

**PUBLIC WORKS AND UTILITIES
MEMORANDUM #08-18**

DATE: July 10, 2008
TO: Honorable Mayor Kathleen M. Novak and City Council Members
FROM: David Allen, Acting City Manager / Director of Public Works and Utilities **NFA**
SUBJECT: CR-104 – Bull Reservoir Outlet and Liner Emergency Repairs

RECOMMENDATION:

Attached to this memorandum is a Resolution which, if approved, would authorize the Mayor to execute the Professional Services Agreement between the City of Northglenn and URS Corp to provide design services for an amount not to exceed \$44,100. Staff recommends approval of the proposed Resolution.

BACKGROUND:

On June 24th the asphalt liner for Bull Reservoir was severely damaged near the outlet works that discharges the treated effluent from the Waste Water Treatment Plant (WWTP). Staff developed and implemented a temporary piping to resume discharges from the new WWTP and divert flows away from the damaged area and to facilitate permanent repairs. The supplies needed for the temporary repair including the pipe were approximately \$20,000. The repairs were completed in house.

Staff contacted representatives of the Colorado State Division of Safety of Dams to inform them of the situation and to coordinate a site visit to determine the appropriate course of action. The State requested the gradual draw down of the reservoir. This draw down is being accomplished by the historical practices of discharging to the FRICO farmers. Further action may be required to facilitate the State's hold requirement. Timing of repairs with the draw down of the reservoir will be critical through out this process. At current water levels there will only be minor impacts projected on the water rights and agreements related to Bull Reservoir.

Staff contacted URS Corp and Joseph A. Cesare and Associates, Inc to submit proposals to design the permanent repairs to the liner and outlet works. Staff reviewed the proposals and is recommending URS Corp. URS proposal demonstrated an understanding of the situation and the hazards that could be encounter during the course of this project.

Given the urgent need for the repairs, Staff is recommending the use of funds from the Pump and Motor Replacement project scheduled for 2008. There is approximately \$45,000 remaining from this project. Since the funds for this project are coming from another project already included in the 2008 Capital Improvement Budget, a budget appropriation amendment is not required. Additionally, Staff anticipates presenting a construction contract for the permanent repair at the August 28th Council meeting.

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BUDGET/TIME IMPLICATIONS:

There is no impact to the General Fund. Funds from the 2008 Capital Improvements Fund would be used to fund the design services.

STAFF REFERENCE:

If Council Members have any comments or questions, they may contact David Allen at (303) 450-8783 or dallen@northglenn.org.

SPONSORED BY: MAYOR NOVAK

COUNCILMAN'S RESOLUTION

RESOLUTION NO.

No. CR-104
Series of 2008

Series of 2008

A RESOLUTION APPROVING A PROFESSIONAL SERVICES AGREEMENT BETWEEN THE CITY OF NORTHGLENN AND URS CORPORATION FOR THE BULL RESERVOIR EMERGENCY REPAIR DESIGN PROJECT

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF NORTHGLENN, COLORADO, THAT:

Section 1. The Professional Services Agreement between the City of Northglenn and URS Corporation, attached hereto, in the amount of \$44,100 for the Design of the Bull Reservoir Outlet and Liner Emergency Repairs Project is hereby approved and the Mayor is authorized to execute same on behalf of the City of Northglenn.

DATED at Northglenn, Colorado, this ____ day of _____, 2008.

KATHLEEN M. NOVAK
Mayor

ATTEST:

JOHANNA SMALL, CMC
Acting City Clerk

APPROVED AS TO FORM:

COREY Y. HOFFMANN
City Attorney

AGREEMENT FOR PROFESSIONAL SERVICES

THIS AGREEMENT is made and entered into this ____ day of _____, 2008, by and between the City of Northglenn, State of Colorado (hereinafter referred to as the "City") and URS Corporation (hereinafter referred to as "Consultant").

RECITALS:

A. The City requires professional services.

B. Consultant has held itself out to the City as having the requisite expertise and experience to perform the required work for the Project.

NOW, THEREFORE, it is hereby agreed for the consideration hereinafter set forth, that Consultant shall provide to the City, professional consulting services for the Project.

I. SCOPE OF SERVICES

Consultant shall furnish all labor and materials to perform the work and services required for the complete and prompt execution and performance of all duties, obligations, and responsibilities for the Project which are described or reasonably implied from **Exhibit A** which is attached hereto and incorporated herein by this reference.

II. THE CITY'S OBLIGATIONS/CONFIDENTIALITY

The City shall provide Consultant with reports and such other data as may be available to the City and reasonably required by Consultant to perform hereunder. No project information shall be disclosed by Consultant to third parties without prior written consent of the City or pursuant to a lawful court order directing such disclosure. All documents provided by the City to Consultant shall be returned to the City. Consultant is authorized by the City to retain copies of such data and materials at Consultant's expense.

III. OWNERSHIP OF WORK PRODUCT

The City acknowledges that the Consultant's work product is an instrument of professional service. Nevertheless, the products prepared under this Agreement shall become the property of the City upon completion of the work. Any re-use of such work product by the City on any extension of this Project or on any other project shall be at the City's sole risk.

IV. COMPENSATION

A. In consideration for the completion of the services specified herein by Consultant, the City shall pay Consultant an amount not to exceed forty four thousand one hundred dollars (\$44,100). Payment shall be made in accordance with the schedule of charges in **Exhibit B** which is attached hereto and incorporated herein by this reference. Invoices will be itemized and include hourly breakdown for all personnel and other charges. The maximum fee specified herein shall include all fees and expenses incurred by Consultant in performing all services hereunder.

B. Consultant may submit monthly or periodic statements requesting payment. Such request shall be based upon the amount and value of the work and services performed by Consultant under this Agreement except as otherwise supplemented or accompanied by such supporting data as

may be required by the City.

1. All invoices, including Consultant's verified payment request, shall be submitted by Consultant to the City no later than the twenty-fourth (24th) day of each month for payment pursuant to the terms of this Agreement. In the event Consultant fails to submit any invoice on or before the twenty-fourth (24th) day of any given month, Consultant defers its right to payment pursuant to said late invoice until the twenty-fourth (24th) day of the following month.

2. Progress payments may be claimed on a monthly basis for reimbursable costs actually incurred to date as supported by detailed statements, including hourly breakdowns for all personnel and other charges. The amounts of all such monthly payments shall be paid within thirty (30) days after the timely receipt of invoice as provided by this Agreement.

C. The City has the right to ask for clarification on any Consultant invoice after receipt of the invoice by the City.

D. In the event payment for services rendered has not been made within forty-five (45) days from the receipt of the invoice for any uncontested billing, interest will accrue at the legal rate of interest. In the event payment has not been made within ninety (90) days from the receipt of the invoice for any uncontested billing, Consultant may, after giving seven (7) days written notice and without penalty or liability of any nature, suspend all work on all authorized services specified herein. In the event payment in full is not received within thirty (30) days of giving the seven (7) days written notice, Consultant may terminate this Agreement. Upon receipt of payment in full for services rendered, Consultant will continue with all authorized services.

E. Final payment shall be made within sixty (60) calendar days after all data and reports (which are suitable for reproduction and distribution by the City) required by this Agreement have been turned over to and approved by the City and upon receipt by the City of Consultant's certification that services required herein by Consultant have been fully completed in accordance with this Agreement and all data and reports for the Project.

V. COMMENCEMENT AND COMPLETION OF WORK

Within seven (7) days of receipt from the City of a Notice to Proceed, Consultant shall commence work on all its obligations as set forth in the Scope of Services or that portion of such obligations as is specified in said Notice. Except as may be changed in writing by the City, the Project shall be complete and Consultant shall furnish the City the specified deliverables as provided in Exhibit A.

VI. CHANGES IN SCOPE OF SERVICES

A change in the Scope of Services shall constitute any material change or amendment of services or work which is different from or additional to the Scope of Services specified in Section I of this Agreement. No such change, including any additional compensation, shall be effective, or paid unless authorized by written amendment executed by the City. If Consultant proceeds without such written authorization, then Consultant shall be deemed to have waived any claim for additional compensation, including a claim based on the theory of unjust enrichment, quantum merit or implied contract. Except as expressly provided herein, no agent, employee, or representative of the City shall have the authority to enter into any changes or modifications, either directly or implied by a course of action, relating to the terms and scope of this Agreement.

VII. PROFESSIONAL RESPONSIBILITY

A. Consultant hereby warrants that it is qualified to assume the responsibilities and render the services described herein and has all requisite corporate authority and professional licenses in good standing, required by law.

B. The work performed by Consultant shall be in accordance with generally accepted professional practices and the level of competency presently maintained by other practicing professional firms in the same or similar type of work in the applicable community.

C. Consultant shall be responsible for the professional quality, technical accuracy, timely completion, and the coordination of all designs, drawings, specifications, reports, and other services furnished by Consultant under this Agreement. Consultant shall, without additional compensation, correct or resolve any errors or deficiencies in his designs, drawings, specifications, reports, and other services, which fall below the standard of professional practice and reimburse the City for construction costs caused by errors and omissions which fall below the standard of professional practice.

D. Approval by the City of drawings, designs, specifications, reports, and incidental work or materials furnished hereunder shall not in any way relieve Consultant of responsibility for technical adequacy of the work. Neither the City's review, approval or acceptance of, nor payment for, any of the services shall be construed to operate as a waiver of any rights under this Agreement or of any cause of action arising out of the performance of this Agreement, and Consultant shall be and remain liable in accordance with applicable performance of any of the services furnished under this Agreement.

E. The rights and remedies of the City provided for under this Agreement are in addition to any other rights and remedies provided by law.

VIII. ILLEGAL ALIENS

A. Certification. By entering into this Agreement, Consultant hereby certifies that, at the time of this certification, it does not knowingly employ or contract with an illegal alien who will perform work under the Agreement and that Consultant will participate in either the E-Verify Program administered by the United States Department of Homeland Security and Social Security Administration or the Department Program administered by the Colorado Department of Labor and Employment in order to confirm the employment eligibility of all employees who are newly hired for employment to perform work under the Agreement.

B. Prohibited Acts. Consultant shall not:

(1) Knowingly employ or contract with an illegal alien to perform work under this Agreement; or

(2) Enter into a contract with a subcontractor that fails to certify to Consultant that the subcontractor shall not knowingly employ or contract with an illegal alien to perform work under this Agreement.

C. Verification.

1. Consultant has confirmed the employment eligibility of all employees who are newly hired for employment to perform work under this Agreement through participation in either the E-Verify Program or the Department Program.

2. Consultant shall not use the E-Verify Program or the Department Program procedures to undertake pre-employment screening of job applicants while this Agreement is being performed.

3. If Consultant obtains actual knowledge that a subcontractor performing work under this Agreement knowingly employs or contracts with an illegal alien who is performing work under the Agreement, Consultant shall:

a. Notify the subcontractor and the City within three (3) days that Consultant has actual knowledge that the subcontractor is employing or contracting with an illegal alien who is performing work under the Agreement; and

b. Terminate the subcontract with the subcontractor if within three (3) days of receiving the notice required pursuant to subparagraph (a) hereof, the subcontractor does not stop employing or contracting with the illegal alien who is performing work under the Agreement; except that Consultant shall not terminate the contract with the subcontractor if during such three (3) days the subcontractor provides information to establish that the subcontractor has not knowingly employed or contracted with an illegal alien who is performing work under the Agreement.

D. Duty to Comply with Investigations. Consultant shall comply with any reasonable request by the Colorado Department of Labor and Employment made in the course of an investigation conducted pursuant to C.R.S. § 8-17.5-102(5)(a) to ensure that Consultant is complying with the terms of this Agreement.

E. If Consultant does not currently employ any employees, Consultant shall sign the NO Employee Affidavit attached hereto.

F. If Consultant wishes to verify the lawful presence of newly hired employees who perform work under the Agreement via the Department Program, Consultant shall sign the Department Program Affidavit attached hereto.

IX. INDEMNIFICATION

Consultant agrees to indemnify and hold harmless the City, its officers, employees, and insurers, from and against all liability, claims, and demands, on account of injury, loss, or damage, including without limitation claims arising from bodily injury, personal injury, sickness, disease, death, property loss or damage, to the extent such injury, loss, or damage is caused by, or is claimed to be caused in whole or in part by, the negligent act, omission, error, professional error, mistake, negligence, or other fault of Consultant, any subcontractor of Consultant, or any officer, employee, representative, or agent of Consultant or of any subcontractor of Consultant, or which arise out of any workmen's compensation claim of any employee of Consultant or of any employee of any subcontractor of Consultant. Consultant agrees to investigate, handle, respond to, and to provide defense for and defend against any such liability, claims or demands at the sole expense of Consultant, or at the option of the City, agrees to pay the City or reimburse the City for reasonable

defense costs incurred by the City in connection with, any such liability, claims, or demands. Consultant also agrees to bear all other costs and expenses related thereto, including court costs and attorney fees, whether or not any such liability, claims, or demands alleged are groundless, false, or fraudulent. If it is determined by the final judgment of a court of any competent jurisdiction that such injury, loss, or damage was caused in whole or in part by the act, omission, or other fault of the City, its officers, or its employees, the City shall reimburse Consultant for the portion of the judgment attributable to such act, omission, or other fault of the City, its officers, or employees.

X. INSURANCE

A. Consultant agrees to procure and maintain, at its own cost, a policy or policies of insurance sufficient to insure against all liability, claims, demands, and other obligations assumed by Consultant pursuant to Section IX, above. Such insurance shall be in addition to any other insurance requirements imposed by this Agreement or by law. Consultant shall not be relieved of any liability, claims, demands, or other obligations assumed pursuant to Section IX, above, by reason of its failure to procure or maintain insurance, or by reason of its failure to procure or maintain insurance in sufficient amounts, durations, or types.

B. Consultant shall procure and maintain, and shall cause any subcontractor of Consultant to procure and maintain, the minimum insurance coverages listed below. Such coverages shall be procured and maintained with forms and insurers acceptable to the City. All coverages shall be continuously maintained to cover all liability, claims, demands, and other obligations assumed by Consultant pursuant to Section IX, above. In the case of any claims-made policy, the necessary retroactive dates and extended reporting periods shall be procured to maintain such continuous coverage.

1. Workmen's compensation insurance to cover obligations imposed by applicable laws for any employee engaged in the performance of work under this Agreement, and Employer's Liability insurance with minimum limits of five hundred thousand dollars (\$500,000) each accident, one million dollars (\$1,000,000) disease - policy limit, and one million dollars (\$1,000,000) disease - each employee. Evidence of qualified self-insured status may be substituted for the workmen's compensation requirements of this paragraph.

2. Commercial general liability insurance with minimum combined single limits of six hundred thousand (\$600,000) each occurrence and one million dollars (\$1,000,000) general aggregate. The policy shall be applicable to all premises and operations. The policy shall include coverage for bodily injury, broad form property damage (including completed operations), personal injury (including coverage for contractual and employee acts), blanket contractual, products, and completed operations. The policy shall contain a severability of interests provision.

3. Professional liability insurance with minimum limits of six hundred thousand dollars (\$600,000) each claim and one million dollars (\$1,000,000) general aggregate.

C. The policy required by paragraph 2. above shall be endorsed to include the City and the City's officers, employees, as additional insureds. Every policy required above except professional and workers' compensation shall be primary insurance, and any insurance carried by the City, its officers, its employees, or its consultants shall be excess and not contributory insurance to that provided by Consultant. No additional insured endorsement to the policy required by paragraph 1. above shall contain any exclusion for bodily injury or property damage arising from

completed operations. Consultant shall be solely responsible for any deductible losses under any policy required above.

D. The certificate of insurance provided for the City shall be completed by Consultant's insurance agent as evidence that policies providing the required coverages, conditions, and minimum limits are in full force and effect, and shall be reviewed and approved by the City prior to commencement of the Agreement. No other form of certificate shall be used. If the City is named as an additional insured on any policy which does not allow for the automatic addition of additional insureds, the Consultant's insurance agent shall also provide a copy of all accompanying endorsements recognizing the City as an additional insured. The certificate shall identify this Agreement and shall provide that the coverages afforded under the policies shall not be cancelled, terminated or materially changed until at least thirty (30) days prior written notice has been given to the City except 10 days notice for non-payment of premiums. The completed certificate of insurance shall be sent to:

City of Northglenn
Attn: Eve Craven
11701 Community Center Drive
Northglenn, Colorado 80233-8061

E. Failure on the part of Consultant to procure or maintain policies providing the required coverages, conditions, and minimum limits shall constitute a material breach of agreement upon which the City may immediately terminate this Agreement, or at its discretion, the City may procure or renew any such policy or any extended reporting period thereto and may pay any and all premiums in connection therewith, and all monies so paid by the City shall be repaid by Consultant to the City upon demand, or the City may offset the cost of the premiums against any monies due to Consultant from the City.

F. The City reserves the right to request and receive a certified copy of any policy and any endorsement thereto; provided that Consultant may redact any confidential information relating to other clients of Consultant.

G. The parties hereto understand and agree that the City, its officers, and its employees, are relying on, and do not waive or intend to waive by any provision of this Agreement, the monetary limitations (presently one hundred fifty thousand dollars (\$150,000) per person and six hundred thousand dollars (\$600,000) per occurrence) or any other rights, immunities, and protections provided by the Colorado Governmental Immunity Act, Colo. Rev. Stat. §24-10-101 et seq., Colo. Rev. Stat., as from time to time amended, or otherwise available to the City, its officers, or its employees.

XI. NON-ASSIGNABILITY

Neither this Agreement, nor any of the rights or obligations of the parties hereto, shall be assigned by either party without the written consent of the other.

XII. TERMINATION

This Agreement shall terminate at such time as the work in Section I is completed and the requirements of this Agreement are satisfied, or upon the City's providing Consultant with seven (7) days advance written notice, whichever occurs first. In the event the Agreement is terminated by the City's issuance of said written notice of intent to terminate, the City shall pay Consultant for all

work previously authorized and completed prior to the date of termination. If, however, Consultant has substantially or materially breached the standards and terms of this Agreement, the City shall have any remedy or right of set-off available at law and equity. If the Agreement is terminated for any reason other than cause prior to completion of the Project, any use of documents by the City thereafter shall be at the City's sole risk, unless otherwise consented to by Consultant.

XIII. CONFLICT OF INTEREST

The Consultant shall disclose any personal or private interest related to property or business within the City. Upon disclosure of any such personal or private interest, the City shall determine if the interest constitutes a conflict of interest. If the City determines that a conflict of interest exists, the City may treat such conflict of interest as a default and terminate this Agreement.

XIV. VENUE

This Agreement shall be governed by the laws of the State of Colorado, and any legal action concerning the provisions hereof shall be brought in the County of Adams, State of Colorado.

XV. INDEPENDENT CONTRACTOR

Consultant is an independent contractor. Notwithstanding any provision appearing in this Agreement, all personnel assigned by Consultant to perform work under the terms of this Agreement shall be, and remain at all times, employees or agents of Consultant for all purposes. Consultant shall make no representation that it is the employee of the City for any purposes.

XVI. NO WAIVER

Delays in enforcement or the waiver of any one or more defaults or breaches of this Agreement by the City shall not constitute a waiver of any of the other terms or obligation of this Agreement.

XVII. ENTIRE AGREEMENT

This Agreement and the attached Exhibits A and B is the entire Agreement between Consultant and the City, superseding all prior oral or written communications. None of the provisions of this Agreement may be amended, modified, or changed, except as specified herein.

XVIII. SUBJECT TO ANNUAL APPROPRIATION

Consistent with Article X, Section 20 of the Colorado Constitution, any financial obligations the City not to be performed during the current fiscal year are subject to annual appropriation, and thus any obligations of the City hereunder shall extend only to monies currently appropriated and shall not constitute a mandatory charge, requirement or liability in any ensuing fiscal conflicting provisions in the Agreement establishing any monetary obligation beyond the current fiscal year.

XIX. NOTICE

Any notice or communication between Consultant and the City which may be required, or which may be given, under the terms of this Agreement shall be in writing, and shall be deemed to have been sufficiently given when directly presented or sent pre-paid, first class United States Mail, addressed as follows:

The City: City of Northglenn
11701 Community Center Drive
Northglenn, Colorado 80233-8061

Consultant: URS Corporation
8181 East Tufts Avenue
Denver, Colorado 80237

City grants to Consultant, and if the project site is not owned by the City, warrants that permission has been granted for a right of entry, from time to time by Consultant, its employees, agents and subcontractors upon the project site for the purpose of providing the services. City recognizes that the use of investigative equipment and practices may unavoidably alter the existing conditions and affect the environment in the area being studied despite the use of reasonable care.

IN WITNESS WHEREOF, the parties hereto each herewith subscribe the same in duplicate.

CITY OF NORTHGLENN, COLORADO

By: _____
Kathleen M. Novak, Mayor

ATTEST:

Johanna Small, Acting City Clerk

APPROVED AS TO FORM:

Corey Y. Hoffmann, City Attorney

CONSULTANT:
By: _____

ATTEST:

Richard R Derudean

Print Name

By: _____

Vice President

Title

7/7/08

Date

Print Name

Title

Date

City's Contract # _____
Cory Peterson
Name of City's Project Manager

Attached is **EXHIBIT A “SCOPE OF SERVICES”** and **EXHIBIT B “AMOUNT OF COMPENSATION”**



SCOPE OF WORK

This section outlines URS' proposed SOW to develop the design for emergency repair of the effluent spillway and embankment. The SOW has been divided into the following tasks:

- Task 1: Project Initiation
- Task 2: Design Analyses
- Task 3: Design Submittal
- Task 4: Project Management

URS also offers the following services related to the project, which are not considered to be part of this SOW:

- Evaluation of failure mechanism(s)
- Evaluation of On-Site Borrow Material
- Construction phase services
- Expert Witness services

The SOW tasks and additional services offered are discussed below.

TASK 1: PROJECT INITIATION

TASK 1.1 KICKOFF MEETING

URS will coordinate a kickoff meeting with key personnel from the City, URS and the SEO. The purpose of this meeting will be to confirm URS' proposed design, applicable design criteria, and schedule and deliverables. We recommend that a representative of the SEO office attend the meeting to help expedite the review process.

TASK 1.2 SITE VISIT

A site visit will be performed to examine the failure area in detail and obtain measurements for design and construction cost estimation. Approximate horizontal and vertical control will be established in the immediate vicinity of the failure area using existing survey data from the City as well as URS field measurements (GPS measurements, hand level, tape). URS' GPS instruments are accurate to within approximately 0.1 inch horizontal and 1 inch vertical. Under normal circumstances, a survey would be performed to establish control for design; however, the embankment toe is anticipated to be submerged during the design period and would not be capable of being surveyed accurately. Specifically, the purpose of the field data collected by URS will be to:

- Establish base mapping for drawings
- Establish horizontal and vertical control for design and construction
- Identify/confirm the location of the existing structures
- Map the surface of the dam in the immediate vicinity of the outfall structure down to the water level at the time of the field measurements
- Confirm the slope angle of the upstream slope of the dam
- Map cracks in the asphalt liner and concrete spillway.

TASK 2: DESIGN ANALYSES

Analyses will be performed to support the design in accordance with SEO requirements, including geotechnical, structural, and hydraulic analyses. We have contacted the SEO and discussed their expectations for analyses, with consideration to the expedited design and construction time frame.

Geotechnical analyses will include evaluating stability of the upstream slope during construction. Seepage analyses are not necessary, as the reservoir will be drawn down below the dead pool at the time of construction; we do not anticipate the



embankment phreatic surface to be present in the excavation/repair zone. Toe drain filter compatibility analyses and evaluation of on-site borrow material are included as an additional services work item, discussed below. These work items cannot be adequately evaluated until construction, when the embankment underlying the damaged asphalt is exposed, the upstream toe is de-watered, and when existing embankment and filter materials can be compared with the on-site borrow sources.

Hydraulic analyses of the proposed baffled apron drop will be performed in accordance with procedures outlined in the Bureau of Reclamation's design document titled Design of Small Canal Structures. The design flow will be evaluated for the current effluent flow rate of 10 cfs and we will verify performance of the structure for the future design flow rate of 20 cfs. The result of the hydraulic analysis will be the general arrangement of the structure and the specific dimensions of the chute, chute walls, baffle dimensions and baffle arrangement.

Structural analyses will be performed to develop load for designing the main features of the baffled apron drop structure: the foundation slab and anchorage, baffled chute drop side walls and baffles. The design loads developed will include hydrostatic loads, thermal and temperature loads. The reinforcement will be designed in accordance with ACI 318. The structural design and analysis will also include doweling to the existing concrete impact basin structure.

This task will include a review of analyses performed by Integra as part of their 2005 design for applicability to URS' proposed design. URS will also review pertinent geotechnical data obtained during our previous work at the site.

TASK 3: DESIGN SUBMITTAL

This task includes preparation of final design drawings, technical specifications, a construction cost estimate, and a design report. The task also includes one review and comment period with the City and the SEO.

DESIGN APPROACH

We propose a design approach that addresses potential failure mechanism(s), and incorporates the key recommendations communicated to us by the City and the SEO. Based on our understanding of the operation of the facility we have outlined the general design criteria, presented in the Project Understanding section above.

Understanding the design criteria and the City's preference for a reinforced concrete chute slab, URS proposes to design a U. S. Bureau of Reclamation (Reclamation) baffled chute drop. The following is an excerpt from Reclamation's document *Design of Small Canal Structures* that describes this type of structure.

"Baffled apron drops used in canals or wasteway channels to provide dissipation of excess energy at drops in grade. Energy dissipation occurs as the water flows over concrete baffle blocks, which are located along the floor of the chute. The ability of the baffled chute drop to accommodate a widely fluctuating tailwater elevation makes it especially suitable as an energy dissipater at the end of a canal or a wasteway that discharges into a reservoir. The length of the baffled apron does not affect the efficacy of the structure."

Based on the observations made during our recent site visit, we anticipate that the existing asphalt surfacing in the vicinity of the existing outfall structure will need to be removed, after the reservoir level is drawn down below dead pool and a cofferdam has been constructed to dewater the toe area. We expect this removal will extend from the existing structure down to the toe of the dam and the width, be approximately 100 feet wide, based on which is bounded by the existing pavement joints on either side of the outfall structure. URS will design the new asphalt lining in accordance with the current state of the practice for modern hydraulic asphalt. We plan to design the baffled apron with design techniques and details similar to what we use for hydraulic structures (spillways and outlet works) for dams. These include the appropriate selection and detailing of structure joints, waterstop to prevent leakage at construction and control joints, and appropriate reinforcement to provide rigid structure to resist the design loads and minimize movements. Care will also be taken to develop and design the appropriate construction details between the existing outfall structure and the new baffled apron drop. Finally, while we do not anticipate that the existing drain material and toe drain will be affected during the construction, URS will select the appropriate gradation of drain materials for the underdrain as well as the embankment drain at the upstream toe. After removal of the asphalt facing, observations of the exposed drainage layer under the facing can be observed along with the drain material and toe drain.



TASK 3.1 DESIGN DRAWINGS

The following design sheets are proposed for the drawing set:

- Title sheet
- Plan of existing conditions
- Demolition plan
- Embankment modifications plan
- Effluent Spillway plan and profile
- Effluent Spillway - Concrete Outline and Reinforcement
- Connections to Existing Structures

TASK 3.2 TECHNICAL SPECIFICATIONS

The following technical specification sections are proposed:

- Demolition
- Earthwork
- Asphalt Pavement
- Concrete
- Drilled Foundation Anchors.

TASK 3.3 CONSTRUCTION COST ESTIMATE

A construction cost estimate will be prepared to aid the City in assessing budgetary requirements. Construction pricing will be in current dollars and are intended to be for "contract" construction costs. Estimated construction cost will not include other owner cost such as legal, permits, procurement requirements, engineering, and construction management.

Work features and items will be identified and a work breakdown structure developed. Quantity estimates will be based on measurements obtained in the field, and are subject to change upon observation of the embankment when the failed asphalt liner and concrete spillway apron are removed during construction.

Pricing will be accomplished with the use of statistical unit pricing, contact with material suppliers and contractors, and the development of unit prices by applying production rates to labor equipment and material cost. Unit pricing will be developed in a similar process performed by a competent and qualified contractor. Bids are also assumed to be advertised in an open and competitive construction market.

The engineer's opinion of construction cost will be based on applying unit prices to the quantification of items in the work breakdown structure. Cost will also be calculated for mobilization and project general requirements based on the estimated construction duration. A contingency will be added to the subtotal of the above and will be in keeping with the class of requested design.

TASK 3.4 DESIGN REPORT

A design report will be prepared that describes our design, and the results of geotechnical, hydraulic, and structural analyses. The report will be submitted along with a SEO application, and drawings and specifications completed to the 90 percent level. Based on discussion with the SEO, a 1 to 2 week review time frame is anticipated. All 90 percent submittals will be revised, based on City and SEO comments for the 100 percent submittals.

TASK 4: PROJECT MANAGEMENT

This task includes project setup, meetings and correspondence, and project closeout. In addition to the kickoff meeting covered under Task 1, we are assuming one meeting with both the City and the SEO to present our design and address any



questions. Due the expedited time frame of the project, we anticipate frequent communication with the City to keep the project moving quickly and efficiently.



COST PROPOSAL

This section presents our proposed costs for the Design SOW, and proposed costs for additional services. A detailed cost breakdown for each task is provided in Table 1.

Design SOW

<u>Work Description</u>	<u>Cost</u>
Task 1 – Project Initiation	\$2,800
Task 2 – Analyses	\$4,800
Task 3 – Design Submittal ¹	\$33,600
Task 4 – Project Management	\$2,900
Total	\$44,100

The following additional services not considered to be part of the Design SOW are offered to the City.

Additional Services

<u>Work Description</u>	<u>Cost</u>
Evaluation of Failure Mechanism(s)	To be determined ²
Evaluation of On-Site Borrow Materials	To be determined ²
Construction Phase Services	
Bid Phase Assistance	\$125 per hour
Construction Inspection	\$75 per hour
Construction Manager	\$100 per hour
Engineering Support During Construction	\$125 per hour
Expert Witness Services – Rich Millet	\$250 per hour
Expert Witness Services – Technical Assistant	\$100 per hour

Notes:

¹ SEO filing fee is assumed to be paid by the City.

² Based on discussion with Mr. Cory Peterson with the City on July 3, 2008, it was agreed that a cost for this additional services work item would not be included in this proposal.

PROSPECTIVE CONSULTANT'S CERTIFICATE REGARDING EMPLOYING OR
CONTRACTING WITH AN ILLEGAL ALIEN

FROM: URS Corporation
(Prospective Consultant)

TO: City of Northglenn
PO Box 330061
11701 Community Center Drive
Northglenn, CO 80233

Project Name Bull Reservoir Outlet and Liner Emergency Repairs

Bid Number _____

Project No. _____

As a prospective Consultant for the above-identified bid, I (we) do hereby certify that, as of the date of this certification, I (we) do not knowingly employ or contract with an illegal alien and that I (we) have confirmed or attempted to confirm the employment eligibility of all employees who are newly hired for employment in the United States through participation in the basic pilot program administered by the United States Department of Homeland Security.

Executed this 7 day of July, 2008.

Prospective Consultant URS Corporation

By: [Signature]

Title: Vice President

Finance Dept Use Only	
Initials	_____
Date	_____
PO #	_____

DEPARTMENT PROGRAM AFFIDAVIT

(To be completed if Consultant participates in the Department of Labor Lawful Presence Verification Program)

I, URS, as a public contractor under contract with the City of Northglenn (the "City"), hereby affirm that:

1. I have examined or will examine the legal work status of all employees who are newly hired for employment to perform work under this public contract for services ("Contract") with the Town within twenty (20) days after such hiring date;

2. I have retained or will retain file copies of all documents required by 8 U.S.C. § 1324a, which verify the employment eligibility and identity of newly hired employees who perform work under this Contract; and

3. I have not and will not alter or falsify the identification documents for my newly hired employees who perform work under this Contract.

[Signature]
Consultant Signature

7/7/08
Date

STATE OF COLORADO)
) ss.
COUNTY OF _____)

The foregoing instrument was subscribed, sworn to and acknowledged before me this ___ day of _____, 2008, by _____ as _____ of _____.

My commission expires:

(S E A L)

Notary Public

Finance Dept Use Only	
Initials	_____
Date	_____
PO #	_____