Agreement Between City of Rapid City and Advanced Engineering and Environmental Services, LLC (AE2S) for Professional Services for Red Rock Canyon Drainage Basin Design Plan Update, Project No. 22-2711 / CIP No. 51183

AGREEMENT made _______________________, 2022, between the City of Rapid City, SD (City) and Advanced Engineering and Environmental Services, LLC (AE2S) (Engineer), located at 1560 Concourse Drive, Rapid City, South Dakota 57703. City intends to obtain services for design for Red Rock Canyon Drainage Basin Design Plan Update, Project No. 22-2711 / CIP No. 51183. 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.

FORM 109 Professional Services Agreement (08/12/2019)
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 sub-contractors 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, alkalies, 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 in 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 $248,367.00 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 November 19, 2023 based on award date of September 19, 2022.

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, nonowned, 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  Engineer:

______________________________
Brian Bergantino, PE
Advanced Engineering and Environmental Services, LLC (AE2S)

DATE: __________________________  DATE: __________________________
ATTEST:

Pauline Sumption, FINANCE DIRECTOR

Reviewed By:

Mary Bosworth, PROJECT MANAGER

DATE: 8-31-2022

CITY’S DESIGNATED PROJECT REPRESENTATIVE

NAME  Mary Bosworth, PE CFM
PHONE  605-394-4154
EMAIL  mary.bosworth@rcgov.org

ENGINEERING FIRM’S DESIGNATED PROJECT REPRESENTATIVE

NAME  Brian Bergantine, PE
PHONE  701-364-9111
EMAIL  brian.bergantine@ae2s.com
EXHIBIT A
SCOPE OF SERVICES

Red Rock Canyon Drainage Basin Design Plan Update
Project No. 22-2711 / CIP No. 51183

The City of Rapid City has requested professional services from Advanced Engineering and Environmental Services, LLC (AE2S) for the Red Rock Canyon Drainage Basin Design Plan (DBDP) Update.

The proposed project for the Red Rock Canyon Drainage Basin Plan Update consists of:

1. Revising the hydrologic / hydraulic analyses for the Red Rock Canyon Drainage Basin to reflect existing (current) conditions, Late 1990s conditions (Chapel Valley subdivision built but nothing else in drainage basin), full build-out conditions, and DBDP improvements conditions;

2. Developing recommendations for DBDP improvements within the Red Rock Canyon Basin so that flooding risk to homes, businesses, and roads meets the City’s Infrastructure Design Criteria Manual under full build-out land use conditions; and


AE2S will complete the following tasks:

TASK 1 - MEETINGS AND PROJECT MANAGEMENT:

Provide City and Project Team coordination consisting of:

1.1 Meetings – Prepare for, attend, take and distribute minutes for the following meetings:
   
   A. Combined Kick-off Conference and Land Use Planning Meeting - With City staff, Pennington County staff, and AE2S
   
   B. Interim Progress Meetings with City Staff* (10 meeting throughout the project)
   
   C. Draft Submittal Review Meeting with City Staff
   
   D. Final Review Submittal Meeting with City Staff*

   *Client Manager attending in person, Project Manager attending via video conference call / screen share. For other meetings without an asterisk noted, both Project Manager and Client Manager will attend in person.

1.2 Project Management – Provide project team and client coordination to implement QA-QC, monitor budget and schedule, and keep client informed of project progress including biweekly email updates.

TASK 2 - DATA COLLECTION:

2.1 Data Review – Collect and review background information and existing data listed in the RFP, and any other resources as necessary.
A. Inventory the following existing features: ground cover and soil types, existing and future land use, existing FEMA floodplains including LOMR information, existing drainage facilities including storm sewer, major utilities specific to potential conflict with drainage facilities, roads and streets, major irrigation ditches, and other specific features as determined necessary.

B. Review past studies and design documents provided by City staff.

2.2 Complete field visit / site survey of existing DBDP improvements shown in the figure below. Field visit will consist of georeferenced photographs and culvert geometry measurements (size and type). Site survey will include georeferenced photographs, culvert geometry measurements (size, type, length, and inverts). The survey shall be in NAD 83 (2011) NAVD 88 South Dakota State Plane South Zone. The horizontal and vertical coordinates may be established from the Rapid City Primary Control Network.

2.3 Provide QA-QC of collected survey data.
TASK 3 - EXISTING (CURRENT) CONDITIONS ANALYSIS:

3.1 Delineate subwatersheds and assign runoff parameters throughout the Drainage Basin sufficient to analyze flows draining to key hydraulic structure locations and large branches throughout the watershed. The runoff parameters will meet City IDCM standards.

3.2 Assemble existing conditions drainage network in HEC-HMS based on information obtained as part of Task 2.

3.3 Develop rainfall hyetographs to reflect City IDCM standards.

3.4 Complete HEC-HMS model simulations to provide peak flows at key locations for the 2-, 10- , and 100-year recurrence intervals.

3.5 Update culvert crossings in the available HEC-RAS model from FEMA in order to determine existing overtopping frequency at each existing culvert / road crossing.

3.6 Provide QA-QC of existing (current) conditions analysis.

3.7 Summarize peak flow results for the storm events analyzed and locations where IDCM standards are met / not met.

TASK 4 - LATE 1990'S CONDITIONS ANALYSIS

4.1 Modify southern portion of the Red Rock Canyon drainage basin in HEC-HMS model prepared as part of Task 3 to reflect undeveloped conditions (rangeland land use and no DBDP improvements) that existed soon after the Chapel Valley subdivision was constructed.

4.2 Complete HEC-HMS model simulations to provide peak flows at key locations for the 2- year, 10-year, and 100-year recurrence intervals.

4.3 Provide QA-QC of Late 1990s conditions analysis.

4.4 Summarize peak flow results for the storm events analyzed and locations where IDCM standards are met / not met.

4.5 Compare Task 3 and Task 4 results to illustrate how drainage basin changes from late 1990s to present have altered peak flows throughout the drainage basin.

TASK 5 - FULL BUILD-OUT LAND USE WITH ONLY EXISTING DBDP IMPROVEMENTS ANALYSIS:

5.1 Develop GIS layer for draft and final full build-out land use and impervious area percentage assumptions based on City and Pennington County input during Task 1.

5.2 Update Task 3 HEC-HMS model with full build-out land use runoff parameters to reflect full build-out land use conditions with existing, already-built DBDP improvements (i.e. hydraulic network from Task 3) of the drainage basin for the 2-year, 10-year, and 100-year storm events.

5.3 Provide QA-QC of full build-out land use with existing DBDP improvements conditions analysis.
5.4 Summarize peak flow results for the storm events analyzed.

5.5 Summarize where existing DBDP improvements meet or do not meet IDCM standards.

5.6 Using the HEC-RAS model described in Task 3, summarize where existing culverts / road crossings in Chapel Valley meet / do not meet the IDCM standards.

5.7 Compare Task 3, Task 4, and Task 5 results to illustrate how drainage basin changes from late 1990s to present to full build-out have the potential to alter peak flows throughout the drainage basin without DBDP improvements.

**TASK 6 - DBDP IMPROVEMENTS PLANNING**

6.1 During one of the interim progress meetings outlined in Task 1 and results of HEC-HMS modeling completed as part of Tasks 3 through 5, agree on performance standard for downstream peak flows, confirm local on-site stormwater detention approaches, and identify general locations and strategies for the drainage basin to meet IDCM standards under full build-out land use conditions.

6.2 Use Task 5 HEC-HMS model (and HEC-RAS model for culverts / road crossings in Chapel Valley) to size DBDP improvements so that the drainage basin meets the City’s IDCM standards.

6.3 During interim progress meetings outlined in Task 1 and results of HEC-HMS modeling completed as part of this task, discuss in-progress results and DBDP improvements development.

6.4 Provide QA-QC of full build-out land use with existing and planned DBDP improvements conditions analysis.

6.5 Summarize peak flow results for the storm events analyzed.

6.6 Summarize compliance with IDCM standards.

6.7 Summarize erosion risk (velocity, Froude Number, and shear stress) to natural channels along the steep, forested sections of Red Rock Canyon to evaluate whether additional channel armoring should be included as future DBDP improvements to meet IDCM standards for open channel flow (Section 4.8 of IDCM).

6.8 Compare Task 3, Task 4, Task 5, and Task 6 results to document compliance with IDCM standards.

6.9 Summarize minimum water quality volume on a subwatershed basis needed for areas of future development using the assumed percent impervious area along with notes on whether the water quality volume could be integrated into existing or future detention facilities.

6.10 Prepare cost estimates in 2023 dollars for recommended improvements.

6.11 Develop preliminary prioritization / implementation triggers for recommended improvements.
TASK 7 - DBDP UPDATE DOCUMENTATION:

7.1 Prepare a Draft DBDP Update Submittal which will include the following:

A. Introduction – project background information, project objectives, design plan limitations, report organization, deliverables, supporting literature, and technical references.

B. Basin Information – Maps, figures, and discussions regarding basins and basin boundaries, existing land use and future land use with assumptions, major streets, contours, NWI wetlands, FEMA floodplains, NRCS soils information, major water and sewer utility lines, irrigation ditches, and general description of apparent or known problems as determined from discussions with City Staff or as determined during the study.

C. Hydrology Modeling – methods, sub-basin layout, and the routing and runoff analysis for existing land use and proposed land use.

D. Hydraulic Modeling – methods and individual conveyance element discussion. Conveyance element discussion includes discussion of existing and proposed features. Discussion to include digital photos of conveyance elements if possible.

E. Summarize cost estimates and preliminary prioritization of recommended improvements.

F. Storm Water Quality – recommended regional stormwater quality treatment and improvements features.

G. Data, Model Results, Maps and Figures as necessary.

H. Prepare individual DBDP improvement cut sheets summarizing ID, location, key hydraulic geometry (size, inverts, etc.), cost, implementation trigger(s), and 2- through 100-year flows.

I. Recommendations of right of way and/or easement requirements.

7.2 Prepare a Final DBDP Update Submittal which will include the following:

A. Address City comments from the Draft DBDP Update Submittal

B. Assemble deliverables noted in “Project Team and Deliverables” Section

PROJECT TEAM MEMBERS

- AE2S, LLC
- City Engineering Services staff

DELIVERABLES

- Task 1 – Meetings and Project Management
  - Meeting minutes, as appropriate
  - Draft and Final land use exhibits
  - Project updates

Exhibit A -- Page 5 of 7
• Task 2 – Data Collection
  — See Task 7
• Task 3 – Existing (Current) Conditions Analysis
  — See Task 7
• Task 4 – Late 1990s Conditions Analysis
  — See Task 7
• Task 5 – Full Build-Out Land Use with Only Existing DBDP Improvements Analysis
  — See Task 7
• Task 6 – DBDP Improvements Planning
  — See Task 7
• Task 7 – DBDP Update Documentation
  — Draft and Final DBDP Update Submittal (Hard Copy and PDF)
  — HEC-HMS Models for:
    1. Existing (Current) Conditions
    2. Late 1990s Conditions
    3. Full Build-out Land Use with Existing DBDP Improvements
    4. Full Build-out Land Use with Existing and Planned DBDP Improvements
  — Chapel Valley HEC-RAS model with RAS Plans for:
    1. Existing (current) conditions
    2. Full Build-Out with Only Existing DBDP Improvements
    3. Full Build-out Land Use with Existing and Planned DBDP Improvements
  — ArcPro Map Packages for DBDP Update figures
  — Field visit data, including georeferenced photographs provided as ArcGIS geodatabase.
  — Survey data, in ArcGIS point shapefile format

KEY ASSUMPTIONS

A. Up to 4 hours of landowner coordination for survey access is included in the fee estimate recognizing
that AE2S will coordinate with City staff on any communication with the major landowner in the
Red Rock Canyon drainage basin.

B. Red Rock Canyon DBDP update will generally be similar to Box Elder DBDP except that the level
of detail for DBDP improvements will be broader. DBDP improvements will focus on existing and
future major drainage-way culverts, and existing and future detention facilities. Open channel
reaches will be generally evaluated and described between major confluences in the trunk-line
drainage network.

C. Following the combined kickoff and land use planning meeting completed as part of Task 1, a draft
full build-out land use map will be prepared for City and County feedback with a final full build-out
land use map prepared based on that feedback.
D. Once full build-out land use has been agreed upon by all parties, full build-out land use will not be changed.

E. The City’s 2018 Major Street Plan will be used for determining location of future culverts / road crossings to be included in the DBDP improvements list.

F. Late 1990s hydrologic / hydraulic conditions will be estimated based on best available data reviewed as part of Task 2.1.

G. Inundation mapping will not be completed for any the events / scenarios analyzed.

H. Water quality volume needs for future development will be estimated using equation in Section 2.2.2 of the Water Quality Manual and assuming “a” equals 1, corresponding to extended detention basins.

I. Given that informal reviews of the DBDP Update report will be completed throughout the report preparation process, responding to City comments on the draft DBDP Update report will take less than 50 hours.

J. If public engagement and/or public meetings are needed for the project, the effort for this scope will be covered by an addendum once the level of public engagement is determined.

ANTICIPATED PROJECT SCHEDULE

Below are anticipated timeframes for each phase of work based on the Scope of Services dates.

Contract Negotiations Complete .................................. August 31, 2022
Final Rapid City Council Authorization NTP ........... September 19, 2022
Draft DBDP Update Report ...................................... May 31, 2023
Final DBDP Update Report ....................................... July 7, 2023
Final Submittal for DBDP Update ............................... August 17, 2023
Project Close-Out ................................................... September 19, 2023
### EXHIBIT B

Red Rock Canyon Drainage Basin Design Plan Update  
Project No. 22-2711 CIP # S1163  
Advanced Engineering and Environmental Services, LLC  
TASK SCHEDULE  
August 29, 2022

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<thead>
<tr>
<th>Red Rock Canyon Drainage Basin Design Plan Update</th>
<th>Task Cost</th>
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<td><strong>TASK 1 - Project Management and Meetings</strong></td>
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<td>1.2 Project Management</td>
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| **TASK 2 - Data Collection**                     |           |
| 2.1 Data Review                                   | $5,828.00  |
| 2.2 Survey                                       | $10,925.00 |
| 2.3 QA-QC                                        | $3,172.00  |
| Project Expenses - Travel, Mileage, Printing     | $2,970.00  |
| **Subtotal Task 2 - Data Collection**            | $23,895.00 |

| **TASK 3 - Existing (Current) Conditions**       |           |
| 3.1 Subwatersheds                                | $10,426.00 |
| 3.2 Drainage Network                             | $12,750.00 |
| 3.3 Rainfall                                     | $578.02    |
| 3.4 HEC-HMS Model Runs & Results                 | $4,078.00  |
| 3.5 Update FEMA HEC-RAS Crossing                 | $2,092.00  |
| 3.6 ga-QC                                        | $2,304.00  |
| 3.7 Summarize results                            | $3,734.00  |
| **Subtotal Task 3 - Existing (Current) Conditions** | $35,932.00|

| **TASK 4 - Late 1990's Conditions Analysis**     |           |
| 4.1 Modify Model to Late 1990's Conditions       | $4,566.00  |
| 4.2 HEC-HMS model simulations                    | $1,406.00  |
| 4.3 QA-QC                                        | $1,648.00  |
| 4.4 Summarize where standard are and aren't met  | $2,766.00  |
| 4.5 Compare results in Task 3 vs Task 4         | $1,838.00  |
| **Subtotal Task 4 - Late 1990's Conditions Analysis** | $12,222.00|

| **TASK 5 - Full Build-out Land Use with Existing DBPD Improvements** |           |
| 5.1 Develop Full Buildout Landuse Map             | $4,949.00  |
| 5.2 Update Task 3 Model with Full Build-out Landuse | $2,742.00  |
| 5.3 QA-QC                                        | $3,085.00  |
| 5.4 Summarize Peak Flow Results                  | $3,172.00  |
| 5.5 Summarize where standard are and aren't met  | $4,090.00  |
| 5.6 HEC-RAS Task 5 Update                       | $5,063.00  |
| 5.7 Comparison of buildout impact                | $2,504.00  |
| **Subtotal Task 5 - Full Build-out Land Use with Existing DBPD Improvements** | $25,604.00|

| **TASK 6 - DBDP Improvements Planning**         |           |
| 6.1 Agree on performance Standards               | $1,313.00  |
| 6.2 Use Task 5 information to size structures   | $20,148.00 |
| 6.3 Meet discussing results (Hours in Task 1)   | $-         |
| 6.4 Provide QA-QC of full build out and improvements | $3,594.00  |
| 6.5 Summarize peak flow results                  | $1,936.00  |
| 6.6 Summarize compliance with IECM standards    | $4,148.00  |
| 6.7 Summarize erosion risk                       | $5,008.00  |
| 6.8 Compare Task 3, Task 4, Task 5, and Task 6 results | $2,872.00  |
| 6.9 Summarize minimum water quality volume      | $3,648.00  |
| 6.10 Cost Estimates                              | $14,210.00 |
| 6.11 Prioritization Plan                         | $2,936.00  |
| **Subtotal Task 6 - DBDP Improvements Planning** | $59,515.00|

| **TASK 7 - DBDP Update Documentation**          |           |
| 7.1 Draft DBDP                                   | $44,244.00 |
| 7.2 Final DBDP Update                            | $14,406.00 |
| Project Expenses - Travel, Mileage, Printing    | $180.00    |
| **Subtotal Task 7 - DBDP Update Documentation** | $58,830.00|

**TOTAL ESTIMATED FEES - Tasks 1 - 7 - Red Rock Drainage Basin Design Plan Update** $248,367.00
EXHIBIT C

Red Rock Canyon Drainage Basin Design Plan Update
Project No. 22-2711 CIP 51183

<table>
<thead>
<tr>
<th>Position Title</th>
<th>2022 Hourly Billing Rate*</th>
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<tbody>
<tr>
<td>Project Manager – Amber Lefers</td>
<td>$215.00</td>
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<td>Client Manager – Dustin Dale</td>
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<td>QA/QC Reviewer – Zach Magdol</td>
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<tr>
<td>Admin Assistant – Lisa Dorch</td>
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Project Mileage: $0.65/mile
Project Mileage (Survey Truck): $0.85/mile
In House Photocopies: $0.30/page
Plots – Color Bond: $1.00/sf
Total Station: $35/hour
RTK GPS: $50/hour
All Other Reimbursables: Cost+15%