

City Council Action Report

To: Mayor and Council
Submitted by: Amy L. Ward, P.E.
Date: August 10, 2006
Subject: Water Treatment Plant Clearwell/Administration Addition
Strategic Council Goal(s): Upgraded City Infrastructure and Facilities – Objective #1

Recommended Action and Major Considerations:

- Authorize the Mayor to execute the attached contract between the City of Northglenn and The Engineering Company of Fort Collins, Colorado, for an amount of \$93,303.00. It is further recommended the City Council authorize \$5,252.00 as a 5.6% contingency and authorize the City Manager to approve minor changes in the scope of work and execute relevant change orders up to the approved expenditure limit of \$98,555.00.
This project is being performed to meet the disinfection contact time required by the Colorado Department of Public Health and Environment during peak demands and also to replace the staff office space that was destroyed last year. Creating a new facility with a clearwell and an office space addition will allow for sufficient disinfection contact time while providing office space for the Water Treatment Plant staff.

Background and Other Information:

- As water demands continue to rise, the existing facility is approaching the point of no longer being able to meet the peak demands. With the increasing peak demands, the City must add the additional clearwell to comply with the contact time requirements required by the Colorado Department of Public Health and Environment.
Based on the design of the Northglenn Water Treatment Plant, the existing clearwell has been in continuous operation without any major maintenance since the plant was placed into operation in 1980.
Without a redundant clearwell, any clearwell rehabilitation that has occurred, has been very minimal and has been performed in the past by diving teams.
In March of last year a fire occurred in the temporary offices building for the Water Treatment Plant. Due to rehabilitation required of the existing clearwell and the lack of permanent office space for the Water Treatment Plant operations staff, staff is recommending construction of an additional clearwell along with permanent office space.
Proposals were solicited from four consulting firms. The firm selected based on the Request for Proposal was The Engineering Company.
A copy of the bid tabulation, agreement, references, and proposed fee.

Legal Considerations:

- The Council is within its legal purview to accept bids and approve contracts.

Policy Considerations:

- This project meets the City Council's Goal of Upgraded City Infrastructure and Facilities.

Budget Information:

- The 2006 Budget includes an appropriation of \$98,555 for this project in account #510.69264.3502.749.

Respectfully Submitted:

[Signature of Amy L. Ward]

Amy L. Ward, P.E.
Civil Engineer II

Approved for Submittal:

[Signature of Steve Zoet]

Steve Zoet
Interim City Manager

Funding Available:

[Signature of Brent Worthington]

FBO
Brent Worthington
FISS Manager

COUNCIL ACTION TAKEN: \_\_\_\_\_

## **AGREEMENT FOR PROFESSIONAL SERVICES**

THIS AGREEMENT is made and entered into this \_\_\_\_\_ day of \_\_\_\_\_, 200\_\_\_\_, by and between the City of Northglenn, State of Colorado (hereinafter referred to as the "City") and The Engineering Company (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.

### **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 Ninety-Three Thousand Three Hundred and Three dollars (\$ 93,303 ). 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. COMPLIANCE WITH LAW**

The work and services to be performed by Consultant hereunder shall be done in compliance with applicable laws, ordinances, rules and regulations.

### **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, if such injury, loss, or damage is caused in whole or in part 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 subconsultant of Consultant, or any officer, employee, representative, or agent of Consultant or of any subconsultant of Consultant, or which arise out of any workmen's compensation claim of any employee of Consultant or of any employee of any subconsultant 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 the 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 paragraph A. 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. Indemnification,

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 subconsultant 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. Indemnification, 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.
4. The policy required by paragraph 2. above shall be endorsed to include the City and the City's officers, employees, and consultants as additional insureds. Every policy required above 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.

5. 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. 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. The completed certificate of insurance shall be sent to:

City of Northglenn  
11701 Community Center Drive  
Northglenn, Colorado 80233-8061  
Attn: Tammy Guenther

6. 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.
7. The City reserves the right to request and receive a certified copy of any policy and any endorsement thereto.
8. 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.*, 10 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. 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: The Engineering Company  
2310 East Prospect  
Fort Collins, CO 80525

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

**CITY OF NORTHGLENN, COLORADO**

By: \_\_\_\_\_  
[Insert Mayor or City Manager depending on amount]

ATTEST:


\_\_\_\_\_  
Diana L. Lentz, City Clerk

APPROVED AS TO FORM:


\_\_\_\_\_  
City Attorney

**CONSULTANT**

By:

  
\_\_\_\_\_  
Vice-President 8/1/06  
Title Date

ATTEST:

  
\_\_\_\_\_  
President 8/1/06  
Title Date

## **EXHIBIT A - SCOPE OF WORK**

### **INTRODUCTION**

In the City of Northglenn Water Treatment Plant, there is an existing clearwell located in the Main Filter Building. The clearwell has a capacity of approximately 540,000 gallons. The clearwell is supplied from a 36-inch filter effluent pipe located at the southeast corner of the clearwell. Currently there is no valve or gate on this line to shut off flow to the clearwell. Because the plant has a single clearwell and the inability to isolate it for maintenance, the City would benefit from an additional clearwell.

The plant staff is currently working out of a modular unit located south of the Main Filter Building. The work space in this unit is not adequate for the operational needs of the staff, and therefore a new, permanent office and lab facility is needed.

We propose to work with the City of Northglenn to develop a design that adds additional clearwell capacity to the plant and also provides a new, permanent administration building for the plant staff. To accomplish this we have prepared a scope of work that will address operational needs for the clearwell and the office space by involving the City plant and administrative staff in workshop format early in the process. We wish to involve the plant staff throughout the project because upon final completion, they will be the people operating and using the facilities.

### **PROJECT CONSIDERATIONS**

It is our philosophy that the design of each treatment facility should incorporate as much operational flexibility as practical. This includes the ability to isolate basins for maintenance or to provide for variations in flow. As an example, in a multiple clearwell situation, operators should have the flexibility to run the clearwells in series, in parallel, or individually. Often this can be accomplished with minimal increase in the overall cost of the project by providing extra piping and valving.

Another key element in our approach is our willingness to listen and respond to operator concerns. Although this may seem like a basic requirement adhered to by all firms, it is often only a "buzz word" and not really applied. We have an excellent track record of working with operators and soliciting their opinions and recommendations. After all, they are the ones that are going to be operating the facilities; therefore, they should be involved in the design process.

## **Design Alternates**

Exhibit 1 shows alternative layouts of a new administration/clearwell building. Based on our initial calculations, a 125,000-gallon clearwell would need a footprint of approximately 1,240 square feet (35'×35') based on 13.5-foot water depth, which is similar to the existing clearwell. The sizing of the clearwell will be based on the needed contact time during winter flows. Because the existing treated water pump station draws directly from the clearwell, it would also be out of service when the clearwell is empty. Therefore, additional pumping will be needed to pump from the new clearwell into the low zone when the existing clearwell is offline.

The current wintertime flow ranges from 3.0 to 4.0 mgd. For conceptual planning purposes we assumed a four pump system with three primary pumps each with a capacity of 1.33 mgd. The number of pumps could possibly be reduced if variable frequency drive power systems are used. We estimate that the pump layout requirements will require a least one-third of the clearwell deck area (420 square feet).

We understand that the following uses would be needed in the administration building: 6 offices for supervisors, 5 cubicles for lab technicians, conference room, kitchen, 2 restrooms, janitor's closet, and a copy area. Based on the estimated work spaces, we estimate that the floor plan requirements would be approximately 2,400 square feet. The total floor plan needed for the pump room and the administrative area would total approximately 2,820 square feet. This is more than double the size of the proposed area of the clearwell. It may be possible to place a portion of the administration building on the clearwell, but the remainder will have to rest on another foundation.

On Exhibit 1 we have shown two potential locations for the facilities. The two sites are shown west of the Main Filter Building. The plant site has many underground utilities that complicate the construction of any structure. The area to the west of the plant offers the least amount of underground utility conflicts. In addition, it is close to the existing clearwell and treated water discharge piping which must be connected and has easy access to the Main Filter Building.

Alternate #1 is west of the existing access road and has the benefit of creating fewer disturbances to the road and Main Filter Building. It would require more piping because it is farther from the Main Filter Building. Staff would enter that building primarily from the west entrance.

Alternate #2 is located closer to the Main Filter Building and would create more disturbances to the access road, wing walls, and grading around the building. The benefit of this site is a shorter walk to the Main Filter Building and shorter piping runs.

## **Project Challenges**

### ***Clearwell Influent***

The first challenge is the modification to the filter effluent line that enters the existing clearwell. The 36-inch line is located below the lower-level floor slab on the south side of the building. The existing drawings show a 36-inch tee with a line extending out of the building 5 feet to the south with plug. This plug will have to be removed and a valve installed for isolation of the new clearwell. The most significant challenge is the line going into the existing clearwell. This line does not have a valve on it, so the clearwell cannot be isolated. It will be necessary to add a gate to this line to provide a shutoff. This can be done in a couple of ways. The first option is to do considerable demolition and excavation work inside the building to expose the 36-inch line. Once the line is exposed, the plant would have to be shut off, the clearwell drained, and a valve "cut in" the line. This option will require extensive hand work. A more feasible option would be to install a fabricated gate over the opening into the clearwell. Again the plant would have to be shut down, the clearwell drained, and a gate installed. This would still require a considerable amount of coordination but could probably be accomplished within a 24-hour shutdown period.

### ***Administration Building on Top of Clearwell***

The second challenge is placing the administration building on top of the clearwell. This has been a common practice in the past and is an efficient use of space. However, health departments are looking more critically at protecting the clearwell from potential contamination. In a conventionally reinforced concrete slab, some cracking is probable. These cracks create a potential means for contaminants to enter the clearwell. While contamination is highly unlikely, it could occur under some conditions. For example, a cleaning solution spill in the supply room could conceivably get into the clearwell. We have experience with some very special membrane coatings that could be applied to the concrete surface that would provide an impermeable barrier. Another option to consider would be not to build the administration building over the clearwell but adjacent to it. The additional costs would be due to a simple spread footing foundation.

### ***New Clearwell Connection and Backwash Supply***

The new clearwell will allow for flexibility in operation. Operation of the new clearwell will be possible with the valve and gate modifications described above. If the new clearwell is in operation, the new pump station will pump to the low zone line. This will require another shutdown to add piping that connects to the existing low zone line north of the filter building. It would be

possible to wet tap this line. We also need to investigate if the backwash supply can be back fed from the low zone line if the existing pump station is off-line. If this is not possible, some additional piping modifications will be needed to connect the new pump station to the backwash supply line.

When both clearwells are run in parallel, it will be necessary to provide a line connecting the new clearwell to the existing clearwell, which will require a penetration into the existing clearwell in the area of the pump station. This will allow for the pump stations to be used together or separately. The line could be closed for isolation of either clearwell.

We will investigate the piping requirements for series operation; we suspect that considerable piping will be needed to accomplish this, including additional penetrations into the existing clearwell.

## **TASK 1- PRELIMINARY DESIGN**

### **Initial Coordination Meeting**

The City's representative and our project manager will schedule the initial coordination meeting. The agenda for this meeting should include distribution of all criteria, reports, and existing data held by the City. The project team will submit a preliminary schedule of events. The meeting will cover preliminary design criteria, alternatives to be evaluated, scheduling, contract procedures, and the format to be used in the reports.

### **Data Gathering**

After review of the data supplied at the initial coordination meeting, we will begin field inspection, existing report evaluation, and literature review.

Published data for treatment facilities, mapping, and survey information will be used as much as possible. Where existing data is questionable (as identified by the City or by our review), additional field data will be obtained.

### **Hydraulic Analysis**

Conduct hydraulic analysis to determine chlorine contact time to verify the size of the clearwell. Conduct preliminary hydraulics calculations to determine pipe and pump sizes.

## **Site Topographic Survey**

Conduct survey of area around the location of the new facilities. The survey will be limited to only areas disturbed by construction.

## **Geotechnical Investigation**

Independent geotechnical firm will conduct on-site investigation in the area of the proposed facilities. The investigation will not exceed three bore holes. A report will be generated for use in the design of the facilities.

## **Preliminary Design**

During this phase of the project, we will meet with the City's staff in a concept development work session. The goals of this session will be to define the scope of the project, identify the alternatives to be considered, and discuss the concerns of staff relative to each alternative.

After the initial meeting, the project team will review the design criteria; check the calculations for process design, hydraulic design, and economic analysis; evaluate pump, valve, piping controller, and clearwell sizing requirements; and prepare a technical memorandum review of the draft report.

During this process, we will also develop alternative floor plan layouts and building elevations. We will consider the expectations of the City from a cost and performance standpoint. We expect considerable involvement from the City during this aspect of the process, and we expect changes to develop as the staff considers their "wish list" items.

A technical memorandum will be prepared and will consist of a narrative describing the design criteria, methodologies used, hydraulic analyses, and opinions of cost. Tables and schematic graphics may be used throughout the narrative to better summarize the project and present the information in a clear and concise manner. Drawings of the proposed improvements will also be included. Text and appendices will be prepared in an 8½"×11" format. Drawings will be prepared in an 11"×17" format for inclusion in the report. Items that will be included in the preliminary design report include the following:

- Facility size and configuration.
- Materials and equipment to be used.
- Process and auxiliary control system.
- Applicable building codes and standards.



- Design standards.
- List of drawings for final design.
- Quality control program to be used during final design.
- Final design schedule.
- Opinion of costs.

During this phase, the development of contract documents will begin. All drawings will be prepared in a 24"×36" format. We prefer to use architectural scales such as K"= 1'0" for architectural and interior process-type drawings. All drawings will be completed with AutoCAD. Providing preliminary cost estimates will be an on-going process during this phase. Because of our recent work on other filter expansion and treatment plant retrofit projects, we will utilize costing information from equipment suppliers and contractors that worked on those projects to obtain accurate costing data for the City.

## **Task 2 - Final Design Phase**

The final design phase shall be for the development of final documents needed to bid the project. We will use the City's standard bidding and contract documents. We shall provide the City with the necessary information for bid schedules, amendments to the special conditions, and construction scheduling and sequencing information. A final opinion of costs will also be prepared before the City finally accepts the project and is ready for bidding. The final design shall include the following construction drawings:

- Site Plan
- Pipeline Plan and Profile
- Pipeline details
- Pump Station plans, sections and details
- Clearwell plans, sections and details
- Architectural plans, elevations, sections and details
- HVAC plans
- Electrical one-line diagrams, power plan, lighting plan and control plan

Technical specifications will be prepared for all work and will follow the CSI format.

## **Project Meetings and Reviews**

We shall provide 60%, 90%, and 100% construction documents for City and State reviews. We anticipate continual involvement with both parties throughout the project and, therefore, the review processes and milestones will be easily understood by the

City. In addition we will involve the Colorado Department of Public Health and Environment (CDPHE) early in the project to understand its concerns and address those prior to the final design review submittal at the end of the project.

### **TASK 3 – BIDDING PHASE**

Deliverable documents will include one (1) hard copy of bid support documents, technical specifications and drawings. In addition, the same documents will be provided on CD's. We will provide three (3) sets of documents stamped by the Professional Engineer of record.

During the bidding phase, we shall attend the pre-bid conference and assist in answering bidders' questions during the advertisement period from the City. We shall not answer any calls from prospective bidders and will forward all inquiries to the City's Project Manager. If necessary, we shall assist in preparation of any addenda required during the bidding process. We shall not an

### **ALTERNATIVE SCOPE OF WORK**

Alternative work is not included in this contract but may be authorized by issuance of a change order from the City.

### **Construction Phase**

Construction management services were not specifically requested in the RFP. However, we can provide construction management services that would include a variety of services required for this project, including the following:

- Conduct a pre-construction meeting.
- Review all contractor submittals.
- Act as the liaison to the resident project representative.
- Review shop drawings, submittals, change order request, requests for information, and payment applications.
- Provide resident project representative services either on a daily or part-time basis.
- Conduct monthly progress meetings.
- Be involved in project start-up and closeout.
- Prepare the final construction report and as-built drawings.

An on-site, daily resident project representative was not requested in the RFP. However, we believe this is a key element to the successful completion of any construction project, and we will urge the City to incorporate this into the final contract.

TEC has developed many formal procedures for our construction administration services. This includes a complete and detailed set of forms that are necessary for proper documentation on a project. We will assign a project engineer who has many years of experience in the construction phase of water and wastewater treatments plant projects.

Communication is a key component of all construction projects. Because our construction administration personnel are highly experienced, we have a history of completing projects successfully. We have developed specific procedures on how to communicate with contractors during change-order situations as well as for conflict resolution. We actively work to involve the owner in the project and make the owner aware of the project status. We also believe the presence of an on-site resident project representative greatly enhances communications.

## **PROJECT COSTS**

The estimated cost of the proposed services will be as summarized in the following table. A detailed estimate of cost is shown on the Figure 1.

### **Primary Scope of Work Items**

Task 1 - Preliminary Design	\$19,764
Task 2 – Final Design	\$70,539
<u>Task 3 – Bidding Phase</u>	<u>\$3,000</u>

**Total Task 1, 2 & 3 \$93,303**

The final design phase fee is based on assumptions that include the design of a 2,900-square-foot, single-story building that includes 2,400 square feet of administration space and 500 square feet of pump station space.

## **Project Schedule**

The project schedule is shown on Figure 2.

**Figure 1**

<b>City of Northglenn</b>	
<b>Water Treatment Plant Clearwell/Administration Building Addition Design Fee</b>	
<b>Staff Report No. 06-22</b>	
	<b>Total</b>
<b>Design</b>	<b>\$90,303</b>
<b>Bid Support</b>	<b>\$3,000</b>
<b>Construction Support</b>	
<b>Total</b>	<b>\$93,303</b>

Firm: The Engineering Company

Project Name: Evergreen Membrane WTP

Project Contact: Gerry Schulte

Contact Phone Number: (303) 674-4112

Project Budget: \$ 3,036,534

Plant Capacity: \$ 553,000

3 MGD

How did the engineering firm perform during the design?

Very well

Were there a significant amount of change orders?

Did not have a significant amount of change orders. Did have a \$50,000 change order, but was due to equipment manufacturer.

Would you select the firm again?

Engineering firm for Evergreen since 1988

Was the firm responsible for agency coordination? If so, how was the firm at receiving the appropriate approval?

Smooth, no hassles.

Was the firm responsible for construction management? If so, how did the firm perform?

Joint project management, had a resident engineer on site. Went very smooth

Any other comments?

Limited space, inventive engineering and were very responsive

Firm: The Engineering Company

Project Name: Soldier Canyon Filter Plant

Project Contact: Bob Reed

Contact Phone Number: (970) 482-3143

Project Budget: \$ 7 M (construction)

\$ 331,875 (design)

Plant Capacity: 30 MGD Expansion

How did the engineering firm perform during the design?

Good.

Were there a significant amount of change orders?

Design-build so not really applicable

Would you select the firm again?

Has worked on several projects for the Tri-Districts

Was the firm responsible for agency coordination? If so, how was the firm at receiving the appropriate approval?

Yes, well

Was the firm responsible for construction management? If so, how did the firm perform?

Yes, fine

Any other comments?

Likes working with Tom Ullman

Firm: The Engineering Company  
Project Name: Florence South Water Treatment Plant  
Project Contact: Tom Piltingsrud  
Contact Phone Number: (719) 784-4848  
Project Budget: \$ 8.5 M  
\$ 432,000  
Plant Capacity: 6 MGD

How did the engineering firm perform during the design?

Very well

Were there a significant amount of change orders?

1

Would you select the firm again?

Absolutely

Was the firm responsible for agency coordination? If so, how was the firm at receiving the appropriate approval?

All without a hitch

Was the firm responsible for construction management? If so, how did the firm perform?

TEC had an on site engineer and it went very well

Any other comments?

Ate the costs on anything they did not anticipate. Would highly recommend them.





**CITY OF NORTHGLENN  
FORMAL BID SUMMARY**

BID NUMBER: 2006 RFP-12

PAGE 1 OF 1

BID NAME: Northglenn Water Treatment Plant Clearwell/

Administration Addition

DEPARTMENT: Logistics

	Jacobson Helgoth Consultants	Lewis Himes Associates Inc.	Integra Engineering	The Engineering Company	
DATE DUE: 06/26/2006	BID RECEIVED: DATE: 6/23/06 TIME: 5:06 pm	BID RECEIVED: DATE: 6/24/06 TIME: 10:01 am	BID RECEIVED: DATE: 6/26/06 TIME: 10:42 am	BID RECEIVED: DATE: 6/26/06 TIME: 1:37 pm	BID RECEIVED: DATE: TIME:
TIME: 2:00 P.M.					
RFP - All plans to be renewed					

*Kathleen Krasinski* 6/26/06  
Buyer

*Sharon Small*  
City Clerk

6/26/06  
Date