revisions proposed to the mitigation plan for Zorinsky Basin 2 are in response to feedback from the adjacent landowner. The mitigation is planned to be moved from the Zorinsky Basin 2 site to an upstream reach at Dam Site 15A, Flanagan Lake. The original Zorinsky Basin 2 mitigation areas would then be sold back to the adjacent landowner with Board approval in the following months. A proposed detailed scope of work and cost estimate for Amendment 3 are attached for review. HDR would provide these additional out of scope items on an hourly basis not to exceed the amount of $107,700.

Management recommends that the Subcommittee recommend to the Board that the General Manager be authorized to execute Amendment No. 3 to the Professional Services Agreement with HDR Engineering, Inc. for the Zorinsky Water Quality Basin Number 2 project in an amount not to exceed $107,700 bringing the total contract not to exceed amount to $1,443,560, subject to changes deemed necessary by the General Manager and approval as to form by District Legal Counsel.
This is **EXHIBIT A1**, consisting of xx pages and Attachments 2 and 3 (xx pages), referred to in and part of the **Agreement between Owner and Engineer for Professional Services** dated April 22, 2016.

**AMENDMENT NO. 3**

**Engineer’s Services**

**PART 1 – BASIC SERVICES**

A1.03  Additional Services for Stream Mitigation and Design

**Zorinsky Water Quality Basin No. 2**
for Papio-Missouri River Natural Resources District
Douglas County, NE

**ENGINEERING PROPOSAL – ADDITIONAL SERVICES FOR STREAM MITIGATION AND DESIGN**

**BACKGROUND AND BASIS OF PROPOSAL**

HDR Engineering, Inc. was selected by the P-MRNRD to provide planning, permitting, preliminary and final design and construction contract administration services for Zorinsky Basin No. 2 (ZB-2). ZB-2 is a proposed water quality basin to be located upstream of Zorinsky Lake on Boxelder Creek located in Douglas County and is located near 204th and F Streets in Omaha, Nebraska.

To more concisely respond to project requirements, a phased approach was proposed. Phase I, which included preliminary design, is completed. Phase II generally included preparing final design documents and providing bidding assistance is completed. Phase III is currently underway for construction contract administration services.

The original design incorporated on-site stream mitigation along a north and south tributary (North and South Fingers). During construction, the P-MRNRD desired to eliminate a portion of the on-site stream mitigation and relocate the stream mitigation at Flanagan Lake (formerly known as Dam Site 15A). This scope of services provides additional services for USACE permitting and coordination, stream mitigation, and associated design activities.

**SCOPE OF SERVICES – ADDITIONAL SERVICES FOR STREAM MITIGATION AND DESIGN**

HDR will perform additional stream mitigation coordination and design. The scope of work modifies the following tasks:

**Phase II Services**

- Task Series 200 – Permitting
- Task Series 300 – General and Site Civil Design
- Task Series 700 – Survey and Right of Way

**Phase III Services**

- Task Series 1000 – Construction Contract Administration Services

The HDR Team proposes to provide the following professional additional services for Phases II and III over an anticipated 5- month project period from the time of authorization.
TASK SERIES 200 PERMITTING

Task Objectives: To coordinate with USACE on revising the approved Mitigation Plan for Zorinsky Basin No. 2 and to develop a stream mitigation plan at Flanagan Lake (formerly known as Dam Site 15A).

HDR Activities: Task 210 Section 404 Permit

210.4 USACE Coordination. Coordinate with USACE on revising approved Mitigation Plan. Address permit modifications to reflect changes in mitigation design. One face-to-face meeting is assumed along with email and/or telephone conversations.

210.5 Wetland Delineation. Investigate the study area for the presence of Clean Water Act jurisdictional waters (including wetlands). Delineate and characterize the type, size, and location of waters of U.S. A formal wetland delineation [in accordance with the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual] shall be provided for areas anticipated for stream mitigation.

210.6 Stream Functional Assessment. Perform a stream functional assessment and potential mitigation development. The Nebraska Stream Condition Assessment Procedure (October 2016) will be used to perform the functional assessment. The post-stream condition assessment from Dam Site 15A will be the pre-existing stream condition for ZB-2 mitigation.

210.7 Stream Mitigation Plan. HDR will coordinate with USACE and NDEQ to incorporate stream channel mitigation concepts at Flanagan Lake. Mitigation plan to follow the USACE’s 12 step process, including the development of a work plan. The concept plans will depict the type, size and location of the mitigation resource and will follow 33 CFR 332.4 (c)(2-14). The development of a conceptual work plan is addressed in Task 350.

210.8 Amendment to Section 404 Permit. Prepare documentation for an amendment to the approved Section 404 permit application describing the stream mitigation.

210.9 Section 401 Water Quality Certification/NDEQ Coordination. Coordinate with NDEQ on an amended Section 401 Water Quality Certification.

Task Deliverables:

- Amendment to Section 404 Permit and 401 Water Quality Certification including a stream mitigation plan.

Key Understandings:

- Field work will be completed by two HDR scientists.
- One (1) coordination meeting with USACE and NDEQ is assumed.
- Preparation of an amendment to the Section 404 permit application to address changes in design. It is anticipated any required permit modifications will not necessitate a public notice.
- No separate submittals are anticipated with NDEQ.
TASK SERIES 300 GENERAL AND SITE CIVIL DESIGN

Task Objective: The objective of this task is the prepare drawings and specifications for the stream mitigation reach.

HDR Activities: Task 350 Stream Mitigation Concept Development. Develop stream mitigation concept plans at Dam Site 15A to offset the loss of stream function (3,073 units) due to the stream impacts of Zorinsky Basin No. 2. Design will incorporate conveyance, habitat, and floodplain interaction elements.

350.2 Existing Conditions Evaluation. Evaluate the cross section and channel profile topographic data, historical imagery, existing hydrologic model and geomorphology. Define locations for rock riffles.

350.3 Constructability Site Visit. Conduct a site visit to confirm constructability of the stream mitigation strategies along the stream reach to provide conveyance, habitat, and floodplain interaction enhancements.

350.4 Preliminary Stream Mitigation Conceptual Design. Conduct a threshold channel design. Determine design flowrates for existing and future land use conditions. Compute the allowable shear stress and identify stream reaches for mitigation. Coordinate with P-MRNRD on the preliminary stream mitigation design concepts.

Task 370 Final Drawings and Specifications. Prepare drawings and specifications for a change order.

370.1 Drawing Preparation. Define typical section, locate stream features, and develop earthwork model for desired stream functional improvements. Develop plan and profile sheets and planting plan, if required.

370.2 Technical Specifications. Provide supplemental specification as required for the design.

370.3 Opinion of Probable Construction Costs. Compute earthwork quantities and civil project features. Determine lump sum and unit prices for civil features.

Task 390 Quality Control. Conduct independent review of design elements using appropriate Engineer senior staff.

Task Deliverables:

- Stream Mitigation Conceptual Plan (estimated at 3 plan and profile drawings and 1 detail drawing).
- Final drawings (estimated at 6 drawings), specifications, and opinion of probable construction costs.

Key Understandings:

- Project improvements are limited to conveyance, habitat, and floodplain interaction.
- It is assumed that the stream can be raised to historical elevations by the use of minimally invasive rock riffles.
• Location of rock riffles will be identified based on a desktop review of the topographic survey. A constructability site visit will confirm the location of the rock riffles and adjust the design to field conditions.
• No hydraulic modeling is included.
• Mitigation design for stream will be at Flanagan Lake between State Street and Rainwood Road on property owned by P-MRN RD.
• USACE comments on the conceptual mitigation plan will require only minor changes to the final drawings. Redesign to a different strategy can be conducted as Additional Services.
• Annual mitigation monitoring is not included in this scope of work.

**TASK SERIES 700 SURVEY AND RIGHT OF WAY**

**Task Objectives:** Provide survey and right of way services in support of final design activities.

**HDR Activities:** Task 710 Additional Field Survey. Conduct additional survey to describe the stream mitigation reaches along the main channel and set additional control points. Field survey will extend from top of bank to top of bank. A digital surface will be created with the topographic survey and supplemented with LiDAR data.

**Task Deliverables:**
- Field survey.
- Topographic surface for the stream mitigation reach.

**Key Understandings:**
- Coordinate system to be the same as used for the construction of Dam Site 15A.
- Topographic survey is limited to main channel above normal pool and excludes the tributary channel.

**TASK SERIES 1000 CONSTRUCTION CONTRACT ADMINISTRATIVE SERVICES**

**Task Objectives:** To provide construction contract administration services.

**Task 1020 Construction Contract Support.**
1020.9 Design Modifications. HDR will prepare change order to remove the construction of the North and South Fingers at Zorinsky Basin No. 2 and to negotiate the change in contract amount to complete the stream mitigation construction at Flanagan Lake. Removal of the on-site stream mitigation will impact the project boundary, SWPPP, seeding, and fencing. An estimated 10 drawings (3 general, 2 erosion control, and 4 civil) will be revised.

**Task Deliverables:**
- Negotiated change order

**Key Understandings:**
- Valley Corporation will be constructing the stream mitigation work at DS 15A.
## TASK SERIES 200 PERMITTING

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### TASK SERIES 300 GENERAL AND SITE CIVIL DESIGN

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### TASK SERIES 700 SURVEY AND RIGHT OF WAY

| Task 710 | Additional Field Survey |

### TASK SERIES 1000 CONSTRUCTION CONTRACT ADMINISTRATION SERVICES

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### TOTAL HOURS

| 7 | 54 | 44 | 118 | 152 | 170 | 18 | 563 |

### TOTAL COST (ROUNDED)

| $1,645 | $11,610 | $10,120 | $21,476 | $19,760 | $18,700 | $1,710 | $85,021 | $2,083 | $425 | $236 | $2,829 | $87,850 | $15,850 | $- | $15,850 | $103,700 |

Previously Invoiced Work for Stream Mitigation Coordination (Period End August 4, 2018) $4,000

Amendment No. 3 Total $107,700

Exhibit A1 – Engineer’s Services for Amendment No. 1 – Attachment 3 Schedule

EJCDC® E-500, Agreement Between Owner and Engineer for Professional Services.

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OEA-440039-1
### ATTACHMENT 3

PAPIO-MISSOURI RIVER NATURAL RESOURCES DISTRICT

PHASE II: FINAL DESIGN AND PHASE III: CONSTRUCTION CONTRACT ADMINISTRATION OF ZORINSKY WATER QUALITY BASIN NO. 2

SCHEDULE FOR STREAM MITIGATION PERMITTING AND DESIGN - AUGUST 2, 2018

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July 18, 2018

Troy Meyer PE
HDR Inc.
8404 Indian Hills Drive

RE: Proposal for Professional Services
Topographic Survey – North end Dam Site 16A
E&A Project Number – P2015.336.001

Dear Troy,
Thank you for providing E & A Consulting Group, Inc. ("E&A") the opportunity to provide you a proposal for land surveying services. We have researched the site and propose to complete a topographic survey per the following scope:

1. Complete topographic survey (3600') of creek from top of bank to top of bank. See exhibit A for survey area.

Cost – $15,850.00

If this proposal is acceptable, please sign this proposal as indicated and return one copy to E&A.

Sincerely,
E & A Consulting Group, Inc.

Jason Headley, RLS 604
Project Manager

Enclosures:
Exhibit "A – Subject Property

I have received and read and agree to this proposal for professional services. By signing, this proposal for professional services becomes the agreement and is executed.

Date: ..................................................

Signature: ............................................

Name: ................................................

Client: ..............................................

Address: ............................................

City, State, ZIP: _____________________________

Phone: ..............................................
Topo top of bank to top of bank including channel flowline.