



**Agreement Between City of Rapid City and  
Advanced Engineering and Environmental Services, Inc. (AE2S)  
for Professional Services for  
Detailed Analysis of Federal Emergency Management Agency (FEMA)  
Special Flood Hazard Areas (SFHA)  
Project No. 15-2244 / CIP No. 51057**

AGREEMENT made \_\_\_\_\_, 20\_\_\_\_, between the City of Rapid City, SD (City) and Advanced Engineering and Environmental Services, Inc. (AE2S), (Engineer), located at located at 1560 Concourse Drive, Rapid City, 57703. City intends to obtain services for Detailed Analysis of FEMA SFHA, Project No. 15-2244 / CIP No. 51057. The scope of services is as described within this document and as further described in Exhibits A and B (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 and B (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 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, 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 **\$266,975.90** 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 August 31, 2016 based on a notice to proceed on or before December 31, 2015.

## **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 occurrence form 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 shall be maintained for 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.
- 7.4.4 Professional liability insurance providing claims-made 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.

### **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, 7<sup>th</sup> 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:**

**Engineer:**

\_\_\_\_\_  
MAYOR

\_\_\_\_\_  
AE2S

DATE: \_\_\_\_\_

DATE: \_\_\_\_\_

ATTEST:

\_\_\_\_\_  
FINANCE OFFICER

**Reviewed By:**



\_\_\_\_\_  
Mary Bosworth, PROJECT MANAGER

DATE: 12-8-15

CITY'S DESIGNATED PROJECT  
REPRESENTATIVE

ENGINEERING FIRM'S DESIGNATED  
PROJECT REPRESENTATIVE

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

NAME Ted Schultz, PE  
PHONE 605-341-7800  
EMAIL ted.schultz@AE2S.com



**EXHIBIT A  
SCOPE OF SERVICES**

**Detailed Analysis of FEMA SFHA  
Project No. 15-2244 / CIP 51057**

The City of Rapid City has requested professional services for the Haines Avenue, Robbinsdale, and South Canyon Drainage Basins.

The proposed project for each Drainage Basin consists of:

1. Revising the Federal Emergency Management Agency (FEMA) Special Flood Hazard Areas (SFHA) for the entire currently FEMA-mapped reaches;
2. Preparing a cost-benefit analysis for Drainage Basin Design Plan (DBDP) improvements that could remove structures from the regulatory floodplain; and
3. Amending the DBDP to reflect the changes to the current DBDP based on improvements needed to remove structures from the regulatory floodplain.

The City requested that Advanced Engineering and Environmental Services, Inc. (AE2S) submit a proposal for the proposed project.

For each Drainage Basin, 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:

- A. Kick-off Conference with City Staff
- B. Floodplain - Preliminary Findings Conference with City Staff
- C. Floodplain - 90% Report Conference with City Staff
- D. Floodplain - Public Informational Meeting
- E. DBDP Cost-Benefit – Identification of Opportunities Conference with City Staff

Meetings for all three drainage basins are assumed to occur at the same time to provide efficiency.

1.2 Project Management – Provide project team and client coordination to keep project on budget and schedule.

**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.

2.2 Data Collection – Complete site surveys in accordance with FEMA Guidelines and Specifications. The route and topography 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. Specifically, survey will include:

A. Hydraulic Structures and Channel Cross Sections within the FEMA SFHA

City will provide as-built topographic information for the West Chicago Street project in a CAD and GIS compatible format.

B. Key Hydraulic Structures on trunk-line drainage routes upstream of the FEMA SFHA

2.3 Provide QA-QC of collected survey data.

### TASK 3 - HYDROLOGIC ANALYSIS:

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

3.2 Assemble drainage network in HEC-HMS.

3.3 Develop rainfall hyetographs to reflect NOAA Atlas 14 depths and FEMA requirements.

3.4 Complete HEC-HMS model simulations to provide peak flows at key locations for the 2-, 10-, 50-, 100-, and 500-year recurrence intervals.

3.5 Provide QA-QC of hydrologic analysis.

### TASK 4 - HYDRAULIC ANALYSIS AND MAPPING:

4.1 Prepare hydraulic model using HEC-RAS to revise Base Flood Elevations within the currently mapped SFHA.

4.2 Prepare preliminary mapping for City review and comment.

4.3 Finalize analysis and mapping for submittal to FEMA.

4.4 Complete floodway encroachment analysis meeting City and FEMA standards for maximum elevation rise.

4.5 Provide QA-QC of hydraulic analysis and floodplain/floodway mapping.

### TASK 5 - FEMA DOCUMENTATION:

5.1 Prepare report and figures documenting revised hydrologic and hydraulic analysis.

5.2 Complete MT-2 Forms for each Drainage Basin.

5.3 Prepare Certified Topographic Map and Annotated FIRM(s), as required by FEMA for a LOMR submittal.

5.4 Prepare Floodway Data Table and Flood Profile.

5.5 Submit LOMR application to FEMA.

- A. Haines Avenue and Robbinsdale Drainages will be submitted as a single LOMR.
- B. South Canyon will be submitted as a separate LOMR because of the West Chicago Street and 44<sup>th</sup> Street construction projects. City will be responsible for FEMA LOMR application fees (currently \$8,250 as of 12/8/2015, subject to change by FEMA).

5.6 Respond to FEMA comments on LOMR application.

5.7 Prepare public notice for newspaper publication.

#### TASK 6 - DBDP COST-BENEFIT ANALYSIS:

Note: DBDP Cost-Benefit Analysis scope and fee will be prepared following completion of Task 5.

- 6.1 Based on Tasks 3 and 4, identify opportunities for conveyance improvements and/or flow reduction to potentially reduce the extent of the revised SFHA.

#### TASK 7 - DBDP AMENDMENT:

Note: DBDP Amendment scope and fee will be prepared following completion of Task 5.

#### PROJECT TEAM AND DELIVERABLES

B. Project team members:

- AE2S, Inc.
- City Engineering Services staff
- FEMA LOMR reviewers

C. Deliverables include:

- Task 1 – Meetings and Project Management
  - Kick-off meeting minutes
- Task 2 – Data Review and Collection
  - Survey Data, submitted to City and FEMA as part of Task 5
- Task 3 – Hydrologic Analysis
  - HEC-HMS Model, submitted to City and FEMA as part of Task 5
  - Final HEC-HMS Model, approved by FEMA
- Task 4 – Hydraulic Analysis and Mapping
  - HEC-RAS Model, submitted to City and FEMA as part of Task 5
  - GIS Floodplain Mapping Files, submitted to City and FEMA as part of Task 5
  - Final HEC-RAS Model and GIS Floodplain Mapping Files, approved by FEMA
- Task 5 – FEMA Documentation

- Draft and Final LOMR Submittal (Hard Copy and PDF) for Haines Avenue / Robbinsdale Drainages submitted to City and FEMA
- Draft and Final LOMR Submittal (Hard Copy and PDF) for South Canyon Drainage submitted to City and FEMA
- Public Notice Language
- LOMR (from FEMA)
- Task 6 – DBDP Cost-Benefit Analysis
  - To Be Determined
- Task 7 – DBDP Amendments
  - To Be Determined

**ANTICIPATED PROJECT SCHEDULE**

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

Contract Negotiations Complete.....	December 8, 2015
Final Rapid City Council Authorization NTP.....	December 21, 2015
Preliminary Mapping and Study Report .....	April 15, 2015
Preliminary LOMR .....	May 6, 2015
FEMA LOMR Documentation .....	May 31, 2015
Recommendations Report.....	To Be Determined
Cost Benefit Analysis .....	To Be Determined
Project Completion Date.....	August 31, 2016

## EXHIBIT B - All Phases

Detailed Analysis of FEMA SFHA  
 Project No. 15-2244 / CIP 51057  
 Advanced Engineering and Environmental Services, Inc.  
**TASK SCHEDULE**  
 December 7, 2015

<b>TASK 1 - Project Management and Meetings</b>	
<b>Project</b>	<b>Task Cost</b>
Haines Avenue Drainage	\$ 10,363.00
Robbinsdale Drainage	\$ 10,363.00
South Canyon Drainage	\$ 10,363.00
<b>TOTAL - TASK 1 - Project Management and Meetings</b>	<b>\$ 31,089.00</b>

<b>TASK 2 - Data Collection</b>	
<b>Project</b>	<b>Task Cost</b>
Haines Avenue Drainage	\$ 13,926.25
Robbinsdale Drainage	\$ 18,237.00
South Canyon Drainage	\$ 23,509.75
<b>TOTAL - TASK 2 - Data Collection</b>	<b>\$ 55,673.00</b>

<b>TASK 3 - Hydrology</b>	
<b>Project</b>	<b>Task Cost</b>
Haines Avenue Drainage	\$ 24,977.50
Robbinsdale Drainage	\$ 24,900.00
South Canyon Drainage	\$ 25,016.00
<b>TOTAL - TASK 3 - Hydrology</b>	<b>\$ 74,893.50</b>

<b>TASK 4 - Hydraulics and Mapping</b>	
<b>Project</b>	<b>Task Cost</b>
Haines Avenue Drainage	\$ 12,620.00
Robbinsdale Drainage	\$ 20,148.00
South Canyon Drainage	\$ 22,077.00
<b>TOTAL - TASK 4 - Hydraulics and Mapping</b>	<b>\$ 54,845.00</b>

<b>TASK 5 - FEMA Documentation</b>	
<b>Project</b>	<b>Task Cost</b>
Haines Avenue Drainage	\$ 12,389.80
Robbinsdale Drainage	\$ 15,559.80
South Canyon Drainage	\$ 13,669.80
<b>TOTAL - TASK 5 - FEMA Documentation</b>	<b>\$ 41,619.40</b>

<b>TASK 6 - DBDP Cost Benefit Analysis</b>	
<b>Project</b>	<b>Task Cost</b>
Haines Avenue Drainage	\$ 2,952.00
Robbinsdale Drainage	\$ 2,952.00
South Canyon Drainage	\$ 2,952.00
<b>TOTAL - TASK 6 - DBDP Cost Benefit Analysis</b>	<b>\$ 8,856.00</b>

<b>TOTAL ESTIMATED FEES - TASKS 1 - 6</b>	<b>\$ 266,975.90</b>
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Note: AE2S shall retain the right to reallocate Drainage Basin, Task, and Staff costs subject to the maximum limiting fee.

**EXHIBIT B - Phase 020  
Haines Avenue Drainage**

Detailed Analysis of FEMA SFHA  
Project No. 15-2244 / CIP 51057  
Advanced Engineering and Environmental Services, Inc.  
**TASK SCHEDULE**  
December 7, 2015

Haines Avenue Drainage		Task Cost
<b>TASK</b>	<b>Task 1 - Project Management and Meetings</b>	<b>Task Cost</b>
1.1	Meetings	\$ 3,755.00
1.2	Project Management	\$ 5,643.00
	Project Expenses - Travel, Mileage, Printing	\$ 965.00
	<b>Subtotal Task Task 1 - Project Management and Meetings</b>	<b>\$ 10,363.00</b>

Task 2 - Data Collection		Task Cost
<b>TASK</b>	<b>Task 2 - Data Collection</b>	<b>Task Cost</b>
2.1	Data Review	\$ 3,127.00
2.2	Survey	\$ 10,338.00
2.3	QA-QC	\$ 328.00
	Project Expenses - Travel, Mileage, Printing	\$ 133.25
	<b>Subtotal Task Task 2- Data Collection</b>	<b>\$ 13,926.25</b>

Task 3 - Hydrology		Task Cost
<b>TASK</b>	<b>Task 3 - Hydrology</b>	<b>Task Cost</b>
3.1	Subwatersheds	\$ 7,673.00
3.2	Drainage Network	\$ 11,518.50
3.3	Rainfall	\$ 570.00
3.4	Model Runs & Results	\$ 2,800.00
3.5	QA-QC	\$ 2,416.00
	Project Expenses - Travel, Mileage, Printing	\$ -
	<b>Subtotal Task Task 3 - Hydrology</b>	<b>\$ 24,977.50</b>

Task 4 - Hydraulics and Mapping		Task Cost
<b>TASK</b>	<b>Task 4 - Hydraulics and Mapping</b>	<b>Task Cost</b>
4.1	Model Development	\$ 4,620.00
4.2	Preliminary Mapping	\$ 1,760.00
4.3	Final Analysis & Mapping	\$ 2,316.00
4.4	Floodway Encroachment & Mapping	\$ 2,552.00
4.5	QA-QC	\$ 1,372.00
	Project Expenses - Travel, Mileage, Printing	\$ -
	<b>Subtotal Task Task 4 - Hydraulics and Mapping</b>	<b>\$ 12,620.00</b>

Task 5 - FEMA Documentation		Task Cost
<b>TASK</b>	<b>Task 5 - FEMA Documentation</b>	<b>Task Cost</b>
5.1	Report Narrative	\$ 5,842.00
5.2	MT-2 Forms	\$ 656.00
5.3	Cert Topo Map and Annotated FIRMs	\$ 2,200.00
5.4	Floodway Data Table and Flood Profile	\$ 820.00
5.5	Assembling and Printing Report	\$ 857.00
5.6	Responding to FEMA Comments	\$ 1,312.00
5.7	Public Notice	\$ 656.00
	Project Expenses - Travel, Mileage, Printing	\$ 46.80
	<b>Subtotal Task Task 5 - FEMA Documentation</b>	<b>\$ 12,389.80</b>

TASKS		Task Cost
<b>TASK</b>	<b>TASKS</b>	<b>Task Cost</b>
6.1	ID Opportunities	\$ 2,952.00
	Project Expenses - Travel, Mileage, Printing	\$ -
	<b>Subtotal Task TASKS</b>	<b>\$ 2,952.00</b>

<b>TOTAL ESTIMATED FEES - Tasks 1 - 6 - Haines Avenue Drainage</b>	<b>\$ 77,228.55</b>
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Note: AE2S shall retain the right to reallocate Drainage Basin, Task, and Staff costs subject to the maximum limiting fee.



**EXHIBIT B - Phase 021  
Robbinsdale Drainage**

Detailed Analysis of FEMA SFHA  
Project No. 15-2244 / CIP 51057  
Advanced Engineering and Environmental Services, Inc.  
**TASK SCHEDULE**  
December 7, 2015

Robbinsdale Drainage		Task Cost
<b>TASK</b>	<b>Task 1 - Project Management and Meetings</b>	<b>Task Cost</b>
1.1	Meetings	\$ 3,755.00
1.2	Project Management	\$ 5,643.00
	Project Expenses - Travel, Mileage, Printing	\$ 965.00
	<b>Subtotal Task Task 1 - Project Management and Meetings</b>	<b>\$ 10,363.00</b>

Task 2 - Data Collection		Task Cost
<b>TASK</b>	<b>Task 2 - Data Collection</b>	<b>Task Cost</b>
2.1	Data Review	\$ 3,414.00
2.2	Survey	\$ 13,644.00
2.3	QA-QC	\$ 984.00
	Project Expenses - Travel, Mileage, Printing	\$ 195.00
	<b>Subtotal Task Task 2 - Data Collection</b>	<b>\$ 18,237.00</b>

Task 3 - Hydrology		Task Cost
<b>TASK</b>	<b>Task 3 - Hydrology</b>	<b>Task Cost</b>
3.1	Subwatersheds	\$ 8,900.00
3.2	Drainage Network	\$ 10,366.00
3.3	Rainfall	\$ 452.00
3.4	Model Runs & Results	\$ 3,124.00
3.5	QA-QC	\$ 2,058.00
	Project Expenses - Travel, Mileage, Printing	\$ -
	<b>Subtotal Task Task 3 - Hydrology</b>	<b>\$ 24,900.00</b>

Task 4 - Hydraulics and Mapping		Task Cost
<b>TASK</b>	<b>Task 4 - Hydraulics and Mapping</b>	<b>Task Cost</b>
4.1	Model Development	\$ 8,056.00
4.2	Preliminary Mapping	\$ 3,144.00
4.3	Final Analysis & Mapping	\$ 4,928.00
4.4	Floodway Encroachment & Mapping	\$ 2,588.00
4.5	QA-QC	\$ 1,432.00
	Project Expenses - Travel, Mileage, Printing	\$ -
	<b>Subtotal Task Task 4 - Hydraulics and Mapping</b>	<b>\$ 20,148.00</b>

Task 5 - FEMA Documentation		Task Cost
<b>TASK</b>	<b>Task 5 - FEMA Documentation</b>	<b>Task Cost</b>
5.1	Report Narrative	\$ 6,510.00
5.2	MT-2 Forms	\$ 1,192.00
5.3	Cert Topo Map and Annotated FIRMS	\$ 3,590.00
5.4	Floodway Data Table and Flood Profile	\$ 740.00
5.5	Assembling and Printing Report	\$ 857.00
5.6	Responding to FEMA Comments	\$ 1,968.00
5.7	Public Notice	\$ 656.00
	Project Expenses - Travel, Mileage, Printing	\$ 46.80
	<b>Subtotal Task Task 5 - FEMA Documentation</b>	<b>\$ 15,559.80</b>

TASKS		Task Cost
<b>TASK</b>	<b>TASKS</b>	<b>Task Cost</b>
6.1	ID Opportunities	\$ 2,952.00
	Project Expenses - Travel, Mileage, Printing	\$ -
	<b>Subtotal Task TASKS</b>	<b>\$ 2,952.00</b>

<b>TOTAL ESTIMATED FEES - Tasks 1 - 6 - Robbinsdale Drainage</b>	<b>\$ 92,159.80</b>
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Note: AE2S shall retain the right to reallocate Drainage Basin, Task, and Staff costs subject to the maximum limiting fee.

**EXHIBIT B - Phase 022  
South Canyon Drainage**

Detailed Analysis of FEMA SFHA  
Project No. 15-2244 / CIP 51057  
Advanced Engineering and Environmental Services, Inc.  
**TASK SCHEDULE**  
December 7, 2015

South Canyon Drainage		Task Cost
<b>TASK</b>	<b>Task 1 - Project Management and Meetings</b>	<b>Task Cost</b>
1.1	Meetings	\$ 3,755.00
1.2	Project Management	\$ 5,643.00
	Project Expenses - Travel, Mileage, Printing	\$ 965.00
	<b>Subtotal Task Task 1 - Project Management and Meetings</b>	<b>\$ 10,363.00</b>

TASK	Task 2 - Data Collection	Task Cost
2.1	Data Review	\$ 4,111.00
2.2	Survey	\$ 18,007.00
2.3	QA-QC	\$ 1,148.00
	Project Expenses - Travel, Mileage, Printing	\$ 243.75
	<b>Subtotal Task Task 2 - Data Collection</b>	<b>\$ 23,509.75</b>

TASK	Task 3 - Hydrology	Task Cost
3.1	Subwatersheds	\$ 8,686.00
3.2	Drainage Network	\$ 10,890.00
3.3	Rainfall	\$ 505.00
3.4	Model Runs & Results	\$ 2,877.00
3.5	QA-QC	\$ 2,058.00
	Project Expenses - Travel, Mileage, Printing	\$ -
	<b>Subtotal Task Task 3 - Hydrology</b>	<b>\$ 25,016.00</b>

TASK	Task 4 - Hydraulics and Mapping	Task Cost
4.1	Model Development	\$ 7,962.00
4.2	Preliminary Mapping	\$ 3,842.00
4.3	Final Analysis & Mapping	\$ 6,132.00
4.4	Floodway Encroachment & Mapping	\$ 2,709.00
4.5	QA-QC	\$ 1,432.00
	Project Expenses - Travel, Mileage, Printing	\$ -
	<b>Subtotal Task Task 4 - Hydraulics and Mapping</b>	<b>\$ 22,077.00</b>

TASK	Task 5 - FEMA Documentation	Task Cost
5.1	Report Narrative	\$ 8,102.00
5.2	MT-2 Forms	\$ 624.00
5.3	Cert Topo Map and Annotated FIRMs	\$ 2,628.00
5.4	Floodway Data Table and Flood Profile	\$ 788.00
5.5	Assembling and Printing Report	\$ 857.00
5.6	Responding to FEMA Comments	\$ 1,968.00
5.7	Public Notice	\$ 656.00
	Project Expenses - Travel, Mileage, Printing	\$ 46.80
	<b>Subtotal Task Task 5 - FEMA Documentation</b>	<b>\$ 13,669.80</b>

TASK	TASKS	Task Cost
6.1	ID Opportunities	\$ 2,952.00
	Project Expenses - Travel, Mileage, Printing	\$ -
	<b>Subtotal Task TASKS</b>	<b>\$ 2,952.00</b>

<b>TOTAL ESTIMATED FEES - Tasks 1 - 6 -- South Canyon Drainage</b>	<b>\$ 97,587.55</b>
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Note: AE2S shall retain the right to reallocate Drainage Basin, Task, and Staff costs subject to the maximum limiting fee.

## EXHIBIT C

### Detailed Analysis of FEMA SFHA Project No. 15-2244 CIP 51057

Advanced Engineering and Environmental Services, Inc.	
Position Title	Hourly Billing Rate
Project Manager III (Client Manager)	\$185.00
Engineer VI	\$202.00
Engineer V (QA-QC Reviewer)	\$179.00
Engineer IV (Project Manager, Haines & Robbinsdale Leads)	\$164.00
Engineer III (South Canyon Lead, Haines & Robbinsdale Support)	\$144.00
Engineer II (South Canyon Support)	\$115.00
Engineer I (Haines Support)	\$98.00
GIS Specialist III (Mapping Lead)	\$115.00
GIS Specialist I (Mapping Support)	\$ 80.00
Surveyor I (Surveyor)	\$ 91.00
Engineering Technician III (CAD Support)	\$ 94.00
Engineering Technician II (Surveyor)	\$ 80.00
Administrator III	\$ 80.00
Administrator I	\$ 67.00

If project goes to 2017, Contract will be amended.

Project Mileage:.....\$ 0.65/mile  
 Project Travel (Other):.... Actual Cost  
 In House B&W Printing:..\$ 0.04/page  
 In House Color Printing:..\$ 0.35/page  
 Blueline Printing: .....Actual Cost  
 Outside Printing:.....Actual Cost  
 Traffic Control:.....Actual Cost