

**Alliance Regional Water Authority
Technical Committee**

REGULAR MEETING



ALLIANCE WATER

COMMITTEE MEMBER PACKETS

Wednesday, January 15th, 2020 at 3:00 P.M.

Kyle - Public Works Building
520 E. RR 150, Kyle, TX 78640

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS

Wednesday, January 15th, 2020 at 3:00 P.M.
520 E. RR 150, Kyle, TX 78640

This Notice is posted pursuant to the Texas Open Meetings Act (Texas Government Code Chapter 551). The Technical Committee of the Board of Directors of the Alliance Regional Water Authority (the Authority) will hold a meeting at 3:00 PM, Wednesday, January 15, 2020, at Kyle Public Works Building, 520 E. RR 150, Kyle, Texas. Additional information can be obtained by calling Graham Moore at (512) 294-3214.

Because this meeting is open to the public, members of the Authority Board of Directors who are not members of the Technical Committee may attend this meeting. If any such Board member attends this meeting such that a quorum of the Authority Board is present, this serves as notice of that potential quorum. The meeting will continue as a meeting of the Authority Technical Committee, and not a meeting of the Authority Board. A Board member who is not a Technical Committee member will have no right to vote on any matter before the Committee.

A. CALL TO ORDER

B. ROLL CALL

C. PUBLIC COMMENT PERIOD (Note: Each person wishing to speak must submit a completed Public Comment Form to the Executive Director or his/her designee before the public comment period begins.)

D. CONSENT AGENDA

D.1 Consider approval of minutes of the Special Technical Committee Meeting held December 11, 2019. ~ *Graham Moore, P.E., Executive Director*

E. PRESENTATIONS TO THE COMMITTEE

E.1 None.

F. ITEMS FOR COMMITTEE ACTION OR DISCUSSION/DIRECTION

F.1 Update and possible direction to Staff regarding the Authority's Phase 1A projects. ~ *Jason Biemer, Project Coordinator*

F.2 Update and possible direction to Staff regarding the Authority's Phase 1B program. ~ *Ryan Sowa, P.E., Kimley-Horn & Associates*

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- F.3 Discussion and possible recommendation to the Board to approve a work order with R.W. Harden & Associates, Inc. for Construction Phase Services for the Authority's Phase 1B Well Drilling / Hydrogeology project. ~ *Ryan Sowa, P.E., Kimley-Horn & Associates*
- F.4 Discussion and possible recommendation to the Board to approve an agreement with Hicks & Company Environmental / Archaeological Consultants for Environmental On-Call Services associated with the Authority's Phase 1B Well Drilling / Hydrogeology project. ~ *Ryan Sowa, P.E., Kimley-Horn & Associates*
- F.5 Discussion and possible recommendation to the Board to approve a work order with Walker Partners, LLC for Design and Procurement Services for the Authority's Phase 1B Water Treatment Plant project. ~ *Ryan Sowa, P.E., Kimley-Horn & Associates*
- F.6 Update on status of groundwater management in project target area, and Gonzales County Underground Water Conservation District, Plum Creek Conservation District, Groundwater Management Area 13, Region L Planning Group, Guadalupe-Blanco River Authority, Hays County and CAPCOG activities. ~ *Graham Moore, P.E., Executive Director*

- G. EXECUTIVE DIRECTOR REPORT - Update on future meeting dates, locations, consultant invoices paid, approved changed orders, status of Authority procurements, Executive Director activities and other operational activities where no action is required. ~ *Graham Moore, P.E., Executive Director*

- H. COMMITTEE MEMBER ITEMS OR FUTURE AGENDA ITEMS – Possible acknowledgement by Committee Members of future area events and/or requests for item(s) to be placed on a future agenda where no action is required.

- I. EXECUTIVE SESSION
 - I.1 *Executive Session pursuant to the Government Code, Section 551.071 (Consultation with Attorney) and/or Section 551.072 (Real Property Deliberations) regarding:*
 - A. *Water supply partnership options*
 - B. *Groundwater leases*
 - C. *Acquisition of real property for water supply project purposes*

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- I.2 Action from Executive Session on the following matters:
 - A. *Water supply partnership options*
 - B. *Groundwater leases*
 - C. *Acquisition of real property for water supply project purposes*

J. ADJOURNMENT

NOTE: *The Technical Committee may meet in Executive Session to consider any item listed on this agenda if a matter is raised that is appropriate for Executive Session discussion. An announcement will be made of the basis for the Executive Session discussion. The Technical Committee may also publicly discuss any item listed on the agenda for Executive Session.*

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A. CALL TO ORDER

No Backup Information for this Item.

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B. ROLL CALL

NAME PRESENT

Kenneth Williams

James Earp

Tom Taggart

Humberto Ramos

Steve Parker

Mike Taylor

NON-VOTING MEMBERS PRESENT

Mayor George Haehn

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C. PUBLIC COMMENT PERIOD

Each person wishing to speak must submit a completed Public Comment Form to the Executive Director or his/her designee before the public comment period begins.

Comments are limited to 3-minutes per agenda item and three minutes total for all non-agenda topics. If using a translator, comments are limited to six minutes per agenda item and six minutes total for non-agenda topics.

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D. CONSENT AGENDA

Item D.1 is presented as part of the consent agenda.

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D.1 Consider approval of minutes of the Regular Technical Committee Meeting held December 11, 2019. ~ *Graham Moore, P.E., Executive Director*

Attachment(s)

- 2019 12 11 Technical Committee Meeting Minutes

Technical Committee decision needed:

- Approval of minutes.



ALLIANCE WATER

Alliance Regional Water Authority

TECHNICAL COMMITTEE MEETING

MINUTES

Wednesday, December 11, 2019

The following represents the actions taken by the Technical Committee of the Alliance Regional Water Authority (Alliance Water) in the order they occurred during the meeting. The Technical Committee convened in a meeting on Wednesday, December 11, 2019 at the Kyle Public Works Facility, 520 E. RR 150, Kyle, Texas.

A. CALL TO ORDER.

The Alliance Water Technical Committee Meeting was called to order at 3:08 p.m. by Mr. Earp.

B. ROLL CALL.

- **Present:** Earp, Taggart, Ramos, and Taylor with Williams joining in Item F.1.
- **Absent:** Parker and Haehn.

C. PUBLIC COMMENT PERIOD

- **None.**

D. CONSENT AGENDA

D.1 Consider approval of minutes of the Regular Technical Committee Meeting held November 12, 2019.

- **Motion to adopt the consent agenda as presented was made by Mr. Earp, seconded by Mr. Taylor and approved on a 4-0 vote.**

E. PRESENTATIONS TO THE COMMITTEE

E.1 None.

F. ITEMS FOR COMMITTEE ACTION OR DISCUSSION/DIRECTION

- F.1 Update and possible direction to Staff regarding the Authority's Phase 1A projects.
- **Mr. Moore provided an update on the projects.**
 - **No Action.**
- F.2 Update and possible direction to Staff regarding the Authority's Phase 1B program.
- **Mr. Ryan Sowa with Kimley-Horn went through the presentation in the packet summarizing Kimley-Horn's recent activities, along with schedule and budget updates.**
 - **Mr. Ramos inquired if there was an agreement with GBRA on well drilling, to possibly use the same drillers. Mr. Moore responded that there is not any agreement with GBRA on well drilling.**
 - **Mr. Taylor asked if we are concerned about knowing water quality during the design process. Mr. Moore responded that actual raw water data should serve as a confirmation of the parameters expected, not anticipating anything strange that would dramatically effect the water treatment design.**
 - **Mr. Taggart requested that if schedule slips further, that monthly updates be provided.**
 - **Mr. Taggart also suggested that project savings be tracked separately from the contingency line item.**
 - **No Action.**
- F.3 Discussion and possible recommendation to the Board to amend the Phase 1B Program to incorporate Cost Saving Measures.
- **Motion to recommend to the Board to amend the Phase 1B Program through the incorporation of the recommended Cost Saving Measures in the packet was made by Mr. Taylor, seconded by Mr. Ramos and approved on a 5-0 vote.**
 - **Discussion included:**
 - **Mr. Taggart noted that San Marcos likes the separation of the peaking factor between the pipelines and facilities and the flexibility it provides.**
 - **Mr. Taylor likes building in the maximum capacity feasible in the pipelines during the Phase 1B.**
 - **Mr. Ramos noted that it was important to get consensus on the measures from the group.**
 - **Mr. Earp feels that the recommendations are responsible and prudent at this point, but also notes that difficult decisions may still be required in the future depending on how actual bids come in.**

- F.4 Discussion and possible action to reschedule the date of the January Technical Committee meeting.
- **Motion to reschedule the January Technical Meeting to Wednesday, January 15th was made by Mr. Ramos, seconded by Mr. Taggart and approved on a 5-0 vote.**
- F.5 Update on status of groundwater management in project target area, and Gonzales County Underground Water Conservation District, Plum Creek Conservation District, Groundwater Management Area 13, Region L Planning Group, Guadalupe-Blanco River Authority, Hays County and CAPCOG activities.
- **Mr. Moore provided an update on the various topics.**
 - **No Action.**

G. EXECUTIVE DIRECTOR REPORT

- **Update, no action.**

H. COMMITTEE MEMBER ITEMS OR FUTURE AGENDA ITEMS

- **Mr. Ramos noted that it will be time to review water sharing needs in 2020.**

I. EXECUTIVE SESSION

- I.1 *Executive Session pursuant to the Government Code, Section 551.071 (Consultation with Attorney) and/or Section 551.072 (Real Property Deliberations) regarding:*
- A. *Water supply partnership options*
 - B. *Groundwater leases*
 - C. *Acquisition of real property for water supply project purposes*
- **None.**
- I.2 Action from Executive Session on the following matters:
- A. Water supply partnership options
 - B. Groundwater leases
 - C. Acquisition of real property for water supply project purposes
- **No Action.**

J. ADJOURNMENT

- Meeting was adjourned at 3:59 p.m. by Mr. Earp.

APPROVED: _____, 2020

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- F.1** Update and possible direction to Staff regarding the Authority's Phase 1A projects.
~ *Jason Biemer, Project Coordinator*
-

Background/Information

Below are brief updates on the Phase 1A projects.

Segment A Pipeline:

- None

Segment B Pipeline:

- Notice to proceed received 12/5/2019.
- Pre-Con was held 12/17/2019.
 - Clearing underway.
 - Stormwater protection systems being installed.
- No major issues identified by contractor or staff at this time.

Pump Station:

- Pump station construction proceeding. See attached slides.
- Revised substantial completion March 3, 2020
- Revised completion March 6th, 2020
- 30-day acceptance and testing follow completion date.

Technical Committee Decisions Needed:

- None.

Phase 1A Booster Pump Station

- Status Update
- December 15, 2019



General Updates



Road work on site
nearing completion



PEC on site this week



Building structures up
– internal painting
completed.



Wiring and major
electrical components
nearing completion.



SCADA server system
arriving on site this
week



Facility Structures - *Interior*

- HVAC system installation completed.
- Chemical feed system ready to test.
- Chemical leak safety system installation complete.
- Ventilation system installation completing.
- Awaiting integration into SCADA system where required.



Facility Structures – *Landscaping and Exterior*

- Gates and fence installation underway.
- Security gates, security lights in final installation phase.
- Vegetation establishing
- Irrigation system installation completing soon.



Phase 1A

Buda Delivery Point

- Canopy completed.
- Underground plumbing completed.
- SCADA and electrical systems in final installation phase.

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- F.2** Update and possible direction to Staff regarding the Authority's Phase 1B program.
~ *Ryan Sowa, P.E., Kimley-Horn & Associates*
-

Background/Information

Ryan Sowa with Kimley-Horn will update the Committee on their recent activities associated with the Phase 1B program.

Graham Moore will update the Committee on the status of providing permanent power to the Water Treatment Plant.

Attachment(s)

- Phase 1B Program Update – January 15, 2020
- Kimley-Horn Monthly Summary of Activities for December 2019

Technical Committee Decisions Needed:

- None.



Phase 1B Program Update

Technical Committee Meeting
January 15, 2020

Kimley»Horn

Agenda

Ongoing Progress

- Well Drilling – Construction Phase Services (RW Harden)
- Well Drilling – Construction Phase Services (Hicks & Company)
- Water Treatment Plant – Final Design/Procurement Contract (Walker Partners)



Kimley»Horn

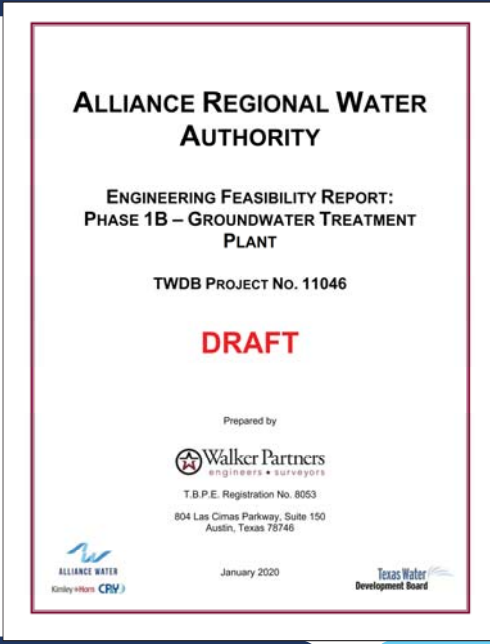
Ongoing Progress

Consultant Contracting Update

- Well Drilling
 - Construction Phase Contract (January)
- Water Treatment Plant
 - Final Design Phase Contract (January)
- Booster Pump Station & Delivery Points
 - Final Design Phase Contract (February)
- Pipeline Segment C
 - Final Design Phase Contract (March)
- Pipeline Segment E
 - Final Design Phase Contract (March)

Design Milestone Reviews

- Water Treatment Plant
 - Final Engineering Feasibility Report (January)
- Booster Pump Station & Delivery Points
 - Final Engineering Feasibility Report (January)
- Raw Water Infrastructure
 - Final Engineering Feasibility Report (January)



Ongoing Progress

Design Standards Update

- Transmission Pipelines Design Standards – Updated
- Construction Specifications & Details – Final Draft Under Review
- Instrumentation & Controls Guidelines – Final
- Cathodic Protection – Draft

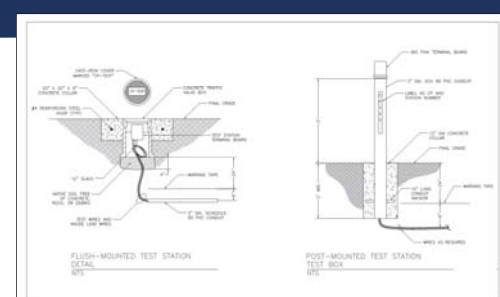


Figure 6 Flush Mounted and Post Mounted Test Station Standard Details.

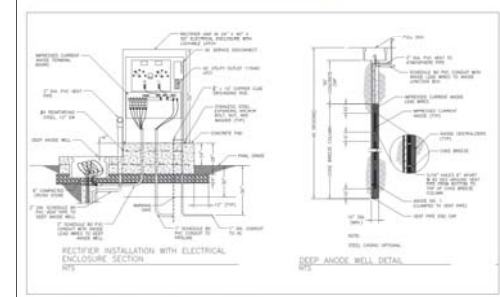


Figure 7 Rectifier Installation and Deep Anode Well Standard Details.



Pipeline Route Analyses & Rights of Entry

Pipeline Segment	Number of Right-of-Entry Requests	Right-of-Entry Received or Access Granted (No. of Parcels)	Right-of-Entry Received or Access Granted (%)	Alignment Confirmed (%)
A	38	38	100%	100%
B	46	46	100%	85%
D	68	68	100%	87%
C	88	71	81%	0%
E	35	30	86%	6%
Wellfield	15	8	53%	0%
Total	290	261		



Kimley»Horn

Pipeline Easement Acquisition Status

Pipeline Segment	Number of Parcels	Appraisals Prepared	Initial Offer Letter Delivered	Purchase Agreement Signed / Easement Closed
A	38	34	25	5
B	46	10	5	1
D	68	1	0	0
C	88	0	0	0
E	35	0	0	0
Wellfield	15	0	0	0
Total	290	45	30	6



Kimley»Horn



Questions?



Kimley»Horn



Consulting Services



Kimley»Horn

Well Drilling – Design Consultant Construction Phase Services

Design Consultant – RW Harden

Scope to include (Time & Materials):

- Project Management
- TCEQ Submittals
- Well Construction Observation
- Construction Contract Administration

Maximum Not-to-Exceed Fee = \$384,200.00



Kimley»Horn

Well Drilling – Environmental Consultant Construction Phase Services

Environmental Consultant – Hicks & Company

Scope to include (Time & Materials on an As-Needed Basis):

- Migratory Bird Nesting Survey
- Active Nest Monitoring
- Threatened & Endangered Species Encounters
- Cultural Resources Encounters

Maximum Not-to-Exceed Fee = \$23,938.75



Kimley»Horn

Water Treatment Plant

Design Consultant – Walker Partners

Design Capacity

- Initial Capacity (Phase 1B + GBRA) – 19.5 MGD
- Phase 1 Total Capacity – 33.5 MGD

Infrastructure Summary

- Raw Water Tanks
- Treatment Processes
- Treated Water Tank & High Service Pump Station
- Admin & Maintenance Buildings
- Roadway Improvements



Kimley»Horn

Water Treatment Plant

Scope to include (Lump Sum):

- 60%, 90%, and 100% Design, Procurement
- Site Civil, Mechanical, Electrical, Instrumentation, HVAC, Architectural, Structural, Roadway Design, & Geotechnical Services
- Agency Coordination / Permitting – Caldwell County, TxDOT, TCEQ
- Does not include Construction Phase Services



Kimley»Horn

Water Treatment Plant

Supplemental Services:

- Additional Geotechnical & Survey Services
- TCEQ Variance Approvals
- High Service Pump Station Surge & Transient Analyses
- General Engineering Design
- Procurement Phase Services (Time & Materials)

Total Basic Services Lump Sum Fee = \$2,900,402.00

Total Supplemental Services Budget = \$633,388.00

Maximum Not-to-Exceed Fee = \$3,533,790.00



Kimley»Horn

Questions?



Kimley»Horn

January 13, 2020

Project Monthly Summary

December 2019 Tasks Performed:

- Task 2 – Stakeholder Coordination
 - Coordination and/or meetings with entities including: Caldwell County, Guadalupe County, Bluebonnet Electric Coop, TxDOT, TCEQ, and TWDB.
 - Continued weekly task coordination with Alliance Water.
 - Prepared for Project Advisory Committee Meeting Update.
 - Prepared and presented Technical Committee Meeting Update.
 - Prepared and presented Board Meeting Update.
 - Prepared for and held Monthly Status Meeting with Alliance Water.

- Task 3 – Budgeting
 - Prepared Program Budget Update for Technical Committee and Board Presentations.
 - Provided additional cost data in support of the program cost analysis process.
 - Continued updates to Budget Workbook to include monthly tracking of actual costs for ARWA review.

- Task 4 – Schedule
 - Prepared Program Schedule Update for Technical Committee and Board Presentations.
 - Coordinated with Program team to integrate each project schedule into overall Program schedule.

- Task 6 – Data Management
 - Developed a process for integrating consultant geotechnical data into GIS.
 - Ongoing maintenance of Microsoft SharePoint Online program.
 - Continued updating of web-based GIS for right-of-entry process and alignment changes.

- Task 7 – Environmental Management
 - Reviewed Segment A Hazardous Materials study prepared by the Program Environmental Consultant.
 - Performed coordination between Program Environmental Consultant and Land Acquisition Consultant to clarify environmental field work to be done on properties as part of right-of-entry process.
 - Monthly progress meeting and ongoing coordination with Program Environmental Consultant.

Alliance Water – Phase 1B Infrastructure – Owner’s Representative

- Continued coordination between Program Environmental Consultant and Design Engineers.
- Reviewed Program Environmental invoices, schedule, and risk log.

- Task 8 – Land Acquisition Management
 - Attended Temporary Injunction Hearings for multiple parcels where the Program is seeking a ROE.
 - Coordinated the appraisal process for Segment A and Segment B parcels.
 - Coordinated with Program Survey Consultant, Program Environmental Consultant, and Land Acquisition team to address questions that arise as part of the field work coordination process.
 - Performed weekly QC of parcel files in SharePoint, provided comments to Land Acquisition team.
 - Weekly coordination meeting with land agents to discuss status of rights-of-entry and to provide Program clarification on any questions/requests that have come from landowners.
 - Reviewed Program Land Acquisition team, Program Legal, and Program Survey invoices.
 - Continued field work coordination to notify landowners of upcoming field work by consultants.

- Task 9 – Texas Water Development Board Management
 - Continue coordination with TWDB Staff to track all EFRs, environmental reports, and bid documents currently under review.
 - Assisted with TWDB budget revisions for loan submittal.

- Task 10 – Design Standards
 - Finalized the updated Pipeline Construction Standards and provided to ARWA for review.
 - Continued coordinating with ARWA for the continued development of standards for fiber and SCADA.
 - Continued development of Draft Cathodic Protection Program Standards.

- Task 11 – Engineering Design Management
 - Pipelines:
 - Segment A
 - Continued coordination with design consultant for final design field work.
 - Coordinated with design consultant to finalize EFR.
 - Segment B
 - Continued coordination with design consultant for final design field work.
 - Coordinated with design consultant to finalize EFR.
 - Segment C

Alliance Water – Phase 1B Infrastructure – Owner’s Representative

- Continued coordination with design consultant regarding ongoing field work and pipeline alignment considerations as part of right-of-entry process and EFR development.
 - Began scoping process coordination for final design phase.
 - Segment D
 - Coordination with design consultant for alignment confirmation.
 - Coordination with design consultant for beginning final design.
 - Segment E
 - Continued coordination with design consultant regarding ongoing field work as part of right-of-entry process and EFR development.
 - Began scoping process coordination for final design phase.
 - Wellfield:
 - Continued coordination regarding bidding of Wells 6-9.
 - Continued review of scope and fee for construction phase services.
 - Raw Water Infrastructure:
 - Reviewed and commented on draft 30% Design Report.
 - Continued coordination with design consultant for 30% design development.
 - Water Treatment Plant:
 - Reviewed and commented on draft 30% Design Report.
 - Continued coordination with design consultant for 30% design development.
 - Began scoping process coordination for final design phase.
 - Booster Pump Station:
 - Began scoping process coordination for final design phase.
 - Began review of 30% Design Report.
 - Inline Elevated Storage Tanks:
 - Coordinated with design consultant concerning for 30% design development and potential site selection.
 - Other:
 - Monthly progress meetings with all design consultants (pipelines, water treatment plant, raw water infrastructure, wellfield, booster pump station).
 - Review invoices, schedules, and risk logs for consultants.
- Task 13 – Electrical Power Planning
 - Continued coordinated with ARWA concerning emergency power needs and service options for the water treatment plant and wellfield.
 - Continued coordination with GVEC and BBEC regarding electric service to the WTP and wellfield.
 - Task 14 – Permit Coordination/Tracking

Alliance Water – Phase 1B Infrastructure – Owner’s Representative

- Continued Permit coordination with Pipeline consultants.
- Continued coordination with Caldwell County concerning variance request for the Site Development Permit.
- Continued General Coordination with TxDOT.
- Continued General Coordination with GVEC and BBEC.
- On-going Permit Tracking Log Updates.
- Task 17 – Other Services
 - Prepared and submitted a draft solar field feasibility analysis and memorandum to ARWA for the WTP site.

January 2020 Projection:

- Task 2 – Stakeholder Coordination
 - Coordination and/or meetings with entities including: Caldwell County, Guadalupe County, GVEC, Bluebonnet Electric Coop, TxDOT, TCEQ, and TWDB.
 - Continue weekly task coordination with Alliance Water.
 - Prepare and present Project Advisory Committee Meeting Update.
 - Prepare and present Technical Committee Meeting Update.
 - Prepare and present Board Meeting Update.
 - Prepare for and hold Monthly Status Meeting with Alliance Water.
 - Prepare for and attend the Operations Workshop.
- Task 3 – Budgeting
 - Finalize updates to Budget Workbook to include monthly tracking of actual costs for ARWA review.
- Task 4 – Schedule
 - Coordinate with Program team to integrate each project schedule into overall Program schedule.
- Task 6 – Data Management
 - Ongoing maintenance of Microsoft SharePoint Online program.
 - Continued updating of web-based GIS for right-of-entry process and alignment changes.
- Task 7 – Environmental Management
 - Coordination with the Program Environmental Consultant regarding additional hazmat studies for Segment A.
 - Continued review of Segment A environmental reports prepared by the Program Environmental Consultant.
 - Perform coordination between Program Environmental Consultant and Land Acquisition Consultant to clarify environmental field work to be done on properties as part of right-of-entry process.

Alliance Water – Phase 1B Infrastructure – Owner’s Representative

- Monthly progress meeting and ongoing coordination with Program Environmental Consultant.
- Continue coordination between Program Environmental Consultant and Design Engineers.
- Review Program Environmental invoices, schedule, and risk log.

- Task 8 – Land Acquisition Management
 - Attended Temporary Injunction Hearings for multiple parcels where the Program is seeking a ROE.
 - Coordinate the appraisal process for Segment A and Segment B parcels.
 - Coordinate with Program Survey Consultant, Program Environmental Consultant, and Land Acquisition team to address questions that arise as part of the field work coordination process.
 - Perform weekly QC of parcel files in SharePoint, provide comments to Land Acquisition team.
 - Weekly coordination meeting with land agents to discuss status of rights-of-entry and to provide Program clarification on any questions/requests that have come from landowners.
 - Review Program Land Acquisition team, Program Legal, and Program Survey invoices.
 - Continue field work coordination to notify landowners of upcoming field work by consultants.

- Task 9 – Texas Water Development Board Management
 - Continue coordination with TWDB Staff to track all EFRs, environmental reports, and bid documents currently under review.
 - Provide assistance with the TWDB Abridged Application and budget revisions for loan submittal where needed.

- Task 10 – Design Standards
 - Finalize and send out the Pipeline Construction Standards for Manufacturer review.
 - Finalize and provide the Final SCADA Package and Division 40 Specifications for review.
 - Submit draft of Cathodic Protection Program Standards for ARWA review.

- Task 11 – Engineering Design Management
 - Pipelines:
 - Segment A
 - Continue coordination with design consultant to finalize EFR.
 - Continue coordination with design consultant for final design.
 - Segment B
 - Continue coordination with design consultant to finalize EFR.
 - Continue coordination with design consultant regarding for final design.

Alliance Water – Phase 1B Infrastructure – Owner’s Representative

- Segment C
 - Continue coordination with design consultant regarding ongoing field work and pipeline alignment considerations as part of right-of-entry process and EFR development.
 - Continue coordination and review of scope and fee for final design phase.
 - Segment D
 - Continue coordination with design consultant for final design.
 - Segment E
 - Continue coordination with design consultant regarding ongoing field work as part of right-of-entry process and EFR development.
 - Continue coordination and review of scope and fee for final design phase.
 - Wellfield:
 - Continue coordination regarding bidding of Wells 6-9.
 - Continued review of scope and fee for construction phase.
 - Raw Water Infrastructure:
 - Review and comment on 30% Design Report.
 - Continue coordination with design consultant for 30% design development.
 - Water Treatment Plant:
 - Review and comment on 30% Design Report.
 - Continue coordination with design consultant for 30% design development.
 - Continue coordination and review of scope and fee for final design phase.
 - Booster Pump Station:
 - Review of 30% Design Report submitted by the design consultant.
 - Continue coordination and review of scope and fee for final design phase.
 - Inline Elevated Storage Tanks:
 - Coordination with design consultant for 30% design development.
 - Review and comment on 30% Design Report.
 - Other:
 - Monthly progress meetings with all design consultants (pipelines, water treatment plant, raw water infrastructure, wellfield).
 - Review invoices, schedules, and risk logs for consultants
- Task 13 – Electrical Power Planning
 - Continue coordination with ARWA concerning emergency power needs and service options for the water treatment plant and wellfield.
 - Coordination with GVEC regarding electric service to the WTP and wellfield.
 - Prepare for and attend the GVEC & BBEC Power Service Coordination Meeting.

Alliance Water – Phase 1B Infrastructure – Owner’s Representative

- Task 14 – Permit Coordination/Tracking
 - Continue Permit coordination with Pipeline consultants
 - Continue Coordination with Caldwell County for variance request for the Site Development Permit.
 - General Coordination with TxDOT
 - General Coordination with GVEC and BBEC
 - Prepare for and attend coordination meeting with GVEC.
 - Permit Tracking Log Updates

- Task 17 – Other Services
 - Finalize and submit the City of San Marcos Watershed Protection Plan for the Booster Pump Station Plat.
 - Finalize solar feasibility memorandum and submit to ARWA.

Scope Elements Added/Removed:

None at this time.

Outstanding Issues/Concerns:

None at this time.

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS

Wednesday, January 15th, 2020 at 3:00 P.M.
520 E. RR 150, Kyle, TX 78640

- F.3** Discussion and possible recommendation to the Board to approve a work order with R.W. Harden & Associates, Inc. for Construction Phase Services for the Authority's Phase 1B Well Drilling / Hydrogeology project. ~ *Ryan Sowa, P.E., Kimley-Horn & Associates*
-

Background/Information

Alliance Water entered into a Work Order in September 2018 with RW Harden & Associates, Inc. (RW Harden) to provide design and procurement services for Alliance Water's four Phase 1B Carrizo water wells. The design is almost complete, with the Texas Water Development Board anticipated to approve all aspects of the project for bidding by the end of January. The effort included in the proposed work order is for construction administration services to include: project management, submittals to TCEQ to achieve interim use approvals for the wells, observation of the well construction and contract management including responses to contract questions, contractor meetings, walkthroughs, etc.

Below are some of the key facts regarding the Phase 1B Well Drilling / Hydrogeology Construction Phaser Services proposal:

Firm: RW Harden & Associates, Inc.
Fee: \$384,200
Work Order Type: Hourly, Not-to-Exceed
Anticipated Duration: 14 months
Project Manager: James Bene, P.G.

Staff is requesting that the Committee recommend Board approval of a Work Order with a fee not-to-exceed \$384,200.

Attachment(s)

- RW Harden proposal for Construction Phase Services for Phase 1B Well Drilling & Hydrogeology project.

Technical Committee Decision Needed:

- Possible recommendation to the Board to approve a work order with RW Harden & Associates, Inc. for Construction Phase Services for the Authority's Phase 1B Well Drilling / Hydrogeology project.

EXHIBIT A
R.W. HARDEN & ASSOCIATES, INC.

SCOPE OF WORK ASSOCIATED WITH CONSTRUCTION OF PUBLIC SUPPLY
PRODUCTION WELLS

R.W. Harden & Associates, Inc. (RWH&A) is providing herein a description of the anticipated tasks, schedule, and budget (collectively, the Scope of Work) associated with performing hydrogeologic services for Alliance Regional Water Authority (ARWA). Specifically, this Scope of Work pertains to construction of four (4) public supply production wells in Caldwell County, Texas. Within this document, the term “Client” refers to Alliance Regional Water Authority (ARWA).

General tasks to be performed by RWH&A include:

- 1) **Project Management** – Preparation of monthly progress reports and invoices, development of various plans, communications and coordination with the Client, and ongoing meeting attendance.
- 2) **TCEQ Submittals** – Preparation of submittals associated with obtaining Texas Commission on Environmental Quality (TCEQ) approval for interim use of four (4) new public supply wells.
- 3) **Well Construction Observation** – Field observation of the methods and materials used by the drilling contractor during construction and testing of four (4) production wells
- 4) **Construction Contract Management** – Administration of the production well construction contract, contractor meetings, preparation of RFI responses and change orders, performance of completion walkthroughs and punch lists, and generation of well completion reports.

The following sections provide detailed descriptions of the work to be conducted.

TASK 1 – PROJECT MANAGEMENT

RWH&A will perform various services associated with general management of the project including: 1) preparation of monthly progress reports and invoices, 2) implementation of the QA/QC Plan developed during previous project phases, 3) implementation of the Project Management Plan developed during previous project phases, 4) preparation and routine updating of project completion schedules, 5) performance of monthly updates to the Project Risk Register, 6) coordination and communication with the Client, 7) attend project kickoff meeting, and 8) coordinate and perform monthly contractor progress meetings.

TASK 2 – TCEQ SUBMITTALS

Where all system infrastructure and water quality comply with TCEQ standards, obtaining approval for a new public water supply well is a two-step process:

1. Before construction begins, TCEQ approval is obtained to establish a new public water system and construct wells. Data packets detailing the methods and materials to be used during well construction were submitted to the TCEQ during earlier phases of the project. Approvals to construct the ARWA production wells were obtained from the TCEQ in February 2019.
2. Following construction, approval to use the wells (“interim approval”) must be obtained from the TCEQ. The typical TCEQ review period for this submittal is approximately 60 days.

2.1 - Interim Use Approval

Upon completion of well drilling, acceptance testing, and selection of permanent pumping equipment, RWH&A will prepare a document package required to obtain TCEQ interim approval (which represents the final approval needed) for use of the wells as public water supplies. These documents will include geophysical and driller’s logs, final material settings, steel mill certificates of well casing and screen, casing cementing certificate, aquifer test results, chemical analysis of the water, and pumping equipment specifications. For clarification with respect to well testing, RWH&A will oversee the performance of a 36-hour pumping aquifer test on each of the four production wells and will analyze and submit the results of these tests to the TCEQ for review. No other tests are necessary to obtain TCEQ approval to use the wells as public supplies.

It should be noted that the document package will be submitted to the TCEQ after well testing has been completed using temporary pumping equipment. In RWH&A’s experience, most TCEQ reviewers will grant approval to use a well as a public supply source prior to installation of permanent pumping equipment, which, in ARWA’s case, will not occur until 2022. However, we have encountered one TCEQ reviewer who would not grant approval to use a well until after testing and sampling was completed with the permanent pumping equipment. While delaying TCEQ approvals until 2022 doesn’t represent a major setback to the project, it is desirable with respect to the logistics associated with wellfield startup to obtain approvals as early as possible. If interim approval is delayed until permanent pumping equipment is installed and tested, the added effort associated with retesting the well and resubmitting the packet documents to the TCEQ can be performed by RWH&A for an additional fee to be agreed upon by the Client and RWH&A at a later date.

TASK 3 – WELL CONSTRUCTION OBSERVATION

As part of this Task, RWH&A will provide experienced on-site personnel at key points in the pilot hole drilling and well construction process to endeavor to ascertain whether the methods and materials used by the drilling Contractor are in accordance with the technical specifications and the needs of the Project. Specifically, RWH&A will provide on-site personnel to observe: 1) drilling operations during penetration of aquifer zones and collection of cuttings samples during drilling of the pilot hole, 2) geophysical logging of the pilot hole, 3) performance of an alignment survey of the reamed borehole, 4) inspection of the surface casing, 5) setting and cementing of surface casing, 6) performance of a caliper survey of the under-reamed hole, 7) inspection of the screen and liner assembly, 8) setting and gravelling of screen and liner, 7) acceptance testing to verify that well

performance guarantees included in the specifications are met, and 8) providing assistance and field guidance during well start-up.

TASK 4 – CONSTRUCTION CONTRACT MANAGEMENT

RWH&A will assist the Client in administering the production well construction contract. Work associated with this task will include planning, contractor communications, and generation of appropriate change orders. RWH&A will attend periodic construction-phase meetings, interpret contract documents, prepare material settings authorization letters, respond to contractor inquiries/RFIs, review shop drawings and samples, review contractor payment applications. Following testing of the wells, RWH&A will attend substantial and final completion walkthroughs and prepare final completion punch lists. RWH&A will work with the contractor to compile a comprehensive report of each well’s final material settings and testing/sampling results.

BUDGET

The estimated costs to perform the work described above are:

- 1) Task 1: Project Management – \$50,480
- 2) Task 2: TCEQ Submittals (Four Wells) – \$23,200
- 3) Task 3: Well Construction Observation (Four Wells) – \$250,800
- 4) Task 4: Contract Administration – 59,720

Total Estimated Budget: \$384,200

Please note that the proposed budget represents a maximum “not to exceed unless authorized” amount for the tasks described herein. The costs include only RWH&A professional engineering services and expenses. Costs associated with surveying, laboratory services, and well contractor costs are not included. We work on projects of this nature in accordance with the actual man-hours involved plus direct out-of-pocket expenses in accordance with the contract and fee schedule (Exhibit B). These budgets assume that the drilling contractor performs the work in an efficient and skillful manner and that the tasks associated with this scope will be completed within approximately 14 months. If significant delays result from inclement weather, contractor performance or contractor equipment failure, RWH&A requests the opportunity to discuss how these may affect project costs.

EXHIBIT B
STANDARD FEES FOR TECHNICAL SERVICES
BY R.W. HARDEN & ASSOCIATES, INC.

- 1) Fees for professional services are based on the actual time of personnel directly involved with the project at the following hourly rates:

Senior Principal	\$240
Principal	\$220
Technical Staff 8	\$180
Technical Staff 7	\$160
Technical Staff 6	\$140
Technical Staff 5	\$130
Technical Staff 4	\$120
Technical Staff 3	\$110
Technical Staff 2	\$100
Technical Staff 1	\$90
Graphics Staff	\$100
Administrative Staff	\$70
Clerical Staff	\$60

- 2) External expenses, including but not limited to: reproduction, transportation, meals and lodging, parking and taxi fares, geophysical logs, printing, maps and photographs, field supplies, equipment rental, shipping, test drilling, well construction, and test laboratories, are charged at actual invoice cost plus 10 percent service fee.
- 3) R.W. Harden and Associates, Inc. equipment and services, including but not limited to: company vehicles, generators, reproduction, computer time, GPS equipment, pressure transducers/data logger, field equipment, calipers, pumps, cameras, pH meters, conductivity meter, turbidity meters, water level meters are charged at rates competitive with commercial rates.
- 4) The above fees for professional services are applicable to work conducted through December 31, 2020. RWH&A may revise their standard rates yearly any time after December 31, 2020.

Alliance Water Phase 1B Program																Project Fee Summary		
Well Field Construction																Basic Effort	\$	384,200
Detailed Overall RW Harden & Assoc., Inc. Cost Breakdown																Supplemental	\$	-
																Total Effort	\$	384,200

Task	Employee Project Role	Principal	Project Mgr.	Geologist 3	Geologist 2	Geologist 1	Engineer 3	Engineer 2	Engineer 1	Graphics	Admin	Total Hours	Total Labor Effort	Total Expense Effort	Subconsultant Cost	Total Effort	Assumptions			
		Hourly Bill Rate	\$240.00	\$180.00	\$160.00	\$140.00	\$120.00	\$180.00	\$160.00	\$140.00	\$100.00							\$70.00		
Basic Services																				
Task 1 - Project Management																				
1.1	Prepare Monthly Summary Reports/Invoicing	16	16							2	16	50	\$ 50,480	\$ -	\$ -	\$ 50,480				
1.2	PMP and QA/QC Plan Implementation	12	8	4	4	4	4					36	\$ 8,040	\$ -	\$ -	\$ 8,040				
1.3	Risk Register & Schedule Development and Monthly Updates	12	8							2		22	\$ 6,720	\$ -	\$ -	\$ 6,720				
1.4	Client Communication, Coordination, and Meetings	80	20	20			20			16		156	\$ 4,520	\$ -	\$ -	\$ 4,520				
													\$ 31,200	\$ -	\$ -	\$ 31,200				
Task 2 - TCEQ Submittals																				
2.1	Prepare Interim Approval Packets	2	4	32			8			16		62	\$ 23,200	\$ -	\$ -	\$ 23,200				
2.2	TCEQ Communications	16	8	24			24			4		76	\$ 9,360	\$ -	\$ -	\$ 9,360				
													\$ 13,840	\$ -	\$ -	\$ 13,840				
													\$ -	\$ -	\$ -	\$ -				
Task 3 - Well Construction Observation																				
3.1	Task Coordination and Data Analysis	20	80	120								220	\$ 250,800	\$ -	\$ -	\$ 250,800				
3.2	Pilot Hole Drilling and Logging	8	40	288								336	\$ 38,400	\$ -	\$ -	\$ 38,400				
3.3	Reaming, Casing Inspection and Setting	8	40	192								240	\$ 55,200	\$ -	\$ -	\$ 55,200				
3.4	Inspection and Setting Screen/Liner/Gravel Assembly	8	40	192								240	\$ 39,840	\$ -	\$ -	\$ 39,840				
3.5	Development and Pre-Testing Tasks	8	40	80								128	\$ 39,840	\$ -	\$ -	\$ 39,840				
3.6	Acceptance Testing	8	40	288						4		340	\$ 21,920	\$ -	\$ -	\$ 21,920				
													\$ 55,600	\$ -	\$ -	\$ 55,600				
													\$ -	\$ -	\$ -	\$ -				
Task 4 - Contract Administration and Management																				
4.1	Work Planning and Contractor Coordination	8	32									40	\$ 59,720	\$ -	\$ -	\$ 59,720				
4.2	RFIs, Shop Drawings, Change Orders and Material Settings	20	16	8			20			40	4	108	\$ 7,680	\$ -	\$ -	\$ 7,680				
4.3	Meetings and Correspondence	12	40	20			16					88	\$ 16,840	\$ -	\$ -	\$ 16,840				
4.4	Completion Walkthroughs and Punchlists	4	16	16			16					52	\$ 16,160	\$ -	\$ -	\$ 16,160				
4.5	Well Completion and Testing/Sampling Reports	2	16	40								58	\$ 9,280	\$ -	\$ -	\$ 9,280				
												0	\$ 9,760	\$ -	\$ -	\$ 9,760				
												0	\$ -	\$ -	\$ -	\$ -				
Supplemental Services																				
Supplemental Services																				
A												0	\$ -	\$ -	\$ -	\$ -				
												0	\$ -	\$ -	\$ -	\$ -				
												Grand Total	\$	384,200	\$	-	\$	-	\$	384,200

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS

Wednesday, January 15th, 2020 at 3:00 P.M.
520 E. RR 150, Kyle, TX 78640

- F.4** Discussion and possible recommendation to the Board to approve an agreement with Hicks & Company Environmental / Archaeological Consultants for Environmental On-Call Services associated with the Authority's Phase 1B Well Drilling / Hydrogeology project. ~ *Ryan Sowa, P.E., Kimley-Horn & Associates*
-

Background/Information

Hicks & Company provided the environmental investigation for the Well Drilling / Hydrogeology & Raw Water Infrastructure as a subconsultant to LNV, Inc. A standard requirement of environmental approvals from the Texas Water Development Board is to have environmental professionals on-call to survey any areas to be cleared for migratory bird nests during the peak season of March to September. In addition the clearance requires Alliance Water to have a consultant on-call should the contractor identify any of the threatened and/or endangered species outlined in the Texas Parks & Wildlife Department guidelines.

Staff negotiated the attached scope and fee with Hicks & Company for these services, should they be required. The contract will be billed on an hourly basis based on actual time spent, not-to-exceed \$23,938.75.

Attachment(s)

- Proposal dated October 16, 2019 from Hicks & Company for Phase 1B Environmental On-Call Services for Construction

Technical Committee Decision Needed:

- Possible recommendation to the Board to approve an agreement with Hicks & Company Environmental / Archaeological Consultants for Environmental On-Call Services associated with the Authority's Phase 1B Well Drilling / Hydrogeology project.

October 16, 2019

Amy Esguerra
CP&Y
One Countryside Place
12500 San Pedro, Ste. 450
San Antonio, Texas 78126

RE: Scope of Services and Fee Estimate; ARWA Phase 1B Environmental On-call Services for Construction; Caldwell County, Texas

Dear Ms. Esguerra:

In response to your email request of October 3, 2019, this transmits a proposal for environmental on-call services for construction of portions of the Alliance Regional Water Authority's Phase 1B Raw Water Infrastructure Project located in Caldwell County, Texas.

This proposal follows your email instructions involving the performance migratory bird nest surveys prior to clearing if scheduled clearing falls within the nesting season period; as well as being on-call in the event the drilling/construction team identifies any of the threatened and endangered species outlined in the coordination with Texas Parks & Wildlife Department (TPWD); and coordination/consultation should cultural resources be encountered. Assumptions for expenditure of time also follows instructions provided in your email. Please see the attached Scope of Services and fee estimate for details.

Hicks & Company appreciates the opportunity to provide environmental services if needed for the project. If you have any questions or need further assistance, please contact me at (512) 478-0858 or rfrye@hicksenv.com.

Sincerely,
Roy G. Frye

Senior Project Manager
Hicks & Company Environmental/Archeological Consultants

Attachments

Scope of Services
Fee Estimate
Location Map

SCOPE OF SERVICES
ARWA Phase 1B – Environmental On-call Services for Construction
October 16, 2019

PROJECT DESCRIPTION AND UNDERSTANDING

This Scope of Services responds to an email request by Amy Esguerra, CP&Y, on October 3, 2019. The request was made on behalf of Alliance Regional Water Authority (ARWA) to provide a proposal to conduct environmental services to ensure compliance with the federal Migratory Bird Treaty Act (MBTA). The services will consist of completing migratory bird nest surveys prior to clearing if scheduled clearing falls within the nesting season period; as well as being on-call in the event the drilling/construction team identifies any of the threatened and endangered species outlined in the coordination with Texas Parks & Wildlife Department (TPWD); and coordination/consultation should cultural resources be encountered. Assumptions for expenditure of time have been established by guidance provided by CP&Y. If additional time is required due to unforeseen circumstances and upon approval by ARWA, such services can be provided under a supplemental scope of services and associated fee. A detailed description of proposed tasks follows.

Task 1. Survey for Nesting Migratory Birds

If construction occurs during the TPWD-specified nesting period, between March 15 and September 15 (TPWD coordination letter dated May 3, 2019), pre-construction nesting surveys will be performed. Such surveys are intended to identify and avoid active nests in advance of construction activities to achieve compliance with the MBTA. For this project, it is assumed that construction schedules will not be able to completely avoid the nesting period and that nesting surveys will be required. These nesting surveys will be performed according to the following protocol.

Coordination and Scheduling of Surveys with Construction Supervisor(s)

Construction is anticipated to begin in 2020 and last for approximately 10 months. If the planned construction schedule overlaps with the established nesting period between March 15 and September 15, CP&Y will coordinate a meeting to be attended by the designated construction supervisor(s) and Hicks & Company staff including the Project Manager (PM), to identify construction schedules, associated construction locations, and personnel contacts. It will be critical to the success of this Task that the nesting surveys for specific corridor segments will be scheduled as close to the occurring construction activities as possible, but not earlier than one week before clearing and grubbing or other construction disturbance will actually occur. Survey dates will coincide with established clearing and grubbing dates to ensure timely survey immediately prior to vegetation clearing activities. Prior to the initiation of the nesting survey(s), Hicks & Company will be provided with the latest digital shapefiles showing the location of the road and collection pipeline alignments and well sites (including test well locations). At the beginning of the day that a nesting survey will occur, the Hicks & Company PM will contact the appropriate construction supervisor to confirm where the clearing and grubbing activities are occurring, location of construction access points, and where the nesting surveys will be conducted.

After the nesting survey has been completed, the Hicks & Company PM will immediately notify the construction supervisor as to the findings of the survey. This will include information concerning whether active nests have been located, location of the active nests, and types and extent of buffer protection zones.

Survey Methodology

The survey schedules will be coordinated with construction schedules for specific parcels with the goal of being completed within seven days before clearing, grubbing, or other disturbance begins.

The nesting surveys will consist of a 100 percent pedestrian survey by two investigators that will walk along and within proposed road and pipeline clearing corridors to identify and locate active nests within 30 feet of each side of the alignment and within well pad site locations that will comprise 250 square feet (pursuant to CP&Y email of October 3, 2019). Vegetation within the road and pipeline corridors and four well pad sites (that may also include an unknown number of test well locations) will be scrutinized for the presence of nests and/or nesting cavities that appear to be in use. Avian behavior will be assessed for obvious signs of nesting, brood rearing, and breeding. All avian species detected will be noted. The location of active nests will be recorded by a hand held GPS unit and marked on aerial photography. Identification of active nests will trigger immediate coordination with designated construction supervisors to establish protection zones and implement procedures for periodically monitoring nest activities and determining when nesting activities are completed. Results of the nesting surveys will be documented in a report that will be submitted to ARWA.

Establishment of Protection Buffer Zones Around Active Nests

If an active nest is discovered during the survey, the TPWD coordination letter of May 3, 2019, recommends the establishment of a protective buffer of 150 feet surrounding the nest. This protective buffer will be considered; however, previous experience with construction projects has shown disturbance tolerance of some nesting birds can be much lower than 150 feet. The size of the buffer zone will be established based on the species of bird involved, specific location of the nest with respect to the anticipated construction activity, and previous experience with nesting avoidance buffers on other projects. Construction buffers typically involve a protection zone marked with continuous colored flagging surrounding the active nest staked within a specified radius distance. Such distances may vary according to type and behavior of the nesting species but have ranged from as little as six feet to as much as 300 feet on previous projects. Buffers would remain in effect around the active nest until the young have fledged or the nest is abandoned. For the purposes of accomplishing this Task and based on guidance provided by CP&Y email on October 3, 2019, it is assumed that the nest surveys will require five trips by two ecologists, with each trip requiring eight hours to complete, including travel time (80 hours total).

Task 2. Monitoring of Active Nests

Detection of active nests will require on-going protection and subsequent weekly field visits to determine when young birds fledge and the nest becomes inactive. If eggs are present in the nest, then

protection zones will be established and maintained, and weekly follow-up visits will be conducted for approximately 28 days (to allow time for incubation and fledging according to the nesting species) or until the nest becomes empty. Monitoring of active nests may be performed while on site before or after surveys are completed for other portions of the road/pipeline corridors. It is assumed that if the monitoring of active nests exceeds the amount of approved time and budget, such services can be completed under a supplement scope of services or alternatively, that the required monitoring activities will be completed by others.

Task 3. On-Call Services for T&E Species and Cultural Resources

Threatened and Endangered Species

On-call services will be provided as needed or required in the event any threatened or endangered species are encountered by construction workers during the construction period. Species noted by the TPWD coordination letter of May 3, 2019, include the state-listed wood stork (*Mycteria americana*), Texas horned lizard (*Phrynosoma cornutum*), and timber rattlesnake (*Crotalus horridus*). Because these species are protected by state law, it is unlawful to collect, transport, or possess them without a permit issued by TPWD. In the event these species are encountered, injured, or otherwise need to be relocated, a qualified permitted biologist with Hicks & Company, or under the supervision of Hicks & Company, will be available to perform these services.

Prior to construction, CP&Y will coordinate contact information between ARWA construction supervisors and Hicks & Company to ensure that timely notification and consultation follow-up occurs. Upon notification by the ARWA construction supervisor or other designated representative, a Hicks & Company ecologist will assess the situation, determine the need for on-site inspection or assistance, and complete any necessary field inspection, consultation, or coordination that is required.

Consultation and assistance will be provided if other state or federally listed species are encountered. Although not expected to occur, if federally listed species are encountered as determined by consultation with Hicks & Company, the U.S Fish and Wildlife Service Field Office in Austin, Texas will be immediately notified.

Cultural resources

In the unlikely event that cultural resources are encountered or excavation reveals sites of potential cultural importance, unmarked graves, or human remains, Hicks & Company will be contacted and an archeologist will assess the situation, conduct a site visit if needed or required, determine the need for further investigation, and complete disposition of any identified features. If cultural resource features are encountered, the Texas Historical Commission (THC) will be contacted for further consultation and guidance as to the need for further investigations or surveys. These services do not include an archeological survey. If such a survey is required, it could be provided under a supplemental scope of services and fee.

For the purposes of accomplishing this Task and based on guidance provided by CP&Y email on October 3, 2019, it is assumed that 10 on-call trips, each requiring four hours of staff time for threatened and endangered species or cultural resources will be required by one staff person (40 hours total).

DELIVERABLES

This Scope of Services includes the following deliverables:

- A brief summary of any found nests or T&E species (or lack there-of) will be reported via email the same day as the surveys (**Task 1**).
- A letter report will be prepared to document results of the migratory bird nesting survey and submitted to ARWA (**Task 1**).
- Active nest protection zones will be established by staked and flagged marker(s) (**Task 2**).
- A summary report detailing the results of any consultation, field visits or other coordination that is required concerning any threatened/endangered species or cultural resources (**Task 3**).

SCHEDULE

Work will be completed, and deliverables will be prepared and submitted, according to construction schedules established by ARWA. Performance of all tasks listed in this proposal will require close coordination with ARWA for schedule updates and any changes in project construction activities.

COSTS

The proposed not-to-exceed cost to complete this Scope of Services is **\$23,938.75**. An itemized fee estimate based on current hourly billing rates is attached.

OVERALL ASSUMPTIONS

This Scope of Services and fee estimate has been prepared as accurately as possible with the current level of knowledge of the project and based on the assumptions included in the above described Tasks.

If substantial changes occur in the project corridor boundaries or infrastructure footprint locations, or later design modifications require reevaluations, such additional reevaluations will be supplemental to those performed under this Scope of Services.

HICKS & COMPANY ENVIRONMENTAL/ARCHEOLOGICAL CONSULTANTS
FEE ESTIMATE - ARWA Phase 1B On-Call Environmental Services for Construction - October 16, 2019

LABOR	Sr. Program Mgr	Sr. Env'l Scientist II	Sr. Env'l Scientist I	Env'l Scientist II	Env'l Prof III	Env'l Prof II	Env'l Prof I	Env'l Staff I	Env'l Tech I	TOTAL
	\$196.94	\$151.50	\$130.29	\$121.20	\$106.05	\$96.96	\$86.35	\$69.69	\$54.54	
TASK 1 -										
MBTA Field Surveys and Monitoring		40		40						80.0
Report Preparation		8		4						12.0
GIS Support				6						6.0
Project Management & Coordination		8								8.0
Task 1 Labor Hours	0.0	56.0	0.0	50.0	0.0	0.0	0.0	0.0	0.0	106.0
Task 1 Subtotal	\$ -	\$ 8,484.00	\$ -	\$ 6,060.00	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 14,544.00
TASK 2 -										
Monitoring Active Nests										0.0
Assumes monitoring will be completed as part of nest Surveys in Task 1 or be completed by others										0.0
Task 2 Labor Hours	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Task 2 Subtotal	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
TASK 3 -										
On-call Services for T/E and Cultural Resources		32		8						40.0
Report Preparation		8		2						10.0
GIS Support					3					3.0
Project Management & Coordination		3			2					5.0
Task 3 Labor Hours	0.0	43.0	0.0	10.0	5.0	0.0	0.0	0.0	0.0	58.0
Task 3 Subtotal	\$ -	\$ 6,514.50	\$ -	\$ 1,212.00	\$ 530.25	\$ -	\$ -	\$ -	\$ -	\$ 8,256.75
TOTAL LABOR										\$ 22,800.75
DIRECT EXPENSES										
	Unit	Rate	Quantity							TOTAL
Research materials	report									\$ -
Mileage	mile	\$0.58	1,850							\$ 1,073.00
Hotel	night									\$ -
Field supplies	bundle	\$65.00	1							\$ 65.00
TOTAL DIRECT EXPENSES										\$ 1,138.00
TOTAL COST										\$ 23,938.75

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS

Wednesday, January 15th, 2020 at 3:00 P.M.
520 E. RR 150, Kyle, TX 78640

- F.5** Discussion and possible recommendation to the Board to approve a work order with Walker Partners, LLC for Design and Procurement Services for the Authority's Phase 1B Water Treatment Plant project. ~ *Ryan Sowa, P.E., Kimley-Horn & Associates*

Background/Information

Alliance Water entered into a Work Order in October 2018 with Walker Partners, LLC to provide preliminary engineering services for the Phase 1B Water Treatment Plant project. The preliminary design is almost complete and in order to maintain progress, Staff has negotiated a scope and fee with Walker Partners to provide final design and procurement services for the Water Treatment Plant project. Construction phase services will be negotiated at a later date and will be authorized via a separate work order.

Below are some of the key facts regarding the Phase 1B Water Treatment Plant proposal:

Firm: Walker Partners, LLC

Fee: \$3,533,790

Work Order Type: Lump Sum

Anticipated Duration: 15 months

Project Manager: Joe Jenkins, P.E.

Key Subconsultants: LNV (Arch, Structural & Raw Water), S. Kanetzky (Electrical Design), & Holt (Geotechnical)

Staff is requesting that the Committee recommend Board approval of a Work Order with a fee for the basic services of \$2,900,402 and a fee for supplemental effort in an amount not-to-exceed \$633,388 for a total fee of \$3,533,790. The Executive Director will be given the discretion to authorize the supplemental effort if needed.

Attachment(s)

- Proposal for Design and Procurement for Phase 1B Water Treatment Plant Project dated January 13, 2020 (sub-consultant information not provided for brevity).

Technical Committee Decision Needed:

- Possible recommendation to the Board to approve a work order with Walker Partners, LLC for Design and Procurement Services for the Authority's Phase 1B Water Treatment Plant project.

January 13, 2020

Graham Moore, PE
 Executive Director
 Alliance Regional Water Authority
 630 E. Hopkins
 San Marcos, TX 78666

Re: Phase 1B – Ground Water Treatment Plant – Proposal for Final Design and Procurement Services

Dear Mr. Moore:

Walker Partners, LLC (Engineer) appreciates this opportunity to submit this Proposal to provide professional surveying and engineering services to Alliance Regional Water Authority (Owner) in connection with the Phase 1B – Ground Water Treatment Plant (Project).

The scope of services, schedule, assumptions and exclusions are outlined in the attached Scope. The associated lump sum fees that Walker Partners proposes to provide for Engineering Basic Services are based on the assumptions in the Scope and the level of effort estimated in the Detail Cost Breakdown (see attached). Table 1, below, includes an itemized breakdown of proposed task fees for an overall lump sum fee for Engineering Basic Services:

Table 1: Task Fee Breakdown for Lump Sum Basic Engineering Services

Task	Description	Lump Sum Fee
1	Project Management	\$ 223,568.00
2	Review of Cathodic Protection Standards	\$ 7,979.00
3	Environmental Coordination	\$ 2,595.00
4	Regulatory Agency Coordination	\$ 31,092.00
5	Public and Private Utility Coordination	\$ 8,259.00
6	High Service Pump Station Hydraulics and Surge/Transient Analysis	\$ 26,380.00
7	Design Consultant Coordination	\$ 6,964.00
8	Subsurface Investigations	\$ 135,076.00
9	60% Design Phase	\$ 1,183,661.00
10	90% Complete Design Phase	\$ 1,065,203.00
11	100% Complete Design Phase	\$ 209,625.00
TOTAL BASIC SERVICES LUMP SUM FEE		\$ 2,900,402.00

We understand that Walker Partners may also provide Supplemental Services for this Project as shown on Table 2, below, and described in the attached scope document. The estimated budgets in Table 2 and the Detail Cost Breakdown are budgetary placeholders for the final design Work Order Supplemental Services. These proposed services will be negotiated and authorized on a case-by-case basis.

Table 2: Estimated Supplemental Services Budget

Task	Description	
12.1	Additional Survey	\$ 15,000.00
12.2	Additional Geotechnical Boring and Piezometers	\$ 11,000.00
12.3	General Engineering Design	\$ 141,500.00
12.4	Environmental Coordination Based on Necessary Additional Environmental Investigations	\$ 10,000.00
12.5	Supplemental SCADA Design	\$ 70,114.00
12.6	Attend Public Meetings (2 meetings)	\$ 16,000.00
12.7	Attend Additional Meetings in the Project Vicinity	\$ 10,000.00
12.8	TCEQ - Exceptions and Variance Development Coordination	\$ 10,000.00
12.9	Alternative Bidding of Combined Packages	\$ 20,000.00
12.10	Transportation (County Road Improvements)	\$ 25,000.00
12.11	Surge and Transient Analysis	\$ 125,203.00
12.12	Site Facility Rendering	\$ 23,100.00
12.13	Procurement (Time & Materials, Hourly Not to Exceed)	\$ 156,471.00
TOTAL ESTIMATED SUPPLEMENTAL SERVICES BUDGET		\$ 633,388.00

Our team looks forward to developing this project to the next phase – final design and procurement of a construction contractor. Please let us know if the proposal review team has any questions or comments.

Sincerely,



George E. "Jed" Walker, Jr., P.E.
Project Principal

Attachments

Alliance Regional Water Authority – Phase 1B Final Design and Procurement of a Construction Contractor for the Groundwater Treatment Plant and Pump Station with integration of the Well Field Piping Project Scope

Appendices

Appendix A – Total Fee Breakdown

Appendix B – Anticipated Design Drawings

Appendix C – Schedule

Subconsultant Proposals

Attachment 1 – Northwest Hydraulics

Attachment 2 – Holt Engineering

Attachment 3 – Elk Engineering

Attachment 4 – LNV Engineering

Attachment 5 – S. Kanetzky Engineering

Attachment 6 – Burrier Engineering

Alliance Regional Water Authority - Groundwater Treatment Plant

Final Design and Bidding Support Services

BACKGROUND

This scope of work encompasses our design team's efforts to complete the final design and provide support during bidding of the project for the new Alliance Regional Water Authority's (ARWA's) Groundwater Treatment Plant. This scope builds on our previous preliminary engineering and schematic (30% design effort) engineering services. The preliminary engineering is captured in the Basis of Design Report (BODR) dated July 2019, and the schematic design (30% design completion) will be submitted and finalized in January 2020. The overall fee is provided in Appendix A.

This water treatment plant (WTP) has been planned to treat Carrizo aquifer groundwater from ARWA wells and from Guadalupe-Blanco River Authority (GBRA) wells. The plant's initial design capacity this contract will be 19.51 million gallons per day (MGD) with planning and accommodation of a final Phase 1 capacity of 33.47 MGD (future). The design will include analysis and sizing for Phase 1B – 1D design.

As described in the BODR, the treatment is based upon water quality data from similar existing wells in the general area. The planned treatment plant includes the following main facilities:

- ARWA and GBRA inlet flow metering
- Two (2) 1-million-gallon, prestressed concrete, raw water balancing and blending tanks
- Master flow controller to control gravity flow through the plant
- Carbon dioxide and lime feed systems to increase alkalinity and pH for stabilization of the water related to corrosion control
- Sodium permanganate and sodium hypochlorite chemical feed systems for oxidation and precipitation of iron and manganese
- Rapid mix facility to effectively mix the chemicals into the groundwater
- Dual-media gravity filters, housed in a filter building, to remove oxidized iron, manganese, and any undissolved lime
- Post-filter disinfection with sodium hypochlorite, with provisions for future chemical additions
- One (1) 2-million-gallon baffled prestressed concrete clearwell
- Backwash pump station
- Plant water pump station
- High-service pump station
- Backwash waste handling through a plate settler and sand drying beds with clarified water recycled to the front of the plant through a recycle pump station
- Administrative and maintenance buildings

The current Opinion of Probable Construction Cost (OPCC) is approximately \$63.5 million as documented in the 30% design report.

SCOPE OF WORK

1. PROJECT MANAGEMENT

- 1.1. Update Project Management Plan.
- 1.2. Prepare Monthly Summary Reports and Invoices, as identified in the ARWA Phase 1B Program Management Plan (15 reports and invoices).
- 1.3. Schedule development and monthly updates. Schedule shall cover final design phase, bidding phase, and permitting.
 - 1.3.1. Schedule shall be in Microsoft Project format.
- 1.4. Risk Register development and monthly updates.
 - 1.4.1. Risk Register shall be in Microsoft Excel format.
 - 1.4.2. Compile an initial or preliminary risk register for the project and submit the risk register to the Owner's Representative for review and comment.
 - 1.4.3. Incorporate review comments into the risk register upon the receipt of review comments from the Owner's Representative. The risk register will be a living document updated throughout the project.
 - 1.4.4. Update the Risk Register monthly for submittal with the monthly status reports.
- 1.5. Meetings:
 - 1.5.1. Conduct Progress Meetings with Owner's Representative over the phone or internet conference (15 meetings).
 - 1.5.2. Conduct half-day coordination workshops (3 workshops).
 - 1.5.3. Prepare and distribute meeting notes and minutes.
 - 1.5.4. Quality control audit (2 workshops).
 - 1.5.4.1. The Consultant Estimates a total of 2 audits per calendar year of the preliminary and detailed design phases.
 - 1.5.4.2. Quality Assurance Audits The Project Auditor will provide the Consultant an agenda and schedule the meeting to be held in the Consultant's office. This allows the Consultant to have materials and staff readily available for questions during the audit process. The Consultant will ensure all requested documents (electronic and hard copies) are readily available upon request.
 - 1.5.4.3. Prior to the audit meeting, the Auditor will ask the Consultant to verify the project stage, the location of electronic files, and provide previous audit documentation.
 - 1.5.4.4. Elements to include during the Quality Assurance Audit:
 - 1.5.4.4.1. Audit agenda and form (developed by the Auditor)
 - 1.5.4.4.2. Consultant's QA/QC plan
 - 1.5.4.4.3. Previous Audit reports
 - 1.5.4.4.4. Examination of the files and completed tasks to verify conformance with the QA/QC plan
 - 1.5.4.4.5. Discussion on corrective actions for both current audit and previous audit reports.
 - 1.5.4.5. Milestone Reviews

1.5.4.5.1. The Consultant will perform internal quality reviews in accordance with the approved QA/QC plan and submit the documentation with each submittal milestone (30%, 60%, 90%, and Final) at a minimum.

1.5.4.5.2. The Consultant prepare all documentation required by the approved QA/QC plan for each milestone and will submit necessary documentation to the Owner's Representative for Quality Assurance review.

2. REVIEW OF CATHODIC PROTECTION STANDARDS

2.1. Review and provide comments on Cathodic Protection Standards prepared by Owner's Representative (Elk). Comments on Cathodic Protection Standards shall be in Adobe PDF format.

2.2. Meetings:

2.2.1. Attend one (1) half-day workshop to discuss comments on Cathodic Protection Standards.

3. ENVIRONMENTAL COORDINATION

3.1. Review Final Environmental Report (by others) and develop Construction Documents based on findings.

3.1.1. Incorporate recommendations from Final Environmental Report into Contract Documents.

4. REGULATORY AGENCY COORDINATION

Develop and submit permit applications. The Owner's Representative will assist in submitting to, and coordinating with, Caldwell County, Texas Department of Transportation (TXDOT), Texas Commission on Environmental Quality (TCEQ), and Texas Water Development Board (TWDB). Project Schedule is to include applicable permits, permit application submittal dates, and estimated review period (including addressing comments and resubmitting for approval).

4.1. Caldwell County - Road Improvements Approval, Driveway Permit, Floodplain Permit, Site Construction Permit, On-Site Septic System Permit. As part of the required application information, the scope includes the development of exhibits.

4.1.1. Submittal of permit during 90% Design Phase milestone.

4.1.2. Address comments and resubmit permit during 90% Design Phase milestone.

4.1.3. Coordination meetings (1 meeting).

4.2. TXDOT - Road Crossing Permit and Connecting Road Improvements Approval. As part of the required application information, the scope includes the development of exhibits.

4.2.1. Permit preparation during 90% Design Phase milestone.

4.2.2. Submittal of permit during 90% Design Phase milestone.

4.2.3. Address comments and resubmit permit during 90% Design Phase milestone.

- 4.2.4. Coordination meetings (2 meetings).
- 4.3. TCEQ - Submittal and Approval.
 - 4.3.1. Coordination Meeting (1 meeting).
 - 4.3.2. Plan submittal and address review comments.
- 4.4. TWDB Approval on Contract Documents.
 - 4.4.1. Plan submittal and review
 - 4.4.2. Review by the TWDB includes the plans, front end documents, and specifications . This task does not include environmental submittals and review. Those tasks are included in ENVIRONMENTAL.

5. PUBLIC AND PRIVATE UTILITY COORDINATION

- 5.1. Guadalupe-Blanco River Authority (GBRA)
 - 5.1.1. Obtain and compare GBRA well water quality data with initial water quality assumptions.

6. HIGH-SERVICE PUMP STATION SURGE/TRANSIENT ANALYSIS

Northwest Hydraulic Consultants' (NHC) review of Booster Pump Station (BPS) Design Consultant distribution model and surge transient recommendations. This item includes the WTP design team internal discussion and coordination with respect to on-site design considerations for the high service pump station and discharge pipeline.

- 6.1. Provide review comments and coordination of distribution model from Booster Pump Station design consultant (Freese & Nichols). Extract relevant information from distribution model from Booster Pump Station design consultant and incorporate in NHC hydraulic transient analysis.
- 6.2. Provide review comments and coordination of surge transient recommendations from Booster Pump Station design consultant. Extract relevant information from surge transient recommendations from Booster Pump Station design consultant and incorporate in NHC hydraulic transient analysis.
- 6.3. Coordinate with Booster Pump Station design consultant (Freese & Nichols) on the pipeline surge/transient design (e.g., pressure class, location of ARV's, defining negative pressure).
- 6.4. Address review comments from Booster Pump Station design consultant (Freese & Nichols) and Program prior to finalizing technical memorandum. We have budgeted for up to two (2) rounds of review comments.
- 6.5. Coordinate with Segment A Transmission Main Design Consultant to confirm final tie-in location to WTP site (1 meeting).

Scope for additional surge/transient modeling efforts has been included in supplemental services in the event it is deemed necessary.

7. DESIGN CONSULTANT COORDINATION

This item is associated with combining the water treatment plant (WTP) and raw water infrastructure (RWI) design packages into a single design package and applies to 60%, 90%, and Final Design. This Scope of Work assumes that the WTP Consultant will be the lead firm for Design and Bid Phase services as the Phase 1B WTP construction cost is expected to be substantially higher than the Phase 1B RWI construction cost. Coordination of common project elements between consultants of the same discipline under two separate contracts including:

- Technical Specifications
 - A) Civil
 - B) Mechanical
 - C) Electrical
- Plan legends, general notes,
 - A) Civil
 - B) Mechanical
 - C) Electrical
- Bid Form including quantities and item descriptions
 - A) Civil
 - B) Mechanical
 - C) Electrical
- General Coordination Between two design teams
 - A) Coordination of sheet numbers and total number of sheets between two prime consultants and all associated sub consultants.
 - B) Coordination of Statement of Experience Requirements for Contractors
 - C) Coordination and Organization of CAD resources, standards, and external reference (XREF) files between disciplines and consultants.

7.1. Wellfield Piping Design Consultant.

- 7.1.1. Coordinate incorporation of 30% Complete Wellfield Piping Drawings into WTP Drawing Set as one Construction Drawing Set.

8. SUBSURFACE INVESTIGATIONS

8.1. Geotechnical Investigation (Holt Engineering, Inc.)

Final Geotechnical Investigation to determine subsurface soil conditions at the proposed Alliance Groundwater Treatment Plant Site to provide final foundation.

- 8.1.1. Two (2) site visits will be made to assess rig access and layout borings. Holt will coordinate with Texas 811 ONE-CALL to locate all existing utilities and obtain all necessary permits prior to drilling in the roadway.
- 8.1.2. Provide all necessary manpower, equipment, and materials for drilling, logging, and sampling 17 additional soil borings to depths of 10 feet to 40 feet each. Maximum total vertical boring length is to be 680 feet. All bore holes will be auger drilled and sampled using either Shelby tubes or split-spoon samplers where appropriate. No Texas Cone Penetrometer will be used.
- 8.1.3. If groundwater is encountered during drilling, the groundwater levels within the open bore holes will be plugged with bentonite chips upon completion of the drilling operation and no further water levels will be obtained.
- 8.1.4. In-house laboratory testing will be conducted consisting of conventional geotechnical tests such as soil classifications, moisture contents, Atterberg limits, grain size analyses, minus 200 sieves, unit weights, sulfate/sulfite, and unconfined compression testing for soil. Corrosion tests will also be run on selected samples. All samples will be retained for a maximum of 12 months. All testing will be in accordance of ASTM testing standards.
- 8.1.5. A Final Geotechnical Report will be issued that will include the following:
 - 8.1.5.1. Description of Field Investigation Program
 - 8.1.5.2. Description of Laboratory Investigation Program
 - 8.1.5.3. Geologic Map of the Area
 - 8.1.5.4. Generalized Boring Location Plan
 - 8.1.5.5. Boring Logs
 - 8.1.5.6. Laboratory and Field Test Results including corrosion/cathodic design
 - 8.1.5.7. Subsurface Characterization
 - 8.1.5.8. Foundation Recommendations including retaining wall design criteria and bedding and backfill specifications for pipe trenches and pavement thickness design recommendations.
- 8.2. Corrosion and Cathodic Investigation, Data Collection, and Design Support (Elk Engineering Associates, Inc.)

All work shall be under the direction of a "Corrosion Expert" that is a Texas PE with NACE International accreditation as a Corrosion and Cathodic Protection Specialist.

- 8.2.1. Soil data provided Holt Engineering Inc. will be evaluated by the Engineer for use in preliminary design and shall include the following:
 - 8.2.1.1. Four pin soil resistance data as required
 - 8.2.1.2. Site boring logs
 - 8.2.1.3. Soil pH data
 - 8.2.1.4. Local water well boring logs
- 8.2.2. The data and documentation listed above will be used to provide a design for cathodic protection (CP) of the underground utilities as required.
- 8.2.3. Review of the following coating systems:
 - 8.2.3.1. Pipes – Internal Coating
 - 8.2.3.2. Pipes – External Coating
 - 8.2.3.3. Concrete Chemical Containment Area Coating

- 8.2.3.4. Slab Sealants/Coating
- 8.2.3.5. Prestressed Concrete Tank Coating
- 8.2.3.6. Filters (Carbon Steel Tanks with Epoxy Coating)
- 8.2.3.7. Paint and Coating Specifications
- 8.2.4. Review of Grounding

9. 60% DESIGN PHASE

- 9.1. Civil and Site Development
 - 9.1.1. Yard Piping
 - 9.1.1.1. Components
 - 9.1.1.1.1. Ground Water (GW) Piping
 - 9.1.1.1.2. Two (2) Raw Water Storage Tanks (RWST)
 - 9.1.1.1.3. Chemical Pre-Treatment Piping
 - 9.1.1.1.4. Filter Influent (FI) Piping
 - 9.1.1.1.5. Filtered Water (FW) Piping
 - 9.1.1.1.6. One (1) Clearwell
 - 9.1.1.1.7. Potable Water (PW) piping
 - 9.1.1.1.8. Backwash Supply (BWS) piping
 - 9.1.1.1.9. Backwash Waste (BWW) piping
 - 9.1.1.1.10. Filter to Waste (FTW) piping
 - 9.1.1.1.11. Sludge Underdrain (SL) piping
 - 9.1.1.1.12. Recycle Water (RCY) piping
 - 9.1.1.1.13. Small-diameter yard piping
 - 9.1.1.1.14. Miscellaneous meter and valve assemblies
 - 9.1.1.2. Tasks
 - 9.1.1.2.1. Pipe Sizing (based on flows provided by Walker Partners)
 - 9.1.1.2.2. Pipe Material Selections
 - 9.1.1.2.3. Fitting Material Selections
 - 9.1.1.2.4. Valve Type and Material Selections
 - 9.1.1.2.5. Selection of piping appurtenances
 - 9.1.1.2.5.1. Meters
 - 9.1.1.2.5.2. Restrained Joints
 - 9.1.1.2.5.3. Specialty Fittings
 - 9.1.1.2.5.4. Expansion Joints
 - 9.1.1.2.5.5. Flexible Couplings
 - 9.1.1.2.6. Finalize horizontal alignment
 - 9.1.1.2.7. Develop vertical alignment
 - 9.1.1.2.8. Develop standard details
 - 9.1.1.2.8.1. Bedding & Backfill
 - 9.1.1.2.8.2. Thrust Blocking
 - 9.1.1.2.9. Develop Special Piping Arrangements
 - 9.1.1.2.9.1. Below grade meter vault piping arrangements

- 9.1.1.2.9.2. Below grade vertical alignment changes to avoid conflicts
 - 9.1.1.2.10. Prepare first draft of technical specifications.
 - 9.1.1.2.11. Meetings
 - 9.1.1.2.12. Complete quality control reviews.
 - 9.1.2. Structures, road, and major site element horizontal locations are finalized. Structure floor/control levels, and finished grades are finalized.
 - 9.1.3. County Road and SH304 tie-in topographic survey, including contours and utilities.
 - 9.1.4. Define demolition requirements and limits.
 - 9.1.5. Define contractor staging, storage, access, and off-site access corridors.
 - 9.1.6. Set final building and structure elevations.
 - 9.1.7. Show storm water control concepts (swales, curb, and gutter) on the drawings.
 - 9.1.8. Provide traffic flow and parking. Lay out road access to all buildings and structures. Coordinate handicap requirements with architectural discipline and local site plan regulations.
 - 9.1.9. Prepare first draft of Technical Specifications.
- 9.2. Transportation (County Road Improvements)
 - Necessary pavement and drainage improvements to Wolf Run Road (County Road Cross Section only, up to but excluding TXDOT Pavement Cross Section).
 - 9.2.1. Planning and design includes utility coordination, support for widening ROW for Wolf Run Road into the Alliance owned frontage only (platting and boundary survey performed by others), support of coordination with TXDOT for load zone permitting, traffic coordination for Wolf Run Road as required for improvements to Wolf Run Road inside TXDOT ROW up to but excluding TXDOT pavement cross section. Includes support of coordination with County engineer for Wolf Run Road load zone permitting, ESAL calculations, pavement section design, standard drainage design requirements and determination. Excludes traffic impact analysis and safety study at the intersection with SH304.
- 9.3. Architectural
 - 9.3.1. Components
 - 9.3.1.1. Filter Building
 - 9.3.1.2. Administration Building
 - 9.3.1.3. Maintenance Building
 - 9.3.1.4. Lime System Building
 - 9.3.2. Tasks
 - 9.3.2.1. Develop building floor plans and elevations for all buildings.
 - 9.3.2.2. Coordinate with I&C and electrical disciplines to size and locate electrical and control rooms.
 - 9.3.2.3. Coordinate with the mechanical discipline to select the type of HVAC equipment, locate HVAC equipment rooms, determine space requirements and routing for ductwork if required, and establish design R-values for all exterior walls.
 - 9.3.2.4. Coordinate with structural engineer to define the structural design concepts for the facilities.
 - 9.3.2.5. Complete building and fire code analysis.
 - 9.3.2.6. Prepare first draft of technical specifications.

- 9.3.2.7. Meetings
- 9.3.2.8. Complete quality control reviews.
- 9.4. Structural
 - 9.4.1. Components
 - 9.4.1.1. Filter Building Foundation for Pre-Engineered Metal Building (PEMB).
 - 9.4.1.2. Administration Building including:
 - 9.4.1.2.1. Roof Framing
 - 9.4.1.2.2. CMU Walls
 - 9.4.1.2.3. Foundation
 - 9.4.1.3. Maintenance Building Foundation for PEMB
 - 9.4.1.4. Lime System Building Foundation for PEMB
 - 9.4.1.5. High Service Pump Station Foundation with PEMB Electrical Room Enclosure
 - 9.4.1.6. Rapid Mix Structure
 - 9.4.1.7. Rapid Mix Meter Vault
 - 9.4.1.8. CO₂ Injection Vault
 - 9.4.1.9. CO₂ Storage Pad
 - 9.4.1.10. Polymer Storage Pad
 - 9.4.1.11. NaMnO₄ Day Tank foundation with containment
 - 9.4.1.12. San Drying Bed with containment
 - 9.4.1.13. (2) Generator Foundations
 - 9.4.1.14. Plate Settler Foundation
 - 9.4.1.15. Inline Mixer Vault
 - 9.4.1.16. Recycle Pump Station Wet Well
 - 9.4.1.17. Raw Water meter and valve assembly pads (2)
 - 9.4.1.18. Pipe Supports and associated foundations
 - 9.4.1.19. Cable Tray supports and associated foundations
 - 9.4.2. Tasks
 - 9.4.2.1. Coordinate with geotechnical engineer to establish foundation design criteria for proposed facilities. Review geotechnical report and discuss foundation design approach with geotechnical engineer and senior structural reviewer
 - 9.4.2.2. Document structural design concept for each structure. Finalize materials of construction (cast-in-place versus precast concrete, roof structures, etc.).
 - 9.4.2.3. Preliminary framing plan for buildings and other structures.
 - 9.4.2.4. Prepare preliminary floor plan for all major structures.
 - 9.4.2.5. Set final building and structure elevations.
 - 9.4.2.6. Determination of Loading
 - 9.4.2.7. Structural Analysis to determine member sizing
 - 9.4.2.8. Perform framing/wall Design of the following buildings:
 - 9.4.2.8.1. Administration building
 - 9.4.2.9. Perform concrete design for the following below grade structure walls and roof slabs (as needed):
 - 9.4.2.9.1. Rapid mix meter vault
 - 9.4.2.9.2. Rapid mix basin
 - 9.4.2.9.3. CO₂ injection vault

- 9.4.2.9.4. Recycle pump station wet well
 - 9.4.2.9.5. Inline mixer vault
 - 9.4.2.10. Perform steel framing design for the following miscellaneous structures:
 - 9.4.2.10.1. Pipe Supports (as needed)
 - 9.4.2.10.2. Cable Tray Supports (as needed)
 - 9.4.2.11. Prepare and submit preliminary drawings to include plans, sections and details to depict the work to be performed. Drawings will be prepared using AutoCAD 2018.
 - 9.4.2.12. Structural Layout
 - 9.4.2.13. Structural Connections
 - 9.4.2.14. Coordination with other disciplines
 - 9.4.2.15. Meetings
 - 9.4.2.16. Complete quality control reviews.
- 9.5. Process
 - 9.5.1. Provide major equipment sizing calculations.
 - 9.5.2. Provide the hydraulic profile for all major gravity process pipelines and hydraulic structures. Establish maximum and minimum water surface elevations for all process tanks.
 - 9.5.3. Coordinate with I&CS on completion of P&IDs.
 - 9.5.4. Coordinate with I&CS on development of process control narratives.
- 9.6. Mechanical
 - 9.6.1. Prepare building and structure layouts (plans and major section(s)).
 - 9.6.2. Assemble catalog cuts for all major process equipment. Complete equipment data sheets or equipment list on all major equipment items.
 - 9.6.3. Coordinate with I&CS on completion of P&IDs.
 - 9.6.4. Provide ancillary equipment sizing and line sizing calculations.
 - 9.6.5. Finalize equipment selection (type, size, weight, arrangement).
 - 9.6.6. Select piping materials.
 - 9.6.7. Prepare first draft of technical specifications.
- 9.7. HVAC / Plumbing
 - 9.7.1. Piping system plans:
 - 9.7.1.1. Mains and main branches
 - 9.7.1.2. Locations of risers
 - 9.7.2. Schematic system diagrams
 - 9.7.3. Ductwork system plans:
 - 9.7.3.1. Supply, return and exhaust
 - 9.7.3.2. Mains and main branches
 - 9.7.4. Location of risers
 - 9.7.5. Schematic system diagrams
 - 9.7.6. HVAC Controls
 - 9.7.6.1. Controls Narrative
 - 9.7.6.2. Control Sequence
 - 9.7.6.3. Controls Points List
 - 9.7.6.4. Controls Schematics
 - 9.7.7. Equipment Plans:

- 9.7.7.1. Preliminary equipment layouts.
 - 9.7.7.2. Housekeeping pads – size and location.
- 9.7.8. Louver sizes and locations.
- 9.7.9. Plumbing fixtures.
- 9.7.10. Typical Details
- 9.7.11. Preliminary Equipment Schedule
 - 9.7.11.1. Capacity, type and weight
 - 9.7.11.2. Electrical requirements.
- 9.8. Instrumentation and Control
 - 9.8.1. Implement Program’s design criteria for instrumentation and controls, fiber, and security.
 - 9.8.2. Coordinate with booster pump station consultant to develop high service pump station operational criteria.
 - 9.8.3. Coordination with design team to prepare a process flow drawing (PFD) for each treatment process. Information to be included on each PFD includes: process configuration, flow streams, valve and gate locations (manual and powered), chemical additions points/types, process equipment location/type including packaged control panels and adjustable-speed drives, flow meters and other process control devices.
 - 9.8.4. Equipment/instrument tag numbering, naming, and abbreviation conventions.
 - 9.8.5. Control system configuration (local control panels, PLC-based controls, or DCS-based controls) with input from owner.
 - 9.8.6. Coordination with the design team to prepare written operational description of each major process.
 - 9.8.7. Overall control philosophy including remote well field telemetry and control, treatment plant control, blending control; local control; level of automation, supervisory control; and reliability and redundancy criteria.
 - 9.8.8. I/O count.
 - 9.8.9. Major process instrument schedule and cut sheets.
 - 9.8.10. Control system block diagram drawing.
 - 9.8.11. Implement Program’s design criteria for SCADA.
 - 9.8.12. Coordinate with booster pump station consultant to develop high service pump station operational criteria.
- 9.9. Electrical
 - 9.9.1. Implement Program design criteria for electrical and utility requirements.
 - 9.9.2. Design overall one-line diagrams for primary and secondary power distribution facilities for proposed facilities. All electrical systems shall include spare capacity for future phases and expansions.
 - 9.9.3. Fiber optic design will pick up from Segment A termination point within the WTP site and will run to the network panel within the building on-site. Coordination shall consist of man-hole locations and spacing and conduit details for SCADA fiber network cable. Fiber contractor will be responsible for pulling cable inside the conduit. Design shall be per Program standards.
 - 9.9.4. Site electrical plan.
 - 9.9.5. Load calculations.

- 9.9.6. Size electrical rooms.
- 9.9.7. A single electrical feed to be provided to facility. Coordinate location of substation and road improvements of Wolf Run Road with GVEC ((1) ½ day meeting). Coordinate location of utility poles and transformers. Submit 90% Civil and Electrical design package to GVEC for review and comment. Address any GVEC comments.
- 9.9.8. Redundancy requirements for power supplies and power distribution.
- 9.9.9. Voltage drop, demand factors, power factors, and metering design
- 9.9.10. Raceway design criteria including sizing, applications, identification, and underground raceways.
- 9.9.11. Wire and cable design including type and use, color coding, and circuit identification.
- 9.9.12. Distribution system protection design criteria including equipment protective devices switchboards, circuit breakers, and surge protection.
- 9.9.13. Adjustable speed drive controllers including AC-VFDs.
- 9.9.14. Motor protection and control center design including number, type, location, overload protection, disconnect switches, and typical control diagrams (ladder type).
- 9.9.15. MCC motor starter control schematic design.
- 9.9.16. Grounding design including general and equipment grounding.
- 9.9.17. Lighting design, lighting calculations, interior mounting heights, exterior mounting heights, circuiting and switching, and type of lighting.
- 9.9.18. Lighting protection design including low voltage protection (SPD)
- 9.9.19. Electrical equipment/rooms number, size, and location
- 9.9.20. Site security/safety features will follow Program standards such as motion detectors, intrusion alarms, closed circuit TV, and fire alarm system including the front gate and all door access control
- 9.9.21. Electrical studies including but not limited to arc flash.
- 9.10. Preparation of Project Manual
 - 9.10.1. Develop Table of Contents; incorporate all ARWA Phase 1B Program standard specifications (provided by Owner's Representative), and project-specific specifications (provided by the Design Consultants).
- 9.11. Opinion of Probable Construction Cost
 - 9.11.1. Update 30% Design Phase cost estimate. Estimate will be a Budget Level (Class 2 - AACE) cost estimate. Estimate will have an accuracy of +20%/-15%.
- 9.12. Submit plans and specifications for QC review.
- 9.13. 60% Design Workshop
 - 9.13.1. Conduct a design workshop to review the work products with the Owner's personnel and other key project staff. Final workshop minutes, documenting the key decisions, and the work products produced through subtasks above, will be submitted to the Owner.
 - 9.13.2. Prepare and distribute meeting notes.
- 9.14. 60% Design Phase Deliverables
 - 9.14.1. Plans and specifications
 - 9.14.2. Draft Geotechnical Report
 - 9.14.3. Updated list of permits required for the project
 - 9.14.4. Updated Risk Register
 - 9.14.5. Updated Project Schedule

- 9.14.6. Corrosion Protection Report
- 9.14.7. Surge/Transient Analysis Report
- 9.14.8. Design Review Workshop and meeting notes
- 9.14.9. Opinion of Probable Construction Cost (OPCC)
- 9.15. Weekly design team conference calls and periodic design team workshops.
- 9.16. Incorporation of 60% review comments.

10. 90% COMPLETE DESIGN PHASE

The purpose of this task is to develop the final contract drawings, specifications, and schedules for competitive bidding. Key activities during this phase will include:

- 10.1. Project Manual:
 - 10.1.1. Finalize bid form.
 - 10.1.2. Owner input is required at this point to determine construction contract and insurance requirements.
 - 10.1.3. Coordinate with Owner on advertising and bidding process.
- 10.2. Prepare final Construction Drawings.
- 10.3. Prepare final calculations.
- 10.4. Complete On-Site Septic System Design and Permitting for the Administration Building (Burrier Engineering) at the Alliance Groundwater Treatment Plant Facility, which shall consist of the following:
 - 10.4.1. Test holes
 - 10.4.2. Soil evaluation
 - 10.4.3. OSSF Design
 - 10.4.4. OSSF Permitting
 - 10.4.5. Caldwell County Fees
- 10.5. 90% Opinion of Probable Construction Cost.
 - 10.5.1. Update 60% Design Phase cost estimate. Estimate will be a Definitive Level estimate (Class 2 - AACE). Estimate will have an accuracy of +15%/-15%.
- 10.6. Submit package for QC reviews.
- 10.7. 90% Design Workshop:
 - 10.7.1. Conduct 90% Design Workshop to review the 90% Design Submittal.
 - 10.7.2. Prepare and distribute meeting notes.
 - 10.7.3. Submit 90% Design Phase plans and specifications for regulatory review - TXDOT, TCEQ, TWDB, and Caldwell County.
- 10.8. 90% Design Phase Deliverables
 - 10.8.1. 90% Design Deliverables (plans and specifications)
 - 10.8.2. Final Geotechnical Report
 - 10.8.3. Updated Risk Register
 - 10.8.4. Updated Project Schedule
 - 10.8.5. 90% Design Review Workshop and meeting notes

- 10.8.6. 90% Opinion of Probable Construction Cost (OPCC)
- 10.8.7. QA/QC Documentation
- 10.9. Weekly design team conference calls and periodic design team workshops.
- 10.10. Incorporation of 90% review comments.

11. 100% COMPLETE DESIGN PHASE

- 11.1. Incorporation of Final Review Comments
 - 11.1.1. Modify the Contract Documents to reflect all agreed-upon Final Review Comments from the Owner, applicable regulatory agencies, and quality control review team. The final documents will then be submitted to the Owner.
- 11.2. Final Project Manual (signed and sealed)
 - 11.2.1. Contract Documents to include language for Request for Competitive Sealed Proposals
- 11.3. 100% Opinion of Probable Construction Cost (OPCC)
 - 11.3.1. Update 90% Design Phase cost estimate. Estimate will be a Definitive Level estimate (Class 1 - AACE). Estimate will have an accuracy of +10%/-10%.
- 11.4. 100% Design Phase Deliverables
 - 11.4.1. 100% Design Deliverables (plans and specifications); signed, sealed, and ready for construction.
 - 11.4.2. Updated Risk Register.
 - 11.4.3. Updated Project Schedule.
 - 11.4.4. 100% Opinion of Probable Construction Cost (OPCC) QA/QC Documentation.
- 11.5. Weekly design team conference calls and periodic design team workshops.
- 11.6. Submit Final Documents for Advertisement

12. SUPPLEMENTAL

- 12.1. Additional Survey
- 12.2. Additional Geotechnical Boring and Piezometers
 - 12.2.1. At the direction of ARWA, the Consultant may be required to perform up to ten (10) additional geotechnical borings and five (5) piezometers beyond those scoped for the project, at an average depth of twenty (20) feet, and conduct surveying as required to tie-in borings into the Design Documents.
- 12.3. General Engineering Design
- 12.4. Environmental Coordination based on necessary additional environmental investigations
- 12.5. Supplemental SCADA Design
 - 12.5.1. Design monitoring and control devices to log process data and control equipment (e.g. PLCs, RTUs, and pump controllers).
 - 12.5.2. Design a communication network to send commands and return process data (e.g. fiber optics, licensed or unlicensed radios, Ethernet, cellular, landlines).

- 12.6. Attend Public Meetings (2 meetings)
- 12.7. Attend additional meetings in the vicinity of the Project or presentations to the Alliance Technical Committee and/or Board (5 meetings)
- 12.8. TCEQ Exceptions and Variance Development and Coordination. Owner's Representative will compile submittal and coordinate with the TCEQ. Design Consultant shall provide exhibits, calculations, and technical support data for each exception request.
 - 12.8.1. Filtration rates for iron and manganese removal - 30 TAC §290.42(b)(2)(A).
 - 12.8.2. Exposure of groundwater to atmosphere - 30 TAC §290.42(b)(2)(C).
 - 12.8.3. Coordination meetings (2 meetings).
- 12.9. Alternative Bidding of Combined Packages
- 12.10. Transportation County Road Improvements – Additional required studies that may include area wide drainage evaluation and traffic impact analyses.
- 12.11. Perform Surge and Transient Analysis for the WTP high service pump station (NHC).
 - 12.11.1. Obtain data necessary for the work. Extract lengths, diameters, and elevations from the alignment/plan and elevation drawings for the WTP high service pump station and the pipeline between the WTP and Maxwell. Calculate acoustic wavespeeds (based on pipe material and thickness/pressure class) and Darcy-Weisbach friction factors for the pipes. Gather data (e.g., diameters, discharge coefficients, etc.) from manufacturer literature associated with the pumps and valves at the WTP high service pump station. Develop pump characteristics for the hydraulic transient analysis computer model using manufacturers pump performance curves supplied by Walker Partners for the pumps at the WTP high service pump station. Setup a hydraulic transient analysis computer model of the WTP high service pump station, 48/42-inch diameter treated water pipelines between the WTP and Maxwell, transmission line to the Lockhart delivery point, and the storage tanks.
 - 12.11.2. Define maximum and minimum flow rates and hydraulic grade lines, as well as facilities status (e.g., operating, idle, open, closed, etc.) for the primary function of the WTP high service pump station. Establish hydraulic grade line (HGL) elevations for the pipelines under steady state operation and static conditions for the following operating conditions:
 - 12.11.2.1. Low flow operation (4 MGD)
 - 12.11.2.2. Phase 1B operation (19.5 MGD)
 - 12.11.2.3. Phase 1C operation (28.1 MGD)
 - 12.11.2.4. Phase 1D operation (33.5 MGD)
 - 12.11.3. Use initial HGL elevations to perform hydraulic transient analysis simulations for the operation of the WTP high service pump station under the following operating conditions:
 - 12.11.3.1. Low flow operation (4 MGD)
 - 12.11.3.2. Phase 1B operation (19.5 MGD)
 - 12.11.3.3. Phase 1C operation (28.1 MGD)
 - 12.11.3.4. Phase 1D operation (33.5 MGD)
 - 12.11.3.5. Transient simulations will include:
 - 12.11.3.5.1. Pump power failure
 - 12.11.3.5.2. Planned pump shutdown, and

12.11.3.5.3. Pump startup for critical operating scenarios.

Note that pump startup simulations will involve the development of safe pump start sequencing and safe pump start times (i.e., safe pump ramp up time/safe pump control valve opening time as applicable) with the surge control recommended in the task below for pump power failure in place. Similarly pump planned shutdown simulations will involve the development of safe pump stop sequencing and safe pump stop times (i.e., safe pump ramp down time/safe pump control valve closing time as applicable) with the surge control recommended in the task below for pump power failure in place.

12.11.4. Evaluate the results (i.e., predicted maximum and minimum pressures) of the transient analysis simulations and determine whether or not surge control measures are required to protect the system from adverse pressure transients (e.g., over-pressurization, vapor cavity formation, and large magnitude negative pressures) created by the loss of power, planned shutdown and startup of the pumps at the WTP high service pump station when operating under each of the following conditions:

12.11.4.1. Low flow operation (4 MGD)

12.11.4.2. Phase 1B operation (19.5 MGD)

12.11.4.3. Phase 1C operation (28.1 MGD)

12.11.4.4. Phase 1D operation (33.5 MGD)

12.11.5. If surge protection is deemed necessary for any of the above conditions, NHC will determine surge control measures (e.g., volume, dimensions and pressure rating of pressurized surge tanks, diameter and location of controlled venting vacuum relief valves, diameter and set point pressure of surge/pressure relief valves, etc.) for the WTP high service pump station and pipeline between the WTP high service pump station and the BPS GST under the following operating conditions:

12.11.5.1. Low flow operation (4 MGD)

12.11.5.2. Phase 1B operation (19.5 MGD)

12.11.5.3. Phase 1C operation (28.1 MGD)

12.11.5.4. Phase 1D operation (33.5 MGD)

The surge control measures will be designed to ensure that the maximum pressures do not exceed the maximum allowable pressures for the system, and to eliminate the possibility of vapor cavity formation and large magnitude negative pressures in the pipelines following pump power failure and pump startup. The results of the hydraulic transient analyses with the recommended surge protection improvements in place will also be provided. In addition, recommendations for safely starting and stopping the pumps will be provided.

12.11.6. Draft and final technical memoranda will be prepared that will include:

12.11.6.1. A description of the hydraulic transient analysis modeling approach

12.11.6.2. A description of the physical facilities, including a schematic showing the hydraulic transient analysis model

12.11.6.3. Component data and assumptions used for the analyses

12.11.6.4. The results of the hydraulic transient analyses, including graphical plots of the maximum and minimum HGL envelopes and maximum allowable pressure along

the pipelines, and plots of pressure head at the WTP high service pump station and significant locations in the system, etc.

12.11.6.5. Recommendations for surge control, and safe startup and shutdown of the pumps for low flow, Phase 1B, Phase 1C and Phase 1D.

Movies of the pertinent hydraulic transient analysis simulations may be included at no additional cost to help illustrate the results of the analysis and effectiveness of the surge control recommendations. The draft memorandum will be provided in portable document format (PDF). Two (2) bound copies of the final technical memorandum will be provided and will include movies and an electronic version of the final technical memorandum on CDROM.

12.12. Site facility rendering.

12.12.1. The Architect will provide up to four (4) professional renderings of the proposed Water Treatment plant site. A preliminary list of individual renderings is provided below.

12.12.1.1. Full Site Elevation looking east from SH 304

12.12.1.2. Full Site Elevation looking south from Wolf Run Rd.

12.12.1.3. Elevation of Administration Building looking south from parking lot.

12.12.1.4. One Miscellaneous Rendering to be determined

12.12.2. The task list associated with the architectural renderings is provided below.

12.12.2.1. Compile list of drawings from all disciplines, including the following:

12.12.2.1.1. Developed Floor Plans.

12.12.2.1.2. Developed Site Plan.

12.12.2.1.3. Building & Equipment Elevations.

12.12.2.2. Coordination & Incorporation of elements from other disciplines.

12.12.2.2.1. (Civil, Structural, MEP).

12.12.2.3. Verification & Incorporation site conditions.

12.12.2.3.1. Topography.

12.12.2.3.2. Property Lines.

12.12.2.3.3. Easements.

12.12.2.3.4. Utilities.

12.12.2.3.5. Locations of existing trees, roads, structures.

12.12.2.4. Acquisition of site & aerial photos.

12.12.2.5. Development of perspective images.

12.12.2.6. Meetings with client.

12.12.2.7. Development of preliminary renderings.

12.12.2.7.1. Review with client.

12.12.2.8. Assembly of presentation boards.

12.13. Procurement (Request For Competitive Sealed Proposal (RFCSP)). This task is anticipated to be authorized during procurement on a time and materials basis.

12.13.1. Prepare addenda and Clarifications (assumes 3 addenda). This task is anticipated to be authorized during procurement on a time and materials basis.

12.13.2. Participate in and document Pre-Proposal Conference

12.13.3. Attend Proposal Opening

12.13.4. Review Contractors' Proposals

- 12.13.5. Perform Contractor References Check
- 12.13.6. Confirm Contractor Experience
- 12.13.7. Prepare Recommendation for Award
- 12.13.8. Prepare Conformed Contract Documents

Level of effort for Procurement phase assumes that the competitive sealed proposal scoring workflow and panel have already been established and will be coordinated by the Owner/Owners Representative.

ASSUMPTIONS

- The design work on this Project and Owner reviews will last 11 months from Authorization to Proceed and be completed in calendar year 2020.
- Technical Specifications generated by the design team will follow 2014 Construction Specifications Institute (CSI) MasterFormat
- All meetings are to be held in the immediate vicinity of the Project (Travis, Hays, or Caldwell Counties).
- Permitting and review fees are not included.
- Advertisement fees are not included.
- Overall system hydraulics are being completed by Freese and Nichols at the Program level.
- Any investigation and remediation of possible hazardous waste, asbestos, lead paint, or other types of contamination, will be conducted as a separate contract by others.
- Complete demolition of pole barn, residential farm house, and wellfield all-weather access drive within the plant site will be accomplished as part of this contract. It is assumed that no drawings for this facility are available and that the demolition requirements will be described in the specifications only. No salvaging or relocation of materials and equipment is required.
- Landscaping will be limited to seeding or sodding.
- This scope of work assumes no pre-purchase of equipment.
- Permit and conformed documents are to be hard copy (half-size drawings). It is assumed all other deliverables will be electronic format.
- Cost estimates to be prepared for guidance in project evaluation and implementation from the information available at the time of the estimate. The final costs of the project will depend on actual labor and material costs, competitive market conditions, final project costs, implementation schedule and other variable factors. As a result, the final project costs will vary from the estimates presented.
- No improvements to State (TXDOT) facilities
- No signal design
- No easement preparation, platting, or boundary surveys
- No utility relocation design or drawings
- Design of Improvements to Wolf Run Rd. will be no more than 3,000 LF from the intersection of SH304 and Wolf Run Road
- All right of entry will be obtained by others
- Spoils from borings will be left onsite and will not be containerized for offsite disposal

- General Engineering and Alternative Bidding of Combined Packages scope and fee will be determined through supplemental agreement process and listed fee is budgetary only.
- No BIM
- No LEED
- No training
- No third party testing
- No construction phase services
- No plant start-up or commissioning
- No factory witness testing
- The following items will be provided by the Owner’s representative:
 - Determine HMI software to provide operators with a graphic representation of the process.
 - Design a database of I/O points (tags) that define the objects in the system.
 - Design an alarm management system to allow operators to view and acknowledge alarms.
 - Design a notification system to disseminate alarm information to remote users via SMS text message, email, voice -to-speech, or pager.
 - Design configuration of a database of historical process information logged by the system.
 - Identify preferred trends and reporting tools to derive insight from historical data.
- Owner’s representative will be the primary contact with the TWDB and will facilitate all submittals and coordination
- Owner’s representative will post or otherwise distribute RFCSP addenda and clarifications.
- Owner’s representative will conduct pre-bid meeting, including developing agenda, and WP will participate in the meeting as requested.
- Owner’s representative will receive and distribute all Contractor questions during procurement process.
- Owner’s representative will coordinate TWDB procurement approvals and construction contract execution.
- Value engineering is not included.
- Additive or deductive bid alternates are not included.
- The Owner’s representative will coordinate with the GBRA regarding the Well Field Pipeline termination location and coordination of pump controls and programming.
- The Owner’s representative will address 90% design submittal package review comments from the GBRA.
- Owner’s representative will be responsible for project manual front end documents.

DRAWINGS

A list of anticipated design drawings are provided in Appendix B.

SCHEDULE

A schedule is provided in Appendix C.

Appendix A

Total Fee Breakdown

Alliance Water Phase 1B Program																		Project Fee Summary		
Water Treatment Plant Consultant																		Basic Effort \$ 2,900,402		
1/13/2020																		Supplemental \$ 633,388		
Detailed Overall Consultant Cost Breakdown																		Total Effort \$ 3,533,790		

Task	Walker	Jenkins	Christensen	Miller	Canady	Garza					WP Total Hours	WP Total Labor Effort	WP Total Expense Effort	LNV	Northwest Hydraulic	S. Kanetzky	Holt	Burrier	Elk	Total Sub Effort	Total Effort	Assumptions
Project Role	Managing Principal	Manager III	Senior Engineer II	Senior Engineer I	Project Manager	Project Engineer II	Project Engineer I (EIT)	CAD Tech X	Support Staff III													
Hourly Bill Rate	\$330.00	\$298.70	\$231.75	\$200.00	\$175.05	\$127.31	\$116.70	\$137.92	\$84.87													
Basic Services																						
Task 1 - Project Management	2	146	0	0	320	0	175	0	122	765	\$ 131,063	\$ 336	\$ 46,390	\$ -	\$ 37,400	\$ -	\$ -	\$ -	\$ -	\$ 83,790	\$ 215,189	
1.1 Update Project Management Plan	2	4			16					22	\$ 4,656	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,656	
1.2 Prepare Monthly Summary Reports/Invoicing as identified in the ARWA Phase 1B Program Management Plan		32			55				22	109	\$ 21,053	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 21,053	
1.3 Schedule Development and Monthly Updates. Schedule shall cover final design phase, bidding phase, and permitting		6			16					22	\$ 4,593	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,593	
1.4 Risk Register development and monthly updates		4			20				6	30	\$ 5,205	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,205	
1.5 Meetings										0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
1.5.1 Conduct Progress Meetings with Owner's Representative over the phone or internet conference (15 meetings)		38			76		38		38	190	\$ 32,314	\$ 202	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 32,516	Mileage expense
1.5.2 Conduct half-day coordination workshops (3 workshops)	0	24			45		45		18	132	\$ 21,825	\$ 134	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 21,959	Mileage expense
1.5.3 Prepare and distribute meeting notes and minutes		30			76		76		38	220	\$ 34,359	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 34,359	
1.5.4 Quality Control Audit (2 workshops)		8			16		16			40	\$ 7,058	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,058	
Task 2 - Review of Cathodic Protection Standards	0	6	0	0	8	0	0	0	0	14	\$ 3,193	\$ 34	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,320	\$ 4,320	\$ 7,547	
2.1 Review and provide comments of Cathodic protection Standards prepared by Owner's Representative		2			4					6	\$ 1,298	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,298	
2.2 Meetings		4			4					8	\$ 1,895	\$ 34	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,929	Mileage expense
Task 3 - Environmental Coordination	0	4	0	0	8	0	0	0	0	12	\$ 2,595	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,595	
3.1 Review Final Environmental Document for applicable project and develop Construction Documents based on findings		4			8					12	\$ 2,595	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,595	
Task 4 - Regulatory Agency Coordination	0	24	5	0	60	0	48	16	12	165	\$ 27,657	\$ 179	\$ 2,960	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 2,960	\$ 30,796	
4.1 Caldwell County - Road Improvements Approval, Driveway Permit, Floodplain Permit, Site Construction Permit, On-Site Septic System Permit		8	5		20		16	16	4	69	\$ 11,463	\$ 134	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 11,597	Mileage expense
4.2 TXDOT - Road Crossing Permit and Connecting Road Improvements Approval		8			8		8			24	\$ 4,724	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,724	
4.3 TCEQ - Submittal and Approval		4			16		12		4	36	\$ 5,735	\$ 45	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,780	Mileage expense
4.4 Texas Water Development Board - Approval on Contract Documents		4			16		12		4	36	\$ 5,735	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,735	
Task 5 - Public and Private Utility Coordination	0	8	0	0	20	0	20	0	0	48	\$ 8,225	\$ 34	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,259	
5.1 Guadalupe-Blanco River Authority (GBRA)		8			20		20			48	\$ 8,225	\$ 34	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,259	Mileage expense
Task 6 - High-Service Pump Station Hydraulics and Surge/Transient Analysis	0	15	6	0	30	0	8	0	0	59	\$ 12,056	\$ 68	\$ -	\$ 12,960	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 12,960	\$ 25,084	
6.1 Review and Coordination of Distribution Model		4	4		16		8			32	\$ 5,856	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,856	
6.2 Submit Distribution Model & Surge/Transient Recommendations		2	2		4					8	\$ 1,761	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,761	
6.3 Coordination Meeting (1)		4			4					8	\$ 1,895	\$ 34	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,929	Mileage expense
6.4 Address Review Comments		1			2					3	\$ 649	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 649	
6.5 Review and Coordination Meeting (1)		4			4					8	\$ 1,895	\$ 34	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,929	Mileage expense
Task 7 - Design Consultant Coordination	0	8	0	0	8	0	8	16	0	40	\$ 6,930	\$ 34	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,964	
7.1 Wellfield Piping Design Consultant		8			8		8	16		40	\$ 6,930	\$ 34	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 6,964	Mileage expense
Task 8 - Subsurface Investigations	0	4	0	0	16	0	16	4	0	40	\$ 6,414	\$ 15,000	\$ -	\$ -	\$ -	\$ 25,409	\$ -	\$ 77,920	\$ -	\$ 103,329	\$ 124,743	
8.1 Geotechnical Investigation		2			8		8	4		22	\$ 3,483	\$ 15,000	\$ -	\$ -	\$ -	\$ 25,409	\$ -	\$ -	\$ -	\$ 25,409	\$ 43,892	Survey for geotech and Wolf Run ROW
8.2 Corrosion Investigation, Data Collection, and Design Support		2			8		8			18	\$ 2,931	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 77,920	\$ -	\$ 77,920	\$ 80,851	
Task 9 - 60% Design Phase	4	132	160	128	542	416	820	600	156	2,958	\$ 442,949	\$ 30,034	\$ 265,511	\$ -	\$ 380,560	\$ -	\$ -	\$ -	\$ -	\$ 646,071	\$ 1,119,054	
9.1 Civil and Site Development		16			60	60	120	120		392	\$ 56,675	\$ 25,000	\$ 117,681	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 117,681	\$ 199,356	Survey crew
9.2 Transportation (County Road Improvements)		20			60	60	120	80		360	\$ 53,153	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 53,153	
9.3 Architectural										0	\$ -	\$ -	\$ 59,800	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 59,800	
9.4 Structural										0	\$ -	\$ -	\$ 88,030	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 88,030	
9.5 Process		8			36	36	72	36	36	232	\$ 31,297	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 31,297	
9.6 Mechanical		40			240	120	240	240	40	960	\$ 141,739	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 141,739	
9.7 HVAC / Plumbing										0	\$ -	\$ -	\$ -	\$ -	\$ 69,840	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 69,840	
9.8 Instrumentation and Control		10			40	40	60	40		200	\$ 29,600	\$ -	\$ -	\$ -	\$ 137,920	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 137,920	
9.9 Electrical										0	\$ -	\$ -	\$ -	\$ -	\$ 110,880	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 110,880	
9.10 Preparation of Project Manual		12			20	20	40		80	184	\$ 23,489	\$ -	\$ -	\$ -	\$ 24,480	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 24,480	\$ 47,969
9.11 Opinion of Probable Construction Cost		14			14	50	100			228	\$ 33,770	\$ -	\$ -	\$ -	\$ 21,600	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 21,600	\$ 55,370
9.12 Submit plans and specifications for QC review	4		120							124	\$ 29,130	\$ -	\$ -	\$ -	\$ 11,520	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 11,520	\$ 40,650
9.13 60% Design Workshop		4			6		8	4		22	\$ 3,730	\$ 34	\$ -	\$ -	\$ 4,320	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 4,320	\$ 8,084
9.14 60% Design Phase Deliverables										0	\$ -	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,000	Reproduction costs & mileage
9.15 Weekly design team conference calls/periodic design team workshops										0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
9.16 Incorporation of 60% Review Comments		8	40	8	30	30	60	80		256	\$ 40,366	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 40,366	
Task 10 - 90% Complete Design Phase	4	108	168	112	318	318	644	576	32	2,280	\$ 348,374	\$ 5,034	\$ 234,286	\$ -	\$ 402,800	\$ -	\$ 10,000	\$ -	\$ -	\$ 647,086	\$ 1,000,494	
10.1 Project Manual		2			12	12	24	24	24	76	\$ 9,463	\$ -	\$ -	\$ -	\$ 8,640	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,640	\$ 18,103
10.2 Prepare Final Construction Drawings										0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
10.2.1 Civil and Site Development		24			80	80	120	120		448	\$ 66,711	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 66,711	
10.2.2 Transportation (County Road Improvements)			8		8	24	24	80	80	224	\$ 31,080	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 31,080	
10.2.3 Architectural										0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
10.2.4 Structural										0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
10.2.5 Process		12			24	24	48	48		168	\$ 25,463	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 25,463	
10.2.6 Mechanical		34			34	48	48	96	180	440	\$ 67,497	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 67,497	
10.2.7 HVAC / Plumbing										0	\$ -	\$ -	\$ -	\$ -	\$ 81,360	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 81,360	\$ 81,360
10.2.8 Instrumentation and Control		8			24	30	60	40		170	\$ 24,529	\$ -	\$ -	\$ -	\$ 136,760	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 136,760	\$ 161,289
10.2.9 Electrical										0	\$ -	\$ -	\$ -	\$ -	\$ 138,600	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 138,600	

Alliance Water Phase 1B Program																			Project Fee Summary	
Water Treatment Plant Consultant																				
1/13/2020																				
Detailed Overall Consultant Cost Breakdown																				
																			Basic Effort \$ 2,900,402	
																			Supplemental \$ 633,388	
																			Total Effort \$ 3,533,790	

Task	Project Role	Walker	Jenkins	Christensen	Miller	Canady	Garza	CAD Tech X	Support Staff III	WP Total Hours	WP Total Labor Effort	WP Total Expense Effort	LNV	Northwest Hydraulic	S. Kanetzky	Holt	Burrier	Elk	Total Sub Effort	Total Effort	Assumptions	
		Managing Principal	Manager III	Senior Engineer II	Senior Engineer I	Project Manager	Project Engineer II															Project Engineer I (EIT)
Hourly Bill Rate		\$330.00	\$298.70	\$231.75	\$200.00	\$175.05	\$127.31	\$116.70	\$137.92	\$84.87												
10.4	Complete On-Site Septic System Design					8	8	16	24	8	64	\$ 8,275	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 8,275	
10.5	90% Opinion of Probable Construction Cost		14		14	50	50	100			228	\$ 33,770	\$ -	\$ -	\$ -	\$ 21,600	\$ -	\$ -	\$ -	\$ 21,600	\$ 55,370	
10.6	Submit package for QC reviews	4		120							124	\$ 29,130	\$ -	\$ -	\$ -	\$ 11,520	\$ -	\$ -	\$ -	\$ 11,520	\$ 40,650	
10.7	90% Design Workshop		4			6		8	4		22	\$ 3,730	\$ 34	\$ -	\$ -	\$ 4,320	\$ -	\$ -	\$ -	\$ 4,320	\$ 8,084	Mileage expense
10.8	90% Design Phase Deliverables										0	\$ -	\$ 5,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 5,000	Reproduction Costs
10.9	Weekly design team conference calls/periodic design team workshops										0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
10.10	Incorporation of 90% Review Comments		8	40	8	30	30	60	80		256	\$ 40,366	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 40,366	
Task 11 - 100% Complete Design Phase		0	14	32	20	40	40	80	40	16	282	\$ 51,898	\$ 5,000	\$ 76,863	\$ -	\$ 61,980	\$ -	\$ -	\$ -	\$ 138,843	\$ 195,741	
11.1	Incorporation of Final Review Comments		4	20	4	20	20	40	40		148	\$ 22,862	\$ -	\$ -	\$ -	\$ 43,260	\$ -	\$ -	\$ -	\$ 43,260	\$ 66,122	
11.2	Final Project Manual (signed and sealed)		2	12	8	8	8	16		16	70	\$ 10,622	\$ -	\$ -	\$ -	\$ 4,320	\$ -	\$ -	\$ -	\$ 4,320	\$ 14,942	
11.3	100% Opinion of Probable Construction Cost (OPCC)		8		8	12	12	24			64	\$ 10,419	\$ -	\$ -	\$ -	\$ 11,520	\$ -	\$ -	\$ -	\$ 11,520	\$ 21,939	
11.4	100% Design Phase Deliverables										0	\$ -	\$ 5,000	\$ -	\$ -	\$ 2,880	\$ -	\$ -	\$ -	\$ 2,880	\$ 7,880	Reproduction costs
11.5	Weekly design team conference calls/periodic design team workshops										0	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	
11.6	Submit Final Documents for Advertisement		4			10	10	20	8	4	56	\$ 7,995	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 7,995	
Supplemental Services																						
Task 12 - Supplemental		0	0	0	0	0	0	0	0	0	0	\$ 338,681	\$ 5,000	\$ 49,130	\$ 109,340	\$ 94,900	\$ 10,000	\$ -	\$ -	\$ 263,370	\$ 607,051	
12.1	Additional Survey										0	\$ 15,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 15,000	
12.2	Additional Geotechnical Boring and Piezometers										0	\$ -	\$ -	\$ -	\$ -	\$ 10,000	\$ -	\$ -	\$ -	\$ 10,000	\$ 10,000	
12.3	General Engineering Design										0	\$ 125,000	\$ -	\$ -	\$ -	\$ 15,000	\$ -	\$ -	\$ -	\$ 15,000	\$ 140,000	
12.4	Environmental Coordination based on necessary additional environmental investigations										0	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,000	
12.5	Supplemental SCADA Design										0	\$ -	\$ -	\$ -	\$ -	\$ 63,740	\$ -	\$ -	\$ -	\$ 63,740	\$ 63,740	
12.6	Attend Public Meetings (2 meetings)										0	\$ 16,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 16,000	
12.7	Attend additional meetings in the vicinity of the Project (5 meetings)										0	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,000	
12.8	TCEQ - Exceptions and Variance Development Coordination										0	\$ 10,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 10,000	
12.9	Alternative Bidding of Combined Packages										0	\$ 20,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 20,000	
12.10	Transportation (County Road Improvements)										0	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 25,000	
12.11	Surge and Transient Analysis										0	\$ 4,929	\$ -	\$ -	\$ 109,340	\$ -	\$ -	\$ -	\$ -	\$ 109,340	\$ 114,269	
12.12	Site Facility Rendering										0	\$ -	\$ -	\$ 21,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 21,000	\$ 21,000	
12.13	Procurement										0	\$ 102,752	\$ 5,000	\$ 28,130	\$ -	\$ 16,160	\$ -	\$ -	\$ -	\$ 44,290	\$ 152,042	
Total Hours by Role:		10	469	371	260	1,370	774	1,819	1,252	338	Grand Total	\$ 1,380,035	\$ 60,753	\$ 675,140	\$ 122,300	\$ 977,640	\$ 35,409	\$ 10,000	\$ 82,240	\$ 1,902,729	\$ 3,343,517	

HUB Participation	
Basic	22%
Total	20%

Subconsultant Basic Services	\$ 626,010	\$ 12,960	\$ 882,740	\$ 25,409	\$ 10,000	\$ 82,240	\$ 1,639,359	
10% Markup	\$ 62,601	\$ 1,296	\$ 88,274	\$ 2,541	\$ 1,000	\$ 8,224	\$ 163,936	\$ 2,900,402 Basic Effort
Subconsultant Supplemental Services	\$ 49,130	\$ 109,340	\$ 94,900	\$ 10,000	\$ -	\$ -	\$ 263,370	
10% Markup	\$ 4,913	\$ 10,934	\$ 9,490	\$ 1,000	\$ -	\$ -	\$ 26,337	\$ 633,388 Supplemental

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS

Wednesday, January 15th, 2020 at 3:00 P.M.
520 E. RR 150, Kyle, TX 78640

- F.6** Update on status of groundwater management in project target area, and Gonzales County Underground Water Conservation District, Plum Creek Conservation District, Groundwater Management Area 13, Region L Planning Group, Guadalupe-Blanco River Authority, Hays County and CAPCOG activities.
~ *Graham Moore, P.E., Executive Director*
-

Gonzales County Underground Water Conservation District (GCUWCD)

The GCUWCD is scheduled to meet on January 14th. A verbal update of the meeting's activities will be provided to the Technical Committee.

Plum Creek Conservation District (PCCD)

The PCCD is scheduled to meet on January 21st.

Groundwater Management Area 13

No update.

Region L Planning Group

The next Region L Planning Group meeting is scheduled for Thursday, January 23rd. This will be the final opportunity to get updates on the plan prior to possible action approving the Initially Prepared Plan in March 2020.

Guadalupe-Blanco River Authority; Hays County Activities; CAPCOG Activities

No update.

Technical Committee decision needed:

- None.

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS

Wednesday, January 15th, 2020 at 3:00 P.M.
 520 E. RR 150, Kyle, TX 78640

- G. EXECUTIVE DIRECTOR REPORT** - Update on future meeting dates, locations, consultant invoices paid, approved changed orders, status of Authority procurements, Executive Director activities and other operational activities where no action is required. ~ *Graham Moore, P.E., Executive Director*

Board Meeting

- The January Board meeting will be held at the San Marcos Activity Center on Wednesday, January 22nd.

RFQ Update

- The RFQ for the Phase 1B Construction Management & Inspection was issued in mid-December. Responses are due in mid-February.
- Staff has also drafted the RFQ for Public Relation Services with the intent of issuing it at the end of January.

Consultant Invoices Paid

- Below are reports on the consultant invoices paid in December.

FY 19-20 CONSULTANT INVOICES PAID in DECEMBER 2019

Consultant	Total Authorized	Current Invoice	Invoiced-to-Date	% of Contract Invoiced	Remaining	Notes/ Anomalies
Mark B. Taylor	\$17,500.00	\$6,050.00	\$12,895.00	74%	\$4,605.00	
LAN - Kyle/Buda Design	\$116,280.27	\$3,860.31	\$5,842.26	5%	\$110,438.01	
Patricia Ehrlinger Carls	\$25,000.00	\$0.00	\$6,157.75	25%	\$18,842.25	
RW Harden	\$40,000.00	\$2,383.25	\$7,516.75	19%	\$32,483.25	
Tx Solutions Group	\$72,000.00	\$6,000.00	\$18,000.00	25%	\$54,000.00	
BGE - Ph 1A CA	\$53,938.59	\$6,621.87	\$6,621.87	12%	\$47,316.72	
LAN - ROW Acquisition	\$32,110.04	\$0.00	\$0.00	0%	\$32,110.04	
Kent Alan Sick - ROW Legal	\$45,000.00	\$4,130.04	\$14,539.74	32%	\$30,460.26	
LNV - Ph 1A Observations	\$4,006.84	\$110.00	\$110.00	3%	\$3,896.84	
LNV - GIS Svcs	\$30,777.63	\$0.00	\$0.00	0%	\$30,777.63	
MLA Labs, Inc.	\$10,814.00	\$0.00	\$1,232.00	11%	\$9,582.00	
Armstrong, Vaughan & Associates, P.C.	\$10,715.00	\$0.00	\$0.00	0%	\$10,715.00	
J.R. Tolles & Associates, Inc.	\$189,985.00	\$18,486.00	\$35,854.00	19%	\$154,131.00	
Total	\$458,142.37	\$29,155.47	\$72,915.37		\$385,227.00	

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS

Wednesday, January 15th, 2020 at 3:00 P.M.
 520 E. RR 150, Kyle, TX 78640

- Below is the report on the Phase 1B invoices paid in December.

PHASE 1B FY 19-20 CONSULTANT INVOICES PAID in DECEMBER 2019

Consultant	Total Authorized	Current Invoice	Invoiced-to-Date	% of Contract Invoiced	Remaining	Notes/ Anomalies
Kimley-Horn Ph 1B Owner's Rep	\$1,372,351.19	\$212,818.12	\$478,551.53	35%	\$893,799.66	
Blanton -	\$429,534.08	\$0.00	\$0.00	0%	\$429,534.08	
LAN - Segment A	\$131,884.80	\$35,788.55	\$35,788.55	27%	\$96,096.25	
KFA - Segment B Prelim	\$68,207.94	\$21,546.06	\$21,546.06	32%	\$46,661.88	
BGE - Segment C Prelim	\$172,491.20	\$36,333.75	\$36,333.75	21%	\$136,157.45	
FNI - Segment D	\$17,963.86	\$10,334.20	\$10,334.20	58%	\$7,629.66	
Walker - Segment E Prelim	\$230,594.60	\$7,344.34	\$7,344.34	3%	\$223,250.26	
LAN - ROW Acquisition	\$2,145,847.22	\$0.00	\$0.00	0%	\$2,145,847.22	
DTR&G	\$894,535.31	\$31,747.11	\$67,459.53	8%	\$827,075.78	
CBRE - Appraisals	\$2,291,500.00	\$0.00	\$52,000.00	2%	\$2,239,500.00	
CP&Y - Survey	\$1,957,932.20	\$47,524.25	\$47,524.25	2%	\$1,910,407.95	
RW Harden - WDH	\$13,920.00	\$5,200.00	\$5,200.00	37%	\$8,720.00	
LNV - RWI	\$1,063,283.45	\$97,759.65	\$97,759.65	9%	\$965,523.80	
Walker Partners - WTP Design	\$214,531.12	\$136,939.98	\$136,939.98	64%	\$77,591.14	
FNI - BPS Prelim	\$268,527.88	\$67,327.95	\$67,327.95	25%	\$201,199.93	
Plummer - Inline Elevated Tank	\$87,509.05	\$5,476.50	\$5,476.50	6%	\$82,032.55	
Total	\$11,360,613.90	\$716,140.46	\$1,069,586.29		\$10,291,027.61	

Approved Change Orders

- See below for Change Orders approved in December 2019.

CHANGE ORDERS APPROVED IN DECEMBER 2019

Consultant	Original Authorization	Change Orders to Date	Change Order Approved this Month	New Total Contract Amount
Walker Partners: 1B Segment E	\$ 408,755.00	\$ 111,824.00	\$ -	\$ 520,579.00
Black Castle - Phase 1A BPS Construction	\$ 4,999,080.00	\$ 111,827.56	\$ -	\$ 5,110,907.56
RW Harden - 1B Well Drilling & Hydrogeology	\$ 114,000.00	\$ 31,380.00	\$ -	\$ 145,380.00
Freese & Nichols: 1B BPS & DP Prelim	\$ 771,617.00	\$ 34,863.00	\$ -	\$ 806,480.00
LAN: 1B Segment A	\$ 595,455.00	\$ 60,375.00	\$ -	\$ 655,830.00
K Friese & Assoc.: 1B Segment B	\$ 565,417.00	\$ 60,095.00	\$ -	\$ 625,512.00
BGE: 1B Segment C	\$ 614,626.00	\$ 10,290.00	\$ -	\$ 624,916.00
Freese & Nichols: 1B Segment D	\$ 597,714.00	\$ 66,722.00	\$ -	\$ 664,436.00
Walker Partners: 1B WTP	\$ 1,203,606.00	\$ 40,406.00	\$ -	\$ 1,244,012.00
CP&Y: Ph 1B Program Survey	\$ 3,375,780.00	\$ 30,000.00	\$ 30,000.00	\$ 3,405,780.00

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS

Wednesday, January 15th, 2020 at 3:00 P.M.
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- H. COMMITTEE MEMBER ITEMS OR FUTURE AGENDA ITEMS – Possible acknowledgement by Committee Members of future area events and/or requests for item(s) to be placed on a future agenda where no action is required.
-

Background/Information

The Committee Members have an opportunity to make announcements or to request that items be added to future Board or Committee agendas.

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS

Wednesday, January 15th, 2020 at 3:00 P.M.

520 E. RR 150, Kyle, TX 78640

I.1 *Executive Session pursuant to the Government Code, Section 551.071 (Consultation with Attorney) and/or Section 551.072 (Real Property Deliberations) regarding:*

- A. *Water supply partnership options*
 - B. *Groundwater leases*
 - C. *Acquisition of real property for water supply project purposes*
-

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS

Wednesday, January 15th, 2020 at 3:00 P.M.
520 E. RR 150, Kyle, TX 78640

I.2 Action from Executive Session on the following matters:

- A. *Water supply partnership options*
 - B. *Groundwater leases*
 - C. *Acquisition of real property for water supply project purposes*
-

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS
Wednesday, January 15th, 2020 at 3:00 P.M.
520 E. RR 150, Kyle, TX 78640

J. ADJOURNMENT
