REQUEST AUTHORIZATION FOR MAYOR AND FINANCE OFFICER TO SIGN PROFESSIONAL SERVICES AGREEMENT OR AMENDMENT

Project Name & Number: Water Risk and Resiliency Assessment, Project #20-2575

CIP #: 51269

Project Description: The Water Division Risk & Resiliency Assessment Project will ensure the City meets the requirements of Section 2013 of the American Water Infrastructure Act (AWIA) of 2018. This section requires that the City complete a risk and resilience assessment and develop an Emergency Response Plan. Every 5 years, the utility must review the risk and resilience assessment and submit recertification along with an updated emergency response plan.

Consultant: HDR Engineering, Inc.

Original Contract Amount: $69,200.00

Original Contract Date: July 6, 2020

Original Completion Date: 12/20/2020

Addendum No:

Amendment Description:

Current Contract Amount: $69,200.00

Current Completion Date: Dec. 20, 2020

Change Requested: 

New Contract Amount: $69,200.00

New Completion Date: 

Funding Source This Request:

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| 343 |

Total

Agreement Review & Approvals

Project Manager: Cassie June 20, 2020

Division Manager: \[Signature\] June 22, 2020

Department Director: \[Signature\] June 22, 2020

City Attorney: \[Signature\] June 22, 2020

ROUTING INSTRUCTIONS

Route two originals of the Agreement for review and signatures.

Finance Office - Retain one original
Project Manager - Submit second original for delivery to Consultant

or:
Public Works Engineering Project Manager

FINANCE OFFICE USE ONLY

(Note to Finance: Please write date of Agreement in appropriate space in the Agreement document)

[Signature]

Approval

Cash Flow

Rev. 03/2009
Agreement Between City of Rapid City and HDR Engineering, Inc. for Professional Services for Water Risk and Resiliency Assessment, CIP No. 51269, Project No. 20-2575

AGREEMENT made July 6, 2020, between the City of Rapid City, SD (City) and HDR Engineering, Inc. (Engineer), located at 703 Main Street, Suite 200, Rapid City, SD 57701. City intends to obtain services for the Water Risk and Resiliency Assessment, Project No. 20-2575, CIP No. 51269. The scope of services is as described within this document and as further described in Exhibits A, B and C (attached).

The City and the Engineer agree as follows:

The Engineer shall provide professional engineering services for the City in all phases of the Project and as further defined in Exhibits A, B and C (attached), serve as the City's professional engineering representative for the Project, and give professional engineering consultation and advice to the City while performing its services.

Section 1—Basic Services of Engineer

1.1 General

1.1.1 The Engineer shall perform professional services described in this agreement, which include customary engineering services. Engineer intends to serve as the City's professional representative for those services as defined in this agreement and to provide advice and consultation to the City as a professional. Any opinions of probable project cost, approvals, and other decisions provided by Engineer for the City are rendered on the basis of experience and qualifications and represent Engineer's professional judgment.

1.1.2 All work shall be performed by or under the direct supervision of a professional Engineer licensed to practice in South Dakota.

1.1.3 All documents including Drawings and Specifications provided or furnished by Engineer pursuant to this Agreement are instruments of service in respect of the Project and Engineer shall retain an ownership therein. Reuse of any documents pertaining to this project by the City on extensions of this project or on any other project shall be at the City's risk. The City agrees to defend, indemnify, and hold harmless Engineer from all claims, damages, and expenses including attorney's fees arising out of such reuse of the documents by the City or by others acting through the City.

1.1.4 The contract will be based on an hourly rate and reimbursable fee schedule with a maximum not-to-exceed amount.
1.2 **Scope of Work**

The Engineer shall:

1.2.1 Consult with the City, other agencies, groups, consultants, and/or individuals to clarify and define requirements for the Project and review available data.

1.2.2 Perform the tasks described in the Scope of Services. (See Exhibit A.)

1.2.3 Conduct a location survey of the Project to the extent deemed necessary to provide adequate site information.

1.2.4 Prepare a report presenting the results of the study as outlined in the scope of services.

**Section 2—Information Provided by City**

The City will provide any information in its possession for the project at no cost to the Engineer.

**Section 3—Notice to Proceed**

The City will issue a written notification to the Engineer to proceed with the work. The Engineer shall not start work prior to receipt of the written notice. The Engineer shall not be paid for any work performed prior to receiving the Notice to Proceed.

**Section 4—Mutual Covenants**

4.1 **General**

4.1.1 The Engineer shall not sublet or assign any part of the work under this Agreement without written authority from the City.

4.1.2 The City and the Engineer each binds itself and partners, successors, executors, administrators, assigns, and legal representatives to the other party to this agreement and to the partners, successors, executors, administrators, assigns, and legal representatives of such other party, regarding all covenants, agreements, and obligations of this agreement.

4.1.3 Nothing in this agreement shall give any rights or benefits to anyone other than the City and the Engineer.

4.1.4 This agreement constitutes the entire agreement between the City and the Engineer and supersedes all prior written or oral
understandings. This agreement may only be amended, supplemented, modified, or canceled by a duly executed written instrument.

4.1.5 The Engineer shall make such revisions in plans which may already have been completed, approved, and accepted by the City, as are necessary to correct Engineer’s errors or omissions in the plans, when requested to do so by the City, without extra compensation therefore.

4.1.6 If the City requests that previously satisfactorily completed and accepted plans or parts thereof be revised, the Engineer shall make the revisions requested by the City. This work shall be paid for as extra work.

4.1.7 If the City changes the location from the one furnished to the Engineer, or changes the basic design requiring a new survey for the portions so changed, the redesign will be paid for as extra work.

4.1.8 The City may at any time by written order make changes within the general scope of this Agreement in the work and services to be performed by the Engineer. Any changes which materially increase or reduce the cost of or the time required for the performance of the Agreement shall be deemed a change in the scope of work for which an adjustment shall be made in the Agreement price or of the time for performance, or both, and the Agreement shall be modified in writing accordingly. Additional work necessary due to the extension of project limits shall be paid for as extra work.

4.1.9 Extra work, as authorized by the City, will be paid for separately and be in addition to the consideration of this Section.

4.1.10 For those projects involving conceptual or process development services, activities often cannot be fully defined during the initial planning. As the project does progress, facts and conditions uncovered may reveal a change in direction that may alter the scope of services. Engineer will promptly inform the City in writing of such situations so that changes in this agreement can be renegotiated.

4.1.11 This Agreement may be terminated (a) by the City with or without cause upon seven days’ written notice to the Engineer and (b) by the Engineer for cause upon seven days’ written notice to the City. If the City terminates the agreement without cause, the Engineer will be paid for all services rendered and all reimbursable expenses incurred prior to the date of termination.
If termination is due to the failure of the Engineer to fulfill its agreement obligations, the City may take over the work and complete it. In such case, the Engineer shall be liable to the City for any additional cost to the extent directly resulting from Engineer's action.

4.1.12 The City or its duly authorized representatives may examine any books, documents, papers, and records of the Engineer involving transactions related to this agreement for three years after final payment. All examinations will be performed at reasonable times, with proper notice. Engineer's documentation will be in a format consistent with general accounting procedures.

4.1.13 The City shall designate a representative authorized to act on the City's behalf with respect to the Project. The City or such authorized representative shall render decisions in a timely manner pertaining to documents submitted by the Engineer in order to avoid unreasonable delay in the orderly and sequential progress of the Engineer's services.

4.1.14 Costs and schedule commitments shall be subject to renegotiation for delays caused by the City's failure to provide specified facilities or information or for delays caused by other parties, excluding subcontractors and sub-consultants, unpredictable occurrences including without limitation, fires, floods, riots, strikes, unavailability of labor or materials, delays or defaults by suppliers of materials or services, process shutdowns, acts of God, or the public enemy, or acts of regulations of any governmental agency or any other conditions or circumstances beyond the control of the City or Engineer. Temporary delays of services caused by any of the above which results in additional costs beyond those outlined may require renegotiation of this agreement.

4.1.15 The City will give prompt written notice to the Engineer if the City becomes aware of any fault or defect in the Project or nonconformance with the Project Documents.

4.1.16 Unless otherwise provided in this Agreement, the Engineer and the Engineer's consultants shall have no responsibility for the discovery, presence, handling, removal or disposal of, or exposure of persons to hazardous materials in any form at the project site, including but not limited to asbestos products, polychlorinated biphenyl (PCB), or other toxic substances.

4.1.17 In the event asbestos or toxic materials are encountered at the jobsite, or should it become known in any way that such materials may be present at the jobsite or any adjacent areas that may affect
the performance of Engineer’s services, Engineer may, at their option and without liability for consequential or any other damages, suspend performance of services on the project until the City retains appropriate specialist CONSULTANT(S) or contractor(s) to identify, abate, and/or remove the asbestos or hazardous or toxic materials.

4.1.18 This agreement, unless explicitly indicated in writing, shall not be construed as giving Engineer the responsibility or authority to direct or supervise construction means, methods, techniques, sequences, or procedures of construction selected by any contractors or subcontractors or the safety precautions and programs incident to the work of any contractors or subcontractors.

4.1.19 Neither the City nor the Engineer, nor its Consultants, shall hold the other liable for any claim based upon, arising out of, or in any way involving the discharge, dispersal, release or escape of smoke, vapors, soot, fumes, acids, alkalis, toxic chemicals, liquids, or gases, waste materials, or other irritants, contaminants, or pollutants.

4.1.20 Neither the City nor the Engineer, nor its Consultants, shall hold the other liable for any claim based upon, arising out of, or any way involving the specification or recommendation of asbestos, in any form, or any claims based upon use of a product containing asbestos.

4.1.21 Engineer hereby represents and warrants that it does not fail or refuse to collect or remit South Dakota or City sales or use tax for transactions which are taxable under the laws of the State of South Dakota.

4.2 City of Rapid City NonDiscrimination Policy Statement

In compliance with Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, the Age Discrimination act of 1975, the Americans with Disabilities Act of 1990, and other nondiscrimination authorities it is the policy of the City of Rapid City, 300 Sixth Street, Rapid City, SD 57701-5035, to provide benefits, services, and employment to all persons without regard to race, color, national origin, sex, disabilities/ handicaps, age, or income status. No distinction is made among any persons in eligibility for the reception of benefits and services provided by or through the auspices of the City of Rapid City.

Engineer will permit access to any and all records pertaining to hiring and employment and to other pertinent data and records for the purpose of enabling the Commission, its agencies or representatives, to ascertain compliance with the above provisions.

This section shall be binding on all subcontractors or suppliers.
Section 5—Payments to the Engineer

5.1 Schedule of Pay Rates

The City will pay the Engineer for services rendered or authorized extra work according to the Engineer's hourly and reimbursable rate schedule described in Exhibit C.

5.2 Fee

The maximum amount of the fee for the services as detailed in Section 1.2 shall not exceed $69,200.00 unless the scope of the project is changed as outlined in Section 4. If expenses exceed the maximum amount, the Engineer shall complete the design as agreed upon here without any additional compensation. Sub task dollar amounts may be reallocated to other tasks as long as the total fee is not exceeded. Prime consultant may not mark up sub-consultant or sub-contractor services.

5.3 Progress Payments

Monthly progress payments shall be processed by the City upon receipt of the claim as computed by the Engineer based on work completed during the month per the hourly rates and allowable reimbursable as established in Section 5.1 and approved by the City.

Net payment to the Engineer shall be due within forty-five (45) days of receipt by the City.

Section 6—Completion of Services

The Engineer shall complete services on or before December 20, 2020 based on award date of July 6, 2020.

Section 7—Insurance Requirements

7.1 Insurance Required

The Engineer shall secure the insurance specified below. The insurance shall be issued by insurance company(s) acceptable to the City and may be in a policy or policies of insurance, primary or excess. Certificates of all required insurance including any policy endorsements shall be provided to the City prior to or upon the execution of this Agreement.
7.2 Cancellation

The Engineer will provide the City with at least 30 days' written notice of an insurer's intent to cancel or not renew any of the insurance coverage. The Contractor agrees to hold the City harmless from any liability, including additional premium due because of the Contractor's failure to maintain the coverage limits required.

7.3 City Acceptance of Proof

The City's approval or acceptance of certificates of insurance does not constitute City assumption of responsibility for the validity of any insurance policies nor does the City represent that the coverages and limits described in this agreement are adequate to protect the Engineer, its consultants or subcontractors interests, and assumes no liability therefore. The Engineer will hold the City harmless from any liability, including additional premium due, because of the Engineer's failure to maintain the coverage limits required.

7.4 Specific Requirements

7.4.1 Workers' compensation insurance with statutory limits required by South Dakota law. Coverage B-Employer's Liability coverage of not less than $500,000 each accident, $500,000 disease-policy limit, and $500,000 disease-each employee.

7.4.2 Commercial general liability insurance providing contractual, personal injury, bodily injury and property damage liability coverage with limits of not less than $1,000,000 per occurrence, $2,000,000 general aggregate, and $2,000,000 aggregate products and completed operations. If the occurrence form is not available, claims-made coverage may be provided. Claims-made coverage shall continue through the term of this Agreement, and Engineer shall purchase at its sole expense either 1) an Extended Reporting Endorsement (also known as Tail Coverage); or 2) Prior Dates Coverage from new insurer with a retroactive date back to the date of, or prior to, the inception of this Agreement; or 3) shall demonstrate through Certificates of Insurance that Engineer has maintained continuous coverage with the same or original insurer. Coverage provided under items 1), 2), or 3) will continue for at least a period of three years after completion of the terms of this Agreement. The policy shall name the City and its representatives as an additional insured.

7.4.3 Automobile liability insurance covering all owned, non-owned, and hired automobiles, trucks, and trailers. The coverage shall be at least as broad as that found in the standard comprehensive automobile liability policy with limits of not less than $1,000,000 combined single
limit each occurrence. The required limit may include excess liability (umbrella) coverage. The policy shall name the City and its representatives as an additional insured.

7.4.4 Professional liability insurance providing coverage for claims arising from the negligent acts, errors or omissions of the Engineer or its consultants, of not less than $1,000,000 each occurrence and not less than $1,000,000 annual aggregate. Coverage shall be maintained for at least three years after final completion of the services. If this policy provides for claims-made coverage, the claims-made coverage shall continue through the term of this Agreement, and Engineer shall purchase at its sole expense either 1) an Extended Reporting Endorsement (also known as Tail Coverage); or 2) Prior Dates Coverage from new insurer with a retroactive date back to the date of, or prior to, the inception of this Agreement; or 3) shall demonstrate through Certificates of Insurance that Engineer has maintained continuous coverage with the same or original insurer. Coverage provided under items 1), 2), or 3) will continue for at least a period of three years after completion of the terms of this Agreement.

Section 8—Hold Harmless

The Engineer hereby agrees to hold the City harmless from any and all claims or liability including attorneys' fees arising out of the professional services furnished under this Agreement, and for bodily injury or property damage arising out of services furnished under this Agreement, providing that such claims or liability are the result of a negligent act, error or omission of the Engineer and/or its employees/agents arising out of the professional services described in the Agreement.

Section 9—Independent Business

The parties agree that the Engineer operates an independent business and is contracting to do work according to his own methods, without being subject to the control of the City, except as to the product or the result of the work. The relationship between the City and the Engineer shall be that as between an independent contractor and the City and not as an employer-employee relationship. The payment to the Engineer is inclusive of any use, excise, income or any other tax arising out of this agreement.

Section 10-Indemnification

If this project involves construction and Engineer does not provide consulting services during construction including, but not limited to, onsite monitoring, site visits, site observation, shop drawing review and/or design clarifications, City agrees to indemnify and hold harmless Engineer from any liability arising from the construction activities
undertaken for this project, except to the extent such liability is caused by Engineer's negligence.

Section 11-Controlling Law and Venue

This Agreement shall be subject to, interpreted and enforced according to the laws of the State of South Dakota, without regard to any conflicts of law provisions. Parties agree to submit to the exclusive venue and jurisdiction of the State of South Dakota, 7th Judicial Circuit, Pennington County.

Section 12-Severability

Any unenforceable provision herein shall be amended to the extent necessary to make it enforceable; if not possible, it shall be deleted and all other provisions shall remain in full force and effect.

Section 13—Funds Appropriation

If funds are not budgeted or appropriated for any fiscal year for services provided by the terms of this agreement, this agreement shall impose no obligation on the City for payment. This agreement is null and void except as to annual payments herein agreed upon for which funds have been budgeted or appropriated, and no right of action or damage shall accrue to the benefit of the Engineer, its successors or assignees, for any further payments. For future phases of this or any project, project components not identified within this contract shall not constitute an obligation by the City until funding for that component has been appropriated.

IN WITNESS WHEREOF, the parties hereto have made and executed this Agreement as of the day and year first above written.

City of Rapid City:  
______________________________
Steve Allender, MAYOR

DATE: ________________________

Engineer:  
______________________________
HDR Engineering Inc.

DATE: 6/10/2020
ATTEST:

Pauline Sumption, FINANCE OFFICER

Reviewed By:

Jeff Crockett, PROJECT MANAGER

DATE: ____________________________

CITY’S DESIGNATED PROJECT REPRESENTATIVE
NAME: Jeff Crockett
PHONE: 605-394-4162
EMAIL: jeff.crockett@rcgov.org

HDR ENGINEERING, Inc.
PROJECT REPRESENTATIVE
NAME: Gabe Laber, PE
PHONE: 605-977-7754
EMAIL: gabriel.laber@hdrinc.com
City of Rapid City Drinking Water System
Risk and Resiliency Assessment Project
Project No.20-2575 / CIP No. 51269

General
The following addresses the work tasks and deliverables requested by the City of Rapid City (City) to complete a Risk and Resiliency Assessment project. While a formal scope of work is provided for the Risk and Resiliency Assessment (RRA) (Phase I), a general scope of work to support an update to an Emergency Response Plan (ERP) is also included such that a more detailed scope and budget can be provided at a later date, and completed as Phase II of the overall Risk and Resiliency Assessment project.

America’s Water Infrastructure Act of 2018 (AWIA) requires all public water systems serving populations greater than 3,300 persons to assess the risks to, and resilience of, its system (referred to as the Risk and Resiliency Assessment or “RRA”). The RRA is to include:

- Risk to the system (supply, treatment, and distribution) from malevolent acts and natural hazards
- Resilience of the infrastructure, including SCADA/cyber resilience
- The monitoring practices of the system
- The financial infrastructure of the system
- The use, storage, or handling of various chemicals by the system
- The operation and maintenance of the system

The detailed RRA will culminate with an implementation plan for capital and operational needs for risk and resilience management of the system. The assessment will be finalized and then certified to the Administrator of the Environmental Protection Agency (EPA) by December 31, 2020, for systems serving a population of 50,000 to 100,000.

The RRA must be reviewed at least every five years to determine if the assessment will be revised. Upon review, the water system shall recertify the original assessment or certify a revision to the assessment.

Within six months of completion of the RRA, AWIA also requires each system to submit a letter of certification to the EPA that the Emergency Response Plan (ERP) for a utility was created or updated (where necessary), and at least every 5 years thereafter. For systems serving a population of 50,000 to 100,000, the ERP certification is required by June 30, 2021.

Community water systems shall to the extent possible coordinate with local emergency planning committees established under the Emergency Planning and Community Right-To-Know Act of 1986 when preparing or revising an assessment or emergency response plan under AWIA. Further, systems must maintain a copy of the assessment and emergency response plan for five years after certifying the plan to the EPA.
Objectives

The primary objective of this RRA is to identify and prioritize risks and provide guidance to support decisions by the utility in allocating resources to risk-reduction initiatives.

The RRA will assess risks from natural hazards and malevolent acts, including physical and cyber-attacks. This work will consider risk (likelihood of threat occurrence, consequence of failure, and system vulnerabilities) for critical water system assets, including source waters, treatment plants, pump/lift stations, storage reservoirs/tanks/vaults, service connections, and control systems. HDR will work with the City to identify representative asset types to gain efficiencies in determining vulnerabilities common to particular system components. This information may then be extrapolated by the City to apply to other assets in the system. HDR will conduct workshops with the City’s staff to assist the City in the development of the critical asset list, threats to consider, and consequence analysis.

The City will determine which mitigation measures to implement for improved resiliency. Mitigation measures will address water system resilience regarding physical, operational, and network/financial control system vulnerabilities.

HDR will review existing documents, such as local hazard mitigation plans, City vulnerability assessment, existing emergency plans, security procedures, etc. As required by the AWIA, the project workshops may periodically include invitations to members of local emergency planning organizations such as law enforcement, fire department, and other intelligence advisors such as the Department of Homeland Security Protective Service Advisors. These agencies, along with City staff will provide information on local threats to aid in defining the physical and cybersecurity hazards of relevance to the City’s system.

Standards Used for AWIA-Related Assessments

To prepare the Risk and Resilience Assessment, HDR will use the following standards:


3. AWWA’s Cybersecurity Guidance and Assessment Tool. As sited by AWWA, “This updated Guidance document has been revised to maintain alignment with the NIST Cybersecurity Framework and Section 2013 of America’s Water Infrastructure Act (AWIA) of 2018. Collectively these resources provide the water sector with a voluntary, sector-specific approach for implementing applicable cybersecurity controls and recommendation.”

4. The City intends to amend this contract to include an update to their existing Water System Emergency Response Plan at a later date, the standard utilized by HDR for this assessment will use the ANSI/AWWA G440-17, Emergency Preparedness Practices, Revised August, 2017.
Methodology Used for AWIA-Related Assessments

The methodology used for the development of this RRA is based on the seven steps contained in the J100 Standard work flow process. The scope items outlined in this RRA Work Plan will include the following:

1) Asset Characterization
2) Threat Characterization
3) Consequence Analysis
4) Vulnerability Analysis
5) Threat Analysis
6) Risk and Resilience Analysis
7) Risk and Resilience Management

All of the materials and information concerning the City’s RRA are considered confidential. Federal Freedom of Information Act (FOIA) exemptions allow utilities to keep this information confidential. During the initial organizational phases, HDR will discuss security guidelines with project participants and how to apply them. A secure file-sharing system will be used for the remote transfer of sensitive information between the HDR Team and the City through the course of this project.

Phase I – Risk and Resilience Assessment

Work Tasks

TASK 1.0 - Project Initiation/Project Management
The Project Initiation/Project Management Task will be used to establish coordination between the HDR and City project teams, and provide overall management of the project. Tasks include project contracting and set-up activities, coordination of project activities and subconsultants, verification of compliance with the scope of services, management of the project budget and schedule, preparation of monthly invoices, and coordination of quality assurance and quality control (QA/QC) of the tasks and deliverables throughout the project. The initiation activities will include a project kickoff meeting with key team members from HDR and the City.

Task 1.01: Project Kickoff
A 60-minute project kickoff meeting will be held with key project team members (HDR and City) to introduce the project teams, establish key project team members’ roles and responsibilities, define lines of communication, review the scope, objectives and project schedule, and establish the approach that will be used to manage the project. The teams are to discuss existing information that may be used in the RRA, and a preliminary list of attendees who will participate in the various project workshops.

Task 1.02: Project Tracking and Invoicing
Includes tracking of project status, including budget and schedule status, and preparation of monthly invoices and progress reports throughout the course of the project.

Task 1 Deliverables
- Project kickoff meeting agenda and notes
Exhibit A – Scope of Work

• Monthly invoices and progress reports

Task 1 Assumptions

• One 60-minute project kickoff meeting/call by up to two HDR staff members, including HDR’s PM and Technical Lead, either in person or via phone conference.
• Bi-weekly PM meetings CONFERENCE calls will be conducted as needed throughout the project with HDR and City project managers and will last no longer than 30 minutes. An estimate of 6 hours for meetings is included for scoping purposes.
• Deliverables will be provided to attendees and others as requested in electronic PDF format.
• Up to 6 monthly invoices and progress reports will be prepared.

TASK 2 – Data Collection and Review

Task 2.01 Data Collection and Review

HDR is to prepare a data request for existing information needed to complete the RRA, which may include but not be limited to the following:

• Security plans and procedures
• Vulnerability and risk assessments
• Emergency response plans
• Business continuity plans (Continuity of Operations Plans - COOP)
• Department of Homeland Security (DHS) assessment
• Human resources policies
• Door lock/key policies
• Security camera use and policies
• Source water protection plans
• Long range water resources plan
• Comprehensive plan
• Water system master plans
• Local natural hazard mitigation plan(s)
• Control system network diagrams and asset inventory
• Other documents that may be related to the assessment of vulnerability and resiliency of the water utility, as appropriate.

HDR will conduct up to two 1-hour calls with City staff to discuss system information and data in preparation for the RRA.

Task 2 Deliverables

• Data Request

Task 2 Assumptions

• The City will provide data within two weeks of request to HDR in electronic format when possible.
• All documents not publicly accessible will be shared electronically through a secure file-sharing platform.
• Up to two 1-hour calls will be conducted by HDR and will be attended by up to 3 HDR team members.

TASK 3 – RRA Workshops and Field Assessment
To complete the RRA, a series of three workshops will be conducted to guide the City through the J100 process, including the identification of critical assets, threats, and consequence analysis. The workshops outlined below are designed to leverage the City staff member's knowledge of the water system and transfer that information into the risk and resilience assessment.

City participants in the workshops should include, but are not limited to senior staff in the areas of Water Operations, Engineering, Maintenance, Communications, Finance, Human Resources, Customer Service, IT, I&C/Operational Technologies, and Safety. Related staff who will be participating in the project should also be in attendance. Other participants may include representatives from Public Works, local law enforcement, the local hazardous materials team and fire department, state and local regulatory agencies, local or regional emergency management, and local or regional Department of Homeland Security. Including the additional participants in some of the project workshops provides critical information and broad perspective about threats to the utility and promotes an understanding of the water system to all participants, particularly first responders.

The workshops will be conducted as outlined below.

Task 3.01 Workshop 1: Identification of Critical Assets, Threats and Consequences
The HDR Team will conduct a two-part, seven-hour workshop to introduce the RRA project to the City's project team and other key stakeholders, and to identify critical assets and relevant threats to be used in the J100 analysis.

The first part of the workshop will introduce the RRA and ERP process to stakeholders. It will include a review of the water system components and operation, and discussion of background information on AWIA, the RRA and ERP requirements, the J100 analysis methodology, and presentation of the project roadmap and schedule.

The second part of the workshop will include the asset characterization, threat characterization, and consequence analysis. Specific activities include:

Consequence Analysis. To identify critical assets, consequence of asset loss/failure levels will be established. These are typically categorized by:

• Major sickness/injury and loss of life
• Cost to remediate, and economic loss to the utility
• Economic cost to the region
• Other factors including public perception, extent of service outage, environmental damage, etc.

HDR will lead the City staff through a discussion of consequences to identify up to six consequence categories to be used in the J100 analysis.

Asset Characterization. By the J100 Standard definition, a critical asset is an item of value to the utility that, if incapacitated, could result in significant damage to the utility or community to the extent that the utility would be unable to meet its mission. Assets include physical elements, cyber elements, and human elements (critical knowledge or functions of people). The workshop will include an assessment of water system assets, such as the source water, intakes, groundwater wells, water treatment plants, pump stations, storage tanks, pipelines, administrative offices, SCADA system, etc. The assets will be
reviewed and ranked by consequence of loss/failure to determine the most critical assets. For scoping purposes up to twelve critical water assets will be used in the J100 analysis. Other assets may be assessed in a narrative manner in the RRA Report.

Threat Characterization. Development of the list of threats will begin with a review of the previous water system vulnerability assessments (if any), the list of reference threats from J100, knowledge of threats by the HDR Team from past projects, and utility staff’s institutional knowledge. Through stakeholder participation, the list of threats will be reviewed, and refined to a list of the most relevant threats to the water system. For scoping purposes up to twelve threats will be identified for use in the J100 analysis. Other threats identified in the workshop may be considered in the RRA report, but not carried through the J100 analysis.

Following the workshop, HDR will conduct a 90-minute call with the City’s project team to review and confirm the outcome from Workshop 1, including verification of up to twelve critical assets and twelve relevant threats to be carried through the risk and resilience analysis. The HDR Team will finalize the critical asset list, threat list, and consequence factors to be used in the J100 analysis, including the development of monetized consequence factors. HDR will also develop monetized consequence factors and threat probabilities to be used in the risk and resilience analysis.

Task 3.02 – Field Assessment of Critical Assets
The HDR team will conduct site visits for each of the twelve critical water assets with City staff to identify existing mitigations, potential vulnerabilities, security issues, and potential mitigation measures. For some assets, a night visit may also be conducted to assess lighting at the facility and to better observe the potential for vandalism or criminal activity in the area.

Through the previously collected data from the City staff, the HDR Team will gather information on physical and personnel security, access control, systems controls, protection of the source water, and hiring/firing/Human Resources procedures.

The HDR Team will compile individual asset sheets summarizing field assessment and risk analysis results for use in the Draft RRA report.

Task 3.03 – Workshop 2: Risk and Resilience Analysis
The HDR Team will conduct a six-hour workshop to perform the J100 Risk and Resilience Analysis. The risk calculation will pair each threat with each critical asset (e.g. 12 critical water assets paired with 12 threats yields 144 water utility threat-asset pairs) in an electronic table to assess risk, which is defined in this process as a function of threat likelihood, vulnerability, and consequence. During the workshop, the HDR Team and the City will develop vulnerability values, which, when incorporated with the threat probabilities and consequence of loss values developed in previous scope activities, will result in the development of a risk score and monetized risk value for each threat-asset pair.

Along with the development of risk values, the HDR Team will assist the City team with the identification of mitigation measures that may be used to lower risk or improve resiliency. Mitigation measures may include policy and procedure changes, physical security improvements, general changes at facilities, needs for additional hires, etc. Estimated changes to vulnerability or consequence values will be documented to assess the potential for risk reduction.

HDR will compile the information from the Workshop into the J100 spreadsheet to calculate initial and mitigated risk scores for each threat asset pair. The results of the risk and resilience assessment will be provided to the City for review in preparation for Workshop 3.
The Utility Resilience Index (URI) is a questionnaire in J100, which will also be completed to provide information on operational and financial resilience of the water system. The HDR Team will use the City’s information to complete the URI and results will be included in the RRA report.

The requirements of the RRA include a limited overview of the operation and maintenance of the public water system. The HDR Team will meet with the various City departments and staff members to discuss the status of an asset management program, chemical storage and handling, and any gaps that could be improved to make the City’s water operations more resilient. This meeting will also include discussion of source water, source water protection, and source water alternatives. The results of this discussion will be included in the RRA Report.

Task 3.04 Workshop 3: Review of J100 Results and Risk and Resilience Management Strategies
The HDR Team will conduct a four-hour workshop with the City to review the results of the risk and resilience analysis, and mitigations that were discussed in Workshop 2. Changes or refinements to risk scoring, as well as further discussion and refinement of mitigation measures will be completed with input from the City team. The City will select which mitigation measures are most practical and efficient to retain in the analysis.

Following the workshop, HDR will develop order-of-magnitude conceptual costs associated with the implementation of capital mitigation strategies and will complete a benefit-cost analysis for the high-risk threat-asset pairs. Risk results will be presented in terms of risk reduction potential, and benefit-cost ratio.

The HDR Team will document the suggested mitigation measures for each of the high-risk threat-asset pairs, and the overall mitigation measures in the draft RRA report.

Task 3 Deliverables
- Workshop agendas and materials
- Asset Summary Sheets
- J100 Workbook

Task 3 Assumptions
- The City is responsible for workshop logistics, including scheduling, workshop invitations, coordination of refreshments (as needed), and location;
- HDR will develop agendas, provide workshop materials at least one week prior to the meeting, and will facilitate the workshops.
- The workshops will be attended by up to three HDR staff members
- HDR will analyze up to 12 critical water assets and 12 threats in the J100 analysis for this project.
- Site visits for up to 12 critical water assets will be conducted in partnership with the City’s staff over a period of no more than 2 consecutive working days. Asset types may be grouped together, and a site visit of a single asset which is representative of an asset type may be substituted for multiple site visits for similar assets.
- Up to two HDR staff members and one Launch! Consulting staff member will participate in the site visits.

TASK 4 – Cybersecurity Assessment Review
The primary objective of the cybersecurity portion of this Risk and Resilience Assessment (RRA) is to identify and prioritize risks and provide guidance to support decisions by the utility in allocating resources to reduce risk to levels acceptable to the utility.
Given that cybersecurity threats are continually evolving and vulnerabilities are constantly being sought for exploitation, the utility’s ability to completely eliminate this risk is impossible. As such, the focus of this assessment is on risk reduction using applicable recognized standards.

This assessment includes the City’s automated monitoring and control systems only; in other words, the plant process control system (PCS) and remote site supervisory control and data acquisition (SCADA) system. Business system/network assessment is excluded with the exception of potential identification as a source of PCS/SCADA System risk or possible means of mitigation. The City’s computing systems for financial infrastructure are also excluded except as described below.

**Standards Used for AWIA-Related Assessments**

To prepare the Cybersecurity Assessment, HDR will use AWWA’s Cybersecurity Guidance and Assessment Tool. As cited by AWWA, “This updated Guidance document has been revised to maintain alignment with the NIST Cybersecurity Framework and Section 2013 of America’s Water Infrastructure Act (AWIA) of 2018. Collectively these resources provide the water sector with a voluntary, sector-specific approach for implementing applicable cybersecurity controls and recommendation.” The AWWA Tool applies the following standards, best practices, and guidelines to assess cybersecurity threats:

1. International Society of Automation (ISA), ISA-62443 “Security for Industrial Automation and Control Systems”
2. National Institute of Standards and Technology, NIST 800-53 Rev. 4 “Security and Privacy Controls for Information Systems and Organizations”

**Methodology Used**

Under this scope of services the City will utilize and self-complete the AWWA Guidance Tool Report. HDR will also perform this step and then host a workshop to collaboratively compare results with both AWWA Guidance Tool Reports. It is assumed that this report will be fully completed by the City including September 2019 updates which include features to document risk.

The City will provide a statement of compliance and/or gap summary of Financial Computing Systems conformance to NIST Framework including tools, policies and procedures and staff to address the core framework profile requirements including: “Identify, Protect, Detect, Respond, and Recover”. HDR will review the provided statement and supporting documentation. At the City's request, HDR will include this statement and supporting documentation in an Appendix in the cybersecurity RRA report section.

All of the materials and information concerning the City's cybersecurity assessment are considered confidential. Federal Freedom of Information Act (FOIA) exemptions allow utilities to keep this information confidential. During the initial organizational phases, HDR will discuss security guidelines with project participants and how to apply them. A secure file-sharing system will be used for the remote transfer of sensitive information between HDR and the City through the course of this project.

**Cybersecurity Task 4.01: Data Collection and Familiarization**

The objective is effective collaboration between the City and HDR to ensure the best answers are used as input to the AWWA Cybersecurity Tool.
HDR will submit a data request for the following information required to develop a high-level understanding of the City’s PCS/SCADA System:

- OSI Layer 2 Physical Network Drawings – This is a physical network diagram that shows all devices connected to the PCS, SCADA System, OT DMZ, etc. An example is available upon request.
- OSI Layer 3 Logical Network Drawing – This is a conceptual drawing that shows all subnets (zone) and connecting devices (conduits). This is a high-level drawing that can look very different from the Layer 2 drawing. Subnets may include Business, Process Control System, SCADA, etc. Connecting devices may include routers, firewalls, Layer 3 switches, etc. An example is available upon request.
- Control System Asset Inventory – This is a list of all PCS/SCADA hosts, ip addresses, subnet masks, default gateways, etc. This inventory should also include a list of all software, versions, patch level, etc. in use by the PCS/SCADA System. An example is available upon request.
- PCS/SCADA System Policies, Procedures, and Standards
- Statement of compliance and/or gap summary of Financial Computing Systems conformance to NIST Framework including tools, policies and procedures and staff to address the core framework profile requirements including: “Identify, Protect, Detect, Respond, and Recover”.

- HDR will review the documentation provided by the City.
- HDR will review the Excel workbook that the City generates using the AWWA Cybersecurity Guidance Tool Report in light of the information provided.
- HDR will host a one-hour teleconference (referred to herein as AWWA Workshop A). The purpose of Workshop A is to review and discuss the “yes/no” answers the City used as input to the AWWA Cybersecurity Guidance Tool. HDR will lead this discussion and capture a few sentences of background information in a spreadsheet to support the yes/no answers; information captured will be the minutes of this workshop. This workshop will help HDR to further understand the PCS/SCADA System. Note that it is common to change a couple of the input answers during this workshop. If that happens, HDR will utilize the AWWA Cybersecurity Tool to generate a new Excel workbook for use with Workshop B (described below).
- HDR will send a copy of the Workshop A spreadsheet and background information for review and comment. HDR will address any comments received.

Cybersecurity Task 4.02: Assessment Review
This task provides for the completion of an assessment by the City and also HDR using the AWWA Cybersecurity Tool along with a collaborative review of those assessment results.

- The City and HDR will use copies of the final Excel workbook from Workshop A to independently assign a control status to each of the 100 possible AWWA recommended cybersecurity controls. HDR will perform this task based on their very good understanding of the AWWA controls and their relatively limited understanding of the PCS/SCADA System. The City will perform this task based on their very good understanding of the PCS/SCADA System and (presumably) their
relatively limited understanding of the AWWA controls. HDR will combine the control statuses from both Excel workbooks into one workbook for use during Workshop B (described below).

- HDR will host a teleconference (referred to herein as Workshop B). Workshop B will be a discussion of AWWA controls statuses where the City and HDR assigned different control statuses. The control statuses that already agree will not be reviewed because it can take 5 hours or more to go through all of the controls. The City and HDR will discuss the subset of controls that differ and work to agree on final control statuses. HDR will capture a few sentences of supporting information in the “Notes” column for each control with a final status of “Partially Implemented” or “Fully Implemented and Maintained.” This is because the City is making an assertion as to the completeness of those controls. The supporting information captured in the “Notes” column will be the minutes for this workshop. The control statuses that may be assigned and their meaning are, as follows:
  - **Not Planned and/or Not Implemented - Risk Accepted** – No Workshop B action required.
  - **Planned and Not Implemented** – No Workshop B action required. Utility recognizes work needs to be done.
  - **Partially Implemented** – This is an assertion. A few sentences will be captured to support this status. Utility recognizes work needs to be done.
  - **Fully Implemented and Maintained** – This is an assertion. Utility claims existing system meets the intent of the control references (not just the example). Ideally, HDR has documentation to support the claim. A few sentences will be captured to support this status.

- HDR will send the Excel workbook with the final statuses and “Notes” to the City for review and comment. HDR will address any comments received.

Cybersecurity Task 4.03: Cyber Report
This task will summarize the process and results from the preceding tasks into a cybersecurity report section that will be included in the final RRA report.

**Task 4 Deliverables:**
- HDR will formulate a Request for Information to the Client that lists information required to develop a high-level understanding of the PCS/SCADA System.
- AWWA Cybersecurity Tool Input Answers spreadsheet completed under Workshop A.
- AWWA Cybersecurity Tool Control Status spreadsheet finalized under Workshop B.
- HDR will develop a Cybersecurity Report with the following sections:
Exhibit A – Scope of Work

- Report body documenting the process used and key contextual information about Appendices 1, 2, and 3.
- Appendix 1 – The AWWA Cybersecurity Tool Input Answers spreadsheet completed under Workshop A.
- Appendix 2 – The definitions of the priorities generated by the AWWA Cybersecurity Tool.
- Appendix 3 – The AWWA Cybersecurity Tool Control Status spreadsheet finalized under Workshop B.

Task 4 Assumptions

- The City will provide timely, reasonable information in response to the HDR request for information and documentation required to develop a high-level understanding of the PCS/SCADA System.
- HDR will review the received documentation to understand the physical & logical network architectures, system boundaries, and comparison to current industry standards in preparation to conduct workshops as part of subsequent tasks.
- During the review, HDR may need to request additional information from the City to clarify items and will transmit that request to the City in writing.
- The City will complete the AWWA Cybersecurity Tool.
- The City will participate in workshops with staff that have a good understanding of IT and OT systems.
- The City will provide a statement of compliance and/or gap summary of Financial Computing Systems conformance to NIST Framework including tools, policies and procedures and staff to address the core framework profile requirements including: “Identify, Protect, Detect, Respond, and Recover”. If requested by the City, HDR will include this information in a separate appendix in the Cybersecurity RRA Report Section.
- The workshops will be held using a virtual collaboration solution (e.g. WebEx).
- Information and Services Provided by Others:
  - The City will update Final AWWA Cybersecurity Guidance Tool based on findings documented in workshop minutes. This will occur after final deliver of the Cybersecurity RRA Report Section.
  - The City will provide timely review of workshop meeting minutes.
- Appendix C will contain the AWWA Cybersecurity Tool Control Status spreadsheet finalized under Workshop B. This spreadsheet will contain cybersecurity controls with an unquantified gap to be filled where the status is “Partially Implemented” or “Planned and Not Implemented.” The City will review the control references and determine the cybersecurity objectives/outcomes/goals appropriate for their PCS/SCADA System and other factors (e.g. risk tolerance, staff levels, budget, etc.). This will be a follow-up exercise to be performed by the City after delivery of the report.

The effectiveness of operational technology systems (“OT Systems”) and financial information technology systems (“Financial IT Systems”) and features designed or recommended by HDR are
dependent upon the City's continued operation and maintenance of the OT and Financial IT Systems in accordance with all standards, best practices, laws, and regulations that govern the operation and maintenance of the OT and Financial IT Systems. The City shall be solely responsible for operating and maintaining the OT and Financial Systems in accordance with applicable industry standards (i.e. ISA, NIST, etc.) and best practices, which generally include but are not limited to, cyber security policies and procedures, documentation and training requirements, continuous monitoring of assets for tampering and intrusion, periodic evaluation for asset vulnerabilities, implementation and update of appropriate technical, physical, and operational standards, and offline testing of all software/firmware patches/updates prior to placing updates into production. Additionally, the City recognizes and agrees that OT and Financial IT Systems are subject to internal and external breach, compromise, and similar incidents. Security features designed or recommended by HDR are intended to reduce the likelihood that OT and Financial IT Systems will be compromised by such incidents. However, HDR does not guarantee that the City's OT and Financial IT Systems are impenetrable and the City agrees to waive any claims against HDR resulting from any such incidents that relate to or affect the City's OT and Financial IT Systems.

TASK 5 – RRA Report and Implementation Plan
HDR will document the methods and findings of the RRA analysis into an RRA report. The HDR Team will prepare one draft and one final version of the RRA report, which is to include:

- Description of the analysis methodology
- Documentation of results of the Risk Analysis
- Overview of utility resilience and potential mitigation measures
- Draft implementation plan
- Results of the Cyber Security Assessment
- Results of the Utility Resilience Index evaluation
- Asset Summary Sheets

The HDR Team will submit the draft RRA report, including the implementation plan, to the City for review. It is assumed that the City's comments will be received within two weeks after receipt of the draft. A meeting (in person for local HDR staff and via conference call for others) with the City and HDR teams will be held to clarify and resolve comments on the draft report and implementation plan. The HDR Team will revise the report and provide the final document to the City in electronic format.

The RRA report is not to be submitted to EPA. The City is to formally certify the completion of the RRA with EPA.

**Deliverables**

- One draft and one final RRA Report to include the draft implementation plan and Cybersecurity Assessment appendix, delivered in electronic form.

**Assumptions**

- The City will provide comments on the draft report and implementation plan within two weeks or receipt.
- HDR will provide a final draft within 10 days of receipt of the City's comments on the draft materials.
- The City will certify completion of the RRA with the EPA as required.
Phase I Schedule
The anticipated duration for the proposed scope of work is approximately 5 months. The key date is the City’s Certification of the Final RRA report by 12/31/20 in accordance with the requirements of the America’s Water Infrastructure Act. (AWIA). Given the workshop-centric approach to this project, a final project deliverable work plan and workshop schedule will be provided following the project initiation task kick off meeting.

The scope is based on in person workshops. If the situation changes due to COVID-19, HDR is prepared to work with the City to modify the work plan to accommodate virtual workshops.
Phase II – Emergency Response Plan

The Emergency Response Plan (ERP) is scheduled to be completed as a second phase of this project, anticipated to be added by amendment to this project. The information gathered in the RAA process will assist in defining the magnitude of the ERP scope and resulting proposed fee. Information on Phase II activities are provided below as reference only, and are not included in the current Scope of Work. A separate, detailed scope of work will be submitted to the City for the ERP task.

If procured as a second phase of this project, HDR will support the City in the preparation of the ERP using the ANSI/AWWA G440-17, Emergency Preparedness Practices Standard. In general, the tasks for the updated ERP will include the following:

- Revisions to or creation of emergency action checklists for threats/hazards relevant to the City. These may have actions for mitigation, preparedness, response, and recovery phases of an emergency.

- Establishment of framework for the ERP contents, derivation of communication contacts and protocols, and process for continual updates to the ERP.

- Facilitation of training on the ERP, including tabletop exercise (optional – not required by AWIA)

- Preparation of a Continuity of Operations Plan (COOP) (optional – not required by AWIA)
### City of Rapid City Drinking Water System
### Risk and Resiliency Assessment Project
### Project No.20-2575 / CIP No. 51269

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<th>Task Description</th>
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<td>Task 2.0: Data Collection and Review</td>
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<td>Task 3.0: RRA Workshops and Field Assessments</td>
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<td>Task 4.0: Cybersecurity Assessment Review</td>
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Enclosed are the 2020 Hourly Billing Rates for HDR Engineering. These rates shall be adjusted annually to reflect any salary adjustments incurred by employees. The rates listed below do not include reimbursable expenses or hourly rates for equipment as defined below.

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<tr>
<th>Description</th>
<th>Billing Rate/Hour</th>
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<td>Admin Assistant</td>
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HDR has technical experts in various geographic locations that may be utilized based on specific project need. This specialized expertise is not subject to the above rates and associated billing rates are to be determined at the time of contract negotiation.

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<td>Kathryn Jones – Technical Lead/Sr PM</td>
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<tr>
<td>Jim Schultz – Cyber Engineer</td>
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<td>David Brearly – Cyber QC</td>
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**Direct Expenses**

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**Printing:**

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**OTHER REIMBURSABLE EXPENSES**

Reimbursable Expense shall mean the actual expenses incurred directly or indirectly in connection with the Project for transportation travel, subconsultants, subcontractors, computer usage, telephone, telex, shipping and express, and other incurred expense. Hourly equipment charges apply to specific equipment used on the project.
CITY of RAPID CITY

Agenda Item Summary

Public Works Committee Meeting Date: 6/30/2020
City Council Meeting Date: 7/6/2020

Staff Contact: Jeff Crockett

Location: Water Division

Agenda Title:
Authorize Mayor and Finance Officer to sign a Professional Services Agreement with HDR Engineering, Inc. for the Water Risk and Resilience Assessment; Project No. 20-2575; CIP No. 51269. Estimated Cost: $69,200.00

Summary:
The Water Division Risk and Resilience Assessment Project will ensure the City meets the requirements of Section 2013 of the American Water Infrastructure Act (AWIA) of 2018. This section requires that the City complete a risk and resilience assessment and develop an emergency response plan. Every 5 years, the utility must review the risk and resilience assessment and submit recertification along with an updated emergency response plan. Estimated Cost: $69,200.00

Funding Source & Fiscal Impact (if applicable):

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<th>Fund</th>
<th>Cost Center</th>
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<tbody>
<tr>
<td>602</td>
<td>933</td>
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X Budgeted  □ Not Budgeted

Recommendation:
Action: Approve
Notes:

City Council Options:

Attachments & Links: