

**Reference: Hydrogeologic Services Proposal**

March 14, 2025

Luis Pedroza  
Deputy City Manager  
City of Douglas  
425 10<sup>th</sup> Street  
Douglas, AZ 85607

Dear Luis,

**Reference: Proposed Cochise College Groundwater Drinking Water Well - Douglas Port of Entry and West Douglas Service Area - Stantec Hydrogeologic Services Proposal – Pipeline #1116893**

Stantec Consulting Services Inc. (Stantec) understands that the City of Douglas, Arizona (City) is in the process of developing additional groundwater supplies west of the City to support the development of the Douglas Port of Entry (POE). The POE is scheduled to go into operation in Q2 2028. To meet these demands, the City is developing additional water resources to supply both the West Douglas Service Area (POE and surrounding area) and the City's water system. This project includes the design and installation of a new production well that will be located near a new elevated storage tank to be located along the southern property line of Cochise College west of the City. When completed, the well would be located at or near the POE 1 site in Section 10 of T24S, R26E just north of U.S Highway 80. Stantec anticipates this well may be completed to a depth of up to 1,000 to 1, 200 feet with a production rate of 1,000 to 2,000 gallons per minute (gpm). This estimate is based on the well siting work Stantec previously completed. Pilot hole drilling and zonal testing will be used to determine the final design depth and screened intervals for the completed well.

To complete this well, the City is seeking hydrogeological support for well design, including technical drilling specifications and a conceptual well diagram, to be issued with a bid solicitation for the drilling, construction, development, and testing of the well. Stantec is proposing to provide part-time drilling and well construction observation along with field data collection to document the drilling, well installation, development, and aquifer testing.

Based on our conversations, Stantec understands the scope of work for this project includes the following major elements:

- Prepare technical specifications, a conceptual well design, and bid schedule for the City's issuance to Arizona licensed well drilling contractors
- Prepare permit applications to acquire the required permits for drilling, including the Arizona Department of Water Resources (ADWR) and Arizona Department of Environmental Quality (ADEQ)
- Part-time observation of well drilling activities and geologic logging of the borehole
- Finalize well design based on well drilling data
- Part-time observation of well construction and installation activities
- Management of well development and aquifer testing, including rig development, pumping development, stepped rate aquifer testing, and constant rate aquifer testing

**Reference:** Hydrogeologic Services Proposal

- Prepare a well completion report documenting drilling and construction activities and testing results
- Project Management including routine progress meeting, project schedule, and financial forecasts

As a multidisciplinary engineering firm, Stantec is prepared to support the City with the well site design, including civil, mechanical, electrical, and instrument and controls (I&C) to place the completed well on-line. These engineering design services will be provided in a separate proposal to be delivered at a later date. For now, the City has requested preparation of well drilling specifications so that they may begin the bidding process with drilling contractors as soon as practical.

## **1 Scope of Work**

Stantec has prepared the following scope of work. The scope of work is divided into six tasks with accompanying assumptions and deliverables. Estimated costs associated with each task are provided in Section 3 and Attachment A. This scope of work presumes that no exploration boreholes will be drilled at any other locations in advance of completing the well at the POE 1 site.

### **1.1 Task 100.100 – Well Technical Specifications and Conceptual Drawings**

Stantec will prepare the technical specifications covering pilot hole drilling, geophysical logging, zonal testing, borehole reaming, well construction, development, and aquifer testing for the City to issue to potential Arizona licensed well drilling contractors (bidders) and for use in selecting a drilling contractor. The City will be responsible for preparation of the contracting package, management of the contractor bidding process and contractor selection, and establishing a contract with the selected contractor. The technical specifications will be included in this contracting package. For bidding purposes, a conceptual well design that includes pertinent elements of the well will be prepared and included with the specifications. A Bid Schedule will be prepared that includes appropriate line items for drilling and construction costs in order to have a uniform bid summary from all contractors. Stantec will prepare these documents in the following formats for City review and comment: 90% Draft and Final - Issued for Construction (IFC).

Once the specifications are final, Stantec will assist the City with coordination and distribution to selected drilling contractors. Stantec will be prepared to field contractor questions, assist with addenda as necessary, and coordinate logistics of the bidding process.

Drilling contractor bids will be submitted to the City of Douglas. Stantec will review all bids and make a written recommendation for award to the City. Stantec will attend the bid opening virtually.

**Reference:** Hydrogeologic Services Proposal

Once the City has awarded the contract for well drilling, Stantec will lead a pre-construction meeting held on site with the selected drilling contractor and City personnel. The Stantec PM will attend.

### ***Assumptions***

- Design drawings will only include 1) below ground well construction details (a conceptual well design) and 2) a well location map for the technical specifications. Drawings will not include above ground detailed design of the site civil, mechanical, electrical, instrumentation and control, water treatment systems, etc. Drawings will not include any pumping equipment (e.g., pump, discharge piping, meters, motor controls). APS power supply will not be included.
- Site survey has been prepared by Bowman Survey for Stantec under another project. The well coordinates will be chosen by Stantec, in coordination with the City, to be in a favorable location considering future design elements at the site (e.g., power supply, storage tank, existing wells, existing conveyance piping).
- No more than 2 addenda of the technical specifications will be required.
- The City will get a drilling contractor onboard prior to receiving ADWR and ADEQ permits to move this project forward.
- A pre-bid meeting for drilling contractors is not included in the scope; however, a pre-construction or kick-off meeting with the selected contractor will be attended by the Stantec PM on site.
- The City will contract directly with the preferred drilling contractor.

### ***Deliverables***

Stantec will provide the following deliverables:

- 90% and IFC package including Well Technical Specifications, Conceptual Well Design, and drillers bid schedule

## **1.2 Task 100.200 – Water Well Permitting**

This task includes the completion of necessary permit applications for drilling and well construction. These permits include the ADWR permit to drill a new well within an Active Management Area (Form 55-0001) and ADEQ Approval to Construct and discharge development and testing water. Stantec will prepare and submit these applications.

Stantec will prepare and submit the Hydrogeologic Study that delineates the radius at which 10 feet of drawdown is expected within the first five years of operation. This radius will be presented with regard to the existing wells located near the site of the City located well at the Cochise College. This Hydrogeologic Study and Form 55-90 Well Construction Supplement will be submitted to ADWR alongside application

**Reference:** Hydrogeologic Services Proposal

Form 55-0001. The ADWR application must be approved for the contracted water well driller to receive the permit to drill and complete the well. Stantec will also prepare and submit the Design Report and Approval to Construct application to ADEQ. Stantec will also prepare and submit the AZPDES discharge permit notice of intent to cover well development and aquifer testing discharges.

Stantec will provide final copies of the approved permit documents to City personnel. Stantec will submit the permit applications directly to the appropriate agencies, utilizing the online submittal options available from ADEQ or ADWR.

### ***Assumptions***

- The Cochise College Site Hydrogeologic Study can be completed using Theis analytical methods.
- Acquisition of these permits could take up to two months once the permit applications are submitted. Stantec assumes that no responses to agency comments will be necessary.
- Three permits will be acquired: the ADWR permit to drill, the ADEQ approve to construct, and the ADEQ notice of intent to discharge. No other permits will be acquired. Stantec has included the permit fees in this project budget.
- The City has established a Service Area Right (56-004001.0000) within the Douglas Active Management Area
- APS power supply permitting and any other permitting not specified in this task is not included.
- Site survey has been conducted by the City and provided to Stantec.

### ***Deliverables***

- Final permit applications submitted to and approved permits received from ADWR and ADEQ. The Hydrogeologic Study and Design Study Report along with the other permit documents will be provided by Stantec in PDF format and submitted to ADWR and ADEQ.

## **1.3 Task 100.300 – Borehole Drilling Observation and Zonal Testing**

After permits have been obtained and the contracted water well driller mobilizes to the site, Stantec will collaborate with the driller on the pilot hole and production well borehole. This task includes the field observation of the drilling activity and completion of zonal testing of the pilot borehole at the drill site. Stantec will provide experienced geologists and hydrogeologists on site (part-time) during drilling operations to maintain compliance with the technical drilling specifications, to document drilling activity and progress, and to hydrogeologically log the drill cuttings and identify potential depth intervals for zonal testing. Part-time drilling observation of borehole drilling includes up to 10 days on site during daylight hours only. Our field crew will consist of one geologist or hydrogeologist at the site who will be supervised by an Arizona licensed Registered Geologist.

**Reference: Hydrogeologic Services Proposal**

Following pilot borehole completion to total depth (anticipated to be a 16-inch pilot borehole), Stantec will review the lithologic and geophysical data, and recommend depth intervals for zonal testing. Stantec will review the recommended zonal testing program with the City and observe field data collection to see that this effort supports the overall project goals and data quality objectives. Zonal testing will be critical in identifying potential water quality concerns, estimating production rates from varying depths within the aquifer, eliminating poor water quality or low yielding zones, and finalizing the well design. The results of the zonal testing will be used to optimize the Final Well Design. Stantec will perform oversight and data collection for the zonal testing program, which will be conducted by the drilling contractor. Stantec will provide up to 10 days on site during daylight hours only. Stantec's field crew will consist of one on site geologist or hydrogeologist.

The zonal testing tools and procedures will be detailed in the well drilling specifications. Zonal testing is an approach that hydrogeologists and well drillers use to evaluate the potential water quality and permeability of different depth intervals in an aquifer prior to completing a water supply well. This process facilitates well design and placement of the well screen in depth intervals that optimize well water quality without unduly restricting groundwater production from the well. Zonal testing starts at the lowermost depth interval to be evaluated and proceeds upward through the aquifer. It is anticipated that the zonal tests will be conducted with 20-feet of perforated pipe that will be completed as a temporary well within the borehole (with gravel pack annulus and temporary bentonite seals above and below the screened interval). The drilling contractor will develop the constructed zonal interval(s) for a directed period of time (anticipated to be approximately 8 to 12-hours), and Stantec will work with the drilling contractor to test the zonal intervals for permeability and water quality. For each test interval, Stantec will measure depths to water and will obtain and submit water samples for analysis. In addition, Stantec staff will deploy a pressure transducer into the zonal testing tool and perform falling head (slug) tests to estimate aquifer permeability. These results will be applied to representative portions of the borehole (as indicated from lithology and geophysical data) to estimate well production.

Following zonal testing completion, Stantec will review all collected data, including lithology, grain size, sieve analysis, geophysics, water quality, and zonal testing results, and will make a recommendation for the final well design to the City. Modifications to the conceptual well design may include final well depth, annular material depth intervals, screened depth intervals, total length of screen, gravel pack size, and/or slot size(s) of the well screen. Stantec will issue an updated well diagram (Drawing) to the City for review and approval. The drilling contractor will then ream the borehole to final diameter (anticipated to be 26 or 28-inches) for well construction purposes.

***Assumptions***

- Stantec will review well materials submittals prior to contractor's order for materials.
- The drilling contractor (or delegated subcontractor) shall be responsible for hand-auger or pot-holing to clear the boring location of utilities prior to drilling. The drilling contractor shall be responsible for the protection of all utilities and other site infrastructure throughout the duration of the drilling program.

**Reference: Hydrogeologic Services Proposal**

- Dust control, erosion control, flagging, and barricading will be within the selected drilling contractor's scope of work (not completed by Stantec).
- Stantec will not be held responsible for utility locate services (e.g., Blue Stake Services), providing portable toilets, hand wash stations, and/or trash containers.
- Stantec may use or rely upon the support facilities that are provided by the drilling contractor, if agreeable, including a portable office trailer or dedicated space within a trailer / shelter.
- Drilling will proceed on a 24 hour per day, 7 day per week basis.
- Stantec will procure or provide field equipment to support the drilling effort. That equipment will include a water level tape, water quality meter, and pressure transducer.
- Stantec field oversight during borehole drilling will include up to 10 days (day-shift only) during pilot hole drilling. Stantec will also provide oversight and execution of the zonal testing program for up to 10 days, in addition to borehole drilling oversight (day-shift only). Stantec will not be onsite during borehole reaming operations, but may check in periodically on progress either in person or via phone call. One Stantec staff geologist or hydrogeologist will be onsite on a part time basis for the pilot hole drilling and zonal testing.
- Zonal testing will include a maximum of seven zone intervals, including three (3) falling head tests per zone and one water quality sample per zone. Water quality samples will be analyzed for arsenic, total dissolved solids (TDS), fluoride, nitrate, iron, manganese, sulfate, and chloride, pH, hardness and alkalinity. Legend Technical Services (Legend) in Tucson will complete the analytical testing. Stantec will contract directly with Legend. Stantec will coordinate with the City and Legend to arrange for the shipping of samples. A three-day rush turn-around time will be requested for water quality analysis. Costs for these analyses are included in our budget.
- Geophysical logging will be completed (contracted) by the drilling company and logs will be provided to Stantec upon completion. This will be included in the technical drilling specifications.
- Lithologic grain size samples will be provided to the well casing supplier by the drilling contractor for analyses immediately upon reaching total depth of the borehole. Results will be provided to Stantec immediately upon analysis completion (assumed to be completed within five days). This will be included in the technical drilling specifications.
- Throughout borehole drilling and reaming, the Contractor will record drilling fluid properties and will ensure the fluids are within appropriate parameter ranges. The drilling contractor will be required to document and report the drilling fluid properties to Stantec and may be asked to provide a mud engineer to support the drilling program.
- A recommendation for the final well design will be provided to the City in a technical memorandum via email within 72 hours of receiving the final lithologic grain size analyses, geophysical results, and zonal testing results (including water quality). The City will be prepared to review and final well design recommendation memorandum promptly (within 24 hours) to reduce material order and delivery time, and driller stand-by time.

### *Deliverables*

- Daily report(s) via email documenting drilling / construction / testing activity for days when Stantec is on site
- Final Well Design Recommendations technical memorandum and diagram will be provided via in PDF format and submitted via email.

## **1.4 Task 100.400 –Well Construction Observation, Development, and Aquifer Testing**

With the well design finalized, Stantec will collaborate with the drilling contractor on the construction and testing of the water supply well. This task includes well construction observation, including screen, casing, sounding tube, and annular materials installation. Stantec will provide part-time oversight up to seven (7) days during daylight hours to document construction details, casing lengths, and annular material volumes. One Stantec geologist or hydrogeologist onsite will see that materials are in accordance with the technical specifications and final well design, and will review materials receipts for casing and other supplies. Stantec staff will calculate theoretical borehole volumes for annular materials, and will track and document the actual volume of material installed as appropriate.

Well development is one of the most critical elements of the well construction process as it prepares the well for long term use in the municipal water system. Stantec hydrogeologists understand the nuances of well development and testing, and will provide part-time oversight, up to seven (7) days (day-shift only) for well development. One onsite Stantec geologist or hydrogeologist will manage development activity and will document well development metrics (i.e., sand production, depth intervals, depths to water, production rates, specific capacities). We will communicate closely with the City throughout the development process to confirm all are satisfied with the development results. It is important to closely monitor development progress to confirm proper energy is being applied to the appropriate depth intervals of the well to maximize results, and to determine that the proper development time is invested in this critical piece of the project.

The first step in development is applying a chemical mud dispersant to the well screens. The drilling contractor will begin the development process by thinning the residual drilling fluids within the well using specified chemical additives. The drilling contractor will perform well development in accordance with the technical specifications, including swab and airlift development to clear the well of drilling fluids and formation fines. This initial development with the drill rig will be followed by developmental pumping via the installation of a temporary line shaft turbine pump and discharge appurtenances. Development water will be routed away from the well and discharged to the ground in an area approved by the City and Cochise College. The well will be pumped and surged for a minimum time period, but development should be performance-based (i.e., sand production and specific capacity metrics).

Following rig development, the drilling contractor will install the temporary pump and discharge piping (provided by the driller or driller's delegated subcontractor). Stantec field staff will advise the pump crew in writing on installation criteria (e.g., pump capacity, pump intake depth, temporary piping routes, discharge

**Reference: Hydrogeologic Services Proposal**

locations, etc.), with the City's input. The development program will be specified for optimal well performance. Stantec field staff are experienced with making field decisions to modify the development specifications based on observed development results. For example, surging may be specified once per hour, but nearing completion of development, if well performance has stabilized, surging frequency may be increased to evaluate sand production and to evaluate whether performance remains within specification.

Once well development is complete, aquifer testing will commence with the same temporary pump that was installed for developmental pumping. One onsite Stantec geologist or hydrogeologist will manage the aquifer testing (including up to four [4] days of oversight, day-shift only). The City will have the drilling contractor onsite full time and Stantec will provide part time day shift coverage onsite. Aquifer testing will consist of both stepped and 72-hour constant rate tests. A pressure transducer will be installed within the well for recording water levels and manual water level checks will be performed periodically through the test. Water levels will be monitored to confirm recovery and equilibrium is achieved prior to the start of aquifer testing. Testing is anticipated to include an 8-hour stepped rate test with at least five pumping rates progressively increasing, followed by a 12-hour recovery period. Once water levels have recovered from the stepped test, a 72-hour constant rate production test will be performed (anticipated at 1,500 gpm). Stantec staff will document flow rates and water levels throughout the test and will advise the pump operator to modify flow rates (if needed) based on observations.

Water discharged from the well will be discharged at a location acceptable to the City and Cochise College. The water will be monitored as it flows away from the well to confirm no erosion or sediment control issues develop. Nearing the completion of the aquifer test, Stantec and the City will collect a water quality sample of the discharge at the wellhead for laboratory analysis of the parameters identified by ADEQ for a New Source Approval (NSA). The drilling contractor shall install a sample tap on the discharge line suitable for collection of the water quality sample. Stantec and the City will arrange for delivery to the laboratory. Stantec has budgeted analytical costs. Stantec will monitor a 24-hour recovery period following the aquifer test and will collect water level data for calculations of aquifer parameters.

Once all testing is complete, the drilling contractor shall coordinate the completion of a downhole video survey and gyroscopic survey. The subcontractor will be notified prior to aquifer testing so that delays in mobilization are not incurred. Stantec will view the video and gyroscopic survey results and notify the City of any concerns (e.g., deviations, damage to well casing, accumulated fill that may need to be bailed). If necessary, Stantec will coordinate with the drilling contractor to complete any necessary well improvements or repairs. Stantec will provide limited field observation of the well video and gyroscopic survey.

***Assumptions***

- This scope includes Stantec oversight for up to seven (7) days of well construction activity, up to seven (7) additional days for well development, and up to four (4) additional days for aquifer testing. If additional development time is needed, Stantec will discuss with the City and determine a path forward.
- Temporary pump procurement, installation, and operation will be performed by the drilling



**Reference: Hydrogeologic Services Proposal**

contractor (or subcontracted delegate) in coordination with Stantec.

- Aquifer testing will include an 8-hour stepped rate test, followed by a 72-hour constant rate test. Aquifer test observations will only be performed for the new well at Cochise College. If possible, water levels may be obtained on the nearest Cochise College and 3T Ranches wells during the constant rate test using pressure transducers. Stantec assumes the City would coordinate access to those wells with the landowners.
- Stantec will obtain and submit a water sample. Costs for this effort are included.

***Deliverables***

- Daily report(s) via email documenting drilling / construction / development / testing activity for days when Stantec is on site

## **1.5 Task 100.500 – Well Completion Report Preparation**

Stantec will prepare a Well Completion Report documenting all drilling, construction, development, and aquifer testing details. The following items will be addressed in the Well Completion Report, including recommendations for a permanent pump placement depth, design pumping rate, and estimated long-term drawdown:

- Introduction and Background
- Hydrogeologic Setting
- Well Permits and Documentation
- Surface Casing Installation
- Pilot Borehole Drilling and Geologic Log
- Zonal Testing Results
- Geophysical Logging Results
- Final Well Design
- Borehole Reaming
- Well and Annular Materials Installation
- Well Development and Results
- Aquifer Testing and Results
- Water Quality
- Final Well Completion (video survey and gyroscopic survey)
- Conclusions and Recommendations

An as-built diagram of the completed well will also be provided, showing any deviations from the original well design. The Well Completion Report will be prepared, reviewed, and stamped by a Registered Geologist in the State of Arizona.

### ***Deliverables***

- Draft and Final Well Completion Report

## **1.6 Task 600 – Project Management and Progress Meetings**

Stantec's Technical Lead and Project Manager will hold biweekly progress meetings with City personnel during the drilling and construction phase of the project. The progress meetings will be used to discuss drilling/construction progress, schedule status, health and safety, and any identified issues. It is anticipated that the selected drilling contractor will also provide a delegate to the biweekly progress meetings. Stantec will prepare agenda(s) and meeting minutes for each meeting. The project schedule will be reviewed (and updated, if necessary) in the progress meetings.

**Assumptions**

- Biweekly progress meetings will be held via conference call and attended by two Stantec personnel. (Note: A pre-construction meeting on site is anticipated with the Drilling Contractor, City, and Stantec once the drilling contract is executed, and is included in Task 100.100.)

**Deliverables**

- Agendas and meeting minutes for the bi-weekly progress meetings, in PDF format and submitted via email.

## 2 Schedule

Stantec's Simplified Task Schedule is summarized below in **Table 1** based on the individual tasks outlined in **Section 1**. This schedule is derived upon numerous assumptions, which are listed below, but estimated timeframes are based upon Stantec's experience with similar projects. The total costs (**Section 3**) will be dependent upon the progression of drilling and amount of time needed for field supervision. The schedule will be reviewed biweekly with the City and updated (if necessary) throughout the duration of the project, as field schedules may change due to unknown conditions or delays.

**Table 1: Scope of Work Simplified Task Schedule**

Work Task	Description	Task Completion Date
100.100	Well Technical Specifications and Conceptual Drawing	30-Apr-25
100.200	Water Well Permitting	30-Apr-25
--	Drilling Mobilization*	16-Jun-25
100.300	Borehole Drilling and Zonal Testing*	22-Jul-25
100.400	Well Construction, Development, and Aquifer Testing*	8-Sep-25
100.500	Well Completion Report*	30-Sep-25

Note: Project Management, Meetings, Supervision, and Quality Control will be ongoing throughout the project estimated to be March 1, 2025 to September 30, 2025

\* Schedule contingent upon drilling contractor schedule, assumes drillers available mid June 2025

**Assumptions**

- Schedule is contingent upon Notice to Proceed by March 10, 2025.
- Schedule is contingent upon receiving ADWR and ADEQ permits

**Reference:** Hydrogeologic Services Proposal

- Schedule is contingent upon City acquiring ownership or lease agreements from Cochise College
- Schedule is contingent upon drilling contractor, including mobilization date and progress of drilling activities.
- Drilling contractor is anticipated to mobilize by June 10, 2025.
- Drilling contractor is assumed to work 24/7.
- Demobilization of drilling rig, mobilization of pump rig, and temporary pump installation (for developmental pumping and aquifer testing) is assumed to occur seamlessly without delay.
- Assumes 3 days of developmental pumping, followed by 4 days of aquifer testing (step test and constant rate test).
- Project management, meetings, supervision, and quality control will be ongoing throughout the project.

### **3 Estimated Costs**

Stantec proposes to perform the stated scope of work on a time and materials basis with a not to exceed amount for work actually performed. We will use the fee schedule included in Attachment A, a contract addendum for current rates on a City of Tucson Contract with Cooperative Agreement language. As estimated and assuming all work is completed, our costs to complete this scope of work are estimated to be \$205,339.00. Should the stated level of effort be less than anticipated, the City will only be charged for the work and time expended. Work that may be beyond the stated scope in this proposal will promptly be brought to the City's attention prior to initiation of the work for negotiation of an amendment.

Our estimated costs to complete the scope of work are summarized by task in Attachment B. Stantec will invoice on a monthly basis for services provided the previous month, with the assumptions provided herein.

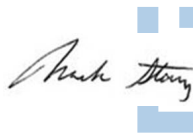
Reference: Hydrogeologic Services Proposal

## 4 Closing

Thank you for the opportunity to work with you on this project. If you have any questions regarding this proposal, please contact either one of us.

Respectfully,

**Stantec Consulting Services Inc.**

 Digitally signed by Stacy, Mark  
DN: CN="Stacy, Mark",  
OU=Internal, OU=users,  
OU=stantec, DC=corp,  
DC=ads  
Date: 2025.03.20  
19:29:37-06'00'


**Mark Stacy** PG/RG/CPG  
Associate, Senior Hydrogeologist  
Phone: (970) 893-4812  
Mobile: (970) 278-7854  
mark.stacy@stantec.com

[stantec.com](https://stantec.com)

Attachments:

Attachment A: Contract Addendum On-Call Engineering Services for New and replacement of Distribution and Transmission Mains, Contract #212603-05, effective May 17, 2024

Attachment B: Fee Proposal

 Digitally signed by  
Bryck, Jack  
DN: CN="Bryck, Jack",  
OU=Internal,  
OU=users,  
OU=stantec, DC=corp,  
DC=ads  
Date: 2025.03.20  
16:54:03-07'00'

**Jack Bryck** PE  
Senior Technical Advisor  
Phone: (480) 508-1369  
Mobile: (480) 244-6886  
jack.bryck@stantec.com

# CONTRACT ADDENDUM

CITY OF TUCSON BUSINESS SERVICES DEPARTMENT  
255 W. ALAMEDA, 6TH FLOOR, TUCSON, AZ 85701  
P.O. BOX 27210, TUCSON, AZ 85726  
PHONE: (520) 837-4375 / FAX: (520) 791-4735  
Vanessa.Guzman@tucsonaz.gov  
ISSUE DATE: APRIL 29, 2024

**CONTRACT # 212603-05**  
CONTRACT ADDENDUM NUMBER: TWO (2)  
PAGE 1 of 2  
VG  
CONTRACT OFFICER: VANESSA GUZMAN

## ON-CALL ENGINEERING SERVICES FOR NEW AND REPLACEMENT OF DISTRIBUTION AND TRANSMISSION MAINS

THIS CONTRACT IS AMENDED AS FOLLOWS:

### ITEM ONE (1): CONTRACT RENEWAL

In accordance with Contract Special Terms and Conditions, 3. Term and Renewal, the City of Tucson is hereby exercising its option to renew the contract for an additional two-year period from **May 17, 2024** through **May 16, 2026**.

### ITEM TWO (2): PRICE ADJUSTMENT

In accordance with Contract Special Terms and Conditions, 4. Rate Adjustment, the City of Tucson hereby accepts the proposed rates per the attached price page (9 pages), **effective May 17, 2024**.

### ITEM THREE (3): CONTRACT MODIFICATION – ADDITIONAL SUBCONSULTANT

In accordance with Contract Standard Terms and Conditions, 12. Contract Amendments, the City of Tucson is hereby exercising its option to modify the provisions of the contract as follows:

Addition of subconsultant Cooper Aerial Surveys Company for the rates specified in attached price page (page 2 of 9).

**\*\*\*END OF ADDENDUM ITEMS\*\*\***

# CONTRACT ADDENDUM

CITY OF TUCSON BUSINESS SERVICES DEPARTMENT  
255 W. ALAMEDA, 6TH FLOOR, TUCSON, AZ 85701  
P.O. BOX 27210, TUCSON, AZ 85726  
PHONE: (520) 837-4375 / FAX: (520) 791-4735  
Vanessa.Guzman@tucsonaz.gov  
ISSUE DATE: APRIL 29, 2024

**CONTRACT # 212603-05**  
CONTRACT ADDENDUM NUMBER: TWO (2)  
PAGE 2 of 2  
VG  
CONTRACT OFFICER: VANESSA GUZMAN

**ALL OTHER PROVISIONS OF THE CONTRACT SHALL REMAIN IN THEIR ENTIRETY.**

**CONTRACTOR: STANTEC CONSULTING SERVICES INC.**

CONTRACTOR HEREBY ACKNOWLEDGES RECEIPT OF  
AND UNDERSTANDING OF THE ABOVE ADDENDUM

  
Signature of person authorized to sign \_\_\_\_\_ Date \_\_\_\_\_

Kiersten Wangsvick, Principal, Water

Name and Title (typed or printed legibly)

Stantec Consulting Services, Inc.

Company Name

One South Church Avenue, Suite 2100

Address

kiersten.wangsvick@stantec.com

Email Address

Tucson, AZ 85701

City State Zip

Contact information for Sales/Account  
Representative for daily business operations:

Kiersten Wangsvick, Principal, Water

Name and Title (typed or printed legibly)

520-247-1701

Phone Number

kiersten.wangsvick@stantec.com

Email Address

**CITY OF TUCSON:**

THE ABOVE REFERENCED CONTRACT ADDENDUM

IS HEREBY EXECUTED THIS 2nd DAY  
OF May, 2024, AT TUCSON, ARIZONA.

Dan Longanecker for  
Director of Business Services and not personally

## FEE ESTIMATE SUMMARY

DATE: 4/2/2024

PROJECT: On Call Engineering Services for New and Replacement of Distribution and Transmission Mains

PREPARED BY: Whitney McReynolds/Kiersten Wangsvick CONTRACT NUMBER 212603-05

EFFECTIVE DATE May 17, 2024 PRIME CONTRACTOR Stantec

CONTRACT TIME Two Years CONTRACT TYPE TMU per Task Order

ITEM NO.	FIRM	Discipline	A	B	C	D
			Direct Labor Rate	Overhead <u>159.477</u> %	Profit <u>10</u> %	Billing Rate
1	Stantec	Principal	\$103.71	\$165.39	\$26.91	\$296.00
2	Stantec	Project Manager	\$67.62	\$107.84	\$17.55	\$193.00
3	Stantec	Senior A/E	\$81.63	\$130.19	\$21.18	\$233.00
4	Stantec	A/E	\$60.96	\$97.22	\$15.82	\$174.00
5	Stantec	Designer	\$49.75	\$79.34	\$12.91	\$142.00
6	Stantec	CADD	\$38.54	\$61.46	\$10.00	\$110.00
7	Stantec	Prof Level IV	\$76.38	\$121.80	\$19.82	\$218.00
8	Stantec	Prof Level III	\$64.82	\$103.37	\$16.82	\$185.00
9	Stantec	Prof Level II	\$40.64	\$64.81	\$10.55	\$116.00
10	Stantec	Prof Level I	\$34.69	\$55.31	\$9.00	\$99.00
11	Stantec	Clerical/Admin	\$33.28	\$53.08	\$8.64	\$95.00
12	Stantec	Survey Crew - 3 Man	\$390.00			\$390.00
13	Stantec	Survey Crew - 2 Man	\$290.00			\$290.00

### Formulas

(A) Direct Labor Rate

(B) Overhead @ \_\_\_\_\_ % X (A)

(C) Profit @ \_\_\_\_\_ % X (A + B)

(D) Billing Rate (A+B+C)



## FEE ESTIMATE SUMMARY

DATE: 3/29/2024

PROJECT: On Call Engineering Services for New and Replacement of Distribution and Transmission Mains

PREPARED BY: Cooper Aerial Surveys Company CONTRACT NUMBER 212603-05

EFFECTIVE DATE May 17, 2024 PRIME CONTRACTOR Stantec

CONTRACT TIME Two Years CONTRACT TYPE TMU per Task Order

ITEM NO.	FIRM	Discipline	A	B	C	D
			Direct Labor Rate	Overhead <u>175.22</u> %	Profit <u>10</u> %	Billing Rate
1	Cooper	Principal	\$70.99	\$124.74	\$19.57	\$215.31
2	Cooper	Project Manager	\$33.65	\$59.13	\$9.28	\$102.06
3	Cooper	Senior A/E / Survey Manager	\$67.30	\$118.26	\$18.56	\$204.12
4	Cooper	A/E / Survey Party Chief	\$31.00	\$54.47	\$8.55	\$94.02
5	Cooper	Designer / Information System Manager-GIS/HIS/MIS	\$26.44	\$46.46	\$7.29	\$80.19
6	Cooper	Clerical/Admin	\$23.00	\$40.42	\$6.34	\$69.76
7	Cooper	Photogrammetric Manager	\$31.25	\$54.91	\$8.62	\$94.78
8	Cooper	Photogrammetric Specialist	\$28.00	\$49.20	\$7.72	\$84.92
9	Cooper	Cartographic Manager	\$25.00	\$43.93	\$6.89	\$75.82
10	Cooper	Cartographic Specialist	\$22.65	\$39.80	\$6.25	\$68.70
11	Cooper	Technical Image Manager	\$27.02	\$47.48	\$7.45	\$81.95
12	Cooper	Technical Image Analyst	\$27.00	\$47.44	\$7.44	\$81.89
13	Cooper	Flight Crew- Manager	\$29.00	\$50.96	\$8.00	\$87.95
14	Cooper	Flight Crew- Photographer	\$32.55	\$57.20	\$8.97	\$98.72
15	Cooper	Survey Instrument Man	\$30.42	\$53.45	\$8.39	\$92.26
16	Cooper	Drone Operator	\$35.00	\$61.50	\$9.65	\$106.15
17	Cooper	Drone Data Processor	\$23.00	\$40.42	\$6.34	\$69.76

### Formulas

- (A) Direct Labor Rate  
 (B) Overhead @ \_\_\_\_\_ % X (A)  
 (C) Profit @ \_\_\_\_\_ % X (A + B)  
 (D) Billing Rate (A+B+C)

DATE March 13, 2024

PROJECT: **On Call Engineering Services for New and Replacement Distribution and Transmission Mains**

PREPARED BY: Fred Narcaroti CONTRACT NUMBER 212603-05

EFFECTIVE DATE 5/17/2024 PRIME CONTRACTOR Stantec

CONTRACT TIME 2 Years CONTRACT TYPE TMU per task order

ITEM NO.	FIRM	Discipline	A	B	C	D
			Direct Labor Rate	Overhead <u>156.70</u> %	Profit <u>10</u> %	Billing Rate
1	Ninyo & Moore	Principal	67.31	105.47	17.28	190.06
2	Ninyo & Moore	Project Manager	64.90	101.70	16.66	183.26
3	Ninyo & Moore	Senior A/E	50.48	79.10	12.96	142.54
4	Ninyo & Moore	A/E	43.27	67.80	11.11	122.12
5	Ninyo & Moore	Designer	36.89	57.81	9.47	104.17
6	Ninyo & Moore	CADD	31.25	48.97	8.02	88.24
7	Ninyo & Moore	Prof Level IV	67.31	105.47	17.28	190.06
8	Ninyo & Moore	Prof Level III	64.90	101.70	16.66	183.26
9	Ninyo & Moore	Prof Level II	34.00	53.28	8.73	96.01
10	Ninyo & Moore	Prof Level I	26.50	41.53	6.80	74.83
11	Ninyo & Moore	Clerical/Admin	36.00	56.41	9.24	101.65

#### Formulas

(A) Direct Labor Rate

(B) Overhead @        % X (A)

(C) Profit @        % X (A + B)

(D) Billing Rate (A+B+C)

## FEE ESTIMATE SUMMARY

DATE: March 7, 2024

PROJECT: On Call Engineering Services for New and Replacement Distribution and Transmission Mains

PREPARED BY: Kaneen Communications CONTRACT NUMBER 212603-05

EFFECTIVE DATE 5/17/2024 PRIME CONTRACTOR Stantec

CONTRACT TIME 2 years CONTRACT TYPE TMU per task order

ITEM NO.	FIRM	Discipline	A	B	C	D
			Direct Labor Rate	Overhead _____ %	Profit _____ %	Billing Rate*
1	Kaneen Communications	Project Manager	\$160 / Hr	N/A	N/A	\$160.00 / Hour
2	Kaneen Communications	Designer	\$120 / Hr	N/A	N/A	\$120.00 / Hour
3	Kaneen Communications	Prof Level II	\$110 / Hr	N/A	N/A	\$110.00 / Hour
4	Kaneen Communications	Clerical / Admin	\$80 / Hr	N/A	N/A	\$80.00 / Hour

### Formulas

(A) Direct Labor Rate

(B) Overhead @ \_\_\_\_\_ % X (A)

\* Please Note: Hourly rates are based on current industry standards and are not calculated using overhead and profit margins.

(C) Profit @ \_\_\_\_\_ % X (A + B)

(D) Billing Rate (A+B+C)



## FEE ESTIMATE SUMMARY

DATE: Rev. 3/14/24

PROJECT: **On Call Engineering Services for New and Replacement Distribution and Transmission Mains**

PREPARED BY: Peak Corrosion Control, Inc.

CONTRACT NUMBER: **212603-05**

EFFECTIVE DATE: 5/17/2024

PRIME CONSULTANT: STANTEC

CONTRACT TIME: 2 Years

CONTRACT TYPE: On Call Services

ITEM NO.	FIRM	DISCIPLINE	A	B	C	D
			DIRECT LABOR RATE	140% OVERHEAD	10% PROFIT	BILLING RATE
1	PEAK CORROSION	Principal (Cathodic Protection Specialist)	\$ 82.40	\$ 115.36	\$ 19.78	\$ 217.54
2	PEAK CORROSION	Project Manager (Cathodic Protection Specialist)	\$ 82.40	\$ 115.36	\$ 19.78	\$ 217.54
3	PEAK CORROSION	Senior A/E (Cathodic Protection Specialist)	\$ 82.40	\$ 115.36	\$ 19.78	\$ 217.54
4	PEAK CORROSION	A/E (Cathodic Protection Specialist)	\$ 82.40	\$ 115.36	\$ 19.78	\$ 217.54
5	PEAK CORROSION	Designer (Cathodic Protection Specialist)	\$ 76.74	\$ 107.44	\$ 18.42	\$ 202.59
6	PEAK CORROSION	Drafter	\$ 36.87	\$ 51.62	\$ 8.85	\$ 97.34
10	PEAK CORROSION	Prof Level I (Field Corrosion Technician)	\$ 42.02	\$ 58.83	\$ 10.08	\$ 110.93
11	PEAK CORROSION	Clerical/Admin	\$ 26.50	\$ 37.10	\$ 6.36	\$ 69.96

### Formulas

- (A) Direct Labor Rate
- (B) Overhead @ 140% x (A)
- (C) Profit @ 10% x (A+B)
- (D) Billing Rate (A+B+C)

#### FEE ESTIMATE SUMMARY

DATE: 03/07/2024

PROJECT: On Call Engineering Services for New and Replacement Distribution and Transmission Mains

PREPARED BY: Darling Geomatics CONTRACT NUMBER: 212603-05

EFFECTIVE DATE: May 17, 2024 PRIME CONTRACTOR: Stantec

CONTRACT TIME: 2 years CONTRACT TYPE: TMU Per Task Order

ITEM NO.	FIRM	Discipline	Direct Labor Rate	Overhead <u>150</u> %	Profit <u>10</u> %	Billing Rate
1	Darling Geomatics	PRINCIPAL	\$75.64	\$113.45	\$18.91	\$208.00
2	Darling Geomatics	PROJECT MANAGER	\$56.73	\$85.09	\$14.18	\$156.00
3	Darling Geomatics	A/E	\$56.73	\$85.09	\$14.18	\$156.00
4	Darling Geomatics	CADD	\$42.54	\$63.82	\$10.64	\$117.00
5	Darling Geomatics	PROF. LEVEL IV	\$73.45	\$110.18	\$18.36	\$202.00
6	Darling Geomatics	PROF. LEVEL III	\$56.73	\$85.09	\$14.18	\$156.00
7	Darling Geomatics	PROF. LEVEL I	\$56.00	\$84.00	\$14.00	\$154.00
8	Darling Geomatics	CLERICAL/ADMIN	\$40.73	\$61.09	\$10.18	\$112.00
9	Darling Geomatics	SURVEY CREW - 3 MAN	\$83.27	\$124.91	\$20.82	\$229.00
10	Darling Geomatics	SURVEY CREW - 2 MAN	\$69.09	\$103.64	\$17.27	\$190.00
11	Darling Geomatics	SURVEY CREW - 1 MAN	\$56.00	\$84.00	\$14.00	\$154.00
12	Darling Geomatics	3D LASER SCANNING - 2 MAN	\$134.18	\$201.27	\$33.55	\$369.00
13	Darling Geomatics	3D LASER SCANNING - 1 MAN	\$111.64	\$167.45	\$27.91	\$307.00
14	Darling Geomatics	UAS (DRONE) PILOT & VISUAL OBSERVER	\$107.64	\$161.45	\$26.91	\$296.00
15	Darling Geomatics	POST PROCESSING	\$48.00	\$72.00	\$12.00	\$132.00

#### Formula

(A) Direct Labor Rate

(B) Overhead @ 150 % X (A)

(C) Profit @ 10% X (A + B)

(D) Billing Rate (A+B+C)

## FEE ESTIMATE SUMMARY

DATE: March 22, 2024

PROJECT: On Call Engineering Services for New and Replacement Distribution and Transmission Mains

PREPARED BY: Tierra Right of Way Services, Ltd.

CONTRACT NUMBER PRIME 212603-05

EFFECTIVE DATE March 22, 2024

CONTRACTOR Stantec

CONTRACT TIME 2 years

CONTRACT TYPE TMU per task order

ITEM NO.	FIRM	Discipline	A	B	C	D
			Direct Labor Rate	Overhead <u>143.15</u> %	Profit <u>10</u> %	Billing Rate
1	Tierra	Principal	\$81.73	\$117.00	\$19.87	\$218.60
2	Tierra	Cultural Resources and Environmental - Project Manager	\$53.36	\$76.38	\$12.97	\$142.72
4	Tierra	Right of Way – Project	\$47.10	\$67.42	\$11.45	\$125.98
4	Tierra	Cultural Resources and Environmental - Prof Level IV	\$44.17	\$63.23	\$10.74	\$118.14
	Tierra	Right of Way - Prof Level IV	\$54.82	\$78.47	\$13.33	\$146.62
5	Tierra	Cultural Resources and Environmental - Prof Level III	\$31.83	\$45.56	\$7.74	\$85.13
6	Tierra	Right of Way – Prof Level III	\$40.59	\$58.10	\$9.87	\$108.56
7	Tierra	Cultural Resources and Environmental - Prof Level II	\$34.00	\$48.67	\$8.27	\$90.94
8	Tierra	Right of Way – Prof Level II (Acquisition Agent)	\$29.80	\$42.66	\$7.25	\$79.70
9	Tierra	Cultural Resources and Environmental - Prof Level I	\$24.00	\$34.36	\$5.84	\$64.19
10	Tierra	Right of Way – Prof Level II (Title Examiner)	\$37.59	\$53.81	\$9.14	\$100.54
11	Tierra	Cultural Resources and Environmental -CADD	\$34.50	\$49.39	\$8.39	\$92.28
12	Tierra	Cultural Resources and Environmental - Clerical/Admin	\$25.75	\$36.86	\$6.26	\$68.87
13	Tierra	Right of Way – Clerical/Admin	\$20.00	\$28.63	\$4.86	\$53.49

### Formulas

(A) Direct Labor Rate

(B) Overhead @ 143.15 % X (A)

(C) Profit @ 10% X (A + B)

(D) Billing Rate (A+B+C)

PROJECT:	<u>On Call Engineering Services for New and Replacement Distribution and Transmission Mains</u>	DATE:	<u>3/12/2024</u>
PREPARED BY:	<u>T2UES, Inc. dba T2 Utility Engineers</u>	CONTRACT NUMBER:	<u>212603-05</u>
EFFECTIVE DATE:	<u>5/17/2024</u>	PRIME CONTRACTOR:	<u>Stantec</u>
CONTRACT TIME:	<u>2 years</u>	CONTRACT TYPE:	<u>TMU per task order</u>

ITEM NO.	FIRM	Discipline	A	B	C	D
			Direct Labor Rate	Overhead	Profit	Billing Rate
1	T2 Utility Engineers	Principal	102.10	186.08	28.82	316.99
2	T2 Utility Engineers	Project Manager	58.87	107.29	16.62	182.78
3	T2 Utility Engineers	Senior A/E	63.14	115.07	17.82	196.03
4	T2 Utility Engineers	A/E	55.16	100.53	15.57	171.26
5	T2 Utility Engineers	Prof Level IV	52.00	94.77	14.68	161.45
6	T2 Utility Engineers	Survey Crew- 2 Man **	62.96	114.74	17.77	195.48
7	T2 Utility Engineers	Survey Crew- 2 Man (SUE Crew)**	59.42	108.29	16.77	184.48
8	T2 Utility Engineers	CADD	35.48	64.66	10.01	110.16
9	T2 Utility Engineers	Clerical/Admin	28.10	51.21	7.93	87.25

**Formulas**

(A) Direct Labor Rate  
 (B) Overhead% x (A)  
 (C) Profit % x (A+B)  
 (D) Billing Rate (A+B+C)

**\*\*Vehicle Rates (To be used in Conjunction with Survey Crew- 2 Man and Survey Crew- 2 Man (SUE Crew) Rates Above**

Survey Truck & Equipment - \$36.00/hr.  
 Designating Truck & Equipment - \$31.00/hr.  
 Vacuum Excavating Truck & Equipment - \$77.00/hr.

Use only the discipline categories listed here when completing the fee summaries for prime and subconsultants.

<b>Discipline Category</b>	<b>212603: On Call Engineering Services for New and Replacement Distribution and Transmission Mains</b>
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<b>Principal</b>	Principal Architect, Principal Engineer, President, Vice President, Managing Principal, Principal In Charge, Specialized Consultant
<b>Project Manager</b>	Project Principal, Principal Project Manager, Project Manager, Senior Project Manager, Project Director, Sr. Project Director, Project Administrator, Account Manager, Office Manager
<b>Senior A/E</b>	Project Architect, Project Engineer, Sr. Project Engineer/Architect, Sr. Engineer/Architect, Project Landscape Architect
<b>A/E</b>	Architect, Engineer, Engineering Consultant, Staff Engineer, Registered Land Surveyor, Landscape Architect, Field Engineer
<b>Designer</b>	Senior Designer, Engineering Designer, Design Engineer, Landscape Designer, Design Tech
<b>CADD</b>	CADD Designer, CADD Technician, CAD Operator, AutoCAD, Drafter, Senior Drafter, Junior Drafter, Draftsperson, Drafting Technician
<b>Prof Level IV</b>	Principal Scientist (Hydrologist, Chemist, Biologist, Geologist, Environmental Scientist), Principal Planner, Principal Scientist
<b>Prof Level III</b>	Senior Scientist (Hydrologist, Chemist, Biologist, Geologist, Environmental Scientist), Survey Manager, Survey Chief, Environmental Specialist, Estimator, Senior Planner, Accountant II
<b>Prof Level II</b>	Scientist I (Hydrologist, Chemist, Biologist, Geologist, Environmental Scientist), Planner, Survey Supervisor, Field Supervisor, Inspector, GPS, GIS, Engineering Aide, Accountant I, Project Coordinator
<b>Prof Level I</b>	Field Tech, Field Staff, Lab Tech, Intern, Project Assistant
<b>Clerical/Admin</b>	Clerical Staff, Word Processor, Administrator, Administrative Assistant, Support Staff
<b>Survey Crew- 3 Man</b>	
<b>Survey Crew- 2 Man</b>	





## FEE ESTIMATE - Douglas Well at Cochise College

		Project Manager	Hydrogeologist/Technical Lead	Hydrogeologist/T/R	Principal Engineer	Hydrogeologist	Hydrogeologist	Hydrogeologist	WP	GIS	Project Management Support	Expenses
Project Billing Rate (T&M)		\$185.00	\$218.00	\$218.00	\$296.00	\$185.00	\$116.00	\$116.00	\$218.00	\$142.00	\$116.00	\$1.00
Total Units (T&M)		35.00	196.00	12.00	54.00	304.00	192.00	148.00	16.00	32.00	40.00	29,184.00
Fee (T&M)		\$6,475.00	\$42,728.00	\$2,616.00	\$15,984.00	\$56,240.00	\$22,272.00	\$17,168.00	\$3,488.00	\$4,544.00	\$4,640.00	\$29,184.00

Task Code	Task Name	Units										
100	Water Supply Well											
100.100	Well Technical Specifications and Conceptual Drawings	72	4	2				8	8			
100.200	Water Well Permitting	20		2		60		8	8			
100.300	Borehole Drilling Observation and Zonal Testing	24	4	8	132		132					
100.400	Well Construction Observation, Development, and Aquifer Testing	24		8	132	132						
100.500	Well Completion Report Preparation	16	4	4	40		16		16			
100.600	Progress Meetings	40										
600	Project Management											
600.100	Project Management	30		15							40	
600.200	Progress Meetings	5		15								
900	Expenses											
900.100	Lab Testing											8,000
900.200	Permit											600
900.300	Travel											13,834
900.400	Equipment											6,750

Project Summary	Hours	Labour	Expense	Subs	Total
Time & Material	1,029.00	\$176,155.00	\$29,184.00	\$0.00	\$205,339.00

Expense	Unit Cost	Quantity	Total
Airfare	\$500.00	5.00	\$2,500.00
Car Rental	\$55.00	44.00	\$2,420.00
Lodging	\$150.00	43.00	\$6,450.00
Per Diem	\$56.00	44.00	\$2,464.00
ADWR/ADEQ Permitting Fees	\$200.00	3.00	\$600.00
Water Quality Lab Costs	\$500.00	16.00	\$8,000.00
Water Level Tape	\$50.00	15.00	\$750.00
Water Quality Meter	\$100.00	15.00	\$1,500.00
Pressure Transducers	\$500.00	9.00	\$4,500.00