Alliance Regional Water Authority
Technical Committee

REGULAR MEETING

ALLIANCE WATER

COMMITTEE MEMBER PACKETS

Wednesday, February 12th, 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, February 12th, 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 January 15, 2020. *~ 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 Freese & Nichols, Inc. for Final Design and Procurement Services for the Authority's Phase 1B Booster Pump Station and Delivery Point project. *~ Ryan Sowa, P.E., Kimley-Horn & Associates*

F.4 Discussion and possible recommendation to the Board to approve a work order with Blanton & Associates, Inc. for additional Environmental Field Investigations for the Authority's Phase 1B projects. *~ Ryan Sowa, P.E., Kimley-Horn & Associates*

F.5 Discussion and possible recommendation to the Board to approve a work order with Kimley-Horn & Associates, Inc. for Owner's Representative Services for March 2020 through February 2021 for the Authority's Phase 1B Program. *~ Graham Moore, P.E., Executive Director*

F.6 Update, discussion and possible direction to Staff regarding the Authority's submission of an Abridged Application to the Texas Water Development Board for additional SWIFT Funding. *~ Graham Moore, P.E., Executive Director*

F.7 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

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS
Wednesday, February 12th, 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*

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	

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS
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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.

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

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D. CONSENT AGENDA

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

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS
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D.1 Consider approval of minutes of the Regular Technical Committee Meeting held January 15, 2020. *~ Graham Moore, P.E., Executive Director*

Attachment(s)

- 2020 01 15 Technical Committee Meeting Minutes

Technical Committee decision needed:

- Approval of minutes.

Alliance Regional Water Authority

TECHNICAL COMMITTEE MEETING

MINUTES

Wednesday, January 15, 2020

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, January 15, 2020 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 3:00 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 December 11, 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. Biemer provided an update on the projects.**
- **Mr. Taggart asked if the booster station will be operated remotely.**
- **Mr. Biemer stated that it does have that capability.**
- **No Action.**

F.2 Update and possible direction to Staff regarding the Authority's Phase 1B program.

- **Mr. Moore provided an update on GVEC providing power to the Water Treatment Plant.**
- **Mr. Ryan Sowa with Kimley-Horn went through the presentation in the packet summarizing Kimley-Horn's recent activities.**
- **Mr. Taggart inquired if the RW Harden Construction Phase contract included "inspection" services or "observation". Mr. Sowa responded that it does include "inspection".**
- **Mr. Earp inquired if the fee for RW Harden is within the budgeted amount. Mr. Sowa responded that it is within budget when considering the engineering and inspection services.**
- **No Action.**

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.

- **Motion to recommend 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 was made by Mr. Earp, seconded by Mr. Ramos and approved on a 5-0 vote.**

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.

- **Motion to recommend to the Board to approve an agreement with Hicks & Company Environmental / Archaelogicial Consultants for Environmental On-Call Services associated with the Authority's Phase 1B Well Drilling / Hydrogeology project was made by Mr. Taggart, seconded by Mr. Williams and approved on a 5-0 vote.**

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.

- **Motion to recommend 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 subject to the future approval by the Board of any supplemental authorizations in excess of $50,000 was made by Mr. Taylor, seconded by Mr. Taggart and approved on a 5-0 vote.**

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.

- **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

- **None.**

I. EXECUTIVE SESSION

I.1 The Technical Committee recessed into Executive Session at 3:43 p.m. pursuant of the Government Code, Section 551.071, to seek the General Counsel's advice regarding matters involving attorney-client privilege, and/or Section 551.072 to discuss water supply project partnership options. The Technical Committee reconvened from Executive Session at 3:59 p.m.

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 4:00 p.m. by Mr. Earp.**

APPROVED: _____, 2020

_____

REGULAR MEETING
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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:
- Clearing underway.
- Stormwater protection systems installed.
- Minor issues identified regarding air relief system. Problem identified early and contractor direction was provided.
- First sections of pipe are in place.
- Project on time. No change orders currently issued.

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.
- Second phase of SCADA training at the end of this month in Houston.

Attachment(s)
- 2020 02 12 Booster Pump Station Status Presentation

Technical Committee Decisions Needed:
- None.

Phase 1A
Booster Pump Station

- **Status Update**
- **February 12, 2020**

General Updates

Road work on site completing

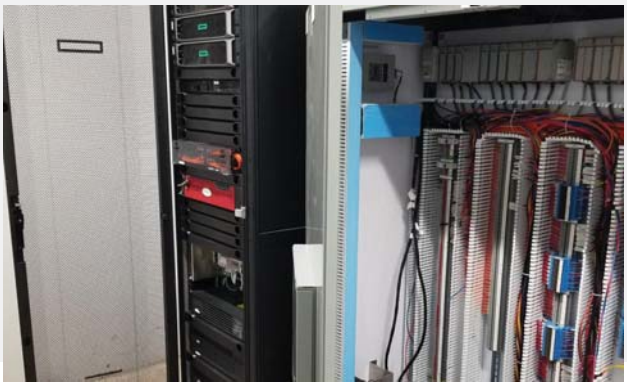
Preliminary punchlist items being drafted

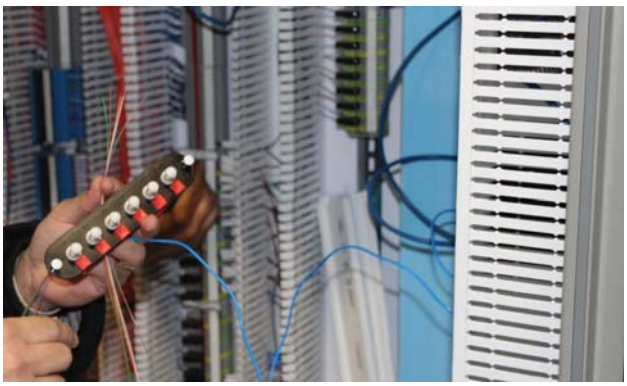
Gates, fence and security systems in final install phase

AFD wiring terminations completed / Buda delivery point wire terminations completed

SCADA server installed and final wiring underway.

Facility Structures - *Interior*





- HVAC system installation completed.
- Chemical feed system ready to test.
- Chlorine monitoring sensor final wiring and setup ready.
- Chemical leak safety system installation complete.
- Awaiting integration into SCADA system where required.

Facility Structures – *Landscaping and Exterior*

- Vegetation establishing
- Irrigation system installation completing soon.

Facility Structures – *Landscaping and Exterior*

- Gates and fence installation underway.
- Security gates, security lights in final installation phase.

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

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

Attachment(s)

- Phase 1B Program Update – February 12, 2020
- Kimley-Horn Monthly Summary of Activities for January 2020

Technical Committee Decisions Needed:

- None.

Phase 1B Program Update

Technical Committee Meeting
February 12, 2020

ALLIANCE WATER

Kimley»Horn

Agenda

Ongoing Progress

Booster Pump Station – Final Design/Procurement Contract (Freese and Nichols)

Environmental Services – Work Order No. 3 (Blanton)

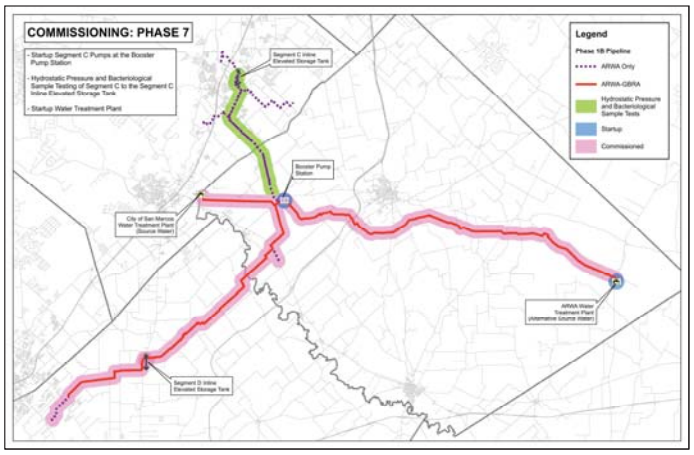
Ongoing Progress

Consultant Contracting Update

- 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)

Program Items Under Development

- Security Standards – out for Consultant/PAC Review
- Cathodic Protection Standards – finalizing draft for Consultant/PAC Review
- Commissioning Planning – developing presentation for Technical Committee/PAC



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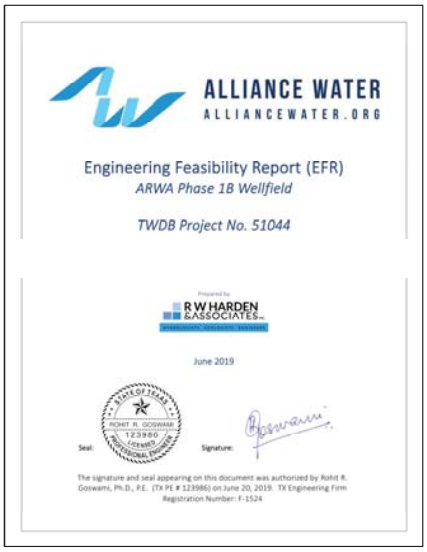
Kimley»Horn

Ongoing Progress

Texas Water Development Board Review Status

- Well Drilling
  - Final Engineering Feasibility Report (Complete)
  - Environmental Data Report (Complete)
- Water Treatment Plant
  - Final Engineering Feasibility Report (February)
  - Environmental Data Report (Complete)
- Booster Pump Station & Delivery Points
  - Final Engineering Feasibility Report (February)
  - Environmental Data Report (Complete)
- Raw Water Infrastructure
  - Final Engineering Feasibility Report (February)
  - Environmental Data Report (Complete)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Engineering Feasibility Report (EFR)
ARWA Phase 1B Wellfield

TWDB Project No. 51044

R W HARDEN & ASSOCIATES

June 2019

ALLIANCE WATER

Kimley»Horn

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	69	69	100%	87%
C	88	71	81%	0%
E	35	30	86%	6%
Wellfield	20	8	40%	0%
Total	**296**	**262**		

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Pipeline Easement Acquisition Status

Pipeline Segment	Number of Parcels	Appraisals Prepared	Inital Offer Letter Delivered	Purchase Agreement Signed / Easement Closed
A	38	35	28	7
B	46	12	10	1
D	69	3	2	1
C	88	0	0	0
E	35	0	0	0
Wellfield	20	0	0	0
Total	**296**	**50**	**40**	**9**

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Questions?

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Consulting Services

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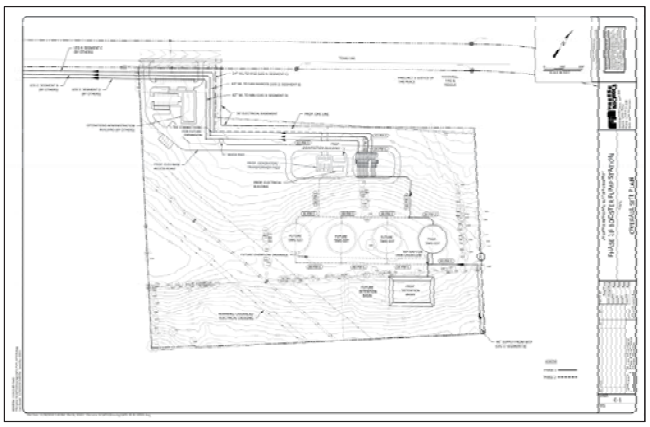
Booster Pump Station & Delivery Points

Design Consultant – Freese and Nichols

Pump Station Infrastructure Summary

- Pump Station and Processes
- Ground Storage Tank
- Electrical Building
- Disinfection Facilities
- Site improvements (grading, drainage, paving/parking, yard piping)



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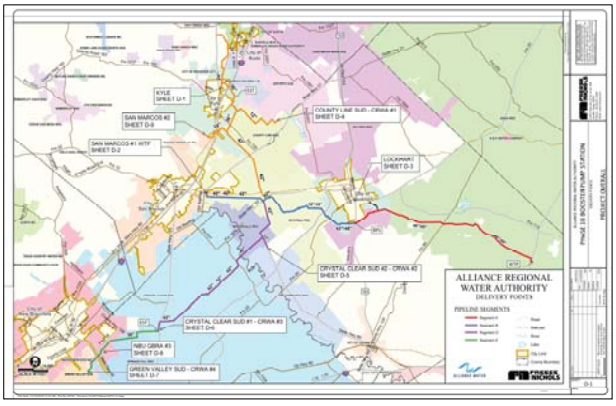
Booster Pump Station & Delivery Points

Delivery Point Infrastructure Summary

- Seven (7) ARWA Delivery Points
- Flow Meter Assembly Design
- Connection to Facilities
- Electrical Service
- Site improvements as needed (yard piping, paving, fencing)



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Booster Pump Station & Delivery Points

Basic Services Scope to include (Lump Sum):

- Project Cost Reduction Alternatives (Peaking Factor Reduction)
- Hydraulics Update, Surge/Transient Analyses, and Chlorine Residual Analysis
- 60%, 90%, and 100% Design
- Site Civil, Mechanical, Electrical, Instrumentation, HVAC, Architectural, Structural
- Design Survey, Geotechnical, and Subsurface Utility Exploration
- Agency Coordination / Permitting – City of San Marcos, Caldwell County, TxDOT, TCEQ, Applicable Permits for each Delivery Point
- Does not include Construction Phase Services

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Booster Pump Station & Delivery Points

Supplemental Services:

- Additional Survey, SUE, & Geotechnical Services
- Additional Transient Simulations
- General Engineering Design
- Procurement (Time and Materials Basis)

Total Basic Services Lump Sum Fee = $1,580,519.00

Total Supplemental Services Budget = $172,677.00

Maximum Not-to-Exceed Fee = $1,753,196.00

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Kimley»Horn

Environmental Services

Work Order No. 3 (Time and Materials, Not to Exceed):

- Extension of Project Management
- Wider Field Work Corridor for Increased Easement Width
- Multiple Additional Mobilizations for Field Work
  - Alternative Alignments
  - Strict Landowner Access Requirements
  - Landowner Cancellations
  - Urgent Program Requests
- Inline Elevated Storage Tank – Site Reviews

Maximum Not-to-Exceed Fee = $274,844.00

Supplemental = $76,925.00

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Kimley»Horn

Questions?

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Kimley»Horn

February 07, 2020

Project Monthly Summary

January 2020 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 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 status update for engineering, environmental, and survey services.
  - Continued updates to Budget Workbook to include monthly tracking of actual costs for ARWA review.

- Task 4 – Schedule
  - Coordinated with Program team to integrate each monthly project schedule update into overall Program schedule.

- Task 6 – Data Management
  - Developed a process for identifying easement acquisition status within 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
  - Coordinated 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.
  - 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.
  - Continued coordination between Program Environmental Consultant and Design Engineers.
  - Reviewed Program Environmental invoices, schedule, and risk log.

- Task 8 – Land Acquisition Management
  - Prepared Program budget status update for land acquisition services.
  - 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.
  - Provided assistance with the TWDB Abridged Application and budget revisions for loan submittal where needed.

- Task 10 – Design Standards
  - Finalized and sent out the Pipeline Construction Standards for Manufacturer review.
  - Finalized and provided the Final SCADA Package and Division 40 Specifications for review.
  - Began review of the drafted Cathodic Protection Program Standards.
  - Continued development of Draft Security Standards.

- Task 11 – Engineering Design Management
  - Pipelines:
    - Segment A
      - Continued coordination with design consultant for final design.
      - Coordinated with design consultant to finalize EFR.
    - Segment B
      - Continued coordination with design consultant for final design.
      - Coordinated with design consultant to finalize EFR.
    - Segment C
      - Continued coordination with design consultant regarding ongoing field work and pipeline alignment considerations as part of right-of-entry process and EFR development.

- Continued coordination and review of scope and fee for final design phase.
- Segment D
  - Continued coordination with design consultant for final design.
- Segment E
  - Continued coordination with design consultant regarding ongoing field work as part of right-of-entry process and EFR development.
  - Continued coordination and review of scope and fee for final design phase.

- Wellfield:
  - Continued coordination regarding upcoming procurement of the construction contract for Wells 6-9.
  - Continued review of scope and fee for construction phase services.
- Raw Water Infrastructure:
  - Reviewed and commented on draft 30% Engineering Feasibility Report.
  - Continued coordination with design consultant for 30% design development.
- Water Treatment Plant:
  - Reviewed and commented on draft 30% Engineering Feasibility Report.
  - Continued coordination with design consultant for 30% design development.
  - Continued coordination and review of scope and fee for final design phase.
- Booster Pump Station:
  - Reviewed and commented 30% Engineering Feasibility Report submitted by the design consultant.
  - Continue coordination and review of scope and fee for final design phase.
- Inline Elevated Storage Tanks:
  - Reviewed and commented on Draft Tank Siting Technical Memorandum submitted by the design consultant.
- 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.
  - Prepared for and attended the GVEC & BBEC Power Service Coordination Meeting.

- Task 14 – Permit Coordination / Tracking
  - 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 16 – Other Services
  - Commissioning Planning
    - Began evaluating the commissioning of the Phase 1B infrastructure and developing a draft presentation.

February 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.

- Task 3 – Budgeting
  - Continue updates to Budget Workbook to include monthly tracking of actual costs for ARWA review.
  - Prepare Program Quarterly Update for the Technical Committee and Board Meetings.

- Task 4 – Schedule
  - Coordinate with Program team to integrate each project schedule into overall Program schedule.
  - Prepare Program Quarterly Update for the for the Technical Committee and Board Meetings.

- 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.
  - Integrate process for identifying easement acquisition status within GIS.

- Task 7 – Environmental Management
  - Continued 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.
  - 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
  - Attend Temporary Injunction Hearings for 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.

- Task 10 – Design Standards
  - Compile comments from the Manufacturer review of the Pipeline Construction Standards.
  - Finalize and provide the Fiber and Security Standards for review.
  - Finalize Draft Cathodic Protection Program Standards for review by the PAC and Design Consultants.

- Finalize Draft Security Standards for review by the PAC and Design Consultants.

- 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.
    - 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.
  - Raw Water Infrastructure:
    - Finalize and backcheck review the Final 30% Design Report.
    - Continue coordination with design consultant for 30% design development.
  - Water Treatment Plant:
    - Coordination with the Design Consultant to finalize and submit the 30% Design Report to the TWDB.
    - Coordination with design consultant for final design.
  - Booster Pump Station:
    - Coordination with design consultant for final design.
    - Continue coordination and review of scope and fee for final design phase.
  - Inline Elevated Storage Tanks:
    - Coordination with design consultant for 30% design development.
    - Continued 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.
  - Schedule and prepare for meeting with GVEC regarding electric service to the wellfield.

- 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 16 – Other Services
  - Commissioning Planning
    - Continue evaluating the commissioning of the Phase 1B infrastructure and finalize presentation.
  - 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, February 12th, 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 Freese & Nichols, Inc. for Final Design and Procurement Services for the Authority's Phase 1B Booster Pump Station and Delivery Point project. ~ *Ryan Sowa, P.E., Kimley-Horn & Associates*

Background/Information

Alliance Water entered into a Work Order in January 2019 with Freese & Nichols, Inc. to provide preliminary engineering services for the Phase 1B Booster Pump Station and Delivery Point project. The preliminary design is almost complete and in order to maintain progress, Staff has negotiated a scope and fee with Freese & Nichols to provide final design and procurement services for the Booster Pump Station 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 Booster Pump Station proposal:

Firm: Freese & Nichols, Inc.
Fee: $1,753,196
Work Order Type: Lump Sum
Anticipated Duration: 16 months
Project Manager: David Bennett, P.E.
Key Subconsultants: Gupta & Associates, Inc. (Electrical & I&C) & Arias (Geotechnical)

Staff is requesting that the Committee recommend Board approval of a Work Order with a fee for the basic services of $1,580,519 and a fee for supplemental effort in an amount not-to-exceed $172,677 for a total fee of $1,753,196. 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 Booster Pump Station Project dated February 7, 2020.

Executive Director Recommendation(s)

- The Executive Director recommends approval of the work order with Freese & Nichols, Inc.

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS
Wednesday, February 12th, 2020 at 3:00 P.M.
520 E. RR 150, Kyle, TX 78640

Technical Committee Decision Needed:

- Possible recommendation to the Board to approve a work order with Freese & Nichols, Inc. for Design and Procurement Phase Services for the Authority's Phase 1B Booster Pump Station project.

FREESE AND NICHOLS
Innovative approaches
Practical results
Outstanding service
9601 McAllister Fwy, Suite 1008 • San Antonio, Texas 78216 • 210-298-3800 • FAX 817-735-7491 www.freese.com

February 7, 2020

Tyler Kay, P.E.
Program Manager - ARWA
Kimley-Horn
801 Cherry St, Unit 11, Suite 1300
Fort Worth, TX 78102

Re: Alliance Regional Water Authority - Phase 1B, Booster Pump Station and Delivery Points, Final Design Scope and Fee Proposal – Revised V2

Dear Mr. Kay:

Freese and Nichols is pleased to submit our revised Scope of Work (SOW) and level of effort estimate for the above referenced project. FNI and our subconsultants have developed a revised proposal based upon Program review comments and from our conference call with your team on 02/03/2020. Attached are the following documents for your review:

- Attachment A – Scope of Work
- Attachment B – Proposed Level of Effort Spreadsheet
- Attachment C – Subconsultant Proposal (Gupta and Associates)
- Attachment D – Subconsultant Proposal (Arias)
- Attachment E – Subconsultant Proposal (Bain Medina Bain, including Rios Group)
- Attachment F – Final Design Schedule

The proposed level of effort (fee) is as follows:

Scope	Fee
Basic Services Total	**$ 1,580,519**
Basic Engineering Services	$ 1,082,119
Special Engineering Services*	$ 312,536
Survey / SUE / Geotech	$ 185,864
Supplemental Services Total	**$ 172,677**
Project Total	**$ 1,753,196**

*Special Engineering Services include Tasks 8, 9, 12, 13, 14

After you've had a chance to review, please let us know if you have any questions or would like to discuss. We appreciate this opportunity and look forward to working with ARWA on this important project.

Sincerely,

David Bennett, P.E.
Project Manager
Principal / Vice President
Freese and Nichols, Inc.

Alliance Regional Water Authority – Phase 1B
Booster Pump Station and Delivery Points
Final Design Scope of Work (Freese and Nichols, Inc.)

A. BASIC SERVICES:

Design Consultant will provide the following Basic Design services as part of the project design:

1. Project Management
   - 1.1. Prepare Monthly Summary Reports/Invoicing as identified in the ARWA Phase 1B Program Management Plan (16 updates).
   - 1.2. Develop schedule and provide monthly updates through procurement phase. The schedule will be provided as part of the monthly invoice and project summary report. Schedule shall be in Microsoft Project format.
   - 1.3. Risk Register development and monthly updates will be provided as part of the monthly invoice and project summary report. Risk Register shall be in Microsoft Excel format.
   - 1.4. Meetings
     - 1.4.1. Conduct Monthly Progress Meetings with Owner's Representative (16 meetings via phone). Prepare agenda and distribute meeting notes.
     - 1.4.2. Quality Control Audit (2 workshops)
   - 1.5. Deliverables
     - 1.5.1. Updated Risk Register(s)
     - 1.5.2. Updated Project Schedule(s)
     - 1.5.3. Progress Meeting notes

2. Entity/Agency Coordination - Develop and submit the following applicable permits:
   - 2.1. Caldwell County Commercial Site Construction Permit coordination for BPS (Program Manager to provide direct coordination with Caldwell County)
     - 2.1.1. Coordinate with the County during the 60% design. Preparation and submittal of permit during 90% design phase milestone
     - 2.1.2. Address comments and resubmit permit during 100% design phase milestone.
     - 2.1.3. Conduct coordination meetings with the County as required.
   - 2.2. City of San Marcos Comprehensive Site Permit coordination for BPS
     - 2.2.1. Coordinate with the City during the 60% design. Preparation and submittal of permit during 90% design phase milestone
     - 2.2.2. Address comments and resubmit permit during 100% design phase milestone.
     - 2.2.3. Conduct coordination meetings with the City as required.
   - 2.3. Site Development Permits for Delivery Point Sites as required from Caldwell County, Guadalupe County, Hays County, City of Kyle, City of San Marcos. (Program Manager to provide direct coordination with all Counties)
     - 2.3.1. Coordinate with Counties/Cities during the 60% design. Preparation and submittal of Permit during 90% design phase milestone
     - 2.3.2. Address comments and resubmit permit during 100% design phase milestone.
     - 2.3.3. The Owner's Representative will assist with submitting and coordinating with all Counties.
   - 2.4. TxDOT Utility Installation in Right-of-Way for Crystal Clear SUD #2 Delivery Point Site (Program Manager to provide direct coordination with TxDOT).

2.4.1. Coordinate with TxDOT during the 60% design. Preparation and submittal of Permit during 90% design phase milestone
2.4.2. Address comments and resubmit permit during 100% design phase milestone.
2.4.3. The Owner's Representative will assist with submitting and coordinating with TXDOT.

2.5. Texas Commission on Environmental Quality (TCEQ) Exceptions and Variance development and coordination for Storage Tank Air Gap Variance (for connections to existing Sponsor/Customer tanks). 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.

3. Public and Private Utility Coordination
   3.1. GIS files, Record Drawings, Utility Block Maps, and other methods not obtained in previous phase will be requested, mapped, and tracked in applicable logs.
   3.2. Coordinate with Owner's Representative on available GIS data collected.
      3.2.1. Coordinate with entities for additional data needs.
   3.3. Design Coordination for the following utilities:
      3.3.1. Bluebonnet Electric Co-operative (BPS Power Supply)
         3.3.1.1. Review package preparation during 60% design milestone.
         3.3.1.2. Submittal of review package during 90% design Phase milestone
         3.3.1.3. Address comments and resubmit during 100% design phase milestone.
         3.3.1.4. Preparation of electric service easement plats and field notes for BPS site.
      3.3.2. Lower Colorado River Authority (Easement on BPS Site – access during construction)
         3.3.2.1. Prepare easement crossing /access package during 60% design phase milestone.
         3.3.2.2. Submittal of easement crossing /access package during 90% design phase milestone
         3.3.2.3. Address Comments and resubmit during 100% design phase milestone.
      3.3.3. Electric Utility Providers for Delivery Points (Bluebonnet, GVEC, NBU, Pedernales
         3.3.3.1. Review package preparation during 60% design milestone.
         3.3.3.2. Submittal of review package during 90% design Phase milestone
         3.3.3.3. Address comments and resubmit during 100% design phase milestone.
      3.3.4. Coordination with other impacted utilities (Including but not limited to AT&T, County Line SUD, CRWA, Crystal Clear SUD, City of Kyle, City of San Marcos)
   3.4. Meetings - Conduct maximum ten (10) coordination meetings with impacted utilities. Prepare agenda and distribute meeting notes

4. Design Consultant and Delivery Point Coordination
   4.1. WTP Design Consultant - Three (3) meetings to coordinate various design items including disinfection boosting, system hydraulics and common design components (pumps, piping, appurtenances, electrical, instrumentation, SCADA). In-person meetings (2) to be held at 60% and 90% design milestones, with one (1) conference call as needed for additional project coordination.
   4.2. Pipeline Design Consultants
      4.2.1. One (1) meeting to coordinate and confirm tie-in locations of Delivery Points, hydraulics, surge, pipe diameter and pressure class for Segment A.

4.2.2. One (1) meeting to coordinate and confirm tie-in locations on BPS site and Delivery Points, hydraulics, surge, pipe diameter and pressure class for Segment B.
4.2.3. One (1) meeting to coordinate and confirm tie-in locations on BPS site and Delivery Points, hydraulics, surge, pipe diameter and pressure class for Segment C.
4.2.4. One (1) meeting to coordinate and confirm tie-in locations on BPS site and Delivery Points, hydraulics, surge, pipe diameter and pressure class for Segment D.
4.2.5. One (1) meeting to coordinate and confirm tie-in locations of Delivery Points, hydraulics, surge, pipe diameter and pressure class for Segment E.

4.3. Delivery Point Coordination
4.3.1. Fourteen (14) meetings (2 for each of the 7 Delivery Points) to coordinate delivery point design with Sponsors. Assumption is that meetings will be scheduled to occur within 2 or 3 days for each round of meetings with Sponsors, to minimize travel time.
4.3.2. Delivery Point Design by Others (GBRA sites: Lockhart and NBU). Provide review of delivery point infrastructure designed by others for consistency with ARWA Program guidelines and BPS/Delivery Point design performed by the Design Consultant. Review will include compatibility of valve and meter selection, instrumentation and communications with ARWA facilities. Perform review at the 60% design milestone, with cursory reviews at 90% and 100% milestones.

5. 60% Design Phase
5.1. Perform up to eight (8) site visits for 60% design (1 for BPS, 1 for each Delivery Point).
5.2. Perform Design Analyses
5.2.1. Pump hydraulics, equipment sizing, phasing and selection
5.2.2. Pump suction/discharge piping and appurtenances
5.2.3. Surge mitigation appurtenances including surge tanks/valves
5.2.4. Ground storage tank, sizing, appurtenances, overflow discharge
5.2.5. Yard piping material selection, joint restraint, deflection, embedment/backfill, appurtenances
5.2.6. Disinfection boosting dosing calculations, contact time, injection points, equipment sizing and selection
5.2.7. Electrical, Instrumentation, Controls and SCADA equipment sizing, load calculations, incoming power, generator, duct banks, and equipment selection. Performed by Gupta and Associates, Inc; see additional details in their attached proposal.
5.2.8. Building Architectural material sections, sizing, ingress/egress, and code compliance
5.2.9. Structural foundations for pump and equipment slabs, ground storage tank, electrical and disinfection buildings, subsurface geotechnical
5.2.10. Building HVAC, Ventilation and Plumbing for Electrical and Disinfection buildings, equipment heat loads, process/discharge water, emergency/safety requirements, equipment sizing and selection
5.2.11. Site Civil grading, drainage, paving/parking, fencing, on-site detention
5.3. Construction Drawings - Develop 60% Plan Set (in accordance with the ARWA Phase 1B Program Design Standards). The following sheets will be developed for the BPS site. Sheets for the Delivery Point sites may include some of these sheets as applicable:
5.3.1. General Sheets (Cover, Project Layout, General Notes, etc.)

5.3.2. Existing site layout
5.3.3. Proposed site layout
5.3.4. Grading plan
5.3.5. Drainage plan and detention pond
5.3.6. Paving plan
5.3.7. Erosion and sediment control SWPPP
5.3.8. Tree preservation plan
5.3.9. Site piping plan, profile, and details
5.3.10. Pump station mechanical plan, sections, notes and details
5.3.11. Ground storage tank plan, elevation, sections, notes and details
5.3.12. Disinfection boosting plan, sections, notes and details
5.3.13. Structural foundation plan, sections, notes and details
5.3.14. Architectural plan, elevation, sections, schedules, notes and details
5.3.15. HVAC and Plumbing plan, schedules, notes and details
5.3.16. Electrical site plan, sections, elevations, building/facility equipment layout plans, one-line diagrams, power, duct banks, security, lighting, grounding, generator schedules, notes, legend, symbols and details
5.3.17. Instrumentation, facility/security network diagrams, equipment P&IDs, notes, legend, symbols and details
5.3.18. Project Specific Details (as developed by the Design Consultant)

5.4. Preparation of Project Manual - Development of Table of Contents to include all ARWA Phase 1B Program standard specifications (Provided by the Owner's Representative), project specific specifications (Provided by Design Consultant).
5.5. Prepare 60% OPCC.
5.6. Perform internal QC and address QC comments
5.7. 60% Design Letter documenting conformance to applicable AWWA and TCEQ standards conformance to ARWA standards, and documentation of any exceptions to these standards.
5.8. 60% Design Workshop
5.8.1. Conduct 60% Design workshop to review the 60% Design Submittal.
5.8.2. Prepare agenda and distribute meeting notes.
5.9. Address comments provided by the Owner and Owner's Representative.
5.10. 60% Design Phase Deliverables
5.10.1. 60% Design Deliverables (plans and specifications)
5.10.2. Draft Geotechnical Report
5.10.3. Updated list of permits required for the project
5.10.4. 60% Design Letter
5.10.5. 60% OPCC
5.10.6. 60% Design Review Workshop and meeting notes

6. 90% Design Phase
6.1. Perform up to eight (8) site visits for 90% design (1 for BPS, 1 for each Delivery Point)
6.2. Construction Drawings – Develop 90% Plan Set in accordance with the ARWA Phase 1B Program Design Standards. Further development and refinement of the 60% Plan Set sheets for the BPS and Delivery Point sites..

6.3. Draft Project Manual - Update all front-end documents and applicable specifications both provided by the Owner's Representative and specific to the project.
6.4. Prepare 90% OPCC.
6.5. Perform internal QC and address QC comments.
6.6. 90% Design Letter documenting conformance to applicable AWWA and TCEQ standards conformance to ARWA standards, and documentation of any exceptions to these standards.
6.7. 90% Design Workshop
6.7.1. Conduct 90% Design workshop to review the 90% Design Submittal.
6.7.2. Prepare agenda and distribute meeting minutes.
6.8. Address comments provided by Owner and Owner's Representative.
6.9. 90% Design Phase Deliverables
6.9.1. 90% Design Deliverables (plans and specifications)
6.9.2. Final Geotechnical Report
6.9.3. 90% Design Letter
6.9.4. 90% OPCC
6.9.5. 90% Design Review Workshop and meeting notes

7. 100% Design Phase
7.1. Perform up to three (3) site visits as needed for 100% design.
7.2. Construction Drawings – Develop 100% Plan Set in accordance with the ARWA Phase 1B Program Design Standards. Further Development of 90% Plan Set sheets for the BPS and Delivery Point sites.
7.3. Signed and Sealed Final Project Manual. Contract Documents to include language for Request for Competitive Sealed Proposals (RFCSP) and all applicable specifications provided by the Program and specific to the project.
7.4. Prepare 100% OPCC.
7.5. Perform internal QC and address QC comments.
7.6. 100% Design Letter documenting conformance to applicable AWWA and TCEQ standards conformance to ARWA standards, and documentation of any exceptions to these standards.
7.7. 100% Design Workshop
7.7.1. Conduct 100% Design workshop to review the 100% Design Submittal.
7.7.2. Prepare agenda and distribute meeting notes.
7.8. Address comments provided by the Owner and Owner's Representative.
7.9. Agency Review of 100% Design Documents – Prepare packet for submission of 100% construction documents (plans, project manual) to the following agencies.
7.9.1. TWDB
7.9.2. TCEQ
7.9.3. Address comments provided by TWDB and TCEQ.
7.10. 100% Design Phase Deliverables
7.10.1. 100% Design Deliverables (plans, project manual)
7.10.2. Final Geotechnical Report
7.10.3. 100% Design Letter
7.10.4. 100% OPCC
7.10.5. 100% Design Review Workshop and meeting notes

8. Project Cost Reduction Alternatives
   8.1. Develop up to two additional alternatives for sizing and configuration of the BPS facilities based upon reduction in peaking factors.
   8.2. Develop revised delivery point infrastructure sizing and configuration based upon reduction in peaking factors.
   8.3. Develop an Opinion of Probable Construction Cost (OPCC) and technical data sheets that compare cost reduction alternatives by major facility component to the original design recommendations presented in the Final Engineering Feasibility Report (EFR).
   8.4. Meetings - Conduct one workshop to discuss cost reduction alternatives and to select a single preferred design approach as the basis for Final Design. Prepare agenda and distribute meeting notes.
   8.5. Update the ARWA selected BPS design alternative and OPCC as basis for Final Design for final approval by ARWA and Owner's Representative.

9. Hydraulic Revisions and System Hydraulics Report
   9.1. Hydraulic Revisions (To be performed in parallel with Project Cost Reduction Alternatives Task - Prior to beginning 60% design)
      9.1.1. Update peak water demand projections based upon lower peaking factors for Phase 1 demands. Phase 1 base demands will not be adjusted. Document water demands by delivery point. Update delivery point demands in the InfoWater model.
      9.1.2. Utilize updated hydraulic model to develop updated system information and recommendations to the following:
         9.1.2.1. Updated system curves (head vs. flow) for the high service pump station at the WTP for two different sizes for pipeline Segment A. System curves for the BPS will not be updated from the initial hydraulic analysis due to pipeline sizes not changing to reflect the peaking factor reduction.
         9.1.2.2. Updated operational range of head and flow conditions at each delivery point for reduced peak demand conditions for input to delivery point hydraulic design.
         9.1.2.3. Updated hydraulic grade lines (HGLs) for reduced peak demands for each major pipeline segment based on recommended pipeline diameters and control elevations.
   9.2. Coordination with Design Consultants – Provide hydraulics technical support to program during 60% design (WTP, In-line ESTs, Pipelines).
   9.3. Hydraulic Revisions (After 90% design completion) – Update hydraulic modeling, data and recommendations based upon program 90% design level for the WTP, BPS, In-line ESTs, and Pipelines (Segments A, B, C, D, E). This does not include updating delivery point demands or peaking factors.
   9.4. System Hydraulics Report
      9.4.1. Document final updates to customer delivery policy including minimum and maximum instantaneous flow rates, seasonal operations, peak hour management, and other relevant items.
      9.4.2. Document final recommended operating procedures to provide system operators with guidance on the intended operations of the system under various demand conditions and operations scenarios.

9.4.3. Summarize final results of the hydraulic analysis and recommended pump/storage tank phasing. Charts and mapping will be developed to show modeling results and recommendations. System curve data will be provided for the WTP Consultant to utilize for their final pump station design. HGL elevation data will be provided for Pipeline Consultants to utilize for their final pipeline designs and plan preparation.

9.4.4. Submit Draft System Hydraulics Report. One electronic PDF copy of the report will be submitted to Owner for review. Address comments provided by Owner and Owner's Representative and finalize System Hydraulics Report. One electronic PDF copy of the final Master Plan report will be submitted.

9.5. Prepare Summary Memorandum – Document final capacity of the BPS, storage tanks, and each pipeline segment. One electronic PDF copy will be submitted to Owner for review. Address comments provided by Owner and Owner's Representative and provide final sealed electronic PDF copy.

9.6. Meetings - Conduct one workshop to discuss comments on Draft System Hydraulics Report. Prepare agenda and distribute meeting notes.

10. Design Survey and Subsurface Utility Exploration (SUE). Performed by Bain Medina Bain, Inc; see additional details in their attached proposal.

10.1. Survey Services

10.1.1. Perform topographical survey for seven (7) proposed Delivery Point Sites. Based on NAD 83 coordinates (State Plane Texas South Central/Feet) will be used to develop 2D planimetric and 3D DTM data to produce a 1-foot contour delineation. Survey will identify property lines, contours, benchmarks, bores, apparent locations of existing utilities marked on the surface, and appurtenances such as trees, fences, drainage structures, and existing easements.

10.1.2. For two (2) sites, perform a tree inventory in accordance with local entities; 12-inch diameter and greater or the minimum diameter required by the permitting entity. Engage a certified Arborist or Forester to confirm species (one-time confirmation).

10.1.3. Verify control points provided by ARWA Owner's Representative.

10.2. SUE Services

10.2.1. Provide Quality Service Level A SUE services to identify the location and depth of existing utilities for Delivery Point Sites. Provide up to ten (10) Level A locates with accurate horizontal and vertical positions of subsurface utilities. The Level A SUE service will be performed by Bain Medina Bain, Inc. See attached proposal for additional details.

10.2.2. Provide Quality Service Level B SUE services to identify the horizontal location of existing utilities at seven (7) Delivery Point Sites. Level B SUE service will be performed by Bain Medina Bain for a maximum of 2500-linear feet of pipeline corridor. See attached proposal for additional details.

10.2.3. Provide Quality Service Level C and D SUE services to identify the horizontal location of existing utilities. Level C and Level D will be performed by Bain Medina Bain, Inc. during surveying operations. Surveyor will call Digtess, 811 or equivalent to have utilities marked in the field. Other agencies not part of 811 will be notified one time prior to survey.

11. Geotechnical Investigation. Performed by Arias Geoprofessionals; see additional details in their

attached proposal.

11.1. Geotechnical Borings

11.1.1. Ground Storage Tank – One (1) boring drilled to a maximum depth of 65 feet for the center of the tank and four (4) borings drilled to a maximum depth of 50 feet around the perimeter of the tank.

11.1.2. Pump Station and Buildings – Three (3) borings drilled to a maximum depth of 40 feet for proposed buildings, equipment pads, pipeline or site facilities.

11.1.3. Piping and Paving – Three (3) borings drilled to a maximum depth of 25 feet for proposed piping and paved areas.

11.1.4. Delivery Point Sites – Two (2) borings will be drilled each to a maximum depth of 25 feet for one (1) proposed TxDOT pipeline crossing.

11.2. Prepare geotechnical report incorporating geotechnical data with foundation recommendations for all site facilities.

12. Surge/Transient Analysis

The following tasks are identified as the stages of work for performance of the hydraulic surge analysis of ARWA water transmission system. This surge analysis will utilize two (s) separate surge models, one of which will include Phase 1 designed features of the system, and the other will include limited Phase 2 improvements to the system based upon conceptual information available. The surge models will include the BPS (pump stations and ground storage), Pipeline Segments B2, C, D, E, and the In-Line Elevated Storage Tanks located along Pipeline Segments C and D.

12.1. Data Collection. Collect and assimilate information on piping and operating philosophy, including pipe data, applicable design codes, pump data, valve data, fluid data, and significant minor pressure loss data. Pipeline data utilized in the surge model will come from, pipeline alignment and plan and profile sheets provided by the Owner's Representative. Pump data utilized in the surge model will come from manufacturers pump performance curves. Such data will be reviewed, evaluated, and formatted, as needed, for input to simulation model building. Design Consultant will review data for consistency and completeness.

12.2. Development of Surge Model. Develop numerical models for Phase 1 design features and limited Phase 2 features, as described above, using Synergi Pipeline Simulator (SPS) Version 10.2. The SPS models will be built and calibrated to meet a steady state flow conditions established for each supply point, delivery point, and lateral connections, with target pressures and flowrates based on design parameters for Phase 1 and limited Phase 2 system improvements.

12.3. Transient Case Simulations. Perform model simulations based upon the following hydraulic transient scenarios for investigation. For this project the following simulation cases are considered to be typical scenarios for simulation of surges for the modeled systems:

12.3.1. Phase 1, Power failure at BPS North Pipeline Leg (all running pumps trip off)

12.3.2. Phase 1, Power failure at BPS South Pipeline Leg (all running pumps trip off)

12.3.3. Phase 1, Power failure at BPS West Leg under pressurized flow (all running pumps trip off)

12.3.4. Phase 1, Single pump trip at BPS North Pipeline Leg

12.3.5. Phase 1, Single pump trip at BPS South Pipeline Leg

12.3.6. Phase 1, Delivery valve closure at inlet to San Marcos #1 Delivery Point (end of West Leg)

12.3.7. Phase 1, Delivery valve closure at inlet to San Marcos #2 Delivery Point

12.3.8. Phase 1, Delivery valve closure at inlet to County Line SUD (CRWA) Delivery Point
12.3.9. Phase 1, Delivery valve closure at inlet to Crystal Clear SUD #2 (CRWA) Delivery Point
12.3.10. Phase 1, Delivery valve closure at end of North Pipeline Leg (past EST)
12.3.11. Phase 1, Delivery valve closure at end of South Pipeline Leg (past EST)
12.3.12. Phase 2, Power failure at BPS North Pipeline Leg (all running pumps trip off)
12.3.13. Phase 2, Power failure at BPS South Pipeline Leg (all running pumps trip off)
12.3.14. Phase 2, Power failure at BPS West Leg under pressurized flow (all running pumps trip off)

Base Case Simulations - The transient cases shall be simulated for base case conditions as designed for Phase 1 and conceptual Phase 2 operations. All surge protection devices, designed for Phase 1, and conceptually planned for Phase 2 improvements, will be included in the surge analysis.

Solution Simulations - If either the maximum allowable surge pressures in the system or worst case allowable vacuum conditions are violated under conditions described in the task above, additional surge protection devices will be sized and added to the model. The cases above will be re-run at the design flow rates to determine the locations (if any), size, characteristics, and new set points for both additional surge protection devices on the system.

12.4. Report Preparation. Document the Surge Analysis in a report to include a summary of significant input parameters to the simulation model, as well as conclusions and recommendations. The initial draft report will be submitted to Owner for review in electronic PDF format for review and comments. A final report will be issued that includes the resolution of comments on the draft report.
12.5. Meetings.
12.5.1. Conduct one workshop to discuss comments on Draft Surge Analysis Report.
12.5.2. Prepare and distribute meeting notes.

13. Chlorine Residual Analysis

Conduct a chlorine residual analysis based on the water age analysis from the hydraulic model under Phase 1 and Phase 2 demand conditions to better define chlorine boosting locations and dosages. Documentation of the chlorine residual modeling will be prepared using a chlorine booster location map and chlorine residual concentration charts in a Technical Memorandum

14. Corrosion Investigation and Design for BPS site

14.1. Review available data including Cathodic Protection Design Standards provided by the ARWA Program and Design team and provide comments.
14.2. Conduct in-situ soil resistivity tests (Wenner 4-Pin survey in accordance with ASTM G57) at approximately 4 to 6 locations within the Booster Pump Station location. Test depths (pin spacing) shall be at 5, 10, 15 and 20- feet (and pipeline invert if depth is greater than 20-feet) at each test location.
14.3. Obtain 3 (three) one-quart soil samples from the site location. If available, these samples may be available from geotechnical boring samples and should be collected at the approximate pipeline invert depth at each location.

14.4. Conduct stray current (DC and AC) interference investigation in the proposed alignment. The purpose of performing this investigation is to identify potential sources of stray current sources that may interact with the proposed pipeline cathodic protection system.
  14.4.1. Potential DC stray current interference sources;
    14.4.1.1. Identify foreign pipeline crossings as well as locations with parallel occupancy with the project site (within 1,000-feet). Identify station locations as well as operator contact information (often provided on foreign pipeline test station posts).
    14.4.1.2. Identify large steel storage tanks which may have operable CP systems as well as gas stations with buried metallic fuel tanks (within 1000-feet of the project site). Identify station locations as well as operator contact information
  14.4.2. Potential AC stray current interference sources - Identify collocated overhead electric transmission corridors locations within 2,000- feet of the project site. Take photos depicting the electric tower construction and the wire conductor phase arrangement as well as the circuit loading (if available). Provide the identity of the electric facility owner and operator.
14.5. Analyze the field collected data and the results of the laboratory tests for each soil sample. The following minimum laboratory tests shall be provided for each soil sample;
  14.5.1. As received soil resistivity per ASTM G57
  14.5.2. Saturated soil resistivity per ASTM G57
  14.5.3. Chlorides per SW 9056
  14.5.4. Sulfates per SW 9056
  14.5.5. Alkalinity/Bicarbonate per SM 2320B
  14.5.6. pH per EPA 9045C
  14.5.7. Prepare a comprehensive soil corrosivity technical memorandum. The memorandum will include the collected field data and laboratory soil analysis results and provide conclusions and recommendations for a cathodic monitoring or cathodic protection system based on the soil conditions and stray current interference presence with respect to the proposed pipeline materials. Provide corrosion investigation services to the extent necessary as well as an Opinion of Probable Cost for all scenarios.
14.6. Cathodic Protection Design – Incorporate corrosion analysis and cathodic recommendations into 60%, 90% and 100% design documents

B. SUPPLEMENTAL SERVICES:

Design Consultant will provide the following Supplemental Services only upon approval and issuance of notice to proceed by the Owner:

15. Supplemental
  15.1. Survey - Verify/Reset horizontal and vertical controls points for construction purposes.
  15.2. Survey – Additional 5 days of field topographic survey.
  15.3. Additional SUE Potholes - At the direction of ARWA, the Design Consultant may be required to perform up to five (5) additional SUE potholes beyond those scoped for the project.
  15.4. At the direction of ARWA the Design Consultant may be required to perform up to two (2) additional Geotechnical Borings to a maximum depth of 25 feet beyond those scoped for the project, and conduct surveying as required to tie-in borings into the design documents.

15.5. General Engineering Design for additional or unanticipated tasks.
15.6. Attend Public Meetings (2 meetings).
15.7. Attend additional meetings in the vicinity of the project (5 meetings.)
15.8. Conduct additional half-day coordination workshops (2 workshops).
15.9. Additional Transient Case Simulations. Utilize the Surge Model to perform 4 additional simulations for hydraulic transient scenarios that may include simulations of pump startup scenarios, or pump trip with standby pump startup, or surge mitigation scenarios involving surge control valves, or other surge control devices. The features of these four scenarios may be determined during Final Design.
15.10. Procurement (Request for Competitive Sealed Proposal (RFCSP)) – To be conducted on a time and materials basis.
15.10.1. Prepare and Submit Final Documents for Advertisement.
15.10.2. Attend Pre-Proposal Conference (meeting to be conducted by Owner's Representative)
15.10.3. Prepare addendum and clarifications.
15.10.4. Attend proposal opening.
15.10.5. Review Contractor Proposals.
15.10.5.1. Perform Contractor References Check.
15.10.5.2. Confirm Contractor Experience.
15.10.5.3. Prepare Recommendation for Award.
15.10.6. Prepare Conformed Contract Documents.

ASSUMPTIONS:

1. No further changes beyond the Phase 1B Program Cost Saving Measures 2a and 2b to customer demands and/or peaking factors will occur in the Final Design Phase.
2. Final Design Phase is assumed to be maximum 12 months in length.
3. Final Procurement Phase is assumed to be maximum 4 months in length.
4. Services are based upon advertising the BPS and Delivery Point sites under a single bid package for construction.
5. Construction Phase services are not included in this scope of work.
6. All meetings to held in the immediate vicinity of the project.
7. Owner's Representative will be the primary contact with TWDB and will facilitate all submittals and coordination. At request of Owner's Rep, Design Consultant may coordinate directly with TWDB as required to address specific comments.
8. Owner's Representative will receive and distribute all Contractor questions during procurement process.
9. Owner's Representative will provide electrical, instrumentation and controls/SCADA specifications that are common to both the WTP and BPS designs (to be prepared by the WTP Designer). Design Consultant will review and provide comments for Program provided specifications.
10. Delivery Point design will be conducted for seven (7) Sponsor sites including:
    a. Crystal Clear SUD #1 (CRWA) – Provide meter, control valve and piping connection to existing ground storage tank.

b. Crystal Clear SUD #2 (CRWA) – Provide meter and control valve. CRWA/Crystal Clear will make connection to new tank.
c. Green Valley SUD #1 (CRWA) – Provide meter, control valve and piping connection to existing domed tanks at CRWA Dunlap WTP.
d. San Marcos #1 & Goforth (GBRA) – Provide meter and control valve; San Marcos will make connection to new ground storage tank.
e. San Marcos #2 – Provide meter and control valve; San Marcos will make connection to elevated storage tank.
f. County Line SUD (CRWA) – Provide meter and control valve and piping connection to existing tank (either ground storage or elevated storage).
g. Kyle – Provide meter, control valve and piping connection to existing ground storage tank.

11. Delivery Point design will be provided by GBRA for the following sites:
    a. Lockhart (GBRA)
    b. New Braunfels Utilities (GBRA)

Alliance Regional Water Authority (ARWA)	Project Fee Summary	
Phase 1B Booster Pump Station & Delivery Points	Basic Services	$ 1,580,519
2/7/2020	Supplemental Service	$ 172,677
Detailed Cost Breakdown - Final Design	Total Project	$ 1,753,196

Task	Task Description	Labor																																				Total Hours	Total Labor Effort	Total Expense Effort	Total Sub Effort	Total Effort
		Sr. Advisor / QA	Project Manager	Pump Station PE	Delivery Points PE	Treatment PE	Corrosion PE	Design Engineer (EIT)	Civil Designer	CAD Technician	Overall QC	Treatment QC	Hydraulics Lead PE	Hydraulics EIT	GIS Analyst	Hydraulics QC	Surge Lead PE	Surge QC	Stormwater Lead PE	Stormwater EIT	Stormwater QC	Structural PE	Structural EIT	Structural Designer	Structural QC	Architect	Architectural Designer	Architectural QC	HVAC PE	HVAC EIT	Plumbing Designer	HVAC / Plumbing QC	Electrical, I&C QC	Geotechnical QC	Construct-ability QC	Cost Estimator	Accounting	Admin					
		$240	$209	$156	$156	$178	$178	$137	$153	$96	$240	$240	$209	$137	$113	$240	$178	$240	$178	$137	$209	$178	$137	$153	$240	$178	$113	$240	$156	$137	$178	$209	$240	$240	$209	$178	$148	$111					
	TASK 1 - PROJECT MANAGEMENT (16 MONTHS)																																							**$ 29,760**	**$ 1,411**	**$ 2,423**	**$ 33,594**
1.1	Monthly summary reports/invoicing		16																																	16	16	48	$ 7,488	$ 408	$ 2,423	$ 10,319
1.2	Schedule development & monthly updates	2	16																																			18	$ 3,824	$ 153	$ -	$ 3,977
1.3	Risk register development & monthly updates	2	16																																			18	$ 3,824	$ 153	$ -	$ 3,977
1.4	Meetings																																						$ -	$ -	$ -	$ -
1.4.1	Monthly progress meetings (16)		32	16				16																														64	$ 11,376	$ 544	$ -	$ 11,920
1.4.2	Quality control audit workshops (2)	2	8					8																														18	$ 3,248	$ 153	$ -	$ 3,401
	TASK 2 - ENTITY/AGENCY COORDINATION																																							**$ 22,364**	**$ 1,735**	**$ -**	**$ 24,099**
2.1	Caldwell County Site Construction Permit for BPS		2	8				16																														26	$ 3,858	$ 336	$ -	$ 4,194
2.2	City of San Marcos Site Permit for BPS		2	8				16																														26	$ 3,858	$ 336	$ -	$ 4,194
2.3	Site Development Permits for DP Sites		4		18			24																														46	$ 6,932	$ 506	$ -	$ 7,438
2.3	TxDOT Utility Crossing Permit for CC SUD #2		2		8			16																														26	$ 3,858	$ 336	$ -	$ 4,194
2.5	TCEQ exception/variance tank air gap (DP sites)		2		8			16																														26	$ 3,858	$ 221	$ -	$ 4,079
	TASK 3 - PUBLIC/PRIVATE UTILITY COORDINATION																																							**$ 33,786**	**$ 2,726**	**$ 4,997**	**$ 41,509**
3.1	GIS utility data coordination				4			8																														12	$ 1,720	$ 102	$ -	$ 1,822
3.2	Design coordiantion with utilities																																						$ -	$ -	$ -	$ -
2.1	Bluebonnet Electric - BPS		2	6				8																														16	$ 2,450	$ 136	$ 4,997	$ 7,583
3.2.2	LCRA Access Across Easemsent - BPS		2	6				8																														16	$ 2,450	$ 136	$ -	$ 2,586
3.3.3	Electric utility providers for DP sites		4		20			32																														56	$ 8,340	$ 476	$ -	$ 8,816
3.3.4	Coordination w/other utilities for DP sites				12			16																														28	$ 4,064	$ 238	$ -	$ 4,302
3.5	Meetings with utilities (10)		8		40			50																														98	$ 14,762	$ 1,638	$ -	$ 16,400
	TASK 4 - DC & DP COORDINATION																																							**$ 42,517**	**$ 3,748**	**$ 9,299**	**$ 55,563**
4.1	WTP DC meetings (2) at 60/90% & 1 conf. call		9	9		9		14																														41	$ 6,805	$ 579	$ 4,063	$ 11,446
4.2	Pipeline DC Meetings (5)		20	12	8			24																														64	$ 10,588	$ 1,119	$ -	$ 11,707
4.3	Delivery Point Coordination																																						$ -	$ -	$ -	$ -
4.3.1	Meetings with DP owners (14)	4	20		40			68																														132	$ 20,696	$ 1,812	$ 5,236	$ 27,744
4.3.2	Review DP design by GBRA (2 sites)		4		16			8																														28	$ 4,428	$ 238	$ -	$ 4,666
	TASK 5 - 60% DESIGN																																							**$ 285,210**	**$ 17,962**	**$ 99,535**	**$ 402,707**
5.1	Site Visits (8)			4	28			32																														64	$ 9,376	$ 1,119	$ -	$ 10,495
5.2	Perform Anayses																																						$ -	$ -	$ -	$ -
5.2.1	Pump hydraulics		2	16				32			4																											54	$ 8,258	$ 459	$ -	$ 8,717
5.2.2	Pump piping & appurtenances		1	4				8																														13	$ 1,929	$ 111	$ -	$ 2,040
5.2.3	Surge mitigation appurtenances		1	8				16																														25	$ 3,649	$ 213	$ -	$ 3,862
5.2.4	Ground storage tank		1	8				16																														25	$ 3,649	$ 213	$ -	$ 3,862
5.2.5	Yard piping		1	8	14			24																														47	$ 6,929	$ 400	$ -	$ 7,329
5.2.6	Disinfection facilities		2			20		40				4																										66	$ 10,418	$ 561	$ -	$ 10,979
5.2.7	Electrical, instrumentation, controls, SCADA		1	4	4			8																														17	$ 2,553	$ 145	$ -	$ 2,698
5.2.8	Building architectural		1	2				4																	20	60												87	$ 11,409	$ 740	$ -	$ 12,149
5.2.9	Structural, foundations		1	2	2			4														8	16															33	$ 4,997	$ 281	$ -	$ 5,278
5.2.10	HVAC, ventilation, plumbing		1	2				4																					4	40	8							59	$ 8,597	$ 502	$ -	$ 9,099
5.2.11	Site civil, grading, drainage/paving/fencing		1	8	8			24											20	40																		101	$ 15,033	$ 859	$ -	$ 15,892
5.3	60% construction drawings		6	44	44	24		140	100	440									8	16		12	24	60		20	60			20	16						4	1,038	$ 130,566	$ 8,823	$ -	$ 139,389
5.4	60% specifications list		1	4	2	2		12											1	2		1	2			2	4		1	2	2						4	42	$ 6,087	$ 357	$ -	$ 6,444
5.5	60% OPCC		2	4	4	4		12											2	4		1	2			1	2		1	4	1					16		60	$ 9,512	$ 510	$ -	$ 10,022
5.6	QC review and address comments	2	16	8	8	4		16	10	40	24	8							2		8	2	4	8	8	4	8	8	8	6	2	4	16		16			240	$ 42,332	$ 2,040	$ -	$ 44,372
5.7	60% design letter	1	2					4																														7	$ 1,206	$ 60	$ -	$ 1,266
5.8	60% design workshop (1)	2	4	4	4	2		12			2																											30	$ 5,044	$ 370	$ -	$ 5,414
5.9	Address Program review comments		2	4	4	2		8																						4								24	$ 3,666	$ 204	$ -	$ 3,870
	TASK 6 - 90% DESIGN																																							**$ 233,987**	**$ 14,790**	**$ 77,417**	**$ 326,193**
6.1	Site Visits (8)			4	28			32																														64	$ 9,376	$ 1,119	$ -	$ 10,495
6.2	90% construction drawings		4	32	32	16		100	80	360									8	16		12	24	60		20	60			20	16						4	864	$ 108,760	$ 7,344	$ -	$ 116,104
6.3	90% specifications		6	48	24	32		100											12	24		6	12			24	48		4	24	8						4	376	$ 55,494	$ 3,196	$ -	$ 58,690
6.4	90% OPCC		2	4	4	4		12											2	4		1	2			1	2		1	4	1					16		60	$ 9,512	$ 510	$ -	$ 10,022
6.5	QC reivew and address comments	2	16	8	8	4		16	8	30	24	8							2		8	2	4	8	8	4	8	8	8	5	2	4	16		16			227	$ 40,929	$ 1,930	$ -	$ 42,859
6.6	90% design letter	1	2					4																														7	$ 1,206	$ 60	$ -	$ 1,266
6.7	90% design workshop (1)	2	4	4	4	2		12			2																											30	$ 5,044	$ 428	$ -	$ 5,472
6.8	Address Program review comments		2	4	4	2		8																						4								24	$ 3,666	$ 204	$ -	$ 3,870
	TASK 7 - 100% DESIGN																																							**$ 145,085**	**$ 9,132**	**$ 44,237**	**$ 198,454**
7.1	Site Visits (3)				12			12																														24	$ 3,516	$ 434	$ -	$ 3,950
7.2	100% construction drawings		2	20	20	8		60	50	200									4	8		4	8	24		10	30			16	8						4	476	$ 59,670	$ 4,046	$ -	$ 63,716
7.3	100% specifications		2	20	10	12		40											4	12		2	4			10	20		2	8	4						4	154	$ 22,578	$ 1,309	$ -	$ 23,887
7.4	100% OPCC		1	2	2	2		6											1	2		1	2			1	2		1	2	1					8		34	$ 5,351	$ 289	$ -	$ 5,640
7.5	QC reivew and address comments	2	8	4	4	2		8	8	20	12	4	4	8				2			4	1	2	4	8	4	8	4	6	4	4	2	8		8			153	$ 26,850	$ 1,301	$ -	$ 28,151
7.6	100% design letter	1	2					4								2																						9	$ 1,686	$ 77	$ -	$ 1,763
7.7	100% design workshop (1)	2	4	4	4	2		8																														24	$ 4,016	$ 377	$ -	$ 4,393
7.8	Address Program review comments		2	2	2	2		4														1	2							6								21	$ 3,220	$ 179	$ -	$ 3,399
7.9	100% TWDB/TCEQ review set (plans/specs)		4	8	8	2		24	8	28			2	4				2		2	4		2	4			2	4			4	2				2		8	132	$ 18,198	$ 1,122	$ -	$ 19,320
	TASK 8 - PROJECT COST REDUCTION ALTS																																							**$ 61,838**	**$ 3,749**	**$ 12,161**	**$ 77,748**
8.1	Develop additional BPS alternatives		12	36		16		80	8	24	2																											178	$ 25,940	$ 1,513	$ -	$ 27,453
8.2	Develop revised Delivery Point recommendations		8		20			32	4	12	2																											78	$ 11,420	$ 663	$ -	$ 12,083
8.3	OPCC & technical data sheets for alternatives		4	16	8	4		32	4	12	2	2																									16		4	104	$ 15,692	$ 884	$ -	$ 16,576
8.4	Update selected alternative as basis for design	2	2	8	4	2		12																															30	$ 4,770	$ 485	$ -	$ 5,255
8.5	Meetings - Cost alternatives review workshop (1)		4	4	4	2		8			2																												24	$ 4,016	$ 204	$ -	$ 4,220
	TASK 9 - HYDRAULIC REVISIONS & FINAL REPORT																																							**$ 63,883**	**$ 4,450**	**$ -**	**$ 68,333**
9.1	Hydraulic Revisions		2	4	4								24	60		4																							98	$ 15,862	$ 833	$ -	$ 16,695
9.2	Hydraulics Coordination w/Design Consultants		4										16	40	12	4																							76	$ 11,976	$ 646	$ -	$ 12,622
9.3	Hydraulic revisions after 90% design		1	2	2								12	40		4																							61	$ 9,781	$ 519	$ -	$ 10,300
9.4	System Hydraulics Report - Draft/Final	1	2										24	40	12	4																							83	$ 13,470	$ 706	$ -	$ 14,176
9.5	Prepare Summary Memorandum	1	2										12	24	4	4																						8	55	$ 8,754	$ 468	$ -	$ 9,222
9.6	Draft System Hydraulics Report Workshop (1)		4	2									4	8		4																							22	$ 4,040	$ 1,280	$ -	$ 5,320
	TASK 10 - DESIGN SURVEY & SUE																																							**$ 7,608**	**$ 442**	**$ 96,439**	**$ 104,489**
10.1	Survey services				4			8	8																														20	$ 2,944	$ 170	$ 52,981	$ 56,095
10.2	SUE services (10 Level A potholes, Level B/C)				8			16	8																														32	$ 4,664	$ 272	$ 43,459	$ 48,395
11	**TASK 11 - GEOTECHNICAL INVESTIGATION**		2	4	2			8																											16				32	**$ 6,290**	**$ 272**	**$ 74,813**	**$ 81,375**
	TASK 12 - SURGE/TRANSIENT ANALYSIS																																							**$ 94,518**	**$ 4,993**	**$ -**	**$ 99,511**
12.1	Data collection			2				16									30																							48	$ 7,844	$ 408	$ -	$ 8,252
12.2	Model development			2				30									120	16																						168	$ 29,622	$ 1,428	$ -	$ 31,050
12.3	Transient case simulations (14)			4				30									160	16																						210	$ 37,054	$ 1,785	$ -	$ 38,839
12.4	Report preparation Draft/Final		4	8				16									40	8																					8	84	$ 14,204	$ 714	$ -	$ 14,918
12.5	Meetings - Surge analysis report workshop (1)	2	4	2				6									8	8																						30	$ 5,794	$ 658	$ -	$ 6,452

Alliance Regional Water Authority (ARWA)	Project Fee Summary	
Phase 1B Booster Pump Station & Delivery Points	Basic Services	$ 1,580,519
2/7/2020	Supplemental Service	$ 172,677
Detailed Cost Breakdown - Final Design	Total Project	$ 1,753,196

		Labor																																						Total
Task	Task Description	Sr. Advisor / QA	Project Manager	Pump Station PE	Delivery Points PE	Treatment PE	Corrosion PE	Design Engineer (EIT)	Civil Designer	CAD Technician	Overall QC	Treatment QC	Hydraulics Lead PE	Hydraulics EIT	GIS Analyst	Hydraulics QC	Surge Lead PE	Surge QC	Stormwater Lead PE	Stormwater EIT	Stormwater QC	Structural PE	Structural EIT	Structural Designer	Structural QC	Architect	Architectural Designer	Architectural QC	HVAC PE	HVAC EIT	Plumbing Designer	HVAC / Plumbing QC	Electrical, I&C QC	Geotechnical QC	Construct-ability QC	Cost Estimator	Accounting	Admin	Total Hours	Total Labor Effort	Total Expense Effort	Total Sub Effort	Total Effort
		$240	$209	$156	$156	$178	$178	$137	$153	$96	$240	$240	$209	$137	$113	$240	$178	$240	$178	$137	$209	$178	$137	$153	$240	$178	$113	$240	$156	$137	$178	$209	$240	$240	$209	$178	$148	$111					
13	**TASK 13 - CHLORINE RESIDUAL ANALYSIS**		2	2		32		60				8		16																								120	**$ 18,758**	**$ 1,020**	**$ -**	**$ 19,778**
14	**TASK 14 - CORROSION INVESTIGATION & DESIGN**																																							**$ 44,318**	**$ 2,848**	**$ -**	**$ 47,166**
14.1	Review data & Program CP Standards						16																																16	$ 2,848	$ 136	$ -	$ 2,984
14.2	In-situ soil resistivity testing						8																																8	$ 1,424	$ 183	$ -	$ 1,607
14.3	Obtain soil samples						8																																8	$ 1,424	$ 183	$ -	$ 1,607
14.4	Stray current investigation						8																																8	$ 1,424	$ 68	$ -	$ 1,492
14.5	Analyze field data and prepare report						24	40	8	26																												4	102	$ 13,916	$ 867	$ -	$ 14,783
14.6	Cathodic protection design (60/90/100)		2	4			40	60	20	40																													166	$ 23,282	$ 1,411	$ -	$ 24,693
	TASK 15 - SUPPLEMENTAL																																							**$ 106,670**	**$ 7,088**	**$ 58,919**	**$ 172,677**
14.1	Survey - Verify/reset control points for const.				2			4	4																														10	$ 1,472	$ 85	$ 13,513	$ 15,070
14.2	Survey - Additional 5 days field topo survey				2			4	4																														10	$ 1,472	$ 85	$ 17,538	$ 19,095
14.3	Additional SUE potholes (5)				4			8	8																														20	$ 2,944	$ 170	$ 13,495	$ 16,609
14.4	Additional geotechnical bores (2)				2			4																										4					10	$ 1,820	$ 85	$ 5,693	$ 7,598
14.5	General engineering design services		20	24	24			40	20	40																													168	$ 24,048	$ 1,658	$ -	$ 25,706
14.6	Attend public meetings (2)	4	8	4	4			12																															32	$ 5,524	$ 847	$ -	$ 6,371
14.7	Attend additional project meetings (5)		20	20	20			30																															90	$ 14,530	$ 995	$ -	$ 15,525
14.8	Conduct half-day workshops (2)	8	12	6	6			16																															48	$ 8,492	$ 408	$ -	$ 8,900
14.9	Additional transient case simulations (4)			2				8									40	4																					54	$ 9,488	$ 459	$ -	$ 9,947
15.10	Procurement																																							$ -	$ -	$ 8,681	$ 8,681
15.10.1	Prepare/Submit final docs for advertisement		2	4	4	2		12	6	12									2	4		1	2	4		2	4		2	4	2	1						8	78	$ 11,258	$ 778	$ -	$ 12,036
15.10.2	Attend Pre-proposal conference (1)		4	4	4														2																				12	$ 2,167	$ 102	$ -	$ 2,269
15.10.3	Prepare addenda and clarifications		2	4	4	2		8	4	8									2			2				2			2	4	1								45	$ 6,868	$ 498	$ -	$ 7,366
15.10.4	Attend proposal opening (1)		4	4	4																																		12	$ 2,167	$ 102	$ -	$ 2,269
15.10.5	Review contractor's proposal		2	4	4			8																					2								4		24	$ 3,937	$ 204	$ -	$ 4,141
15.10.6	Prepare conformed documents		2	4	4	2		8	8	16									2	4		1	2	4		2	4		2	4	2	1							72	$ 10,482	$ 612	$ -	$ 11,094

1. Overview and Understanding:

This project will provide the final design and advertisement services for the Phase 1B Booster Pump Station (BPS) and Delivery Points (Project) for the Alliance Regional Water Authority (ARWA). Gupta & Associates, Inc. (GAI) will perform both the electrical distribution and controls (ED&C) and the instrumentation and controls (I&C) design as a subconsultant to Freese and Nichols, Inc. (FNI).

This work includes: electrical, instrumentation, controls and SCADA equipment sizing, load calculations, incoming power, generator, duct banks, and equipment selection. It includes electrical site plans, sections, elevations, building/facility equipment layout plans, one-line diagrams, power, duct banks, security, lighting, grounding, generator schedules, instrumentation, facility/security network diagrams, and P&IDs. It includes notes, legends, symbols, details, and construction specifications.

This work is to be done in accordance with the ARWA Phase 1B Program Design Standards.

1.1. Project Description – Basic Services

1.1.1. Pump Station

1. The outdoor pump station will consist of 460V motors on all pumps. The number and size of pumps are to be determined prior to start of design.
2. Motors will be controlled by a combination of both full voltage non-reversing (FVNR) and variable frequency drives (VFDs).
3. A motor control center will be installed in a separate electrical building. The HVAC, architectural, and structural designs, including the building equipment pad, are to be provided by others.
4. These pumps will be controlled by a central programmable logic controller (PLC) and the logic will be based upon a standard lead/lag configuration to maintain a process variable (expected to be either discharge flow or discharge pressure).

1.1.2. Ground Storage Tank

1. A ground storage tank will require level monitoring and control of influent/effluent valves, but no cathodic protection.

1.1.3. Chemical Facility

1. A chemical facility will require power and instrumentation to allow flow paced chemical injection.
2. Heat trace of sample lines and/or chemical injection lines will be included.

1.1.4. Delivery Sites

1. GAI will provide design services for seven delivery sites.
2. The sites will consist of above grade or below grade meter vaults and above grade outdoor equipment rack.
3. Individual ED&C and I&C drawings will be provided for each remote site.
4. Provide review of delivery point infrastructure designed by others for consistency with ARWA Program guidelines and BPS/Delivery Point design performed by GAI. Review will include compatibility of valve and meter selection, instrumentation and communications with ARWA facilities. These reviews will consist of the following:
   a. Three in-person meetings, one each at the 60% / 90% / 100% Review Submittals for the sites being designed by this FNI project
   b. Three conference calls on an as-needed basis for the sites being designed by this FNI project.
   c. Three review cycles for the two delivery sites being designed by others (GBRA) outside this FNI project (no associated meetings).

1.1.5. Power Company Coordination

1. A single supply from the power company will be installed at the pump station and each of the delivery sites.

2. GAI will coordinate with Bluebonnet Electric Coop for power to the BPS.
3. GAI will coordinate with Bluebonnet Electric, GBEC, NBU, and Pedernales Electric as needed for power to the seven delivery sites included in this Project.
4. GAI will develop easement plats for power company facilities at the pump station and each of the delivery sites based upon survey reference files provided by FNI.

1.1.6. Standby Generator

1. A single standby generator will be provided to back up the pump station, but not at any of the delivery sites.

2.1. Work Definition

2.1.1. Administrative

This work will include the following administrative services:

1. GAI will provide various submittals for Owner's review of the design process. These submittals are expected to be:
   a. 60% Design for Owner's review
   b. 90% Design for Owner's review
   c. 100% Design for Owner's (and TWDB if needed) review
   d. Sealed and signed documents for advertisement
   e. Conformed documents for construction
2. GAI will provide monthly invoicing for this work to FNI. The duration of this Project is expected to be:
   a. Design Phase: 11 months
   b. Advertisement/Bidding Phase: 2 months
3. GAI will conduct site surveys after notice to proceed is received as needed.
4. GAI will participate in a project initiation conference call.
5. GAI will participate in various design team coordinating conference calls and workshops to review design progress. These include:
   a. Design Phase Bi-Weekly Coordination Conference Calls: 26
   b. Design Phase Coordination Workshops: 0
6. GAI will participate in various design review meetings and workshops with the Owner. These consist of in-person meetings, one each after the 60%/90%/100% Review Submittals.
7. Opinions of Probable Construction Costs (OPCC) will be provided for each submittal.

2.1.2. Cost Reduction Alternatives

1. The Engineering Feasibility Report work has already been done and will serve as the basis of design for this Project with the exception as follows:
2. Project Cost Reduction Alternatives
   a. Develop up to two additional alternatives for sizing and configuration of the BPS facilities based upon reduction in peaking factors.
   b. Develop revised delivery point infrastructure sizing and configuration based upon reduction in peaking factors.
   c. Develop an Opinion of Probable Construction Cost (OPCC) and technical data sheets that compare cost reduction alternatives by major facility component to the original design recommendations presented in the Final Engineering Feasibility Report (EFR).
   d. Update ARWA selected BPS design alternative and OPCC as basis for Final Design.
3. GAI will participate in one workshop to discuss cost reduction alternatives and to select the preferred design approach as the basis for Final Design.

2.1.3. Final Design – Plan Drawings

GAI will provide half-size copies of plan drawings in 11" X 17" for the 60% / 90% / 100% Review submittals in PDF format for review. The bid ready set of plans will be signed and sealed half-sized copies in PDF format. The preliminary list of plan drawings to be provided is attached.

2.1.4. Final Design – Specifications

1. ARWA has directed the Water Treatment Plant (WTP) Designer (Walker Partners) to develop all technical specifications that are common to the WTP and the BPS. GAI will still be responsible for developing specs that are unique to the BPS and Delivery Point sites. Given that Walker Partners will be carrying the effort to develop these specs, GAI will include effort to review the Walker Partners developed specifications and come to agreement on them for inclusion in GAI's design. The specifications to be provided by Walker Partners will include at a minimum the following:
   a. Electrical Support Hardware
   b. Power System Studies
   c. Boxes and Enclosures
   d. Raceways
   e. 600V wire
   f. Light Switches and Receptacles
   g. NEMA Frame Induction Motors (600V and Below)
   h. Distribution Dry-Type Transformers
   i. Panelboards
   j. Low Voltage Circuit Breakers
   k. Low Voltage Disconnect Switches
   l. Grounding and Bonding
   m. Lighting
   n. Underground System
2. The I&C specifications used on this Project will be based upon the ARWA Phase 1B Project Instrumentation and Controls Design Guideline – FINAL (dated December, 2019) as published by CP&Y.

2.1.5. Advertising and Bidding Services

GAI will provide the following:

1. Respond to Bidders' requests for information (RFIs) and issue addenda as required.
2. GAI is not expecting to participate in any pre-bid meetings on site.
3. Conformed documents will be provided in PDF format showing all addenda.

2.1.6. Construction Phase Services

Not included at this time.

2.1.7. Special Services

Not included at this time.

3. Fee:

GAI will perform these services based upon the following:

Description	Basis	ED&C	I&C	Total
Cost Reduction Alternatives	Fixed Fee	$11,739	$0	$11,739
Design Phase	Fixed Fee	$149,564	$55,317	$204,881
Advertisement/Bidding	T&M Not to Exceed	$6,117	$2,263	$8,380
Total		$164,420	$57,580	$225,000

4. Clarifications:

The following items apply to this proposal:

1. Opinions of Probable Construction Costs are engineering estimates and are not warranted.
2. GAI has not included any software licenses or hardware in this proposal.
3. GAI requires a process flow diagrams, equipment lists, and control strategies to be provided by FNI prior to beginning design.
4. All site plan and other mechanical background reference CAD files to be provided by FNI.
5. The contractual terms and conditions in place with the preliminary engineering design phase of this project will be applied to this scope of work.

	ED&C Sheet Listing
Sheet #	**Description**
00-E-01	Legend & Symbols - I
00-E-02	Legend & Symbols - II
00-E-03	General Notes
00-E-04	Light Fixture Schedule
00-E-05	Standard Construction Details - I
00-E-06	Standard Construction Details - II
00-E-07	Standard Construction Details - III
00-E-08	Standard Construction Details - IV
	Booster Pump Station
10-E-01	Site Plan Overall
10-E-02	Duct Bank Sections
10-E-03	Overall One-Line Diagram
10-E-04	MCC Elevation and Panel Schedules
10-E-05	Floor Plan - Pump Station Power and Grounding
10-E-06	Floor Plan - Cable Tray
10-E-07	Floor Plan - Pump Station Instrumentation
10-E-08	Floor Plan - Pump Station Lighting
10-E-09	Floor Plan - Chem Facility Power and Grounding
10-E-10	Floor Plan - Chemical Facility Instrumentation
10-E-11	Site Plan Detail - Meter Vault
10-E-12	Generator Plan
10-E-13	Generator Details
10-E-14	PLC Interface Diagram - Pumps
10-E-15	PLC Interface Diagram - Chemicals
10-E-16	Riser Diagram - Pumps
10-E-17	Riser Diagram - Chemicals
10-E-18	Riser Diagram - Security
10-E-19	Wiring Schematic - I

	I&C Sheet Listing
Sheet #	**Description**
00-N-01	Legend & Symbols - I
00-N-02	Legend & Symbols - II
00-N-03	Instrument Installation Details - I
00-N-04	Instrument Installation Details - II
00-N-05	Instrument Installation Details - III
	Booster Pump Station
10-N-01	Overall System Architecture
10-N-02	P&ID - Pumps I
10-N-03	P&ID - Pumps II
10-N-04	P&ID - Chemicals
10-N-05	Control Panel

Alliance Regional Water Authority Phase 1B
Booster Pump Station and Delivery Points Project
Electrical Engineering Project Scope

	ED&C Sheet Listing
Sheet #	**Description**
10-E-20	Wiring Schematic - II
10-E-21	Wiring Schematic - III
	Bluebonnet Electric Easement Plat
	Delivery Site #1
21-E-01	Site Plan Overall
21-E-02	Site Plan Detail - Meter Vault
21-E-03	Overall One-Line Diagram and Panel Schedule
	Bluebonnet Electric Easement Plat
	Delivery Site #2
22-E-01	Site Plan Overall
22-E-02	Site Plan Detail - Meter Vault
22-E-03	Overall One-Line Diagram and Panel Schedule
	Bluebonnet Electric Easement Plat
	Delivery Site #3
23-E-01	Site Plan Overall
23-E-02	Site Plan Detail - Meter Vault
23-E-03	Overall One-Line Diagram and Panel Schedule
	Bluebonnet Electric Easement Plat
	Delivery Site #4
24-E-01	Site Plan Overall
24-E-02	Site Plan Detail - Meter Vault
24-E-03	Overall One-Line Diagram and Panel Schedule
	Bluebonnet Electric Easement Plat
	Delivery Site #5
25-E-01	Site Plan Overall
25-E-02	Site Plan Detail - Meter Vault

	I&C Sheet Listing
Sheet #	**Description**
	Delivery Site #1
21-E-01	Overall System Architecture
21-E-02	P&ID
21-E-03	Control Panel
	Delivery Site #2
22-E-01	P&ID
22-E-02	Control Panel
	Delivery Site #3
23-E-01	P&ID
23-E-02	Control Panel
	Delivery Site #4
24-E-01	P&ID
24-E-02	Control Panel
	Delivery Site #5
25-E-01	P&ID
25-E-02	Control Panel

Alliance Regional Water Authority Phase 1B
Booster Pump Station and Delivery Points Project
Electrical Engineering Project Scope

	ED&C Sheet Listing
Sheet #	**Description**
25-E-03	Overall One-Line Diagram and Panel Schedule
	Bluebonnet Electric Easement Plat
	Delivery Site #6
26-E-01	Site Plan Overall
26-E-02	Site Plan Detail - Meter Vault
26-E-03	Overall One-Line Diagram and Panel Schedule
	Bluebonnet Electric Easement Plat
	Delivery Site #7
27-E-01	Site Plan Overall
27-E-02	Site Plan Detail - Meter Vault
27-E-03	Overall One-Line Diagram and Panel Schedule
	Bluebonnet Electric Easement Plat

	I&C Sheet Listing
Sheet #	**Description**
	Delivery Site #6
26-E-01	P&ID
26-E-02	Control Panel
	Delivery Site #7
27-E-01	P&ID
27-E-02	Control Panel

ARWA Booster PS and Delivery Points Project
Final Design Phase

Gupta & Associates, Inc.

			Principal		Project Manager		Engineer - Senior		Engineer		Project Engineer		Designer - Senior		Designer		CAD Tech - Senior		CAD Tech		Admin		Subtotal				Markup	TOTAL
			Rate: $ 232		Rate: $ 216		Rate: $ 186		Rate: $ 139		Rate: $ 108		Rate: $ 145		Rate: $ 96		Rate: $ 93		Rate: $ 72		Rate: $ 75							
		TASK SUMMARY - BASIC SERVICES	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	Hours	Cost	ODCs	SUBs	5%	Cost
8	1.0	**Project Management/Administration**	17	$ 3,944	17	$ 3,672	36.25	$ 6,743	20	$ 2,780	32	$ 3,456	0	$ -	0	$ -	0	$ -	0	$ -	17	$ 1,275	139.25	$ 21,870	$435	$0	$0	$ 22,305
9		1.1 Project Management/Administration	17	$ 3,944	17	$ 3,672		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	34	$ 7,616	$150	$0	$0	$ 7,766
10		1.2 Invoice Processing		$ -		$ -	4.25	$ 791		$ -		$ -	0	$ -		$ -		$ -		$ -	17	$ 1,275	21.25	$ 2,066	$41	$0	$0	$ 2,107
11		1.3 Pre-Design Kickoff Meeting		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0	$0	$0	$ -
12		1.4 Pre-Construction Meeting		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0	$0	$0	$ -
13		1.5 Monthly Project Status Reports		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0	$0	$0	$ -
14		1.6		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0	$0	$0	$ -
15		1.7 WTP/Delivery Site Coordination Conf Calls (3)		$ -		$ -	8	$ 1,488	8	$ 1,112	8	$ 864		$ -		$ -		$ -		$ -		$ -	24	$ 3,464	$69	$0	$0	$ 3,533
16		1.8 WTP/Delivery Site Coordination Meetings (3)		$ -		$ -	24	$ 4,464		$ -		$ -		$ -		$ -		$ -		$ -		$ -	24	$ 4,464	$89	$0	$0	$ 4,553
17		1.9 Coordination with Bluebonnet, GBEC, NBU, and		$ -		$ -		$ -	12	$ 1,668	24	$ 2,592		$ -		$ -		$ -		$ -		$ -	36	$ 4,260	$85	$0	$0	$ 4,345
18		1.10		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0	$0	$0	$ -
19	2.0	**Preliminary Engineering Report**	0	$ -	10	$ 2,160	16	$ 2,976	24	$ 3,336	0	$ -	0	$ -	0	$ -	8	$ 744	16	$ 1,152	0	$ -	74	$ 10,368	$207	$0	$0	$ 10,575
20		ED&C		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0		$0	$ -
21		2.1 Initial Site Visit and Investigation		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0		$0	$ -
22		2.2 Prepare Draft Tech Memo		$ -	2	$ 432	16	$ 2,976	24	$ 3,336		$ -		$ -		$ -	8	$ 744	16	$ 1,152		$ -	66	$ 8,640	$173		$0	$ 8,813
23		2.3 Submit Draft Tech Memo		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0		$0	$ -
24		2.4 Tech Memo Review Meeting		$ -	8	$ 1,728		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	8	$ 1,728	$35		$0	$ 1,763
25		2.5 Prepare Final Tech Memo		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0		$0	$ -
26		2.6 Submit Final Tech Memo		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0		$0	$ -
27		2.7 Monthly Project Progress Meetings (Report Phase)		$ -		$ -	0	$ -		$ -	0	$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0		$0	$ -
28				$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0		$0	$ -
47	3.0	**Design Phase - ED&C**	0	$ -	16	$ 3,456	175	$ 32,550	384	$ 53,376	72	$ 7,776	0	$ -	0	$ -	103.4	$ 9,616	349.6	$ 25,171	2	$ 150	1102	$ 132,095	$2,642	$0	$0	$ 134,737
48		3.1 Site Investigation		$ -		$ -	16	$ 2,976		$ -	16	$ 1,728		$ -		$ -		$ -		$ -		$ -	32	$ 4,704	$94		$0	$ 4,798
49		3.2 Bi-Weekly Project Design Conf Calls (Design Phase)		$ -		$ -	26	$ 4,836		$ -	26	$ 2,808		$ -		$ -		$ -		$ -		$ -	52	$ 7,644	$153		$0	$ 7,797
50		3.3 Plan Drawings		$ -		$ -	87.4	$ 16,256	349.6	$ 48,594		$ -		$ -		$ -	87.4	$ 8,128	349.6	$ 25,171		$ -	874	$ 98,150	$1,963		$0	$ 100,113
51		3.4 Preliminary Power Study		$ -		$ -		$ -	24	$ 3,336		$ -		$ -		$ -		$ -		$ -		$ -	24	$ 3,336	$67		$0	$ 3,403
52		3.5 Construction Specifications		$ -		$ -		$ -	8	$ 1,112	10	$ 1,080		$ -		$ -		$ -		$ -	2	$ 150	20	$ 2,342	$47		$0	$ 2,389
53		3.6		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0		$0	$ -
54		3.7 OPCC		$ -		$ -		$ -	2.4	$ 334	9.6	$ 1,037		$ -		$ -		$ -		$ -		$ -	12	$ 1,370	$27		$0	$ 1,398
55		3.8 Submittal - 60% (Packaging and Quality Reviews)		$ -	4	$ 864	8	$ 1,488		$ -		$ -		$ -		$ -	4	$ 372		$ -		$ -	16	$ 2,724	$54		$0	$ 2,778
56		3.9 Design Review Meeting		$ -		$ -	2.4	$ 446		$ -	5.6	$ 605		$ -		$ -		$ -		$ -		$ -	8	$ 1,051	$21		$0	$ 1,072
57		Review Comments Response		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0		$0	$ -
58		3.10 Submittal - 90% (Packaging and Quality Reviews)		$ -	4	$ 864	8	$ 1,488		$ -		$ -		$ -		$ -	4	$ 372		$ -		$ -	16	$ 2,724	$54		$0	$ 2,778
59		3.11 Design Review Meeting		$ -		$ -	5.6	$ 1,042		$ -	2.4	$ 259		$ -		$ -		$ -		$ -		$ -	8	$ 1,301	$26		$0	$ 1,327
60		Review Comments Response		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0		$0	$ -
61		3.12 Submittal - 100% (Packaging and Quality Reviews)		$ -	4	$ 864	8	$ 1,488		$ -		$ -		$ -		$ -	4	$ 372		$ -		$ -	16	$ 2,724	$54		$0	$ 2,778
62		3.13 Design Review Meeting		$ -		$ -	5.6	$ 1,042		$ -	2.4	$ 259		$ -		$ -		$ -		$ -		$ -	8	$ 1,301	$26		$0	$ 1,327
63		Review Comments Response		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0		$0	$ -
64		3.14 Submittal - Issued for Bid (Packaging and Quality		$ -	4	$ 864	8	$ 1,488		$ -		$ -		$ -		$ -	4	$ 372		$ -		$ -	16	$ 2,724	$54		$0	$ 2,778
65	4.0	**Design Phase - I&C**	0	$ -	0	$ -	55.8	$ 10,379	133.6	$ 18,570	36.4	$ 3,931	26	$ 3,770	0	$ -	31.8	$ 2,957	127.2	$ 9,158	1.2	$ 90	412	$ 48,856	$977	$0	$0	$ 49,833
66		4.1 Site Investigation		$ -		$ -	8	$ 1,488		$ -		$ -		$ -		$ -		$ -		$ -		$ -	8	$ 1,488	$30		$0	$ 1,518
67		4.2 Bi-Weekly Project Design Conf Calls (Design Phase)		$ -		$ -		$ -		$ -		$ -	26	$ 3,770		$ -		$ -		$ -		$ -	26	$ 3,770	$75		$0	$ 3,845
68		4.3 Plan Drawings		$ -		$ -	31.8	$ 5,915	127.2	$ 17,681		$ -		$ -		$ -	31.8	$ 2,957	127.2	$ 9,158		$ -	318	$ 35,711	$714		$0	$ 36,426
69		4.4 Preliminary Radio Path Study		$ -		$ -		$ -		$ -		$ -	0	$ -		$ -		$ -		$ -		$ -	0	$ -	$0		$0	$ -
70		4.5 Construction Specifications		$ -		$ -		$ -	4.8	$ 667	6	$ 648		$ -		$ -		$ -		$ -	1.2	$ 90	12	$ 1,405	$28		$0	$ 1,433
71		4.6 Control Narrative		$ -		$ -	16	$ 2,976		$ -	24	$ 2,592		$ -		$ -		$ -		$ -		$ -	40	$ 5,568	$111		$0	$ 5,679
72		4.7 OPCC		$ -		$ -		$ -	1.6	$ 222	6.4	$ 691		$ -		$ -		$ -		$ -		$ -	8	$ 914	$18		$0	$ 932
73		4.8 Submittal - 30% (Packaging and Quality Reviews)		$ -	0	$ -	0	$ -		$ -		$ -		$ -		$ -	0	$ -		$ -		$ -	0	$ -	$0		$0	$ -
74		4.9 Design Review Meeting		$ -		$ -	0	$ -		$ -	0	$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0		$0	$ -
75		Review Comments Response		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0		$0	$ -
76		4.10 Submittal - 60% (Packaging and Quality Reviews)		$ -	0	$ -	0	$ -		$ -		$ -		$ -		$ -	0	$ -		$ -		$ -	0	$ -	$0		$0	$ -
77		4.11 Design Review Meeting		$ -		$ -	0	$ -		$ -	0	$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0		$0	$ -
78		Review Comments Response		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0		$0	$ -
79		4.12 Submittal - 90% (Packaging and Quality Reviews)		$ -	0	$ -	0	$ -		$ -		$ -		$ -		$ -	0	$ -		$ -		$ -	0	$ -	$0		$0	$ -
80		4.13 Design Review Meeting		$ -		$ -	0	$ -		$ -	0	$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0		$0	$ -
81		Review Comments Response		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0		$0	$ -
82		4.14 Submittal - Issued for Bid (Packaging and Quality		$ -	0	$ -	0	$ -		$ -		$ -		$ -		$ -	0	$ -		$ -		$ -	0	$ -	$0		$0	$ -
101	6.0	**Advertisement & Bidding (T&M)**	0	$ -	0	$ -	4	$ 744	0	$ -	16	$ 1,728	0	$ -	0	$ -	53	$ 4,929	0	$ -	0	$ -	73	$ 7,401	$148	$0	$0	$ 7,549
102		6.1 Front End Documents		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0	$0	$0	$ -
103		6.2 Pre-Bid Meeting		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0	$0	$0	$ -
104		6.3 RFI Review		$ -		$ -	2	$ 372		$ -	8	$ 864		$ -		$ -		$ -		$ -		$ -	10	$ 1,236	$25	$0	$0	$ 1,261
105		6.4 Addenda		$ -		$ -	2	$ 372		$ -	8	$ 864		$ -		$ -	8	$ 744		$ -		$ -	18	$ 1,980	$40	$0	$0	$ 2,020
106		6.5		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0	$0	$0	$ -
107		6.6 Conformed Drawings - ED&C		$ -		$ -		$ -		$ -		$ -		$ -		$ -	37.5	$ 3,488		$ -		$ -	37.5	$ 3,488	$70	$0	$0	$ 3,557
108		6.7 Conformed Drawings - I&C		$ -		$ -		$ -		$ -		$ -		$ -		$ -	7.5	$ 698		$ -		$ -	7.5	$ 698	$14	$0	$0	$ 711
109		6.8		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0	$0	$0	$ -
110		6.9		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0	$0	$0	$ -
111		6.10		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -		$ -	0	$ -	$0	$0	$0	$ -
168																												
169			17	$3,944	43	$9,288	287.05	$53,391	561.6	$78,062	156.4	$16,891	26	$3,770	0	$0	196.2	$18,247	492.8	$35,482	20.2	$1,515	1800.25	$220,590	$4,410	$0	$0	$ 225,000

142 Chula Vista, San Antonio, Texas 78232 • Phone: (210) 308-5884 • Fax: (210) 308-5886

January 14, 2020 (Revised January 21, 2020)
Arias Job No. 2018-1103

VIA Email: dtb@freese.com

Mr. David T. Bennett, P.E., ENV SP
Principal / Vice President
Treatment, Transmission & Utilities

Freese and Nichols, Inc. (FNI)
9601 McAllister Freeway, Suite 1008
San Antonio, Texas 78216

RE: Proposal for Additional Geotechnical Engineering Services
Phase 1B Booster Pump Station (BPS) at Caldwell County, Texas
Delivery Points at 10375 North Highway SH 123, Seguin, Texas
Alliance Regional Water Authority (ARWA)

Dear Mr. Bennett:

Thank you for the opportunity to submit this proposal for additional geotechnical engineering services for the proposed project. ***Arias understands that we have been pre-selected for this project based upon our qualifications***. We provide our clients with innovative and cost-effective solutions to the geotechnical challenges present in the South Texas and South-Central Texas areas.

Project Information

Arias previously performed a Preliminary Geotechnical Study for the proposed ARWA Phase 1B Booster Pump Station located at Caldwell County, Texas, and submitted a Geotechnical Data Report (GDR) and Geotechnical Design Memorandum (GDM) on December 11, 2019. After completion of the preliminary study, we have been requested to provide additional geotechnical services for the final design.

Based on the information provided to us, we understand that the project will involve design and construction of a 5 million-gallon (MG) ground water storage tank, buildings, equipment pads and pipeline at the ARWA Phase 1B Booster Pump Station site. We also understand that a pipeline will be installed for Delivery Points using the bore and jack method at the SH 123 crossing near 10375 North Highway SH 123, Seguin, Texas.

Proposed Borings

The number of soil borings and depths for the proposed Pump Station and Delivery Points are summarized in the following table:

Item	Location	No. of Borings	Boring Depth, (ft.)	Total Depth, (ft)
5.0 MG Ground Storage Tank	Center of GST at Phase 1B Pump Station	1	65	65
	Perimeter of GST at Phase 1B Pump Station	4	50	200
Buildings, Equipment Pads, Pipeline or Site Facilities	At Pump Station, Electrical and Chlorine Building	3	40	120
Piping/Pavements	TBD	3	25	75
Delivery Points	SH 123 Crossing	2	25	50
Supplemental Borings	TBD	2	25	50
			Total Boring Footage, (ft.)	560

Proposed Scope of Services

Arias Geoprofessionals, Inc. (Arias) proposes the following geotechnical services for the project:

1. Arias will mark the boring locations and will meet ARWA personnel at the site so that they can mark the locations of existing underground utilities based on their plans. Arias will also contact Texas 811 One Call service to locate and mark underground utilities. We have assumed that FNI will provide Arias with contact information for ARWA personnel so that the site meeting can be set up.

2. Arias will retain a subcontract driller to perform drilling; however, Arias personnel will locate the borings, will direct the sampling efforts, and will visually classify recovered samples. Soil interpreted to be clay in the field will be sampled by either pushing a thin-walled tube (ASTM D 1587) or with a split barrel sampler while performing the Standard Penetration Test (ASTM D 1586). Soil interpreted to be sand or gravel in the field will be sampled with a split barrel sampler while performing the Standard Penetration Test (ASTM D 1586). Rock coring will be performed only at the center boring of the proposed GST (i.e. 65-foot deep boring) location if bedrock is encountered. To obtain undisturbed samples for strength testing; competent rock will be continuously cored using an NX-core barrel. Rock coring is not planned for the other borings.

3. If groundwater is encountered, the groundwater levels within the open borehole will be recorded at the time of drilling and immediately following drilling. The boreholes will be backfilled with cuttings generated by drilling operations after completion of drilling.

4. Laboratory testing will be performed on recovered samples selected by the geotechnical engineer to aid in soil classification and to measure engineering properties. Laboratory testing is expected to include moisture content, Atterberg limits, fines content, unconsolidated undrained triaxial compression, swell, direct shear and one-dimensional consolidation tests. As suggested by FNI, five (5) corrosivity testing (i.e. pH, resistivity, sulfates, sulfides, chlorides, redox, and bicarbonate) will be performed on the GST, piping and pump station borings. During our drilling operation, a bulk sample will be collected from the location of the proposed pavements within the pump station. Lime Series and CBR tests will be conducted for the pavement design. The actual laboratory program will depend upon the type of soils encountered.

5. We will issue an electronic copy of our Geotechnical Data Report (GDR) prepared by a licensed professional engineer in Texas that will include:
    - *Description of the field exploration program;*
    - *Description of the laboratory testing program;*
    - *Soil boring plan that depicts borehole locations on a base map provided by Client;*
    - *Soil boring logs with soil classifications based on the Unified Soil Classification System (ASTM D 2487);*
    - *Description of site geology based on location of the site on the Geologic Atlas of Texas;*
    - *Generalized site stratigraphy and engineering properties developed from field and laboratory data at the explored locations; and*
    - *Depth where groundwater was encountered during drilling and its potential impact on construction;*

6. After completion of GDR, we will issue an electronic copy of our Geotechnical Design Memorandum (GDM) prepared by a licensed professional engineer in Texas that will include:
    - *Recommended foundation type to support the GST, buildings and equipment pads;*
    - *Recommended net allowable bearing pressure, minimum foundation bearing depth, and estimated settlement magnitude for a shallow foundation system, if applicable;*
    - *Estimated potential vertical rise for expansive soils, and recommendations for ground improvement to result in a PVR of about 1-inch or less;*
    - *Allowable side friction and end bearing values for a deep drilled pier foundation system, if applicable. Laterally loaded drilled pier input parameters to be used with LPILE software and estimated uplift (tension) loading from expansive soil heave will be provided;*
    - *OSHA classifications for onsite soils, bedding and backfill recommendations,*
    - *Backfill and compaction requirements for material placement behind below grade walls, and beneath slabs-on-grade,*
    - *General discussions on subsurface conditions for proposed Bore and Jack installation, and*
    - *Flexible and Rigid Pavement Recommendations. We will require traffic data/information and design parameters from the Client in order to provide pavement recommendations.*

Our report will not provide global stability evaluations for site slopes or retaining walls. We would be pleased to provide this service if desired and project conditions dictate.

CoMET Services

Please be advised that Arias can perform Construction Materials Engineering and Testing (CoMET) services for this project. If requested, we would be pleased to provide a scope of work and fee for these services.

Proposed Fee

Our proposed **Lump Sum Fees** for the performance of the scope of work as described in this proposal, and that the work will be performed as outlined in the General Conditions included with this proposal are as follows:

- **Lump Sum Fee for Basic Services: $65,055.00**
- **Lump Sum Fee for the Supplemental Services: $4,950.00**

We have provided fee breakdown for your review, and to establish unit rates in case additional work is requested that is beyond the scope outlined herein.

We will submit monthly progress billing during the course of our study; invoicing will be based on the percentage of project completion to bill for project tasks as they are completed (i.e. site mobilization of

geotechnical field-testing equipment and personnel, completion of field work and laboratory testing, engineering analysis, report preparation, etc.).

We have prepared our scope and fee with the understanding that no clearing will be required, no concrete coring will be required, and that no special permission will be needed for access. We have assumed that you will provide free access to the site. Meetings and supplemental letters are not included in our proposed project fees. If required, these items will be billed according to the current Arias & Associates Unit Rate Schedule for Geotechnical Services.

Schedule

In general, the field exploration can typically begin about one (1) week after receiving written authorization (signed proposal) pending ARWA approval/clearances. Field drilling and sampling is expected to take approximately one (1) to one and one-half (1½) weeks. Laboratory testing is expected to be completed within approximately two (2) to three (3) weeks after completion of the soil borings. During this time, preliminary recommendations could be provided to assist the design team in moving forward. We anticipate that our Geotechnical Report can be delivered within about five (5) to six (6) weeks after completing the borings.

Delays sometime occur due to adverse weather, utility clearance requirements, site clearing requirements for drill rig access, and other factors outside of our control. In this event, we will communicate the nature of the delay with you and provide a revised schedule at the earliest possible date.

Proposal Acceptance

Please let us know if this proposal meets your expectations. If acceptable, the authorization table at the end of this proposal should be completed as applicable. We will begin work upon receipt of a signed copy of this proposal by an authorized representative. Please return the entire signed proposal to us by fax, mail or email to gkibria@ariasinc.com. If the billing address is different, include that information as well.

Should you have any questions, please do not hesitate to contact me by email, or by phone on my direct line at (210) 499-6816. We appreciate the opportunity provided and look forward to being an integral part of the Project Team.

Sincerely,

ARIAS & ASSOCIATES, INC.
TBPE Registration No: F-32

Golam Kibria, Ph.D., P.E.
Senior Geotechnical Engineer

Christopher M. Szymczak, P.E
Senior Geotechnical Engineer

Geotechnical Cost Estimate - Revision 01.21.2020 (Basic Services)
ARWA – Maxwell Pump Station and Delivery Points - Additional Scope of Work

Task	Item Description	Est. Qty.	Unit	Unit Price	Est. Total Price
1	**Field Exploration**				
1.1 Planning and Coordination					
	Field Coordination (Staking of Borings, One-Call, Drilling Plan)	12	hr	$ 95.00	$ 1,140.00
	Transportation Cost - Trip Charge	1	trip	$ 50.00	$ 50.00
	Project Management (Senior Geotechnical Engineer)	8	hr	$ 135.00	$ 1,080.00
				1.1 Subtotal	**$ 2,270.00**
1.2 Drilling and Sampling					
	Mobilization (drill rig, support equipment, air compressor)	6	ea	$ 450.00	$ 2,700.00
	Drilling and Sampling (Soil Borings)	500	ft	$ 19.00	$ 9,500.00
	Drilling and Sampling (Shale Coring)	10	ft	$ 26.00	$ 260.00
	Drill Rig Stand-by (difficulty moving, moving between borings)	4	hr	$ 175.00	$ 700.00
	Backfill boreholes	510	ft	$ 5.00	$ 2,550.00
	Logger	60	hr	$ 65.00	$ 3,900.00
	Traffic Control (large)	1	ea	$ 2,600.00	$ 2,600.00
	Transportation Cost - Trip Charge (Logger)	6	trip	$ 50.00	$ 300.00
				1.2 Subtotal	**$ 22,510.00**
				Field Exploration TOTAL:	**$ 24,780.00**
2	**Laboratory Soil Testing**				
2.1 Lab Testing Program					
	Moisture Content	140	ea	$ 10.00	$ 1,400.00
	Atterberg Limits	78	ea	$ 65.00	$ 5,070.00
	Grain Size Analysis (Includes Percent Passing #200 Sieve)	78	ea	$ 65.00	$ 5,070.00
	Unconfined Compressive Strength	0	ea	$ 65.00	$ -
	Unconsolidated Undrained Triaxial Compression (ASTM D2850)	52	ea	$ 110.00	$ 5,720.00
	Swell Test (ASTM D2435)	24	ea	$ 125.00	$ 3,000.00
	Corrosivity (pH, resistivity, sulfates, sulfides, chlorides, redox, and bicarbonate)	5	ea	$ 560.00	$ 2,800.00
	One-Dimensional Consolidation Testing	2	ea	$ 650.00	$ 1,300.00
	Direct Shear	1	ea	$ 600.00	$ 600.00
	Lime Series	1	ea	$ 325.00	$ 325.00
	CBR testing on the Bulk Sample	1	ea	$ 850.00	$ 850.00
	Lab Manager/Graduate Engineer	2	hr	$ 85.00	$ 170.00
				Laboratory Testing TOTAL:	**$ 26,305.00**
3	**Engineering and Reporting**				
3.1 Geotechnical Data Report (GDR)					
	Senior Geotechnical Engineer	16	hr	$ 135.00	$ 2,160.00
	Project Engineer	32	hr	$ 95.00	$ 3,040.00
	Drafting	4	hr	$ 65.00	$ 260.00
	Administrative (Job set-up, billing)	2	hr	$ 65.00	$ 130.00
				3.1 Subtotal	**$ 5,590.00**
3.2 Geotechnical Design Memorandum (GDM)					
	Senior Geotechnical Engineer	32	hr	$ 135.00	$ 4,320.00
	Project Engineer	40	hr	$ 95.00	$ 3,800.00
	Drafting	4	hr	$ 65.00	$ 260.00
				3.2 Subtotal	**$ 8,380.00**
				Engineering TOTAL:	**$ 13,970.00**
	Project Total				**$ 65,055.00**

Geotechnical Cost Estimate - Revision 01.21.2020 (Supplemental Services)
ARWA – Maxwell Pump Station and Delivery Points - Additional Scope of Work

Task	Item Description	Est. Qty.	Unit	Unit Price	Est. Total Price
1	**Field Exploration**				
1.1 Planning and Coordination					
	Field Coordination (Staking of Borings, One-Call, Drilling Plan)	1	hr	$ 95.00	$ 95.00
	Transportation Cost - Trip Charge	1	trip	$ 50.00	$ 50.00
	Project Management (Senior Geotechnical Engineer)	1	hr	$ 135.00	$ 135.00
				1.1 Subtotal	**$ 280.00**
1.2 Drilling and Sampling					
	Mobilization (drill rig, support equipment, air compressor)	1	ea	$ 450.00	$ 450.00
	Drilling and Sampling (Soil Borings)	50	ft	$ 19.00	$ 950.00
	Drilling and Sampling (Shale Coring)	0	ft	$ 26.00	$ -
	Drill Rig Stand-by (difficulty moving, moving between borings)	0	hr	$ 175.00	$ -
	Backfill boreholes	50	ft	$ 5.00	$ 250.00
	Logger	8	hr	$ 65.00	$ 520.00
	Traffic Control (large)	0	ea	$ 2,600.00	$ -
	Transportation Cost - Trip Charge (Logger)	1	trip	$ 50.00	$ 50.00
				1.2 Subtotal	**$ 2,220.00**
				Field Exploration TOTAL:	**$ 2,500.00**
2	**Laboratory Soil Testing**				
2.1 Lab Testing Program					
	Moisture Content	13	ea	$ 10.00	$ 130.00
	Atterberg Limits	8	ea	$ 65.00	$ 520.00
	Grain Size Analysis (Includes Percent Passing #200 Sieve)	8	ea	$ 65.00	$ 520.00
	Unconfined Compressive Strength	0	ea	$ 65.00	$ -
	Unconsolidated Undrained Triaxial Compression (ASTM D2850)	6	ea	$ 110.00	$ 660.00
	Swell Test (ASTM D2435)	0	ea	$ 125.00	$ -
	Corrosivity (pH, resistivity, sulfates, sulfides, chlorides, redox, and bicarbonate)	0	ea	$ 560.00	$ -
	One-Dimensional Consolidation Testing	0	ea	$ 650.00	$ -
	Direct Shear	0	ea	$ 600.00	$ -
	Lime Series	0	ea	$ 325.00	$ -
	CBR testing on the Bulk Sample	0	ea	$ 850.00	$ -
	Lab Manager/Graduate Engineer	0	hr	$ 85.00	$ -
				Laboratory Testing TOTAL:	**$ 1,830.00**
3	**Engineering and Reporting**				
3.1 Geotechnical Data Report (GDR)					
	Senior Geotechnical Engineer	2	hr	$ 135.00	$ 270.00
	Project Engineer	3	hr	$ 95.00	$ 285.00
	Drafting	1	hr	$ 65.00	$ 65.00
	Administrative (Job set-up, billing)	0	hr	$ 65.00	$ -
				3.1 Subtotal	**$ 620.00**
3.2 Geotechnical Design Memorandum (GDM)					
	Senior Geotechnical Engineer	0	hr	$ 135.00	$ -
	Project Engineer	0	hr	$ 95.00	$ -
	Drafting	0	hr	$ 65.00	$ -
				3.2 Subtotal	**$ -**
				Engineering TOTAL:	**$ 620.00**
	Project Total				**$ 4,950.00**

FEE ESTIMATE FOR
Freese and Nichols
ARWA Booster Pump Station

Survey Services

Date: January 15, 2020 Revised Jan 22, 2020 Revised Feb 6, 2020
BMB Job No. P-3444.03

Item No.			RPLS	Survey Tech. IV	CADD Tech II	3-Man Survey Crew	Administrative Assistant	Total Task Hours	Cost
			$150.00	$115.00	$105.00	$205.00	$85.00		
			HOURS						TOTAL
1	**Survey or area CRWA#1**							**Subtotal for this area**	**$9,465.00**
	Mobilization Prepare Deed and parcel sketches Identify control point locations of points to be used.		1.0	2.0		1.0		4.0	$585.00
	Coordinate One Call, and SUE		1.0	2.0		2.0	1.0	5.0	$875.00
	Field Survey Locate and verify control points, topography, Locate level A and B utilities in the field. CAD, Prepare 3D (DTM) of survey areas and Prepare 2D (features and utilities)		1.0	2.0	6.0	11.0		20.0	$3,265.00
	QA/QC		1.0	1.0				2.0	$265.00
	Deliverables Survey, Test Hole Data			1.0	1.0		1.0	2.0	$305.00
	SUE work The Rios Group (see note below)								$4,170.00
2	**Survey or area CRWA #2**							**Subtotal for this area**	**$13,210.00**
	Mobilization Prepare Deed and parcel sketches Identify control point locations of points to be used.		1.0	2.0		1.0		4.0	$585.00
	Coordinate One Call, SUE and Arborist Work		2.0	1.0		2.0	1.0	6.0	$910.00
	Field Survey Locate and verify control points, topography, Locate level A and B utilities in the field, Locate Trees, CAD Prepare 3D (DTM) of survey areas and Prepare 2D (features and utilities)		1.0	2.0	8.0	14.0		25.0	$4,090.00
	Tie down Geotech Bore Locations (13)		1.0	2.0	3.0	10.0			$2,745.00
	QA/QC		1.0		1.0			2.0	$255.00
	Deliverables Survey, Arborist Report, Test Hole Data			1.0	1.0		1.0	2.0	$305.00
	Arborist								$150.00
	SUE work The Rios Group (see note below)								$4,170.00
3	**Survey or area CRWA #3**							**Subtotal for this area**	**$13,305.00**
	Mobilization Prepare Deed and parcel sketches Identify control point locations of points to be used.		1.0	2.0		1.0		4.0	$585.00
	Coordinate One call and SUE work		2.0	1.0		2.0	1.0	6.0	$910.00
	Field Survey Locate and verify control points, topography, Locate level A and B utilities in the field. CAD, Prepare 3D (DTM) of survey areas and Prepare 2D (features and utilities)		1.0	4.0	8.0	15.0		28.0	$4,525.00
	Tie down Geotech Bore Locations (2)		1.0	1.0	2.0	6.0			$1,705.00
	QA/QC		1.0		1.0			2.0	$255.00
	Deliverables Survey,Test Hole Data			1.0	1.0		1.0	3.0	$305.00
	SUE work The Rios Group (see note below)								$5,020.00
4	**Survey or area CRWA #4**							**Subtotal for this area**	**$21,385.00**
	Mobilization Prepare Deed and parcel sketches Identify control point locations of points to be used.		1.0	2.0		1.0		4.0	$585.00
	Coordinate One Call, and SUE		2.0	1.0		2.0	1.0	6.0	$910.00
	Field Survey Locate and verify control points, topography, Locate level A and B utilities in the field. CAD, Prepare 3D (DTM) of survey areas and Prepare 2D (features and utilities)		2.0	4.0	16.0	23.0		45.0	$7,155.00
	QA/QC		2.0		2.0			4.0	$510.00
	Deliverables Survey, Test Hole Data			1.0	1.0		1.0	3.0	$305.00
	SUE work The Rios Group (see note below)								$11,920.00
5	**Survey or area Kyle Delivery Point**							**Subtotal for this area**	**$9,055.00**
	Mobilization Prepare Deed and parcel sketches Identify control point locations of points to be used.		1.0	2.0		1.0		4.0	$585.00
	Coordinate One Call, and SUE work		1.0	2.0		2.0	1.0	5.0	$875.00
	Field Survey Locate and verify control points, topography, Locate level A and B utilities in the field. CAD, prepare 3D (DTM) of survey areas and prepare 2D (features and utilities)		1.0	2.0	6.0	9.0		18.0	$2,855.00
	QA/QC		1.0	1.0				2.0	$265.00
	Deliverables Survey, Test Hole Data			1.0	1.0		1.0	2.0	$305.00
	SUE work The Rios Group (see note below)								$4,170.00
6	**Survey or area San Marcos WTP Delivery Point**							**Subtotal for this area**	**$7,880.00**
	Mobilization Prepare Deed and parcel sketches Identify control point locations of points to be used.		1.0	1.0		1.0	1.0	4.0	$555.00
	Coordinate One Call, and SUE		1.0	1.0			1.0	3.0	$350.00
	Field Survey Locate and verify control points, topography, Locate level A and B utilities in the field. CAD, Prepare 3D (DTM) of survey areas and Prepare 2D (features and utilities)		1.0	2.0	4.0	7.0		14.0	$2,235.00
	QA/QC		1.0	1.0				2.0	$265.00
	Deliverables Survey, Test Hole Data			1.0	1.0		1.0	3.0	$305.00
	SUE work The Rios Group (see note below)								$4,170.00
7	**Survey of area San Marcos 2nd Delivery Point**							**Subtotal for this area**	**$9,560.00**
	Mobilization Prepare Deed and parcel sketches Identify control point locations of points to be used.		1.0	2.0		1.0		4.0	$585.00
	Coordinate One Call, SUE and Arborist work		1.0	2.0		2.0	1.0	5.0	$875.00
	Field Survey Locate and verify control points, topography, Locate level A and B utilities in the field. CAD, Locate Trees, Prepare 3D (DTM) of survey areas and Prepare 2D (features and utilities)		1.0	2.0	6.0	10.0		19.0	$3,060.00
	QA/QC		1.0	1.0				2.0	$265.00
	Deliverables Survey, Arborist Report, Test Hole Data			1.0	1.0		1.0	2.0	$305.00
	Arborist								$300.00
	SUE work The Rios Group (see note below)								$4,170.00
	Total Hours		35.0	55.0	70.0	124.0	15.0	266.0	
	Total Cost		$5,250.00	$6,325.00	$7,350.00	$25,420.00	$1,275.00		**$83,860.00**
	Supplemental Services								
	Additional 5 Level A S.U.E. Potholes								$8,990.00
	Survey for 5 Level A S.U.E. Potholes		1.0	2.0	3.0	10.0		16.0	$2,745.00
	Additional 5 days of Field crew time		5.0	10.0	10.0	60.0		85.0	$15,250.00
	Verify /Reset horizontal and vertical control points at Booster Pump Station (CRWA #2) and the other delivery points.		2.0	10.0	20.0	40.0		72.0	$11,750.00
			8.0	22.0	33.0	110.0	0.0	173.0	
			1200.0	2530.0	3465.0	22550.0	0.0		**$38,735.00**
	Professional Services Summary								
	BMB Survey total								$75,365.00
	SUE work The Rios Group								$46,780.00
	J & L Consulting Certified Arborist								$450.00
	Total Cost								**$122,595.00**

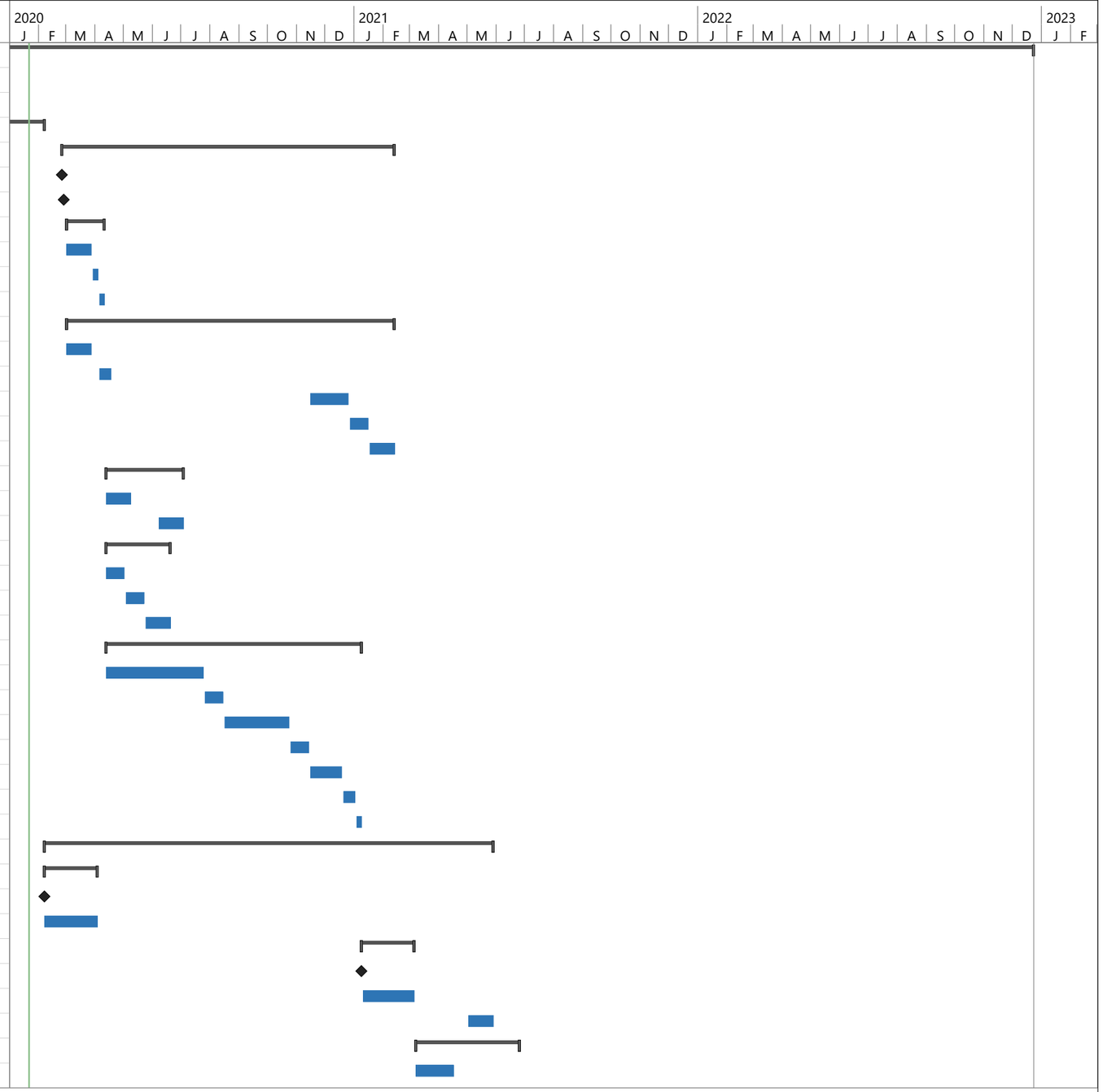
Assumptions:
Right of Entry has been acquired at each area to be surveyed for access and to control panels that may fall outside the required survey areas.
Copies of all the easements and descriptions will be provided in digital format.
Control Point Values and Metadata on the project control will be provided.

TRG Assumptions:
All test holes will be accessible to truck mounted vacuum excavation equipment.
ROW permits from the County, City or TXDOT will not be required.
Designed traffic control plans will not be required.
Non-routine traffic control measures will not be required at some locations.
The coring of pavement will not be required.

Note:
S.U.E. work the Rios Group will consist of :
UP to 10 Level A locates
A maximum of 2500 L.F. of pipeline corridor Level B locations.

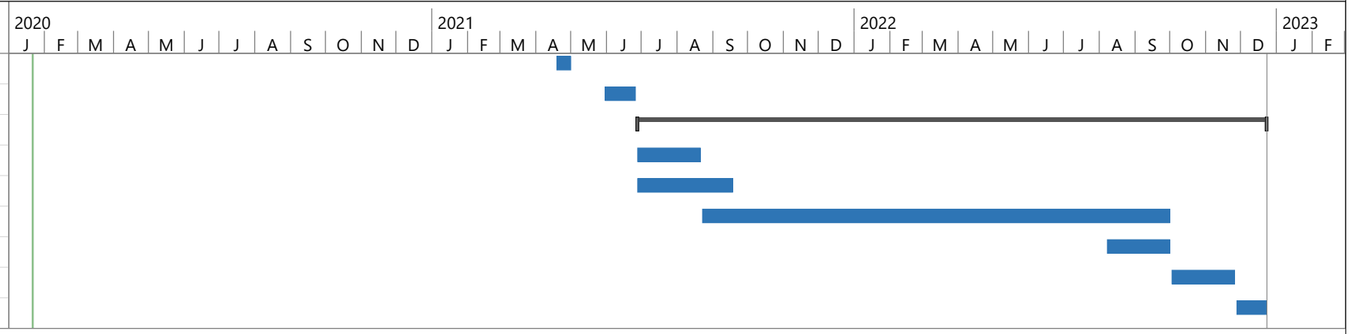
Alliance Regional Water Authority
Phase 1B Booster Pump Station and Delivery Points
Final Design Project Schedule - **DRAFT**

ID	Task Name	Duration	Start	Finish
1	**Booster Pump Station and Delivery Points**	**204.6 wks**	**Wed 1/23/19**	**Fri 12/23/22**
2	Notice To Proceed	0 wks	Wed 1/23/19	Wed 1/23/19
3	Kickoff Meeting	0 wks	Wed 2/13/19	Wed 2/13/19
4	**Preliminary Design**	**51.9 wks**	**Mon 2/11/19**	**Fri 2/7/20**
37	**Final Design & Engineering Design Report**	**50.6 wks**	**Wed 2/26/20**	**Fri 2/12/21**
38	Board Award of Final Design Contract	0 days	Wed 2/26/20	Wed 2/26/20
39	Final Design Notice to Proceed	0 days	Fri 2/28/20	Fri 2/28/20
40	**Project Cost Reduction Alternatives**	**6 wks**	**Mon 3/2/20**	**Fri 4/10/20**
41	Project Cost Reduction Alternatives	4 wks	Mon 3/2/20	Fri 3/27/20
42	Cost Reduction Alternatives Workshop w/ARWA	1 wk	Mon 3/30/20	Fri 4/3/20
43	Finalize BPS Design Approach	1 wk	Mon 4/6/20	Fri 4/10/20
44	**Revise Hydraulics & System Hydraulics Report**	**50 wks**	**Mon 3/2/20**	**Fri 2/12/21**
45	Hydraulic Revisions - Draft	4 wks	Mon 3/2/20	Fri 3/27/20
46	Hydraulic Revisions - Final	2 wks	Mon 4/6/20	Fri 4/17/20
47	Draft System Hydraulics Report (Begin after 90%)	6 wks	Mon 11/16/20	Fri 12/25/20
48	ARWA Review & Workshop	3 wks	Mon 12/28/20	Fri 1/15/21
49	Final System Hydraulics Report	4 wks	Mon 1/18/21	Fri 2/12/21
50	**Field Work**	**12 wks**	**Mon 4/13/20**	**Fri 7/3/20**
51	Topographic Survey for Delivery Points	4 wks	Mon 4/13/20	Fri 5/8/20
52	SUE Potholing	4 wks	Mon 6/8/20	Fri 7/3/20
53	**Geotechnical Investigation**	**10 wks**	**Mon 4/13/20**	**Fri 6/19/20**
54	Field Work	3 wks	Mon 4/13/20	Fri 5/1/20
55	Testing	3 wks	Mon 5/4/20	Fri 5/22/20
56	Reporting	4 wks	Mon 5/25/20	Fri 6/19/20
57	**Construction Plans & Specifications**	**39 wks**	**Mon 4/13/20**	**Fri 1/8/21**
58	60% Plans, Specs, Cost Projection	15 wks	Mon 4/13/20	Fri 7/24/20
59	ARWA Review & Workshop	3 wks	Mon 7/27/20	Fri 8/14/20
60	90% Plans, Specs, Cost Projection	10 wks	Mon 8/17/20	Fri 10/23/20
61	ARWA Review & Workshop	3 wks	Mon 10/26/20	Fri 11/13/20
62	100% Plans, Specs, Cost Projection, EDR	5 wks	Mon 11/16/20	Fri 12/18/20
63	ARWA Review & Workshop	2 wks	Mon 12/21/20	Fri 1/1/21
64	Final Plans, Specs, Cost Projection, EDR	1 wk	Mon 1/4/21	Fri 1/8/21
65	**Texas Water Development Board**	**68.1 wks**	**Fri 2/7/20**	**Fri 5/28/21**
66	**Engineering Feasibility Report Approval**	**8 wks**	**Fri 2/7/20**	**Fri 4/3/20**
67	Submit EFR to TWDB	0 wks	Fri 2/7/20	Fri 2/7/20
68	TWDB Approval of EFR	8 wks	Fri 2/7/20	Fri 4/3/20
69	**Final Design Approval**	**8 wks**	**Fri 1/8/21**	**Fri 3/5/21**
70	Submit Final Construction DocS & EDR to TWDB/T	0 wks	Fri 1/8/21	Fri 1/8/21
71	TWDB/TCEQ Approval of Construction Docs & EDR	8 wks	Mon 1/11/21	Fri 3/5/21
72	TWDB Concurrence with Construction Award	4 wks	Mon 5/3/21	Fri 5/28/21
73	**Advertise/Bid/Award**	**16 wks**	**Mon 3/8/21**	**Fri 6/25/21**
74	Advertise	6 wks	Mon 3/8/21	Fri 4/16/21



Alliance Regional Water Authority
Phase 1B Booster Pump Station and Delivery Points
Final Design Project Schedule - **DRAFT**

ID	Task Name	Duration	Start	Finish
75	Review Bids and Award Recommendation	2 wks	Mon 4/19/21	Fri 4/30/21
76	Board Award	4 wks	Mon 5/31/21	Fri 6/25/21
77	**Construction**	**78 wks**	**Mon 6/28/21**	**Fri 12/23/22**
78	Notice to Proceed & Mobilization	8 wks	Mon 6/28/21	Fri 8/20/21
79	Submittal Review & Approvals	12 wks	Mon 6/28/21	Fri 9/17/21
80	Construction	58 wks	Mon 8/23/21	Fri 9/30/22
81	Preparation of Operation & Maintnenance Manuals	8 wks	Mon 8/8/22	Fri 9/30/22
82	Commissioning and Testing	8 wks	Mon 10/3/22	Fri 11/25/22
83	Final Completion	4 wks	Mon 11/28/22	Fri 12/23/22



REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS
Wednesday, February 12th, 2020 at 3:00 P.M.
520 E. RR 150, Kyle, TX 78640

F.4 Discussion and possible recommendation to the Board to approve a work order with Blanton & Associates, Inc. for additional Environmental Field Investigations for the Authority's Phase 1B projects. ~ *Ryan Sowa, P.E., Kimley-Horn & Associates*

Background/Information
Alliance Water entered into a Work Order in May 2018 with Blanton & Associates, Inc. to provide environmental services for the Phase 1B projects. The work order covered desktop studies, field work, environmental data forms, etc. to achieve environmental clearance for the Phase 1B projects. The new work order addresses changes from the original scope, including:

- Extension of project management time
- Wider field work corridor (due to wider easements resulting from agreement with GBRA)
- Multiple additional mobilizations for field work due to:
    - Alternative alignments
    - Strick landowner access requirements
    - Landowner cancellations
    - Urgent program requests
- Inline Elevated Storage Tank – site reviews

Below are some of the key facts regarding the Phase 1B Environmental Services proposal:

Firm: Blanton & Associates, Inc.
Fee: $351,769
Work Order Type: Hourly, Not-to-Exceed
Anticipated Duration: 10 months
Project Manager: Velma Danielson
Key Subconsultants: W&M Environmental Group, LLC

Staff is requesting that the Committee recommend Board approval of a Work Order with a fee for the basic services of $274,844 and a fee for supplemental effort in an amount not-to-exceed $76,925 for a total fee of $351,769. The Executive Director will be given the discretion to authorize the supplemental effort if needed.

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS
Wednesday, February 12th, 2020 at 3:00 P.M.
520 E. RR 150, Kyle, TX 78640

Attachment(s)

- Proposal for Additional Environmental Investigation for the Phase 1B Program dated January 31, 2020.

Executive Director Recommendation(s)

- The Executive Director recommends approval of the work order with Blanton & Associates

Technical Committee Decision Needed:

- Possible recommendation to the Board to approve a work order with Blanton & Associates, Inc. for Additional Environmental Field Investigation services associated with the Authority's Phase 1B Program.

Blanton & Associates, Inc. - Environmental Scope for Alliance Water Phase 1B Program

Pursuant to Master Services Agreement Between Alliance Regional Water Authority and Blanton & Associates, Inc., Dated May 23, 2018

Work Order No. 003

January 31, 2020

WORK ORDER NO. 003 - DEFINITION AND BACKGROUND

The Environmental Consultant (B&A) was given notice to commence work on Work Order No. 001 (dated May 17, 2018) on June 11, 2018. Since that time, and as requested as part of the monthly invoice format provided by the Owner's Representative (Owner's Rep,) under "Recommended Scope Elements to Add/Remove," the Environmental Consultant has compiled a summary of observations regarding Work Order No. 001, noting amended scope items that may be necessary but did not require immediate discussion or action beginning with the February 15, 2019 invoice (for January 2019 services). This Work Order No. 003 is based largely on the cumulative list of scope items provided previously, which has been updated as necessary. These items reflect:

1. Requests from the Owner's Rep for B&A to perform additional work;
2. Changes or modifications to B&A's scope resulting from additional requirements not known at the time B&A's Work Order No. 001 scope was approved;
3. Recognition that pipeline alignment length in mileage and corridor width determined by the survey buffer will determine the project area for B&A Team field surveys.
4. Inefficiencies in field survey work that have occurred to date and that can reasonably be anticipated in future tasks based on progression of the Phase 1B Program Project to date; and
5. An estimated revised contract period of May 2018 through December 2020, for a total of 31 months.

In this Environmental Consultant's Work Order No. 003, scope of work amendments incorporate the changes indicated below (with reference to Work Order No. 001 tasks and section numbers) and in an attached cost spreadsheet. These modifications are consistent with: 1) email comments received from Owner's Representative on June 20, 2019; 2) email comments from Owner's Representative on August 6, 2019; 3) email comments received by B&A from the Owner's Representative on September 17, 2019; 4) comments received by B&A during a meeting between the Owner, Owner's Representative and B&A on October 8, 2019; 5) discussion in a memorandum from B&A to the Owner and Owner's Representatives dated November 5, 2019; and 6) comments received by B&A from the Owner's Representative on December 20, 2019 via email. The December 20th email comments (which relate to a Work Order No. 001 amendment request as well as this Work Order No. 003) are summarized below:

B&A is to submit an official Work Order No. 001 Amendment request to utilize the Task 7 - Supplemental Services funding in B&A's original Work Order No. 001 Level of Effort spreadsheet as follows:

- Re-allocate the $170,895 budget for Task 7 - Supplemental Services funding in B&A's original Work Order No. 001 Level of Effort spreadsheet to fund the revised scope and fee that B&A submitted as the Work Order No. 001 – Amendment No. 1 revisions for Task 3 – Desktop Constraints Analysis, Task 5 – Water Treatment Plant, Task 6 – Environmental Documents and

Permitting Requirements (Transmission lines, Administration/ Operations Facility and Booster Pump Station), and Task 7 – Supplemental Services, for a lump sum amount of $87,332.

- Convert Task 1 – Project Management and Task 4 – Field Surveys to time and materials compensation. B&A is to utilize the remaining $83,563 of the $170,895 (original Task 7 Work Order No. 001 budget) to fund a portion of B&A's revised scope of work and fee for Tasks 1 and 4, with the remainder of B&A's revised scope of work and fees for these two tasks to be addressed in new B&A Work Order No. 003 (i.e., this Work Order).

Assessing the status of right-of-entry (ROE) and property access as of January 1, 2020, B&A anticipates that no more than five multiple-field-day mobilizations will be necessary to complete field work for the Phase 1B Program Projects, and these mobilizations will be conducted in the manner outlined in B&A's memorandum to the Owner's Representative dated November 5, 2019. B&A's Level of Effort spreadsheet and fee for Task 4 – Field Surveys, is based on these five multiple-field-day mobilizations.

If additional mobilizations are required, B&A will request authorization to use the fee available in Task 7 – Supplemental Services - Task 7.6 Limited Alignment/Parcel Field Work Requests from Owner's Representative that is addressed in this Work Order No. 003. The additional scope and fee for Task 7 – Supplemental Services, is to provide access to additional funding for B&A, with prior approval from the Owner's Representative, for up to five un-anticipated and un-scoped limited parcel/alignment field survey mobilizations requested by the Owner's Representative.

Additional field mobilizations beyond the five multiple-field day mobilizations discussed above and under Task 4 of this scope of work, and beyond the five un-anticipated and un-scoped limited parcel/alignment field survey mobilizations discussed above and under Task 7 of this scope of work may result in an amendment to this scope of work and Level of Effort spreadsheet fee.

Compensation for Work Order No. 003 will be on a time and materials basis.

The scope items discussed in this Work Order No. 003 are additive to the tasks (with the same identifying task numbers) listed in B&A's original and revised Work Order No. 001.

SCOPE OF WORK

1. Project Management

    - B&A's original contract period was May 2018 through June 2020 (based on environmental schedules), for a total of 25 months. Because the ROE process has taken longer than anticipated, B&A has added six additional months to the contract period (May 2018 through December 2020) as an estimate, for a total of 31 months. Therefore, additional time is included in the Project Management Task (Task 1) through this Work Order.

4. Field Surveys

    4.2. Land Acquisition Coordination (With Exception of WTP Site)

        4.2.1. Complete and submit property access request forms.

        4.2.2. Coordinate with landowners to arrange for property access when directed by the land acquisition agent(s).

        4.2.3 Additional work required to verify ROE property specific requirements.

        4.2.4. Field surveys will be performed when ROE is obtained on as many contiguous parcels as possible, and the Owner's Rep has issued a notice to proceed (NTP) on parcels cleared for survey. Additional costs are included in this Work Order to accommodate field survey

inefficiencies that have been experienced (and are expected to continue) due to lack of ROE on sufficient parcels to allow for full days or multiple full days of field survey. Field survey activities include preparing all field data, including field data forms, field check lists, and GIS data.

No more than five multiple-field-day mobilizations will be necessary to complete field work for the Phase 1B Program Projects, and these mobilizations will be conducted in the manner outlined in B&A's memorandum to the Owner's Representative dated November 5, 2019. If additional mobilizations are required, B&A will request authorization to use the fee available in Task 7 – Supplemental Services - Task 7.6 Limited Alignment/Parcel Field Work Requests from Owner's Representative that is addressed in this Work Order No. 003.

4.2.5. Complete one agenda and meeting with land acquisition to detail specific field tasks and requests.

Revised Assumption(s) for Section 4.2:

- The Owner's Rep will issue ROE and NTP to the Environmental Consultant in order to begin field work.
- Receipt of ROE will be provided to the Environmental Consultant prior to field surveys being conducted, as required by the Owner's Rep's Field Work Site Visit Protocol.
- B&A will submit Property Access Request Forms (PARFs) to complete field work once B&A receives NTP for enough parcels to ensure efficient field crew deployment and confirms the most recent segment alignment.
- B&A will conduct this field work contingent upon receipt of the completed PARFs, and provided that the Program does not make changes to survey area requirements and landowners do not either revoke access or add last minute restrictions severely limiting B&A's ability to access these parcels or prohibiting B&A from conducting planned field work within the two-week PARF window. Should these issues arise, B&A will assess any impacts to planned field work to determine whether we are able to move forward as scheduled or will need to postpone field work due to circumstances beyond either the Program's or B&A's control.
- Archeological pedestrian surveys will occur during the first week, and any needed trenching will occur during the second week, of the two-week access window.

4.3 Survey Transmission lines, Administration/Operations Facility and Booster Pump Station, delivery points:

4.3.6. Based on re-alignments, alignment alternatives or deviations of proposed transmission lines and associated or additional delivery points, evaluate information to perform field surveys on those re-alignments, alternatives or deviations and delivery points.

4.3.7 Prepare a risk register prior to commencement of field work

4.3.8 Prepare for field surveys in compliance with the Owner's Rep's Field Work Site Visit Protocol, original and revised, including preparation of field binders (ROE table, field checklists, survey forms, field maps, etc.) and making crew assignments and travel arrangements.

4.3.9 For Administration/Operations Facility and Booster Pump Station site only, perform windshield survey of pond adjacent to site for Owner's Rep to prepare a City of San Marcos Watershed Protection Plan, as requested by Owner's Rep on June 20, 2019.

4.3.10 For Segments C and D only, conduct field surveys on the two selected inline tank sites, as requested by the Owner's Rep on August 6, 2019.

Revised Assumption(s), Alignment Modification(s), and Project Revision(s) Addressed in this Work Order, for Section 4.3:

- Transmission lines will be studied along a 150-foot buffer (75 feet to each side of the center line of the alignment) for Segments A, B, D, and E. This revised 150-ft study corridor includes the co-location of the GBRA line and the additional 20 ft on each side of the buffer for stream/creek crossings. The transmission line for Segment C will be studied along the originally scoped 100-foot buffer (50 feet to each side of the center line of the alignment).
- Realignments require additional field surveys and review of desktop information resources. Costs associated with realignments based on project experience to date are included in this Work Order. For realignments resulting in limited access/parcel field survey mobilizations, B&A will request authorization to use the fee available in Task 7 – Supplemental Services - Task 7.6 Limited Alignment/Parcel Field Work Requests from Owner's Representative that is addressed in this Work Order No. 003.
- Pipeline alignment length in mileage and corridor width determined by the survey buffer will determine the project area for B&A Team field surveys.

4.4. Deliverables

Deliverables changed or added to the Scope of Work:

4.4.1 GIS data uploads/updates including survey corridor status shapefiles, and excel file with status are required to be submitted within two weeks of field survey event

4.4.3 Field Checklists (required to be submitted within two weeks of field survey event)

7. Supplemental Services

7.6 Limited Alignment/Parcel Field Work Requests from Owner's Representative

7.6.1 Based on previous experience with field survey work performed to date and as discussed in B&A's memorandum dated November 5, 2019 to the Owner and Owner's Representative, B&A anticipates additional requests from the Owner's Representative for field mobilizations on limited numbers of parcels or portions of the alignment in response to alignment revisions, landowner conditions, or requirements that are beyond the control of either Alliance Water or B&A including, but not limited to, ROE expiration dates, specific landowner access conditions, alignment changes resulting in additional field work, temporary injunction parcel access, etc.

No more than five limited-access field survey mobilizations (i.e., beyond the protocol outlined in B&A's memorandum dated November 5, 2019) will be requested by the Owner's Representative. Additional requests beyond this number may result in an amendment to this Work Order scope and fee.

Assumption(s) for Section 7.6:

- The Owner's Representative will continue to request B&A conduct field surveys on a limited number of parcels that will add field mobilizations scope and costs beyond those included in B&A's Task 4 scope of work in Work Order No. 003.
- B&A assumes these requests will continue for the duration or B&A's work on Task 4 in the same manner that they occurred from January 2019 – December 2019. As such, any requests for limited field work that are beyond the protocol outlined in B&A's memorandum dated November 5, 2019 will be subject to the supplemental field work budget included in Task 7 of Work Order No. 003.

Alliance Water

Note: Text in blue font indicates changes in scope included in B&A's Work Order No. 003

Pipeline Consultant
1/31/2020

Detailed Overall Env Consultant Cost Breakdown

Work Order #3 Summary		
Tasks 1 - 6	$	274,844.00
Task 7	$	76,925.00
Total Work Order #3	$	351,769.00

Task	Project Role	Principal	PM	DPM	ENV Professional	Endangered Species Lead	Endangered Species Scientist	ENV Tech II	ENV Tech I	USACE Permit Lead	USACE Permit Scientist I	ENV Tech I	CR Lead	CR Scientist II	Env Tech II - Waters	Env Tech I - Waters	Senior GIS Analyst	GIS Analyst	GIS Technician	B&A Total Hours	B&A Total Labor Effort	B&A Total Expense Effort	W&M Labor	W&M Expense Effort	Total Sub Effort	Total Effort	Assumptions
	Hourly Bill Rate	$225.00	$180.00	$170.00	$150.00	$160.00	$130.00	$110.00	$90.00	$160.00	$130.00	$90.00	$160.00	$130.00	$110.00	$90.00	$140.00	$110.00	$95.00								
1	**Task 1 - Project Management**																			167	23270	0			0	23270	See Discussion - Task 1, Scope of Work
1.1	Prepare Monthly Summary Reports/Invoicing (6 additional months)	8	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	14	2,880	-			-	2,880	See Discussion - Task 1, Scope of Work
1.2	Compliance with the PMP	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			-	-	See Discussion - Task 1, Scope of Work
1.5	Schedule Development and Monthly Updates (for seven program elements, plus 2 inline storage tanks added to project)	7	4	-	-	-	-	-	41	-	-	-	-	-	-	-	-	-	-	52	5,985	-			-	5,985	See Discussion - Task 1, Scope of Work
1.6	Meetings																									-	
1.6.1	Conduct Progress Meetings with Owner's Representative (6 additional meetings)	-	16	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28	4,920	-			-	4,920	See Discussion - Task 1, Scope of Work
1.6.2	Internal team scrums (6 additional months)	-	4	16	4	-	-	-	24	7	-	-	7	-	-	-	-	-	11	73	9,485	-			-	9,485	See Discussion - Task 1, Scope of Work
4	**Task 4 - Field Surveys**																			1,445	177,065	13,297			61,212	251,574	
4.2	Land ROE Coordination (With Exception of WTP Site)																									-	
4.2.1	Complete and submit PARFs	-	4	3	-	-	-	-	22	-	-	-	-	-	-	-	-	-	-	29	3,210	-	-	-	-	3,210	See Discussion/Assumptions - Task 4, Scope of Work
4.2.2	Arrange property access, as required	-	9	9	-	-	-	-	15	-	-	-	-	-	-	-	-	-	-	33	4,500	-	1,400	-	1,400	5,900	See Discussion/Assumptions - Task 4, Scope of Work
4.2.3	Verify ROE property specific requirements	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-	-	15	1,350	-	-	-	-	1,350	See Discussion/Assumptions - Task 4, Scope of Work
4.2.4	Field survey costs due to ROE inefficiencies	-	15	30	-	15	60	67	30	4	90	75	-	60	184	-	-	-	-	630	75,200	9,551	26,550	-	26,550	111,300	See Discussion/Assumptions - Task 4, Scope of Work
4.2.5	Agenda & Meeting w/ land acquisition	-	3	6	-	-	-	-	6	-	-	-	-	-	-	-	-	-	-	15	2,100	-	573	-	573	2,673	See Discussion/Assumptions- Task 4, Scope of Work
4.3	Survey Transmission lines, Administration/Operations Facility and Booster Pump Station, delivery points																									-	
4.3.6	Survey re-alignments, alternatives, and increased area	-	60	120	-	6	-	-	45	6	-	-	6	-	-	-	-	-	6	249	38,700	-	11,921	1,293	13,214	51,914	See Discussion/Assumptions - Task 4, Scope of Work
4.3.7	Risk register prior to field work	-	1	1	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	9	980	-	-	-	-	980	See Discussion/Assumptions - Task 4, Scope of Work
4.3.8	Prepare for field surveys	-	11	22	-	-	3	-	22	-	3	-	-	3	-	-	3	18	180	265	28,370	3,746	3,765	-	3,765	35,881	See Discussion/Assumptions - Task 4, Scope of Work
4.3.9	Administration/Operations Facility and Booster Pump Station - Survey	-	1	1	-	-	-	-	-	3	3	-	-	-	-	-	-	1	-	9	1,330	-	-	-	-	1,330	See Discussion/Assumptions - Task 4, Scope of Work
4.3.10	Inline Tank (Segments C and D) surveys	-	1	3	-	1	3	3	6	3	6	6	3	6	-	-	-	-	4	45	5,550	-	1,510	-	1,510	7,060	See Discussion/Assumptions - Task 4, Scope of Work
4.4	Deliverables																									-	
4.4.1	Submit GIS data uploads	-	4	6	-	-	-	-	7	-	-	-	-	-	-	-	7	7	45	76	8,395	-	10,670	-	10,670	19,065	See Discussion/Assumptions - Task 4, Scope of Work
4.4.3	Submit Field Checklists	-	4	3	-	-	-	6	45	-	-	-	-	6	6	-	-	-	-	70	7,380	-	3,530	-	3,530	10,910	See Discussion/Assumptions - Task 4, Scope of Work
7	**Task 7 - Supplemental Services**																			475	57,425	1,250			18,250	76,925	
7.6.1	Limited Alignment/Parcel Field Work Requests from Owner's Representative (Assume 5 Field Events)	-	10	30	-	5	40	55	60	5	-	-	10	160	-	60	5	30	5	475	57,425	1,250	17,250	1,000	18,250	76,925	See Discussion/Assumptions - Task 7, Scope of Work

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS
Wednesday, February 12th, 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 Kimley-Horn & Associates, Inc. for Owner's Representative Services for March 2020 through February 2021 for the Authority's Phase 1B Program. ~ *Graham Moore, P.E., Executive Director*

Background/Information
The Authority entered into a work order with Kimley-Horn & Associates, Inc. in February 2018 for the first year of Owner's Representative Services for the Phase 1B Program and entered into a second work order in February 2019 for the second year. The current work order is set to expire on February 29, 2019.

The table below outlines the contracted fees for Owner's Representative services for the first two work orders and the actual/projected total expenditure for each:

Work Order / Period	Contract Value	Total Expenditure
#1 (3/18 – 2/19)	$2,609,966	$1,984,280
#2 (3/19 – 2/20)	$2,877,103	$2,815,225

The Executive Director negotiated a new work order with Kimley-Horn to begin on March 1, 2020 and extend through February 28, 2021. Below is a summary of the scope of work.

Scope of Work
A detailed scope of work is attached with summary costs listed below. Due to the scale of the effort it is difficult to get a definitive list of all activities that will be required. It will be incumbent upon the Executive Director to closely monitor the activities and expenditures.

Task	Anticipated Fee
1 – Program Management Plan Updates	$49,374
2 – Stakeholder Coordination	$312,436
3 - Budgeting	$119,180
4 - Schedule	$98,555
5 – Reporting	$48,920
6 – Data Management	$119,291
7 – Environmental Management	$162,199
8 – Land Acquisition Management	$510,978
9 – TWDB Management	$66,260
10 – Design Standards	$339,134

11 – Engineering Design Management	$774,030
12 – Quality Assurance	$48,021
13 – Electrical Power Planning*	$72,514
14 – Permit Coordination/Tracking	$46,899
15 – Procurement & Construction Phase	$29,213
16 – Project Administration	$57,076
17 – Other Services	$256,342
Maximum Fee	**$3,110,422**

Fee Schedule
The work is proposed to be contracted on an hourly rate basis. Kimley-Horn's subconsultants account for 56.7% of the total anticipated effort, with 53.4% of the total effort contracted to Historically Underutilized Businesses. The costs include a 10% markup by Kimley-Horn on all subconsultants work.

Contract
The work order will be issued under the terms and conditions of the Master Agreement entered into between Kimley-Horn and Alliance Water in May 2016.

Attachment(s)
- Proposal dated February 7, 2020 from Kimley-Horn for Phase 1B – Owner's Representative Services

Recommendation(s)
- The Executive Director recommends approval of the work order with Kimley-Horn & Associates

Technical Committee Decision Needed:

- Possible recommendation to the Board to approve a work order with Kimley-Horn & Associates, Inc. for Owner's Representative Services for March 2020 through February 2021 for the Authority's Phase 1B Program.

Kimley»Horn

February 7, 2020

Mr. Graham Moore, P.E.
Executive Director
Alliance Regional Water Authority
1040 Highway 123
San Marcos, TX 78666

RE: Scope of Services – Work Order No. 4
Phase 1B Infrastructure – Owner's Representative

PROJECT DEFINITION AND BACKGROUND

The Alliance Regional Water Authority (Alliance Water) has developed a Capital Improvements Plan (CIP) per Resolution 20160525-008 that identifies anticipated infrastructure requirements over the several decades. This CIP is divided into multiple project delivery phases. Phase 1A is scheduled to be completed in 2018. Phase 1B consists of infrastructure to be delivered by the end of 2023 and includes groundwater wells, water treatment plant, transmission mains, booster pump station, and eight (8) delivery points. Alliance Water and Guadalupe Blanco River Authority (GBRA) have entered into an agreement to oversize a portion of the proposed Phase 1B infrastructure to accommodate delivery of water to both Alliance Water as well as GBRA customers (three additional delivery points). The infrastructure to be oversized includes: water treatment plant, a significant portion of the transmission mains, and booster pump station.

Alliance Water has obtained a State Water Implementation Fund for Texas (SWIFT) loan from the Texas Water Development Board (TWDB) for the proposed Phase 1B Program.

The Scope of Services for this agreement consists of Kimley-Horn and Associates, Inc. ("Kimley-Horn" or "Owner's Representative") serving Alliance Water as an Owner's Representative by assisting in the management of the overall project delivery of Phase 1B Program through the completion and startup of the infrastructure in 2023. In performing the services, the Owner's Representative will operate as an extension of, and in complete coordination with, Alliance Water's staff. While maintaining a high level of coordination with Alliance Water, the Owner's Representative will be the representative and not the agent of Alliance Water. The Owner's Representative will exercise independent judgment and will operate without extensive oversight and direction. The Owner's Representative will commit the personnel and resources required to fully and effectively perform the services throughout the term of this Agreement.

Work Order No. 4 will extend for a duration of 12 months. Attachment A identifies the key phases that each infrastructure contract is anticipated to complete within this 12-month period.

KEY TERMINOLOGY

- **Consultants** – refers collectively to consultants (design, environmental, and land acquisition) that will be procured by and contracted directly with Alliance Water for the Phase 1B Program.
- **Land Acquisition Consultant Team** – refers to consultants (legal, land agent / appraisal, and survey) that will be procured by and contracted directly with Alliance Water for the land acquisition process for the Phase 1B Program.
- **Environmental Consultant –** refers to the consultant that will be procured by and contracted directly with Alliance Water to perform environmental services for the Phase 1B Program.
- **Combined Program –** refers to the infrastructure that will be shared between Alliance Water and GBRA.

SCOPE OF WORK

1. Program Management Plan Updates

This task consists of the ongoing implementation and maintenance of the Phase 1B Program Management Plan (PMP) that was developed in Work Order No. 2. The PMP defines the policies and procedures to be implemented by Phase 1B Program personnel. Tasks to be performed may include the development of additional PMP components as well as the maintenance of the following components already developed:

1.1. Communication Protocol
1.2. Document Control / Data Management Protocol
1.3. Quality Assurance Plan
1.4. Milestone Review Process Protocol
1.5. Risk Management Plan
1.6. Land Acquisition Protocol
1.7. Environmental Management Protocol
1.8. Texas Water Development Board (TWDB) Protocol
1.9. Design Management Protocol
1.10. Budget and Funding Protocol
1.11. Schedule Protocol
1.12. Reporting Protocol
1.13. Permit Management Protocol
1.14. GBRA & Project Advisory Committee (PAC) Protocol
1.15. Procurement Protocol
1.16. Construction Protocol, including integration of the Construction Management & Inspection (CM&I) team
1.17. PMP Appendices

Task Meetings:

- None

2. Stakeholder Coordination

This task consists of the coordination that will be required by the Owner's Representative in performance of the management of the Phase 1B program. Perform stakeholder coordination in accordance with the protocol established in the PMP. This task includes:

2.1. Stakeholder identification

2.2. Initial and/or Ongoing Coordination
- 2.2.1. Executive Director
- 2.2.2. Technical Committee and Board Meetings – attend and present status updates
- 2.2.3. Project Advisory Committee (PAC) Meetings – attend and present status updates
- 2.2.4. Other Alliance Water Consulting Services (Public Relations, Accounting, Legal)
- 2.2.5. Texas Commission on Environmental Quality (TCEQ)
- 2.2.6. Texas Department of Transportation (TxDOT)
- 2.2.7. Union Pacific Railroad (UPRR)
- 2.2.8. Counties (Hays, Caldwell, Guadalupe)
- 2.2.9. Cities (Kyle, San Marcos, Uhland, Lockhart, Maxwell, others)
- 2.2.10. GBRA and/or its consultants
- 2.2.11. Other utilities, entities

Task Meetings:

- Alliance Water Executive Director coordination meetings
- Alliance Water Executive Committee and Board Meetings
- PAC Meetings
- Other Alliance Water Consulting Services – as part of coordination meetings with Executive Director
- Texas Commission on Environmental Quality
- Texas Department of Transportation
- Union Pacific Railroad
- Counties
- Cities
- Other utilities, entities
- Design consultants will be required to meet with agencies separately on project specific issues.

3. Budgeting

Maintain the budget tracking protocol developed in the PMP for the Phase 1B Program. It is assumed that the budget will be maintained in Microsoft Excel and linked to the schedule. The format of the budget will be in accordance with TWDB requirements. Monthly Budget updates are anticipated with monthly review sessions as established in the PMP. This task includes:

3.1. Perform monthly budget updates:

3.1.1. Track costs to the Phase 1B Program versus the anticipated budget. Costs associated with the Combined Program will be tracked separately
3.1.2. Coordinate with applicable parties to receive current opinion of probable construction cost (OPCC) data for projects as identified in PMP.
3.1.3. Identify budget deviations and coordinate with applicable parties for potential corrective measures. Summarize budget deviations within monthly updates.

3.2. Prepare budget updates for the following parties at the frequency identified:
3.2.1. Executive Director – monthly
3.2.2. Alliance Water Board and Technical Committee – quarterly
3.2.3. PAC – quarterly
3.2.4. TWDB – quarterly
3.2.5. Public – quarterly

3.3. Program Cost Analysis and Review – perform cost analyses, which may include: evaluating proposed design standards and specifications, obtaining contractor input, and comparing cost projections prepared by Design Consultants to look for potential options for controlling projected program costs.

Task Meetings:

- None

4. Schedule

Maintain the schedule as Identified in the PMP for the Phase 1B Program. The schedule management will be performed monthly using Microsoft Project with schedule review sessions as established in the PMP (concurrent with budget review sessions). This task includes:

4.1. Perform monthly schedule updates:
4.1.1. Coordinate with applicable parties to obtain current schedules for projects
4.1.2. Identify schedule deviations and coordinate with applicable parties for potential corrective measures
4.1.3. Special updates will be performed when critical information becomes known

4.2. Prepare schedule updates for the following parties at the frequency identified:
4.2.1. Executive Director – monthly
4.2.2. Alliance Water Board and Technical Committee – quarterly
4.2.3. PAC – quarterly
4.2.4. TWDB – quarterly
4.2.5. Public – quarterly

4.3. Program Schedule Analysis and Review – perform overall program schedule analysis, which may include: obtaining contractor input and comparing schedules prepared by Design Consultants to look for potential options for controlling projected program schedule.

Task Meetings:

- None.

5. Reporting

Prepare routine progress reports as identified in the PMP for the Phase 1B Program. This task includes:

5.1. Prepare monthly progress reports:
- 5.1.1. Coordinate with applicable parties to obtain status for project tasks
- 5.1.2. Provide Board and Technical Committee a detailed report identifying what was worked on during the previous month and what is anticipated for the following month

5.2. Prepare progress updates for the following parties at the frequency identified:
- 5.2.1. Executive Director – weekly summary and monthly report
- 5.2.2. Alliance Water Board and Technical Committee – monthly
- 5.2.3. PAC – monthly
- 5.2.4. TWDB – quarterly
- 5.2.5. Public – quarterly

Task Meetings:

- None.

6. Data Management

Manage record keeping as established in the PMP. Data storage will continue to be performed utilizing Microsoft SharePoint as well as Esri ArcGIS. This task includes:

6.1. Overall data management:
- 6.1.1. Perform administrative support functions for overall project record keeping and implementing the data management system;
- 6.1.2. Enter information into applicable data management system;
- 6.1.3. Distribute updated contract documents ensuring program team maintain current version of project documents;
- 6.1.4. Prepare, manage, record, distribute and archive documentation of project activities, progress, and related communications;
- 6.1.5. Log receipt of documents and inquiries requiring a response, ensure delivery of documents to appropriate parties, track documents, and monitor timely response;
- 6.1.6. Review supporting documents for conformance with PMP guidelines;
- 6.1.7. Maintain project records;
- 6.1.8. Maintain change management logs, RFI logs, RFPs logs, submittal logs;
- 6.1.9. Perform internal audits for quality assurance of overall documents.

6.2. Microsoft SharePoint:
- 6.2.1. Perform ongoing data management of documents within SharePoint,

6.3. Interactive Web-based GIS:
- 6.3.1. Perform data updates for the following data to be hosted in ArcGIS application, assumed to occur at the frequencies identified:
  - Background Imagery (provided by Esri basemapping) – annually;
  - Parcel data (right-of-entry and land acquisition status) – weekly;
  - City / County / District boundaries – annually;

- Alliance Water proposed infrastructure – monthly;
- FEMA 100-year floodplain (from FEMA map service) – annually;
- United States Geological Service (USGS) National Hydrography Dataset (from USGS hosted map service) – annually;
- United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (from USFWS hosted map service) – annually;
- Desktop/Field Environmental data provided by Environmental Consultant – monthly;
- Topographical data – annually;
- Existing utility data – monthly

Updates/edits will be performed in an ArcGIS Desktop environment prior to being viewable in the web-based application. Data and application support and hosting will be provided for the duration of this this Work Order.

Task Meetings:

- None.

Deliverables:

- Hard copy deliverables to be provided to Alliance Water and other parties as part of the Owner's Representative services are included in this task. Deliverables may include:
  - Meeting agendas;
  - Program status reports;
  - Copies of the PMP;
  - Exhibits.

7. Environmental Management

Perform environmental management and coordination for the Phase 1B Program in accordance with the PMP. This task includes:

7.1. Perform regular coordination with Environmental Consultant to discuss ongoing activities, schedule, potential issues, deliverables, and other items related to their scope of work.
7.2. In conjunction with the Environmental Consultant, perform ongoing coordination with key agencies, including:
  7.2.1. United States Army Corps of Engineers (USACE)
  7.2.2. Texas Parks and Wildlife Department (TPWD)
  7.2.3. Local floodplain administrators.
7.3. Assist with the review of Environmental Consultant monthly invoices.
7.4. Perform continuous tracking of Environmental Consultant's project scope and assist with the development and review of potential amendments.
7.5. Perform as-needed site visits with Environmental Consultant during their field studies.
7.6. To the extent reasonably possible, site visits will be coordinated with those identified in Task 8 and 11.
7.7. Review and comment on environmental permitting documents (prepared by Environmental Consultant) for the following agencies:

7.7.1. USACE
7.7.2. TPWD
7.7.3. United States Fish and Wildlife Service (USFWS)
7.7.4. Texas Historical Commission (THC).

7.8. Review and comment on TWDB environmental deliverables prepared by Environmental Consultant.
7.9. Other Environmental Services as identified and assigned by Alliance Water.

Task Meetings:

- Environmental agency (USACE, USFWS, TPWD, THC) meetings
- Environmental Consultant Team progress meetings

8. Land Acquisition Management

Perform management and coordination for the Phase 1B Program land acquisition process in accordance with the PMP and the RAMP. This task includes:

8.1. Perform regular coordination with Land Acquisition Consultant Team (including weekly progress meetings) to discuss ongoing activities, schedule, potential issues, deliverables, and other items related to their scope of work.
8.2. Assist with the review of Land Acquisition Consultant Team monthly invoices.
8.3. Perform continuous tracking of Land Acquisition Consultant's project scope and assist with the development and review of potential amendments.
8.4. Review land acquisition data for conformance to the PMP/RAMP requirements and provide comments to the Land Acquisition Consultant Team.
8.5. Perform as-needed site visits with Land Acquisition Consultant Team.
8.6. To the extent reasonably possible, site visits will be coordinated with those identified in Task 7 and 11.
8.7. Review and comment on TWDB land acquisition deliverables prepared by Land Acquisition Consultant Team.
8.8. Coordination with landowners to facilitate access for Consultants for field work,
8.9. Weekly meetings with Alliance Water and Special Counsel,
8.10. Other Land Acquisition Services as identified and assigned by Alliance Water.

Task Meetings:

- Land Acquisition Team progress meetings

9. Texas Water Development Board Management

Perform management and coordination with the TWDB for the Phase 1B Program in accordance with the PMP. This task includes:

9.1. Identify milestone deliverables and provide feedback on critical path schedule.
9.2. Review TWDB deliverables for conformance to TWDB requirements and provide comments to the Consultants.
9.3. Perform regular coordination with the TWDB to discuss ongoing activities, schedule, potential issues, status of deliverables, and other items related to the TWDB SWIFT loan.

9.4. Prepare fund release request letters for submission to the TWDB, including required backup information.

Task Meetings:

- TWDB progress meetings

10. Design Standards

Prepare Design Standards, Standard Specifications for Construction, and associated Standard Details for the Consultants to utilize in the development of design documents. In general, the specification or details should incorporate nationally recognized standards, or regionally recognized standards, for references. Categories include:

10.1. Development of Design Standards, Specifications and Details (develop and/or update as needed):
  - 10.1.1. Transmission Pipelines and Delivery Points Design Standards
  - 10.1.2. Standard Specifications for Construction
  - 10.1.3. Standard Details
  - 10.1.4. Pipeline Corrosion Protection Standards
  - 10.1.5. Telemetry, Instrumentation & Controls, SCADA, and Security Standards – Development of Design Standards, Specifications and Details for the following:
    - 10.1.5.1. Fiber Optic Design Standards, Specifications and Details
    - 10.1.5.2. SCADA Communication Standards, Specifications and Details
    - 10.1.5.3. Instrumentation Standards, Specifications and Details
    - 10.1.5.4. Security Standards, Specifications and Details
  - 10.1.6. Facility General Electrical Standards – to be developed by the Water Treatment Plant Consultant as part of their specification development. The Owner's Representative will review and comment and coordinate with other applicable Consultants to ensure consistency.

10.2. Master Specifications – develop and/or update as needed
10.3. Record Drawings (Plans & GIS)
10.4. Address comments from Design Consultant Teams and finalize

Task Meetings:

- Specifications and Details Review Meeting (1 total).

11. Engineering Design Management

Perform engineering design management and coordination for the Phase 1B Program in accordance with the PMP. Manage the following proposed design contracts:

11.1. Hydrogeology / Well Drilling
11.2. Raw Water Infrastructure
11.3. Water Treatment Plant and High Service Pump Station
11.4. Transmission Pipelines (5 contracts)
11.5. Administration Building and Operations Center
11.6. Booster Pump Station and Delivery Points
11.7. Elevated Storage Tanks

11.8. Program Survey

The following tasks shall be performed, as applicable to the current status of the contract:

- Identify early actions required.
- Assist with the development and review of project scope (new contracts and/or contract amendments) for the Design Consultants.
- Assist with the review of proposed LOE developed by the Design Consultants.
- Review and provide comments on the Project Management Plans prepared by the Design Consultants.
- Assist with the review of Design Consultant monthly invoices.
- Perform regular coordination with the Design Consultants to discuss ongoing activities, schedule, potential issues, deliverables, and other items related to their scope of work.
- Perform as-needed site visits with Design Consultants.
- To the extent reasonably possible, site visits will be coordinated with those identified in Task 7 and 8.
- Review and comment on TWDB Engineering Feasibility Report (EFR) deliverables prepared by Design Consultants.
- Review and comment on milestone submittals (60%, 90%, final) prepared by Design Consultants.
- Review/Provide comments on Consultant OPCCs at milestones.
- Other Design-related services as assigned by Alliance Water.

Task Meetings:

- Consultant Design Teams progress meetings

12. Quality Assurance

Perform Quality Assurance protocol for the Phase 1B Program in accordance with the PMP. This task includes:

12.1. Review the Quality Assurance / Quality Control (QA/QC) Plans prepared by the Consultants for conformance to the PMP and provide comments.

12.2. Perform regular coordination with Consultants to confirm implementation of QA/QC in project activities.

12.3. At each milestone submittal, receive QA/QC documentation from Consultants and review for adherence to QA/QC Plan.

Task Meetings:

- None.

13. Electrical Power Planning

Perform ongoing planning and coordination support associated with the electrical power required for the Phase 1B Program infrastructure, including the following:

- Well Pumps and Raw Water Infrastructure
- Water Treatment Plant and High Service Pump Station

- Booster Pump Station, Administration Building and Operations Center
- Potential Corrosion Protection Systems for Transmission Pipelines

The following tasks shall be performed:

13.1. Perform preliminary analyses and coordinate with Design Consultants to determine approximate demand and energy associated with each of the potential service locations.
13.2. Develop a strategy for contacting, gathering system quality and reliability data, and discussing rates with each of the electrical service providers.
13.3. Coordinate with the electrical service providers to evaluate potential cost and reliability of service options for each location.
13.4. Assist Alliance Water with negotiations of the electrical supply agreements.
13.5. Assist the Alliance by defining special equipment needs such as power factor correction, motor starting equipment to mitigate voltage dips, etc.

Task Meetings:

- Alliance Water and Electrical Service Providers coordination meetings

14. Permit Coordination/Tracking

Perform permit coordination and tracking associated with the Phase 1B Program in accordance with the PMP. The following tasks shall be performed:

14.1. Perform regular coordination with the Consultants to discuss ongoing activities, schedule, potential issues, and other items related to permitting.
14.2. Incorporate permit updates from Consultants into master permit tracking list. The master permit tracking list will maintain linkage to the master schedule.
14.3. The following list identifies the anticipated entities that will require approvals and/or permits in the performance of the Phase 1B Program. The Consultant will provide design documents and exhibits required as part of the permit submittal.
  14.3.1. TCEQ
  14.3.2. TxDOT
  14.3.3. UPRR
  14.3.4. Counties (Hays, Caldwell, Guadalupe)
  14.3.5. Cities (Kyle, San Marcos, Uhland, Lockhart, Maxwell, others)
  14.3.6. Private utilities

Task Meetings:

- As already defined in Task 2 – Stakeholder Coordination.

15. Procurement and Construction Phase Services

Perform Procurement and Construction Phase Services associated with the Phase 1B Program in accordance with the PMP. The following tasks are anticipated:

15.1. Procurement Services
  15.1.1. Pre-Proposal Meeting

15.1.1.1. Prepare agenda and lead meeting
15.1.1.2. Collect questions and provide to Design Consultant for review and response
15.1.2. Proposal Evaluation and Recommendation
15.1.2.1. Review Design Consultant recommendation and provide formal recommendation to Owner
15.1.3. Committee and Board Items
15.1.3.1. Present Proposal Summary and formal recommendation to PAC, Technical Committee, and Board
15.1.4. Execution of Contract
15.1.4.1. Coordinate construction contract execution
15.2. Construction Phase Services
15.2.1. Administration
15.2.1.1. Prepare and present at workshop on administrative construction procedures
15.2.1.2. Review and comment on Construction Administrative Data Management Plan (prepared by the CM&I)
15.2.2. Preconstruction Meetings
15.2.2.1. Attend
15.2.3. Monthly Construction Meetings
15.2.3.1. One (1) member of the Owner's Representative team will attend monthly construction meetings for all projects, scheduled on the same 1 to 2-day span each month.
15.2.4. Construction Activities – Review and comment on applicable items, and attend meetings as needed:
15.2.4.1. Submittals (review of Program-wide elements only)
15.2.4.2. Substitutions (Consultant provides recommendation, Owner's Representative reviews and advises Owner)
15.2.4.3. Request for Information (only if RFI has contractual implications)
15.2.4.4. Pay Request (review for administrative completeness only)
15.2.4.5. Defective Work (Consultant provides recommendation, Owner's Representative reviews and advises Owner)
15.2.4.6. Change Orders (Consultant provides recommendation, Owner's Representative reviews and advises Owner)
15.2.4.7. Record Drawings (review for administrative completeness only)
15.2.4.8. Commissioning (attend and coordinate ARWA sponsors as needed)
15.2.4.9. Substantial Completion
15.2.4.10. Final Walkthrough
15.2.4.11. Warranty Walkthrough

Task Meetings:

- As already defined in Task 15 – Procurement and Construction Phase Services.

16. Project Administration

For this task, "Project" refers to the contract between the Owner's Representative and Alliance Water. The following tasks shall be performed:

16.1. Invoicing – the Owner's Representative shall submit invoices monthly in the approved format for Alliance Water review and approval. Each monthly invoice package shall include the invoice and project status report.

16.2. Project Management – the Owner's Representative shall perform miscellaneous administrative tasks, including management of manpower and budgets, subconsultant management, and other activities associated with managing the overall Owner's Representative contract.

Task Meetings:

- None.

17. Other Services

Perform services on an as-needed basis as directed by Alliance Water. These tasks could include:

17.1. Water Quality Testing and Coordination – This task consists of sampling and testing of the raw water source and customer treated water sources. This task will include testing protocols, on-site testing, lab coordination and review, summary reporting and coordination with the Water Treatment Plant Design Consultant. Sampling will occur at the raw water wells for Alliance Water and GBRA for evaluating chlorine decay, trihalomethane (THM) formation, and/or other constituents. Treated water quality sampling will be near the locations of the Alliance Water delivery points and will be performed for water blending analyses. Water quality sampling and testing will be approved in advance by Alliance Water based on the outcomes of water quality workshops and related coordination. Lab and equipment fees will be paid separately by Alliance Water.

17.2. TCEQ Exception Request Submittals – This task includes compilation and preparation of the exception requests for the transmission pipelines associated with: minimum pressures, sampling frequency and creek crossings. This task will include coordinating information from Design Consultants, submitting supporting documents to TCEQ and providing updated information as requested by the TCEQ. This task also includes exception request coordination for the water treatment plant, as deemed necessary.

17.3. Fiber, SCADA, Security Design and Procurement –

- 17.3.1. Fiber Network, SCADA communication network design
- 17.3.2. SCADA top end network, HMI systems design
- 17.3.3. Security top end network, Video management and Access control system design
- 17.3.4. For the procurement of the Fiber Optic, SCADA, and Security evaluate the use of methods such as: design build, construction manager at risk (CMAR), or sole sourcing in bid documents. Assist with the development of the Request for Qualifications (RFQ) or Request for Proposals (RFP) for this contract. Prepare a Basis of Design document to be utilized by potential bidders for the RFP.
  - 17.3.4.1. SCADA Fiber Optic Drawings and Specifications
  - 17.3.4.2. SCADA Top End Equipment Drawings and Specifications
  - 17.3.4.3. Security Top End Equipment Drawings and Specifications
- 17.3.5. Facility Electrical and Instrument design coordination for SCADA fiber network SCADA Top End and Security Top End.

17.4. SCADA Programming

- 17.4.1. Review and Comment on each facility IC design package

17.4.2. Provide comments on the process control strategies, PLC IO list and Facility network design.

17.5. Commissioning Planning – This task includes evaluating potential options for start-up and commissioning of the Phase 1B infrastructure, including coordination with Alliance Water members (sponsors) and other water utilities in the vicinity of the Phase 1B infrastructure.

17.6. Other Tasks as Assigned by Alliance Water – These tasks may include items such as: desktop-level analyses of specific technical topics (such as water quality), preparation of presentations related to technical or risk topics, and other services as requested by Alliance Water.

Task Meetings:

- None

FEE AND EXPENSES

Kimley-Horn will perform the services in Tasks 1 – 17 on a labor fee plus expense basis with the maximum fee shown below.

Task 1 Program Management Plan	$ 49,374.00
Task 2 Stakeholder Coordination	$ 312,436.00
Task 3 Budgeting	$ 119,180.00
Task 4 Schedule	$ 98,555.00
Task 5 Reporting	$ 48,920.00
Task 6 Data Management	$ 119,291.00
Task 7 Environmental Management	$ 162,199.00
Task 8 Land Acquisition Management	$ 510,978.00
Task 9 TWDB Management	$ 66,260.00
Task 10 Design Standards	$ 339,134.00
Task 11 Engineering Design Management	$ 774,030.00
Task 12 Quality Assurance	$ 48,021.00
Task 13 Electrical Power Planning	$ 72,514.00
Task 14 Permit Coordination/Tracking	$ 46,899.00
Task 15 Procurement and Construction Phase Services	$ 29,213.00
Task 16 Project Administration	$ 57,076.00
Task 17 Other Services	$ 256,342.00
Maximum Fee	$3,110,422.00

Kimley-Horn will not exceed the total maximum fee shown without authorization from Alliance Water. Individual task amounts are provided for budgeting purposes only. Kimley-Horn reserves the right to reallocate amounts among tasks as necessary. Labor fee will be billed on an hourly basis according to our then-current rates. As to these tasks, direct reimbursable expenses such as subconsultants, express delivery services, fees, air travel, and other direct expenses will be billed at 1.10 times cost. Administrative time related to the project may be billed hourly. All permitting, application, and similar project fees will be paid directly by Alliance Water.

Payment will be due within 25 days of your receipt of the invoice and should include the invoice number and Engineer project number.

Please contact me at (210) 321-3414 or ryan.sowa@kimley-horn.com should you have questions.

Very Truly Yours,

V. Ryan Sowa, P.E.
Project Manager

Glenn Gary, P.E.
Senior Vice President

ATTACHMENT A – ANTICIPATED TASKS FOR PHASE 1B CONTRACTS DURING WORK ORDER NO. 4

	CONTRACT PHASE									
CONTRACT	CONSULTANT PROCUREMENT	CONSULTANT CONTRACT EXECUTION	DESKTOP ANALYSES & SITE/ROUTE SELECTION	RIGHTS-OF-ENTRY OBTAINED	FIELD VISITS & ANALYSES	PRELIMINARY ENGINEERING REPORT COMPLETED	TWDB FINAL DESIGN/LAND ACQ. FUNDING RELEASES	FINAL DESIGN	PROCUREMENT FOR CONSTRUCTION	CONSTRUCTION PHASE
PIPELINE SEGMENT A							X	X		
PIPELINE SEGMENT B							X	X		
PIPELINE SEGMENT C							X	X		
PIPELINE SEGMENT D							X	X		
PIPELINE SEGMENT E							X	X		
WELL DRILLING									X	X
OPS. CENTER & ADMIN. BUILDING	X	X	X	X	N/A	X	N/A	X		
RAW WATER INFRASTRUCTURE			X	X	X	X	X	X		
WATER TREATMENT PLANT							X	X		
BOOSTER PUMP STATION & DELIVERY POINTS							X	X		
ELEVATED STORAGE TANKS			X	X	X	X	X	X		

Alliance Regional Water Authority Owner's Representative
Work Order No. 4 Rate Schedule
(Hourly Rate)

QA/QC Engineer / Senior Project Manager / Principal	$265
Senior Technical Advisor / Deputy Project Manager	$235
Senior Instrumentation / Electrical Engineer	$225
Property Acquisition Manager	$210
Senior Scheduler	$216
Senior Architect	$205
Senior Environmental Manager	$200
Senior Engineer	$180
GIS Specialist	$170
Instrumentation / Electrical Engineer	$170
Senior Biologist	$165
Civil Engineer	$160
GIS Developer	$155
IT Professional	$150
Architectural Project Manager	$130
CADD Operator / Senior Technician	$130
Engineer-in-Training	$125
GIS Analyst	$125
Biologist	$120
Acquisition Specialist	$110
Senior Historian	$110
Document Control Specialist	$98
Administrative Staff / Technician	$90
Archeologist	$85

Alliance Regional Water Authority
Owner's Representative / Program Management (Work Order No. 4)
2/5/2020
Detailed Overall Kimley-Horn Cost Breakdown

Project Fee Summary
Total Effort $ 3,110,422

Scope of Services

Task	Project Role	QA/QC Engineer / Senior Project Manager / Principal	Senior Tech. Advisor / Deputy Project Manager	Senior Engineer	GIS Specialist	Civil Engineer	IT Professional	Engineering-in-Training	GIS Analyst	Administrative Staff / Technician		Total Hours	Total Labor Effort	Total Expense Effort	Foster CM Group	CP&Y	Grubb	Spitzer	RVK	V&A	Total Sub Effort	Total Effort	Assumptions
	Hourly Bill Rate	$265.00	$235.00	$180.00	$170.00	$160.00	$150.00	$125.00	$125.00	$90.00													
	Task 1 - Program Management Plan Updates												$ 33,565	$ -	$ 12,621	$ -	$ -	$ 3,188	$ -	$ -	$ 15,809	$ 49,374	
1.1	Communication Protocol	1				1		2		1		5	$ 765		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 765	
1.2	Document Control / Data Management Protocol	1				1		2		1		5	$ 765		$ 2,189	$ -	$ -	$ -	$ -	$ -	$ 2,189	$ 2,954	
1.3	Quality Assurance Plan		1			1		2		1		5	$ 735		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 735	
1.4	Milestone Review Process Protocol	1				1		2		1		5	$ 765		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 765	
1.5	Risk Management Plan	1				1		2		1		5	$ 765		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 765	
1.6	Land Acquisition Protocol	1								1		2	$ 355		$ -	$ -	$ -	$ 3,188	$ -	$ -	$ 3,188	$ 3,543	
1.7	Environmental Management Protocol											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
1.8	Texas Water Development Board (TWDB) Protocol	1				1		1		1		4	$ 640		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 640	
1.9	Design Management Protocol	3				3		3		2		11	$ 1,830		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,830	
1.10	Budget and Funding Protocol	1								1		2	$ 355		$ 2,829	$ -	$ -	$ -	$ -	$ -	$ 2,829	$ 3,184	
1.11	Schedule Protocol	1								1		2	$ 355		$ 2,829	$ -	$ -	$ -	$ -	$ -	$ 2,829	$ 3,184	
1.12	Reporting Protocol	1				2		2		1		6	$ 925		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 925	
1.13	Permit Management Protocol	1								1		2	$ 355		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 355	
1.14	GBRA & PAC Protocol	1								1		2	$ 355		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 355	
1.15	Procurement Protocol	4				8		8		4		24	$ 3,700		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,700	
1.16	Construction Protocol	30				30		30		20		110	$ 18,300		$ 4,774	$ -	$ -	$ -	$ -	$ -	$ 4,774	$ 23,074	Coord. w/ CM&I Consultant, development of protocol
1.17	PMP Appendices	2				6		6		4		18	$ 2,600		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,600	
	Task 2 - Stakeholder Coordination												$ 179,460	$ 12,700	$ 18,454	$ 82,665	$ -	$ 19,158	$ -	$ -	$ 120,276	$ 312,436	
2.1	Stakeholder Identification	2										2	$ 530		$ -	$ 605	$ -	$ -	$ -	$ -	$ 605	$ 1,135	
2.2	Initial and/or Ongoing Coordination											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
2.2.1	Executive Director	104										104	$ 27,560		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 27,560	
2.2.2	Technical Committee and Board											0	$ -		$ -	$ 6,402	$ -	$ -	$ -	$ -	$ 6,402	$ 6,402	
2.2.3	PAC											0	$ -		$ -	$ 6,402	$ -	$ -	$ -	$ -	$ 6,402	$ 6,402	
2.2.4	Other Alliance Water Consulting Services	12										12	$ 3,180		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,180	
2.2.5	Texas Commission on Environmental Quality	6										6	$ 1,590		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,590	
2.2.6	Texas Department of Transportation											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
2.2.7	Union Pacific Railroad											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
2.2.8	Counties (Hays, Caldwell, Guadalupe)	10										10	$ 2,650		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,650	
2.2.9	Cities (Kyle, San Marcos, Uhland, Lockhart, Maxwell, others)	10										10	$ 2,650		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,650	
2.2.10	GBRA and/or its Consultants	24				24						48	$ 10,200		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,200	
2.2.11	Other Utilities/Entities	6										6	$ 1,590		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,590	
2.3	Alliance Water Executive Director coordination meetings	84	24			36		48		12		204	$ 40,740	$ 3,000	$ 6,032	$ 30,140	$ -	$ 8,316	$ -	$ -	$ 44,488	$ 88,228	
2.4	Alliance Water Technical Committee and Board Meetings	72				36						108	$ 24,840	$ 2,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 26,840	
2.5	PAC Meetings	36				18						54	$ 12,420	$ 1,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,420	
2.6	Other ARWA Consulting Services - as part of Coor. Mtg. with ED.	10				10						20	$ 4,250	$ 1,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,250	
2.7	Texas Commission on Environmental Quality - Meetings	8										8	$ 2,120	$ 300	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,420	
2.8	Texas Department of Transportation - Meetings	4										4	$ 1,060	$ 200	$ -	$ 1,496	$ -	$ -	$ -	$ -	$ 1,496	$ 2,756	
2.9	Union Pacific Railroad - Meetings	4										4	$ 1,060	$ 200	$ -	$ 1,496	$ -	$ -	$ -	$ -	$ 1,496	$ 2,756	
2.10	Counties - Meetings	10										10	$ 2,650	$ 500	$ -	$ 2,992	$ -	$ -	$ -	$ -	$ 2,992	$ 6,142	
2.11	Cities - Meetings	10										10	$ 2,650	$ 500	$ -	$ 2,992	$ -	$ -	$ -	$ -	$ 2,992	$ 6,142	
2.12	Other Utilities/Entities - Meetings	10										10	$ 2,650	$ 1,000	$ -	$ 1,496	$ -	$ -	$ -	$ -	$ 1,496	$ 5,146	
2.13	Internal Program Monthly Meetings	72	18			36		48				174	$ 35,070	$ 3,000	$ 12,421	$ 28,644	$ -	$ 10,842	$ -	$ -	$ 51,907	$ 89,977	
	Task 3 - Budgeting												$ 30,960	$ -	$ 88,220	$ -	$ -	$ -	$ -	$ -	$ 88,220	$ 119,180	
3.1	Perform Monthly Budget Updates	24				36						60	$ 12,120		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 12,120	
3.1.1	Track costs to the Phase 1B Program vs. the anticipated budget											0	$ -		$ 66,572	$ -	$ -	$ -	$ -	$ -	$ 66,572	$ 66,572	
3.1.2	Coordinate with applicable parties to receive current OPCC data											0	$ -		$ 2,873	$ -	$ -	$ -	$ -	$ -	$ 2,873	$ 2,873	
3.1.3	Identify budget deviations and coordinate with applicable parties											0	$ -		$ 2,398	$ -	$ -	$ -	$ -	$ -	$ 2,398	$ 2,398	
3.2	Prepare Budget Updates	24				36						60	$ 12,120		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 12,120	
3.2.1	Executive Director (Monthly)											0	$ -		$ 2,851	$ -	$ -	$ -	$ -	$ -	$ 2,851	$ 2,851	
3.2.2	Alliance Water Board and Technical Committee (Quarterly)											0	$ -		$ 1,901	$ -	$ -	$ -	$ -	$ -	$ 1,901	$ 1,901	
3.2.3	PAC (Quarterly)											0	$ -		$ 1,901	$ -	$ -	$ -	$ -	$ -	$ 1,901	$ 1,901	
3.2.4	TWDB (Quarterly)											0	$ -		$ 1,901	$ -	$ -	$ -	$ -	$ -	$ 1,901	$ 1,901	
3.2.5	Public (Quarterly)											0	$ -		$ 1,901	$ -	$ -	$ -	$ -	$ -	$ 1,901	$ 1,901	
3.3	Program Cost Evaluation	6				18		18				42	$ 6,720		$ 5,922	$ -	$ -	$ -	$ -	$ -	$ 5,922	$ 12,642	
	Task 4 - Schedule												$ 27,000	$ -	$ 71,555	$ -	$ -	$ -	$ -	$ -	$ 71,555	$ 98,555	
4.1	Perform Monthly Schedule Updates	24				24						48	$ 10,200		$ 42,812	$ -	$ -	$ -	$ -	$ -	$ 42,812	$ 53,012	
4.1.1	Coordinate with applicable parties to obtain current schedules											0	$ -		$ 2,851	$ -	$ -	$ -	$ -	$ -	$ 2,851	$ 2,851	
4.1.2	Identify schedule deviations and coordinate with applicable parties											0	$ -		$ 4,752	$ -	$ -	$ -	$ -	$ -	$ 4,752	$ 4,752	
4.1.3	Special updates will be performed when critical info becomes known											0	$ -		$ 4,763	$ -	$ -	$ -	$ -	$ -	$ 4,763	$ 4,763	
4.2	Prepare Schedule Updates	24				24						48	$ 10,200		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,200	
4.2.1	Executive Director (Monthly)											0	$ -		$ 2,851	$ -	$ -	$ -	$ -	$ -	$ 2,851	$ 2,851	
4.2.2	Alliance Water Board and Technical Committee (Quarterly)											0	$ -		$ 1,901	$ -	$ -	$ -	$ -	$ -	$ 1,901	$ 1,901	
4.2.3	PAC (Quarterly)											0	$ -		$ 1,901	$ -	$ -	$ -	$ -	$ -	$ 1,901	$ 1,901	
4.2.4	TWDB (Quarterly)											0	$ -		$ 1,901	$ -	$ -	$ -	$ -	$ -	$ 1,901	$ 1,901	
4.2.5	Public (Quarterly)											0	$ -		$ 1,901	$ -	$ -	$ -	$ -	$ -	$ 1,901	$ 1,901	
4.3	Program Schedule Evaluation	12				12		12				36	$ 6,600		$ 5,922	$ -	$ -	$ -	$ -	$ -	$ 5,922	$ 12,522	
	Task 5 - Reporting												$ 48,920	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 48,920	
5.1	Prepare Monthly Progress Reports	24				24		24				72	$ 13,200		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 13,200	
5.2	Prepare Progress Updates (ED., ARWA, TWDB, Public)											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
5.2.1	Executive Director (Weekly Summary and Monthly Report)	12				12		24				48	$ 8,100		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,100	
5.2.2	Alliance Water Board and Committees (Monthly)	24				36		36				96	$ 16,620		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 16,620	
5.2.3	PAC (Monthly)	12				12		12				36	$ 6,600		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,600	
5.2.4	TWDB (Quarterly)											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
5.2.5	Public (Quarterly)	8				8		8				24	$ 4,400		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,400	
	Task 6 - Data Management												$ 57,990	$ 11,000	$ 50,301	$ -	$ -	$ -	$ -	$ -	$ 50,301	$ 119,291	
6.1	Overall Data Management	6				36		48				90	$ 13,350		$ 45,126	$ -	$ -	$ -	$ -	$ -	$ 45,126	$ 58,476	

Alliance Regional Water Authority
Owner's Representative / Program Management (Work Order No. 4)
2/5/2020
Detailed Overall Kimley-Horn Cost Breakdown

Project Fee Summary	
Total Effort	$ 3,110,422

Scope of Services

Task	Project Role	QA/QC Engineer / Senior Project Manager / Principal	Senior Tech. Advisor / Deputy Project Manager	Senior Engineer	GIS Specialist	Civil Engineer	IT Professional	Engineering-in-Training	GIS Analyst	Administrative Staff / Technician		Total Hours	Total Labor Effort	Total Expense Effort	Foster CM Group	CP&Y	Grubb	Spitzer	RVK	V&A	Total Sub Effort	Total Effort	Assumptions
	Hourly Bill Rate	$265.00	$235.00	$180.00	$170.00	$160.00	$150.00	$125.00	$125.00	$90.00													
6.1.1	Perform admin. Support functions for overall project record keeping											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
6.1.2	Enter information into applicable data management system											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
6.1.3	Distribute updated contract documents											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
6.1.4	Prepare, manage, record, distribute and archive documentation											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
6.1.5	Log receipt of all documents and inquiries requiring a response											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
6.1.6	Review supporting documents for conformance with PMP											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
6.1.7	Maintain project records											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
6.1.8	Maintain change management logs, RFI logs, RFP logs, Submittal logs											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
6.1.9	Perform internal audits for quality assurance of overall documents											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
6.2	Microsoft SharePoint											0	$ -		$ 5,174	$ -	$ -	$ -	$ -	$ -	$ 5,174	$ 5,174	
6.2.1	Perform ongoing data management of documents within SharePoint	6				48	60	48				162	$ 24,270	$ 4,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 28,270	
6.3	Interactive Web-based GIS											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
6.3.1	Perform ongoing incorporation of data within ArcGIS	6			24	24		36	36			138	$ 20,370	$ 2,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 22,370	
6.4	Deliverables											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
6.4.1	Hard copy deliverable to be provided to Alliance Water											0	$ -	$ 5,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,000	
6.4.1.1	Meeting Agendas											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
6.4.1.2	Program status reports											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
6.4.1.3	Copies of the PMP											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
6.4.1.4	Exhibits											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Task 7 - Environmental Management												$ 13,380	$ -	$ -	$ 148,819	$ -	$ -	$ -	$ -	$ 148,819	$ 162,199	
7.1	Perform regular coordination with Env. Cons.	24				24						48	$ 10,200		$ -	$ 41,745	$ -	$ -	$ -	$ -	$ 41,745	$ 51,945	
7.2	Ongoing agency coordination											0	$ -		$ -	$ 7,260	$ -	$ -	$ -	$ -	$ 7,260	$ 7,260	
7.2.1	United States Army Corps of Engineers (USACE)											0	$ -		$ -	$ 2,904	$ -	$ -	$ -	$ -	$ 2,904	$ 2,904	
7.2.2	Texas Parks and Wildlife Department (TPWD)											0	$ -		$ -	$ 4,356	$ -	$ -	$ -	$ -	$ 4,356	$ 4,356	
7.2.3	Local floodplain administrators											0	$ -		$ -	$ 2,904	$ -	$ -	$ -	$ -	$ 2,904	$ 2,904	
7.3	Assist with the review of Env. Cons. monthly invoices											0	$ -		$ -	$ 4,356	$ -	$ -	$ -	$ -	$ 4,356	$ 4,356	
7.4	Continuous tracking of Env. Cons. Scope of work & amendments	12										12	$ 3,180		$ -	$ 7,260	$ -	$ -	$ -	$ -	$ 7,260	$ 10,440	
7.5	Perform as-needed site visits with Env Cons. during Field Study											0	$ -		$ -	$ 5,016	$ -	$ -	$ -	$ -	$ 5,016	$ 5,016	
7.6	Coordinated site visits with those identified in Task 8 and 11											0	$ -		$ -	$ 1,452	$ -	$ -	$ -	$ -	$ 1,452	$ 1,452	
7.7	Review and comment on Environmental Permitting Documents											0	$ -		$ -	$ 5,808	$ -	$ -	$ -	$ -	$ 5,808	$ 5,808	
7.7.1	USACE											0	$ -		$ -	$ 6,996	$ -	$ -	$ -	$ -	$ 6,996	$ 6,996	
7.7.2	TPWD											0	$ -		$ -	$ 9,900	$ -	$ -	$ -	$ -	$ 9,900	$ 9,900	
7.7.3	United States Fish and Wildlife Service (USFWS)											0	$ -		$ -	$ 5,544	$ -	$ -	$ -	$ -	$ 5,544	$ 5,544	
7.7.4	Texas Historical Commission (THC)											0	$ -		$ -	$ 7,744	$ -	$ -	$ -	$ -	$ 7,744	$ 7,744	
7.8	Review and comment on TWDB deliverables by Env. Cons.											0	$ -		$ -	$ 21,780	$ -	$ -	$ -	$ -	$ 21,780	$ 21,780	
7.9	Other Environmental Services as defined by Alliance Water											0	$ -		$ -	$ 7,260	$ -	$ -	$ -	$ -	$ 7,260	$ 7,260	
7.10	Environmental Agency meetings (USACE, USFWA, TPWD, THC)											0	$ -		$ -	$ 4,356	$ -	$ -	$ -	$ -	$ 4,356	$ 4,356	
7.11	Environmental Consultant Team progress meetings											0	$ -		$ -	$ 2,178	$ -	$ -	$ -	$ -	$ 2,178	$ 2,178	
	Task 8 - Land Acquisition Management												$ 54,580	$ 400	$ -	$ -	$ -	$ 455,998	$ -	$ -	$ 455,998	$ 510,978	
8.1	Perform regular coordination with Ld. Acq. Cons.	48				60						108	$ 22,320		$ -	$ -	$ -	$ 295,680	$ -	$ -	$ 295,680	$ 318,000	
8.2	Assist with the review of Ld. Acq. Cons. monthly invoices											0	$ -		$ -	$ -	$ -	$ 10,718	$ -	$ -	$ 10,718	$ 10,718	
8.3	Continuous tracking of Land Acq. Scope of work & amendments	12										12	$ 3,180		$ -	$ -	$ -	$ 7,392	$ -	$ -	$ 7,392	$ 10,572	
8.4	Review land acquisition data for conformance to the PMP/RAMP											0	$ -		$ -	$ -	$ -	$ 31,185	$ -	$ -	$ 31,185	$ 31,185	
8.5	Perform as-needed site visits with Ld. Acq. Cons.											0	$ -		$ -	$ -	$ -	$ 1,155	$ -	$ -	$ 1,155	$ 1,155	
8.6	Coordinated site visits with those identified in Task 7 and 11											0	$ -		$ -	$ -	$ -	$ 1,155	$ -	$ -	$ 1,155	$ 1,155	
8.7	Review and comment on TWDB land acquisition deliverables	12				12						24	$ 5,100		$ -	$ -	$ -	$ 4,112	$ -	$ -	$ 4,112	$ 9,212	
8.8	Coord. with landowners to facilitate access for Consultants for field work											0	$ -		$ -	$ -	$ -	$ 75,372	$ -	$ -	$ 75,372	$ 75,372	
8.9	Other Ld. Acq. services as identified and assigned by Alliance Water	24				24						48	$ 10,200		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,200	
8.10	Land Acquisition Team progress meetings	52										52	$ 13,780	$ 400	$ -	$ -	$ -	$ 29,229	$ -	$ -	$ 29,229	$ 43,409	
	Task 9 - Texas Water Development Board Management												$ 9,540	$ 400	$ -	$ 56,320	$ -	$ -	$ -	$ -	$ 56,320	$ 66,260	
9.1	Identify milestone deliverables and provide feedback on CP schedule											0	$ -		$ -	$ 7,040	$ -	$ -	$ -	$ -	$ 7,040	$ 7,040	
9.2	Review TWDB deliverables for conformance to TWDB requirements	24										24	$ 6,360		$ -	$ 21,120	$ -	$ -	$ -	$ -	$ 21,120	$ 27,480	
9.3	Perform regular coordination with the TWDB to discuss ongoing actions											0	$ -		$ -	$ 14,080	$ -	$ -	$ -	$ -	$ 14,080	$ 14,080	
9.4	Prepare fund release request letters for submission to TWDB											0	$ -		$ -	$ 7,040	$ -	$ -	$ -	$ -	$ 7,040	$ 7,040	
9.5	TWDB progress meeting	12										12	$ 3,180	$ 400	$ -	$ 7,040	$ -	$ -	$ -	$ -	$ 7,040	$ 10,620	
	Task 10 - Design Standards												$ 110,070	$ 2,400	$ -	$ 170,786	$ -	$ -	$ -	$ 55,878	$ 226,664	$ 339,134	
10.1	Development of Design Standards, Specifications, and Details											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
10.1.1	Transmission Pipelines and Delivery Points Design Stds. - Finalize	8				10		10		10		38	$ 5,870		$ -	$ 5,610	$ -	$ -	$ -	$ -	$ 5,610	$ 11,480	
10.1.2	Preparation of Standard Specifications for Const. - Finalize	60	30			10				20		120	$ 26,350		$ -	$ 11,594	$ -	$ -	$ -	$ -	$ 11,594	$ 37,944	
10.1.3	Preparation of Standard Details - Finalize	30	10			10		80				130	$ 21,900		$ -	$ 11,594	$ -	$ -	$ -	$ -	$ 11,594	$ 33,494	
10.1.4	Pipeline Corrosion Protection Standards	15				20						35	$ 7,175		$ -	$ 2,299	$ -	$ -	$ -	$ -	$ 2,299	$ 9,474	
10.1.4.1	Document Review											0	$ -		$ -	$ -	$ -	$ -	$ -	$ 23,403	$ 23,403	$ 23,403	Review of final design submittals for each project
10.1.4.2	Corrosivity Investigation Standards											0	$ -		$ -	$ -	$ -	$ -	$ -	$ 2,255	$ 2,255	$ 2,255	
10.1.4.3	Cathodic Protection Design Standards											0	$ -		$ -	$ -	$ -	$ -	$ -	$ 1,188	$ 1,188	$ 1,188	
10.1.4.4	Pipeline Corrosion Standards TM											0	$ -		$ -	$ -	$ -	$ -	$ -	$ 7,354	$ 7,354	$ 7,354	
10.1.4.5	Standard Details & Specifications											0	$ -		$ -	$ -	$ -	$ -	$ -	$ 12,359	$ 12,359	$ 12,359	
10.1.4.6	Standards Review Meeting	5				5						10	$ 2,125	$ 400	$ -	$ -	$ -	$ -	$ -	$ 9,320	$ 9,320	$ 11,845	
10.1.5	Facility General Electrical Standards	5										5	$ 1,325		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,325	
10.1.6	Telemetry, Instrumentation & Controls, SCADA, and Security Standards	20										20	$ 5,300		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,300	
10.1.6.1	Fiber Optic Standards											0	$ -		$ -	$ 38,049	$ -	$ -	$ -	$ -	$ 38,049	$ 38,049	
10.1.6.2	SCADA Standards											0	$ -		$ -	$ 20,625	$ -	$ -	$ -	$ -	$ 20,625	$ 20,625	
10.1.6.3	I&C Standards											0	$ -		$ -	$ 20,625	$ -	$ -	$ -	$ -	$ 20,625	$ 20,625	
10.1.6.4	Security Standards											0	$ -		$ -	$ 30,811	$ -	$ -	$ -	$ -	$ 30,811	$ 30,811	
10.2	Master Specifications - Finalize	20	10							10		40	$ 8,550		$ -	$ 7,788	$ -	$ -	$ -	$ -	$ 7,788	$ 16,338	
10.3	Record Drawings (Plans & GIS)	10	5			20		40				75	$ 12,025		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 12,025	
10.4	Address comments from Design Consultant Teams and Finalize	15	15			10		30				70	$ 12,850		$ -	$ 17,281	$ -	$ -	$ -	$ -	$ 17,281	$ 30,131	
10.5	Standards Review Meeting	10	10			10						30	$ 6,600	$ 2,000	$ -	$ 4,510	$ -	$ -	$ -	$ -	$ 4,510	$ 13,110	

Alliance Regional Water Authority
Owner's Representative / Program Management (Work Order No. 4)
2/5/2020
Detailed Overall Kimley-Horn Cost Breakdown

Project Fee Summary	
Total Effort	$ 3,110,422

Scope of Services

Task	Project Role	QA/QC Engineer / Senior Project Manager / Principal	Senior Tech. Advisor / Deputy Project Manager	Senior Engineer	GIS Specialist	Civil Engineer	IT Professional	Engineering-in-Training	GIS Analyst	Administrative Staff / Technician	Total Hours	Total Labor Effort	Total Expense Effort	Foster CM Group	CP&Y	Grubb	Spitzer	RVK	V&A	Total Sub Effort	Total Effort	Assumptions
	Hourly Bill Rate	$265.00	$235.00	$180.00	$170.00	$160.00	$150.00	$125.00	$125.00	$90.00												
	Task 11 - Engineering Design Management											$ 413,415	$ 4,000	$ -	$ 309,771	$ -	$ -	$ 46,844	$ -	$ 356,615	$ 774,030	
11.1	Management and Coordination of Hydrogeology/Well Drilling	12									12	$ 3,180		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,180	Procurement / Construction Phase
	Identify early actions required										0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Assist with the development and review of project scope for the DC										0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Assist with the review of proposed LOE developed by the DC										0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Assist with the review of Design Consultants monthly invoices	6									6	$ 1,590		$ -	$ 3,168	$ -	$ -	$ -	$ -	$ 3,168	$ 4,758	
	Perform regular coordination with the DC to discuss ongoing tasks										0	$ -		$ -	$ 9,504	$ -	$ -	$ -	$ -	$ 9,504	$ 9,504	
	Perform as-needed site visits with Design Consultants										0	$ -		$ -	$ 7,568	$ -	$ -	$ -	$ -	$ 7,568	$ 7,568	
	Review/Comment on TWDB EFR deliverables prepared by DC										0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Review/Comment on milestone submittals prepared by DC										0	$ -		$ -	$ 15,477	$ -	$ -	$ -	$ -	$ 15,477	$ 15,477	
	Review/Comment on OPCC's prepared by DC										0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Other Design-related services as assigned by Alliance Water	12									12	$ 3,180		$ -	$ 7,018	$ -	$ -	$ -	$ -	$ 7,018	$ 10,198	
11.2	Management and Coordination of Well Pumps and Raw Water Inf.										0	$ -		$ -	$ 605	$ -	$ -	$ -	$ -	$ 605	$ 605	Final Design Phase
	Identify early actions required										0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Assist with the development and review of project scope for the DC	4									4	$ 1,060		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,060	Construction Phase Work Order Review
	Assist with the review of proposed LOE developed by the DC	4									4	$ 1,060		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,060	Construction Phase Work Order Review
	Assist with the review of Design Consultants monthly invoices	12									12	$ 3,180		$ -	$ 2,376	$ -	$ -	$ -	$ -	$ 2,376	$ 5,556	
	Perform regular coordination with the DC to discuss ongoing tasks	12									12	$ 3,180		$ -	$ 13,728	$ -	$ -	$ -	$ -	$ 13,728	$ 16,908	
	Perform as-needed site visits with Design Consultants										0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Review/Comment on TWDB EFR deliverables prepared by DC										0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Review/Comment on milestone submittals prepared by DC	18									18	$ 4,770		$ -	$ 20,328	$ -	$ -	$ -	$ -	$ 20,328	$ 25,098	60%, 90%, 100% Submittals
	Review/Comment on OPCC's prepared by DC	6									6	$ 1,590		$ -	$ 2,376	$ -	$ -	$ -	$ -	$ 2,376	$ 3,966	
	Other Design-related services as assigned by Alliance Water	24									24	$ 6,360		$ -	$ 17,952	$ -	$ -	$ -	$ -	$ 17,952	$ 24,312	
11.3	Management and Coordination of WTP and HSPS										0	$ -		$ -	$ 2,420	$ -	$ -	$ -	$ -	$ 2,420	$ 2,420	Final Design & Procurement Phase
	Identify early actions required										0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Assist with the development and review of project scope for the DC	4									4	$ 1,060		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,060	Construction Phase Work Order Review
	Assist with the review of proposed LOE developed by the DC	4									4	$ 1,060		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,060	Construction Phase Work Order Review
	Assist with the review of Design Consultants monthly invoices	12									12	$ 3,180		$ -	$ 2,970	$ -	$ -	$ -	$ -	$ 2,970	$ 6,150	
	Perform regular coordination with the DC to discuss ongoing tasks	24									24	$ 6,360		$ -	$ 14,388	$ -	$ -	$ -	$ -	$ 14,388	$ 20,748	
	Perform as-needed site visits with Design Consultants										0	$ -		$ -	$ 2,398	$ -	$ -	$ -	$ -	$ 2,398	$ 2,398	
	Review/Comment on TWDB EFR deliverables prepared by DC										0	$ -		$ -	$ 4,796	$ -	$ -	$ -	$ -	$ 4,796	$ 4,796	
	Review/Comment on milestone submittals prepared by DC	24									24	$ 6,360		$ -	$ 31,856	$ -	$ -	$ -	$ -	$ 31,856	$ 38,216	60%, 90%, 100% Submittals
	Review/Comment on OPCC's prepared by DC	6									6	$ 1,590		$ -	$ 5,764	$ -	$ -	$ -	$ -	$ 5,764	$ 7,354	
	Other Design-related services as assigned by Alliance Water	36									36	$ 9,540		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 9,540	
11.4	Management and Coordination of Transmission Pipeline (5 Contracts)										0	$ -		$ -	$ 1,210	$ -	$ -	$ -	$ -	$ 1,210	$ 1,210	Final Design & Procurement (A, B, D), EFR & Final Design (C,
	Identify early actions required										0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Assist with the development and review of project scope for the DC	6		6		12					24	$ 4,590		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,590	Construction Phase Work Order Review (Segments A, B, D)
	Assist with the review of proposed LOE developed by the DC	6		6		12					24	$ 4,590		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,590	Construction Phase Work Order Review (Segments A, B, D)
	Assist with the review of Design Consultants monthly invoices	60		24		48					132	$ 27,900		$ -	$ 4,752	$ -	$ -	$ -	$ -	$ 4,752	$ 32,652	
	Perform regular coordination with the DC to discuss ongoing tasks	60		84		168					312	$ 57,900		$ -	$ 13,728	$ -	$ -	$ -	$ -	$ 13,728	$ 71,628	
	Perform as-needed site visits with Design Consultants	10		10		20					40	$ 7,650	$ 1,000	$ -	$ 5,984	$ -	$ -	$ -	$ -	$ 5,984	$ 14,634	
	Review/Comment on TWDB EFR deliverables prepared by DC	4		4		4					12	$ 2,420		$ -	$ 5,984	$ -	$ -	$ -	$ -	$ 5,984	$ 8,404	Segments C, E
	Review/Comment on milestone submittals prepared by DC	48		24		48					120	$ 24,720		$ -	$ 25,432	$ -	$ -	$ -	$ -	$ 25,432	$ 50,152	60%, 90%, 100% Submittals
	Review/Comment on OPCC's prepared by DC	12		6		12					30	$ 6,180		$ -	$ 8,976	$ -	$ -	$ -	$ -	$ 8,976	$ 15,156	
	Other Design-related services as assigned by Alliance Water	60		30		96					186	$ 36,660		$ -	$ 14,960	$ -	$ -	$ -	$ -	$ 14,960	$ 51,620	
11.5	Management and Coordination of Admin. Building and Ops. Center										0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	EFR Phase through Final Design Phase
	Identify early actions required	4									4	$ 1,060		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,060	
	Assist with the development and review of project scope for the DC	4									4	$ 1,060		$ -	$ -	$ -	$ -	$ 2,030	$ -	$ 2,030	$ 3,090	
	Assist with the review of proposed LOE developed by the DC	4									4	$ 1,060		$ -	$ -	$ -	$ -	$ 1,353	$ -	$ 1,353	$ 2,413	
	Review and provide comments on the PMP prepared by the DC										0	$ -		$ -	$ -	$ -	$ -	$ 1,023	$ -	$ 1,023	$ 1,023	
	Assist with the review of Design Consultants monthly invoices	6									6	$ 1,590		$ -	$ -	$ -	$ -	$ 3,850	$ -	$ 3,850	$ 5,440	
	Perform regular coordination with the DC to discuss ongoing tasks										0	$ -		$ -	$ -	$ -	$ -	$ 19,443	$ -	$ 19,443	$ 19,443	
	Perform initial windshield survey to review the overall Phase 1B projects										0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Perform as-needed site visits with Design Consultants										0	$ -		$ -	$ -	$ -	$ -	$ 572	$ -	$ 572	$ 572	
	Review/Comment on TWDB EFR deliverables prepared by DC	4									4	$ 1,060		$ -	$ -	$ -	$ -	$ 1,023	$ -	$ 1,023	$ 2,083	
	Review/Comment on milestone submittals prepared by DC	8									8	$ 2,120		$ -	$ -	$ -	$ -	$ 7,673	$ -	$ 7,673	$ 9,793	
	Review/Comment on OPCC's prepared by DC	4									4	$ 1,060		$ -	$ -	$ -	$ -	$ 1,793	$ -	$ 1,793	$ 2,853	
	Other Design-related services as assigned by Alliance Water	6									6	$ 1,590		$ -	$ -	$ -	$ -	$ 2,558	$ -	$ 2,558	$ 4,148	
11.6	Management and Coordination of BPS & Delivery Points										0	$ -		$ -	$ 605	$ -	$ -	$ -	$ -	$ 605	$ 605	Final Design & Procurement Phase
	Identify early actions required										0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Assist with the development and review of project scope for the DC	3		6							9	$ 1,875		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,875	Construction Phase Work Order Review
	Assist with the review of proposed LOE developed by the DC	3		6							9	$ 1,875		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,875	Construction Phase Work Order Review
	Assist with the review of Design Consultants monthly invoices	12		24							36	$ 7,500		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 7,500	
	Perform regular coordination with the DC to discuss ongoing tasks			60							60	$ 10,800		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,800	
	Perform as-needed site visits with Design Consultants			5							5	$ 900	$ 500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,400	
	Review/Comment on TWDB EFR deliverables prepared by DC										0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Review/Comment on milestone submittals prepared by DC	24		24							48	$ 10,680		$ -	$ 15,422	$ -	$ -	$ -	$ -	$ 15,422	$ 26,102	60%, 90%, 100% Submittals
	Review/Comment on OPCC's prepared by DC	6		6							12	$ 2,670		$ -	$ 5,104	$ -	$ -	$ -	$ -	$ 5,104	$ 7,774	
	Other Design-related services as assigned by Alliance Water	36		36							72	$ 16,020		$ -	$ 11,946	$ -	$ -	$ -	$ -	$ 11,946	$ 27,966	
11.7	Management and Coordination of Elevated Storage Tanks										0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	EFR Phase through Final Design Phase
	Identify early actions required										0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Assist with the development and review of project scope for the DC	4		8							12	$ 2,500		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,500	Final Design & Procurement Phase Work Order Review
	Assist with the review of proposed LOE developed by the DC	4		8							12	$ 2,500		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,500	Final Design & Procurement Phase Work Order Review
	Assist with the review of Design Consultants monthly invoices	12		24							36	$ 7,500		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 7,500	
	Perform regular coordination with the DC to discuss ongoing tasks			48							48	$ 8,640		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 8,640	
	Perform as-needed site visits with Design Consultants			5							5	$ 900	$ 500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,400	
	Review/Comment on TWDB EFR deliverables prepared by DC	4		8							12	$ 2,500		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,500	
	Review/Comment on milestone submittals prepared by DC	4		8							12	$ 2,500		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 2,500	
	Review/Comment on OPCC's prepared by DC	4		4							8	$ 1,780		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,780	
	Other Design-related services as assigned by Alliance Water	24		24							48	$ 10,680		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 10,680	
11.8	Management and Coordination of Program Survey										0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	Assumed 8 months of Remaining Program Survey Effort
	Identify early actions required										0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	

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Project Fee Summary
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Task	Project Role	QA/QC Engineer / Senior Project Manager / Principal	Senior Tech. Advisor / Deputy Project Manager	Senior Engineer	GIS Specialist	Civil Engineer	IT Professional	Engineering-in-Training	GIS Analyst	Administrative Staff / Technician		Total Hours	Total Labor Effort	Total Expense Effort	Foster CM Group	CP&Y	Grubb	Spitzer	RVK	V&A	Total Sub Effort	Total Effort	Assumptions
	Hourly Bill Rate	$265.00	$235.00	$180.00	$170.00	$160.00	$150.00	$125.00	$125.00	$90.00													
	Assist with the development and review of project scope for the DC											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Assist with the review of proposed LOE developed by the DC											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Assist with the review of Design Consultants monthly invoices	8				16						24	$ 4,680		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4,680	
	Perform regular coordination with the DC to discuss ongoing tasks	16				48						64	$ 11,920		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 11,920	
	Perform as-needed site visits with Design Consultants											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Review/Comment on TWDB EFR deliverables prepared by DC											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Review/Comment on milestone submittals prepared by DC	10		20		60						90	$ 15,850		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 15,850	Plat & Field Note Documents (Segment C, E)
	Review/Comment on OPCC's prepared by DC											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Other Design-related services as assigned by Alliance Water	5		10		20						35	$ 6,325		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,325	
11.9	Consultant Design Teams progress meetings											0	$ -		$ -	$ -	$ -	$ -	$ 5,528	$ -	$ 5,528	$ 5,528	
11.9.1	Hydrogeology / Well Drilling	6										6	$ 1,590		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,590	
11.9.2	Raw Water Facilities	6										6	$ 1,590		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,590	
11.9.3	WTP / HSPS	6										6	$ 1,590		$ -	$ 10,956	$ -	$ -	$ -	$ -	$ 10,956	$ 12,546	
11.9.4	Pipelines	30		24		48						102	$ 19,950	$ 1,000	$ -	$ 20,020	$ -	$ -	$ -	$ -	$ 20,020	$ 40,970	
11.9.5	Administrative Building and Operations Center	6										6	$ 1,590		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,590	
11.9.6	BPS & Delivery Points	6		24								30	$ 5,910	$ 500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,410	
11.9.7	Elevated Storage Tanks	6		24								30	$ 5,910	$ 500	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 6,410	
11.9.8	Program Survey	12										12	$ 3,180		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 3,180	
	Task 12 - Quality Assurance												$ 23,865	$ -	$ -	$ 24,156	$ -	$ -	$ -	$ -	$ 24,156	$ 48,021	
12.1	Review the QA/QC Plans prepared by the Consultants based on PMP	3	20	3		12						38	$ 7,955		$ -	$ 8,052	$ -	$ -	$ -	$ -	$ 8,052	$ 16,007	
12.2	Perform regular coordination with all Consultants on QA/QC imp.	3	20	3		12						38	$ 7,955		$ -	$ 8,052	$ -	$ -	$ -	$ -	$ 8,052	$ 16,007	
12.3	Review/Receive QA/QC documentation from Consultants	3	20	3		12						38	$ 7,955		$ -	$ 8,052	$ -	$ -	$ -	$ -	$ 8,052	$ 16,007	
	Task 13 - Electrical Power Planning												$ 7,950	$ 500	$ -	$ -	$ 64,064	$ -	$ -	$ -	$ 64,064	$ 72,514	
13.1	Perform Prelim. Analyses to determine approx. demand and energy	4										4	$ 1,060		$ -	$ -	$ 5,060	$ -	$ -	$ -	$ 5,060	$ 6,120	
13.2	Develop a strategy for cont., gathering system quality, and reliability data	4										4	$ 1,060		$ -	$ -	$ 5,456	$ -	$ -	$ -	$ 5,456	$ 6,516	
13.3	Coordination with Electrical Service Providers to evaluate costs	4										4	$ 1,060		$ -	$ -	$ 15,659	$ -	$ -	$ -	$ 15,659	$ 16,719	
13.4	Assist Alliance Water with negotiations on the electrical supply agr.	4										4	$ 1,060		$ -	$ -	$ 15,659	$ -	$ -	$ -	$ 15,659	$ 16,719	
13.5	Assist Alliance Water by defining special equipment needs	4										4	$ 1,060		$ -	$ -	$ 5,852	$ -	$ -	$ -	$ 5,852	$ 6,912	
13.6	Alliance Water and Electrical Service Providers Coord. Meetings	10										10	$ 2,650	$ 500	$ -	$ -	$ 16,379	$ -	$ -	$ -	$ 16,379	$ 19,529	
	Task 14 - Permit Coordination/Tracking												$ 7,970	$ -	$ -	$ 38,929	$ -	$ -	$ -	$ -	$ 38,929	$ 46,899	
14.1	Perform regular coordination with Consultants	4										4	$ 1,060		$ -	$ 12,892	$ -	$ -	$ -	$ -	$ 12,892	$ 13,952	
14.2	Incorporate permit updates from Consultants into master tracking list	4										4	$ 1,060		$ -	$ 6,468	$ -	$ -	$ -	$ -	$ 6,468	$ 7,528	
14.3	Management of Permit Submittal	10				20						30	$ 5,850		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 5,850	
14.3.1	TCEQ											0	$ -		$ -	$ 6,160	$ -	$ -	$ -	$ -	$ 6,160	$ 6,160	
14.3.2	TxDOT – Design Consultants											0	$ -		$ -	$ 4,246	$ -	$ -	$ -	$ -	$ 4,246	$ 4,246	
14.3.3	UPRR											0	$ -		$ -	$ 2,750	$ -	$ -	$ -	$ -	$ 2,750	$ 2,750	
14.3.4	Counties (Hays, Caldwell, Guadalupe)											0	$ -		$ -	$ 2,596	$ -	$ -	$ -	$ -	$ 2,596	$ 2,596	
14.3.5	Cities (Kyle, San Marcos, Uhland, Lockhart, Maxwell, others)											0	$ -		$ -	$ 1,771	$ -	$ -	$ -	$ -	$ 1,771	$ 1,771	
14.3.6	Private utilities											0	$ -		$ -	$ 2,046	$ -	$ -	$ -	$ -	$ 2,046	$ 2,046	
	Task 15 - Procurement and Construction Phase Services												$ 11,195	$ -	$ -	$ 18,018	$ -	$ -	$ -	$ -	$ 18,018	$ 29,213	
15.1	Procurement Services											0	$ -		$ -	$ 1,210	$ -	$ -	$ -	$ -	$ 1,210	$ 1,210	Well Drilling & Pipelines A, B, D
15.1.1	Pre-Proposal Meeting	6				3		3				12	$ 2,445		$ -	$ 2,101	$ -	$ -	$ -	$ -	$ 2,101	$ 4,546	
15.1.2	Proposal Evaluation and Recommendation	4				2						6	$ 1,380		$ -	$ 1,309	$ -	$ -	$ -	$ -	$ 1,309	$ 2,689	
15.1.3	Committee and Board Items (PAC, TC, and Board)	2				2						4	$ 850		$ -	$ 517	$ -	$ -	$ -	$ -	$ 517	$ 1,367	
15.1.4	Execution of Contract	1				1						2	$ 425		$ -	$ 2,101	$ -	$ -	$ -	$ -	$ 2,101	$ 2,526	
15.2	Construction Phase Services											0	$ -		$ -	$ 1,210	$ -	$ -	$ -	$ -	$ 1,210	$ 1,210	Well Drilling (+/- 9 months of construction)
15.2.1	Administration	5										5	$ 1,325		$ -	$ 3,168	$ -	$ -	$ -	$ -	$ 3,168	$ 4,493	
15.2.2	Preconstruction Meetings	4										4	$ 1,060		$ -	$ 792	$ -	$ -	$ -	$ -	$ 792	$ 1,852	
15.2.3	Monthly Construction Meetings											0	$ -		$ -	$ 4,026	$ -	$ -	$ -	$ -	$ 4,026	$ 4,026	
15.2.4	Construction Activities											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
15.2.4.1	Submittals	2										2	$ 530		$ -	$ 1,584	$ -	$ -	$ -	$ -	$ 1,584	$ 2,114	
15.2.4.2	Substitutions											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
15.2.4.3	Request for Information	3										3	$ 795		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 795	
15.2.4.4	Pay Request	6										6	$ 1,590		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1,590	
15.2.4.5	Defective Work											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
15.2.4.6	Change Orders	3										3	$ 795		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 795	
15.2.4.7	Record Drawings											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
15.2.4.8	Commissioning											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
15.2.4.9	Substantial Completion											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
15.2.4.10	Final Walkthrough											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
15.2.4.11	Warranty Walkthrough											0	$ -		$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	
	Task 16 - Project Administration												$ 25,620	$ -	$ 5,702	$ 10,912	$ 1,584	$ 2,587	$ 5,082	$ 5,588	$ 31,456	$ 57,076	
16.1	Invoicing	12				24		12		60		108	$ 13,920		$ 5,702	$ 6,292	$ 1,584	$ 2,587	$ 5,082	$ 1,188	$ 22,436	$ 36,356	
16.2	Project Management	24				24		12				60	$ 11,700		$ -	$ 4,620	$ -	$ -	$ -	$ 4,400	$ 9,020	$ 20,720	
	Task 17 - Other Services												$ 82,850	$ -	$ -	$ 173,492	$ -	$ -	$ -	$ -	$ 173,492	$ 256,342	
17.1	Water Quality Testing and Coordination	5				5						10	$ 2,125		$ -	$ 21,054	$ -	$ -	$ -	$ -	$ 21,054	$ 23,179	
17.2	TCEQ Exception Request Submittals	5				20						25	$ 4,525		$ -	$ 10,912	$ -	$ -	$ -	$ -	$ 10,912	$ 15,437	
17.3	Fiber, SCADA, Security Design and Procurement	40										40	$ 10,600		$ -	$ 1,210	$ -	$ -	$ -	$ -	$ 1,210	$ 11,810	
17.3.1	Fiber Network, SCADA communication network design											0	$ -		$ -	$ 15,928	$ -	$ -	$ -	$ -	$ 15,928	$ 15,928	
17.3.2	SCADA top end network, HMI systems design											0	$ -		$ -	$ 15,928	$ -	$ -	$ -	$ -	$ 15,928	$ 15,928	
17.3.3	Security top end network, Video management and Access control system design											0	$ -		$ -	$ 15,928	$ -	$ -	$ -	$ -	$ 15,928	$ 15,928	
17.3.4	Procurement of the Fiber Optic, SCADA, and Security	40										40	$ 10,600		$ -	$ 1,210	$ -	$ -	$ -	$ -	$ 1,210	$ 11,810	
17.3.4.1	SCADA Fiber Optic Drawings and Specifications											0	$ -		$ -	$ 17,028	$ -	$ -	$ -	$ -	$ 17,028	$ 17,028	
17.3.4.2	SCADA Fiber Top End Equipment Drawings and Specifications											0	$ -		$ -	$ 17,028	$ -	$ -	$ -	$ -	$ 17,028	$ 17,028	
17.3.4.3	Security Top End Equipment Drawings and Specifications											0	$ -		$ -	$ 17,028	$ -	$ -	$ -	$ -	$ 17,028	$ 17,028	

Alliance Regional Water Authority

Owner's Representative / Program Management (Work Order No. 4)

2/5/2020

Detailed Overall Kimley-Horn Cost Breakdown

Project Fee Summary

Total Effort	$ 3,110,422

Scope of Services

Task	Project Role	QA/QC Engineer / Senior Project Manager / Principal	Senior Tech. Advisor / Deputy Project Manager	Senior Engineer	GIS Specialist	Civil Engineer	IT Professional	Engineering-in-Training	GIS Analyst	Administrative Staff / Technician		Total Hours	Total Labor Effort	Total Expense Effort	Foster CM Group	CP&Y	Grubb	Spitzer	RVK	V&A	Total Sub Effort	Total Effort	Assumptions
	Hourly Bill Rate	$265.00	$235.00	$180.00	$170.00	$160.00	$150.00	$125.00	$125.00	$90.00													
17.3.5	Facility Electrical and Instrument Design coordination											0	$ -		$ -	$ 15,708	$ -	$ -	$ -	$ -	$ 15,708	$ 15,708	
17.4	SCADA Programing	20										20	$ 5,300		$ -	$ 1,210	$ -	$ -	$ -	$ -	$ 1,210	$ 6,510	
17.4.1	Review and Comment on each facility IC design package											0	$ -		$ -	$ 6,952	$ -	$ -	$ -	$ -	$ 6,952	$ 6,952	
17.4.2	Provide comments											0	$ -		$ -	$ 3,476	$ -	$ -	$ -	$ -	$ 3,476	$ 3,476	
17.5	Commissioning Planning	40				60		60				160	$ 27,700		$ -	$ 5,632	$ -	$ -	$ -	$ -	$ 5,632	$ 33,332	
17.6	Other design tasks as assigned by Alliance Water	40				40		40				120	$ 22,000		$ -	$ 7,260	$ -	$ -	$ -	$ -	$ 7,260	$ 29,260	
												Grand Total	$ 1,138,330	$ 31,400	$ 246,853	$ 1,033,868	$ 65,648	$ 480,931	$ 51,926	$ 61,466	$ 1,940,692	$ 3,110,422	
													Subconsultant Base Fee		$ 224,412	$ 939,880	$ 59,680	$ 437,210	$ 47,205	$ 55,878	SUM		
													% of Total Fee		7.2%	30.2%	1.9%	14.1%	1.5%	1.8%	56.7%		
														10% Markup	$ 246,853	$ 1,033,868	$ 65,648	$ 480,931	$ 51,926	$ 61,466			

Alliance Water Owners Representative 2/6/2020 Detailed Overall Foster CM Group Cost Breakdown	Project Fee Summary	
	Total Effort	$ 224,412

Basic Services									
Task									
	Project Role	Senior Scheduler	Document Control Specialist		Total Hours	Total Labor Effort	Total Expense Effort	Total Effort	Assumptions
	Hourly Bill Rate	$216.00	$98.00						
	Task 1 - Program Management Plan Updates					$ 11,384	$ 90	$ 11,474	
1.1	Communication Protocol				0	$ -		$ -	
1.2	Document Control / Data Management Protocol		20		20	$ 1,960	$ 30	$ 1,990	Allowance for Protocol Modification; mileage for 3 mtgs
1.3	Quality Assurance Plan				0	$ -		$ -	
1.4	Milestone Review Process Protocol				0	$ -		$ -	
1.5	Risk Management Plan				0	$ -		$ -	
1.6	Land Acquisition Protocol				0	$ -		$ -	
1.7	Environmental Management Protocol				0	$ -		$ -	
1.8	Texas Water Development Board (TWDB) Protocol				0	$ -		$ -	
1.9	Design Management Protocol				0	$ -		$ -	
1.10	Budget and Funding Protocol	10	4		14	$ 2,552	$ 20	$ 2,572	Allowance for Protocol Modification; mileage for 2 mtgs Filing in Sharepoint
1.11	Schedule Protocol	10	4		14	$ 2,552	$ 20	$ 2,572	Allowance for Protocol Modification; mileage for 2 mtgs Filing in Sharepoint
1.12	Reporting Protocol				0	$ -		$ -	
1.13	Permit Management Protocol				0	$ -		$ -	
1.14	GBRA & PAC Protocol				0	$ -		$ -	
1.15	Procurement Protocol				0	$ -		$ -	
1.16	Construction Protocol	20			20	$ 4,320	$ 20	$ 4,340	Establish Protocol; mileage for 2 meetings
1.17	PMP Appendices				0	$ -		$ -	
	Task 2 - Stakeholder Coordination					$ 16,336	$ 440	$ 16,776	
2.1	Stakeholder Identification				0	$ -		$ -	
2.2	Initial and/or Ongoing Coordination				0	$ -		$ -	
2.2.1	Executive Director				0	$ -		$ -	
2.2.2	Technical Committee and Board				0	$ -		$ -	
2.2.3	PAC				0	$ -		$ -	
2.2.4	Other Alliance Water Consulting Services				0	$ -		$ -	
2.2.5	Texas Commission on Environmental Quality				0	$ -		$ -	
2.2.6	Texas Department of Transportation				0	$ -		$ -	
2.2.7	Union Pacific Railroad				0	$ -		$ -	
2.2.8	Counties (Hays, Caldwell, Guadalupe)				0	$ -		$ -	
2.2.9	Cities (Kyle, San Marcos, Uhland, Lockhart, Maxwell, others)				0	$ -		$ -	
2.2.10	GBRA and/or its Consultants				0	$ -		$ -	
2.2.11	Other Utilities/Entities				0	$ -		$ -	
2.3	Alliance Water Executive Director coordination meetings	24			24	$ 5,184	$ 300	$ 5,484	4 hr/mtg x 6 mtgs; mileage
2.4	Alliance Water Technical Committee and Board Meetings				0	$ -		$ -	
2.5	PAC Meetings				0	$ -		$ -	
2.6	Other ARWA Consulting Services - as part of Coor. Mtg. with ED.				0	$ -		$ -	
2.7	Texas Commission on Environmental Quality - Meetings				0	$ -		$ -	
2.8	Texas Department of Transportation - Meetings				0	$ -		$ -	
2.9	Union Pacific Railroad - Meetings				0	$ -		$ -	
2.10	Counties - Meetings				0	$ -		$ -	
2.11	Cities - Meetings				0	$ -		$ -	

Alliance Water Owners Representative 2/6/2020 Detailed Overall Foster CM Group Cost Breakdown	Project Fee Summary	
	Total Effort	$ 224,412

Basic Services									
Task	Project Role	Senior Scheduler	Document Control Specialist		Total Hours	Total Labor Effort	Total Expense Effort	Total Effort	Assumptions
	Hourly Bill Rate	$216.00	$98.00						
2.12	Other Utilities/Entities - Meetings				0	$ -		$ -	
2.13	Internal Program Monthly Meetings	48	8		56	$ 11,152	$ 140	$ 11,292	Scheduler: 4 hr/mtg x 12 mtgs / Doc Controls: 4 hr/mtg x 2 mtgs
	Task 3 - Budgeting					$ 79,920	$ 280	$ 80,200	
3.1	Perform Monthly Budget Updates				0	$ -		$ -	
3.1.1	Track costs to the Phase 1B Program vs. the anticipated budget	280			280	$ 60,480	$ 40	$ 60,520	Allowance based upon Year 2 activity reduced for existing templet ; 4 mtgs
3.1.2	Coordinate with applicable parties to receive current OPCC data	12			12	$ 2,592	$ 20	$ 2,612	Allowance
3.1.3	Identify budget deviations and coordinate with applicable parties	10			10	$ 2,160	$ 20	$ 2,180	Allowance
3.2	Prepare Budget Updates				0	$ -		$ -	
3.2.1	Executive Director (Monthly)	12			12	$ 2,592		$ 2,592	1 hr/mnth x 12 months
3.2.2	Alliance Water Board and Technical Committee (Quarterly)	8			8	$ 1,728		$ 1,728	2 hr/qtr x 4 qtr
3.2.3	PAC (Quarterly)	8			8	$ 1,728		$ 1,728	2 hr/qtr x 4 qtr
3.2.4	TWDB (Quarterly)	8			8	$ 1,728		$ 1,728	2 hr/qtr x 4 qtr
3.2.5	Public (Quarterly)	8			8	$ 1,728		$ 1,728	2 hr/qtr x 4 qtr
3.3	Program Cost Evaluation	24			24	$ 5,184	$ 200	$ 5,384	6 hr / qtr x 4 qtr, incl mtgs
	Task 4 - Schedule					$ 64,800	$ 250	$ 65,050	
4.1	Perform Monthly Schedule Updates	180			180	$ 38,880	$ 40	$ 38,920	Allowance based upon Year 2 activity increased for new schedule development / 4 mtgs
4.1.1	Coordinate with applicable parties to obtain current schedules	12			12	$ 2,592		$ 2,592	Allowance based upon Year 2 activity increased for new schedule development / 4 mtgs
4.1.2	Identify schedule deviations and coordinate with applicable parties	20			20	$ 4,320		$ 4,320	Allowance based upon Year 2 activity increased for new schedule development / 4 mtgs
4.1.3	Special updates will be performed when critical info becomes known	20			20	$ 4,320	$ 10	$ 4,330	Allowance with 1 mtg
4.2	Prepare Schedule Updates				0	$ -		$ -	
4.2.1	Executive Director (Monthly)	12			12	$ 2,592		$ 2,592	1 hr / mnth x 12 mnths
4.2.2	Alliance Water Board and Technical Committee (Quarterly)	8			8	$ 1,728		$ 1,728	2 hr/qtr x 4 qtr
4.2.3	PAC (Quarterly)	8			8	$ 1,728		$ 1,728	2 hr/qtr x 4 qtr
4.2.4	TWDB (Quarterly)	8			8	$ 1,728		$ 1,728	2 hr/qtr x 4 qtr
4.2.5	Public (Quarterly)	8			8	$ 1,728		$ 1,728	2 hr/qtr x 4 qtr
4.3	Program Schedule Evaluation	24			24	$ 5,184	$ 200	$ 5,384	6 hr / qtr x 4 qtr, incl mtgs
	Task 5 - Reporting					$ -	$ -	$ -	
	Task 6 - Data Management					$ 45,668	$ 60	$ 45,728	
6.1	Overall Data Management		418		418	$ 40,964	$ 60	$ 41,024	Allowabce based upon Year 2 effort with 1 trip / month
6.1.1	Perform admin. Support functions for overall project record keeping				0	$ -		$ -	
6.1.2	Enter information into applicable data management system				0	$ -		$ -	
6.1.3	Distribute updated contract documents				0	$ -		$ -	
6.1.4	Prepare, manage, record, distribute and archive documentation				0	$ -		$ -	
6.1.5	Log receipt of all documents and inquiries requiring a response				0	$ -		$ -	
6.1.6	Review supporting documents for conformance with PMP				0	$ -		$ -	
6.1.7	Maintain project records				0	$ -		$ -	
6.1.8	Maintain change management logs, RFI logs, RFP logs, Submittal logs				0	$ -		$ -	

FOSTER CM

Alliance Water Owners Representative 2/6/2020 Detailed Overall Foster CM Group Cost Breakdown	Project Fee Summary	
	Total Effort	$ 224,412

Basic Services									
Task									
	Project Role	Senior Scheduler	Document Control Specialist		Total Hours	Total Labor Effort	Total Expense Effort	Total Effort	Assumptions
	Hourly Bill Rate	$216.00	$98.00						
6.1.9	Perform internal audits for quality assurance of overall documents				0	$ -		$ -	
6.2	Microsoft SharePoint		48		48	$ 4,704		$ 4,704	Allowance for additional file setup
6.2.1	Perform ongoing data management of documents within SharePoint				0	$ -		$ -	
6.3	Interactive Web-based GIS				0	$ -		$ -	
6.3.1	Perform ongoing incorporation of data within ArcGIS				0	$ -		$ -	
6.4	Deliverables				0	$ -		$ -	
6.4.1	Hard copy deliverable to be provided to Alliance Water				0	$ -		$ -	
6.4.1.1	Meeting Agendas				0	$ -		$ -	
6.4.1.2	Program status reports				0	$ -		$ -	
6.4.1.3	Copies of the PMP				0	$ -		$ -	
6.4.1.4	Exhibits				0	$ -		$ -	
	Task 7 - Environmental Management					$ -	$ -	$ -	
	Task 8 - Land Acquisition Management					$ -	$ -	$ -	
	Task 9 - Texas Water Development Board Management					$ -	$ -	$ -	
	Task 10 - Design Standards					$ -	$ -	$ -	
	Task 11 - Engineering Design Management					$ -	$ -	$ -	
	Task 12 - Quality Assurance					$ -	$ -	$ -	
	Task 13 - Electrical Power Planning					$ -	$ -	$ -	
	Task 14 - Permit Coordination/Tracking					$ -	$ -	$ -	
	Task 15 - Procurement and Construction Phase Services					$ -	$ -	$ -	
	Task 16 - Project Administration					$ 5,184	$ -	$ 5,184	
16.1	Invoicing	24			24	$ 5,184		$ 5,184	
16.2	Project Management				0	$ -		$ -	
	Task 17 - Other Services					$ -	$ -	$ -	
				Grand Total		$ 223,292	$ 1,120	$ 224,412	

CP&Y

Alliance Water
Owners Representative
2/6/2020
Detailed Overall CP&Y Cost Breakdown

Project Fee Summary	
Total Effort	$ 939,880

Basic Services

Task	Project Role	QA/QC Engineer / Senior Project Manager / Principal	Senior Tech. Advisor / Deputy Project Manager	Senior Instrumentation / Electrical Engineer	Senior Environmental Manager	Senior Engineer	Instrumentation/ Elec Eng	Civil Engineer	Senior Biologist	GIS Developer	CADD Operator / Senior Technician	Engineering-in-Training	Biologist	Administrative Staff / Technician	Archeologist	Senior Historian	Total Hours	Total Labor Effort	Total Expense Effort	Total Effort	Assumptions
	Hourly Bill Rate	$265.00	$235.00	$225.00	$200.00	$180.00	$170.00	$160.00	$165.00	$155.00	$130.00	$125.00	$120.00	$90.00	$85.00	$110.00					
	Task 1 - Program Management Plan Updates																	$ -	$ -	$ -	
	Task 2 - Stakeholder Coordination																	$ 74,600	$ 550	$ 75,150	
2.1	Stakeholder Identification																0	$ -	$ 550	$ 550	
2.2	Initial and/or Ongoing Coordination																0	$ -		$ -	
2.2.1	Executive Director																0	$ -		$ -	
2.2.2	Technical Committee and Board		12				12	6									30	$ 5,820		$ 5,820	
2.2.3	PAC		12				12	6									30	$ 5,820		$ 5,820	
2.2.4	Other Alliance Water Consulting Services																0	$ -		$ -	
2.2.5	Texas Commission on Environmental Quality																0	$ -		$ -	
2.2.6	Texas Department of Transportation																0	$ -		$ -	
2.2.7	Union Pacific Railroad																0	$ -		$ -	
2.2.8	Counties (Hays, Caldwell, Guadalupe)																0	$ -		$ -	
2.2.9	Cities (Kyle, San Marcos, Uhland, Lockhart, Maxwell, others)																0	$ -		$ -	
2.2.10	GBRA and/or its Consultants																0	$ -		$ -	
2.2.11	Other Utilities/Entities																0	$ -		$ -	
2.3	Alliance Water Executive Director coordination meetings		24			48	8	24	48								152	$ 27,400		$ 27,400	
2.4	Alliance Water Technical Committee and Board Meetings																0	$ -		$ -	
2.5	PAC Meetings																0	$ -		$ -	
2.6	Other ARWA Consulting Services - as part of Coor. Mtg. with ED.																0	$ -		$ -	
2.7	Texas Commission on Environmental Quality - Meetings																0	$ -		$ -	
2.8	Texas Department of Transportation - Meetings					4		4									8	$ 1,360		$ 1,360	
2.9	Union Pacific Railroad - Meetings					4		4									8	$ 1,360		$ 1,360	
2.10	Counties - Meetings					8		8									16	$ 2,720		$ 2,720	
2.11	Cities - Meetings					8		8									16	$ 2,720		$ 2,720	
2.12	Other Utilities/Entities - Meetings					4		4									8	$ 1,360		$ 1,360	
2.13	Internal Program Monthly Meetings		24			48		24	48								144	$ 26,040		$ 26,040	
	Task 3 - Budgeting																	$ -	$ -	$ -	
	Task 4 - Schedule																	$ -	$ -	$ -	
	Task 5 - Reporting																	$ -	$ -	$ -	
	Task 6 - Data Management																	$ -	$ -	$ -	
	Task 7 - Environmental Management																	$ 135,290	$ -	$ 135,290	
7.1	Perform regular coordination with Env. Cons.								230								230	$ 37,950		$ 37,950	
7.2	Ongoing agency coordination								40								40	$ 6,600		$ 6,600	
7.2.1	United States Army Corps of Engineers (USACE)								16								16	$ 2,640		$ 2,640	
7.2.2	Texas Parks and Wildlife Department (TPWD)								24								24	$ 3,960		$ 3,960	
7.2.3	Local floodplain administrators								16								16	$ 2,640		$ 2,640	
7.3	Assist with the review of Env. Cons. monthly invoices								24								24	$ 3,960		$ 3,960	
7.4	Continuous tracking of Env. Cons. Scope of work & amendments								40								40	$ 6,600		$ 6,600	
7.5	Perform as-needed site visits with Env Cons. during Field Study								16				16				32	$ 4,560		$ 4,560	
7.6	Coordinated site visits with those identified in Task 8 and 11								8								8	$ 1,320		$ 1,320	
7.7	Review and comment on Environmental Permitting Documents								32								32	$ 5,280		$ 5,280	
7.7.1	USACE								24				20				44	$ 6,360		$ 6,360	
7.7.2	TPWD								40				20				60	$ 9,000		$ 9,000	
7.7.3	United States Fish and Wildlife Service (USFWS)								16				20				36	$ 5,040		$ 5,040	
7.7.4	Texas Historical Commission (THC)								16					40			56	$ 7,040		$ 7,040	
7.8	Review and comment on TWDB deliverables by Env. Cons.								120								120	$ 19,800		$ 19,800	
7.9	Other Environmental Services as defined by Alliance Water								40								40	$ 6,600		$ 6,600	
7.1	Environmental Agency meetings (USACE, USFWA, TPWD, THC)								24								24	$ 3,960		$ 3,960	
7.11	Environmental Consultant Team progress meetings								12								12	$ 1,980		$ 1,980	
	Task 8 - Land Acquisition Management																	$ -	$ -	$ -	
	Task 9 - Texas Water Development Board Management																	$ 51,200	$ -	$ 51,200	
9.1	Identify milestone deliverables and provide feedback on CP schedule							40									40	$ 6,400		$ 6,400	
9.2	Review TWDB deliverables for conformance to TWDB requirements							120									120	$ 19,200		$ 19,200	
9.3	Perform regular coordination with the TWDB to discuss ongoing actions							80									80	$ 12,800		$ 12,800	
9.4	Prepare fund release request letters for submission to TWDB							40									40	$ 6,400		$ 6,400	
9.5	TWDB progress meeting							40									40	$ 6,400		$ 6,400	
	Task 10 - Design Standards																	$ 155,260	$ -	$ 155,260	
10.1	Development of Design Standards, Specifications, and Details																0	$ -		$ -	
10.1.1	Transmission Pipelines and Delivery Points Design Stds. - Finalize		4			16		8									28	$ 5,100		$ 5,100	
10.1.2	Preparation of Standard Specifications for Const. - Finalize		4			24	16	16									60	$ 10,540		$ 10,540	
10.1.3	Preparation of Standard Details - Finalize		4			24	16	16									60	$ 10,540		$ 10,540	
10.1.4	Pipeline Corrosion Protection Standards		2	4		4											10	$ 2,090		$ 2,090	
10.1.4.1	Document Review																0	$ -		$ -	
10.1.4.2	Corrosivity Investigation Standards																0	$ -		$ -	
10.1.4.3	Cathodic Protection Design Standards																0	$ -		$ -	
10.1.4.4	Pipeline Corrosion Standards TM																0	$ -		$ -	
10.1.4.5	Standard Details & Specifications																0	$ -		$ -	
10.1.4.6	Standards Review Meeting																0	$ -		$ -	
10.1.5	Facility General Electrical Standards																0	$ -		$ -	
10.1.6	Telemetry, Instrumentation & Controls, SCADA, and Security Standards																0	$ -		$ -	
10.1.6.1	Fiber Optic Standards		2	80			60				40			8			190	$ 34,590		$ 34,590	
10.1.6.2	SCADA Standards		2	40			32				24			8			106	$ 18,750		$ 18,750	

CP&Y

Alliance Water
Owners Representative
2/6/2020
Detailed Overall CP&Y Cost Breakdown

Project Fee Summary	
Total Effort	$ 939,880

Basic Services

Task	Project Role	QA/QC Engineer / Senior Project Manager / Principal	Senior Tech. Advisor / Deputy Project Manager	Senior Instrumentation / Electrical Engineer	Senior Environmental Manager	Senior Engineer	Instrumentation/ Elec Eng	Civil Engineer	Senior Biologist	GIS Developer	CADD Operator / Senior Technician	Engineering-in-Training	Biologist	Administrative Staff / Technician	Archeologist	Senior Historian	Total Hours	Total Labor Effort	Total Expense Effort	Total Effort	Assumptions
	Hourly Bill Rate	$265.00	$235.00	$225.00	$200.00	$180.00	$170.00	$160.00	$165.00	$155.00	$130.00	$125.00	$120.00	$90.00	$85.00	$110.00					
10.1.6.3	I&C Standards		2	40			32				24			8			106	$ 18,750		$ 18,750	
10.1.6.4	Security Standards		2	60			60				24			8			154	$ 28,010		$ 28,010	
10.2	Master Specifications - Finalize		4	12		12		8									36	$ 7,080		$ 7,080	
10.3	Record Drawings (Plans & GIS)																0	$ -		$ -	
10.4	Address comments from Design Consultant Teams and Finalize		2	16		8		8			40	24		8			106	$ 15,710		$ 15,710	
10.5	Standards Review Meeting		4	8		4		4									20	$ 4,100		$ 4,100	
	Task 11 - Engineering Design Management																	$ 277,210	$ 4,400	$ 281,610	
11.1	Management and Coordination of Hydrogeology/Well Drilling																0	$ -		$ -	
	Identify early actions required																0	$ -		$ -	
	Assist with the development and review of project scope for the DC																0	$ -		$ -	
	Assist with the review of proposed LOE developed by the DC																0	$ -		$ -	
	Assist with the review of Design Consultants monthly invoices					16											16	$ 2,880		$ 2,880	
	Perform regular coordination with the DC to discuss ongoing tasks					48											48	$ 8,640		$ 8,640	
	Perform as-needed site visits with Design Consultants					24		16									40	$ 6,880		$ 6,880	
	Review/Comment on TWDB EFR deliverables prepared by DC																0	$ -		$ -	
	Review/Comment on milestone submittals prepared by DC		2			40		40									82	$ 14,070		$ 14,070	
	Review/Comment on OPCC's prepared by DC																0	$ -		$ -	
	Other Design-related services as assigned by Alliance Water		4			16		16									36	$ 6,380		$ 6,380	
11.2	Management and Coordination of Well Pumps and Raw Water Inf.																0	$ -	$ 550	$ 550	
	Identify early actions required																0	$ -		$ -	
	Assist with the development and review of project scope for the DC																0	$ -		$ -	
	Assist with the review of proposed LOE developed by the DC																0	$ -		$ -	
	Assist with the review of Design Consultants monthly invoices					12											12	$ 2,160		$ 2,160	
	Perform regular coordination with the DC to discuss ongoing tasks					48		24									72	$ 12,480		$ 12,480	
	Perform as-needed site visits with Design Consultants																0	$ -		$ -	
	Review/Comment on TWDB EFR deliverables prepared by DC																0	$ -		$ -	
	Review/Comment on milestone submittals prepared by DC					60		48									108	$ 18,480		$ 18,480	
	Review/Comment on OPCC's prepared by DC					12											12	$ 2,160		$ 2,160	
	Other Design-related services as assigned by Alliance Water					48		48									96	$ 16,320		$ 16,320	
11.3	Management and Coordination of WTP and HSPS																0	$ -	$ 2,200	$ 2,200	
	Identify early actions required																0	$ -		$ -	
	Assist with the development and review of project scope for the DC																0	$ -		$ -	
	Assist with the review of proposed LOE developed by the DC																0	$ -		$ -	
	Assist with the review of Design Consultants monthly invoices			12													12	$ 2,700		$ 2,700	
	Perform regular coordination with the DC to discuss ongoing tasks			24				48									72	$ 13,080		$ 13,080	
	Perform as-needed site visits with Design Consultants			4				8									12	$ 2,180		$ 2,180	
	Review/Comment on TWDB EFR deliverables prepared by DC			8				16									24	$ 4,360		$ 4,360	
	Review/Comment on milestone submittals prepared by DC		16	16		40	24	60						8			164	$ 28,960		$ 28,960	
	Review/Comment on OPCC's prepared by DC		4	4		8	4	8									28	$ 5,240		$ 5,240	
	Other Design-related services as assigned by Alliance Water																0	$ -		$ -	
11.4	Management and Coordination of Transmission Pipeline (5 Contracts)																0	$ -	$ 1,100	$ 1,100	
	Identify early actions required																0	$ -		$ -	
	Assist with the development and review of project scope for the DC																0	$ -		$ -	
	Assist with the review of proposed LOE developed by the DC																0	$ -		$ -	
	Assist with the review of Design Consultants monthly invoices					24											24	$ 4,320		$ 4,320	
	Perform regular coordination with the DC to discuss ongoing tasks					48		24									72	$ 12,480		$ 12,480	
	Perform as-needed site visits with Design Consultants					16		16									32	$ 5,440		$ 5,440	
	Review/Comment on TWDB EFR deliverables prepared by DC					16		16									32	$ 5,440		$ 5,440	
	Review/Comment on milestone submittals prepared by DC		4	4		60	24	40									132	$ 23,120		$ 23,120	
	Review/Comment on OPCC's prepared by DC					24		24									48	$ 8,160		$ 8,160	
	Other Design-related services as assigned by Alliance Water					40		40									80	$ 13,600		$ 13,600	
11.5	Management and Coordination of Admin. Building and Ops. Center																0	$ -		$ -	
	Identify early actions required																0	$ -		$ -	
	Assist with the development and review of project scope for the DC																0	$ -		$ -	
	Assist with the review of proposed LOE developed by the DC																0	$ -		$ -	
	Review and provide comments on the PMP prepared by the DC																0	$ -		$ -	
	Assist with the review of Design Consultants monthly invoices																0	$ -		$ -	
	Perform regular coordination with the DC to discuss ongoing tasks																0	$ -		$ -	
	Perform initial windshield survey to review the overall Phase 1B projects																0	$ -		$ -	
	Perform as-needed site visits with Design Consultants																0	$ -		$ -	
	Review/Comment on TWDB EFR deliverables prepared by DC																0	$ -		$ -	
	Review/Comment on milestone submittals prepared by DC																0	$ -		$ -	
	Review/Comment on OPCC's prepared by DC																0	$ -		$ -	
	Other Design-related services as assigned by Alliance Water																0	$ -		$ -	
11.6	Management and Coordination of BPS & Delivery Points																0	$ -	$ 550	$ 550	
	Identify early actions required																0	$ -		$ -	
	Assist with the development and review of project scope for the DC																0	$ -		$ -	
	Assist with the review of proposed LOE developed by the DC																0	$ -		$ -	
	Assist with the review of Design Consultants monthly invoices																0	$ -		$ -	
	Perform regular coordination with the DC to discuss ongoing tasks																0	$ -		$ -	
	Perform as-needed site visits with Design Consultants																0	$ -		$ -	
	Review/Comment on TWDB EFR deliverables prepared by DC																0	$ -		$ -	
	Review/Comment on milestone submittals prepared by DC		4	8		40	24										76	$ 14,020		$ 14,020	
	Review/Comment on OPCC's prepared by DC		4	4		8	8										24	$ 4,640		$ 4,640	

CP&Y

Alliance Water
Owners Representative
2/6/2020
Detailed Overall CP&Y Cost Breakdown

Project Fee Summary	
Total Effort	$ 939,880

Basic Services

Task	Project Role	QA/QC Engineer / Senior Project Manager / Principal	Senior Tech. Advisor / Deputy Project Manager	Senior Instrumentation / Electrical Engineer	Senior Environmental Manager	Senior Engineer	Instrumentation/ Elec Eng	Civil Engineer	Senior Biologist	GIS Developer	CADD Operator / Senior Technician	Engineering-in-Training	Biologist	Administrative Staff / Technician	Archeologist	Senior Historian	Total Hours	Total Labor Effort	Total Expense Effort	Total Effort	Assumptions
	Hourly Bill Rate	$265.00	$235.00	$225.00	$200.00	$180.00	$170.00	$160.00	$165.00	$155.00	$130.00	$125.00	$120.00	$90.00	$85.00	$110.00					
	Other Design-related services as assigned by Alliance Water		4			40	16										60	$ 10,860		$ 10,860	
11.7	Management and Coordination of Elevated Storage Tanks																0	$ -		$ -	
	Identify early actions required																0	$ -		$ -	
	Assist with the development and review of project scope for the DC																0	$ -		$ -	
	Assist with the review of proposed LOE developed by the DC																0	$ -		$ -	
	Assist with the review of Design Consultants monthly invoices																0	$ -		$ -	
	Perform regular coordination with the DC to discuss ongoing tasks																0	$ -		$ -	
	Perform as-needed site visits with Design Consultants																0	$ -		$ -	
	Review/Comment on TWDB EFR deliverables prepared by DC																0	$ -		$ -	
	Review/Comment on milestone submittals prepared by DC																0	$ -		$ -	
	Review/Comment on OPCC's prepared by DC																0	$ -		$ -	
	Other Design-related services as assigned by Alliance Water																0	$ -		$ -	
11.8	Management and Coordination of Program Survey																0	$ -		$ -	
	Identify early actions required																0	$ -		$ -	
	Assist with the development and review of project scope for the DC																0	$ -		$ -	
	Assist with the review of proposed LOE developed by the DC																0	$ -		$ -	
	Assist with the review of Design Consultants monthly invoices																0	$ -		$ -	
	Perform regular coordination with the DC to discuss ongoing tasks																0	$ -		$ -	
	Perform as-needed site visits with Design Consultants																0	$ -		$ -	
	Review/Comment on TWDB EFR deliverables prepared by DC																0	$ -		$ -	
	Review/Comment on milestone submittals prepared by DC																0	$ -		$ -	
	Review/Comment on OPCC's prepared by DC																0	$ -		$ -	
	Other Design-related services as assigned by Alliance Water																0	$ -		$ -	
11.9	Consultant Design Teams progress meetings																0	$ -		$ -	
11.9.1	Hydrogeology / Well Drilling																0	$ -		$ -	
11.9.2	Raw Water Facilities																0	$ -		$ -	
11.9.3	WTP / HSPS		8			16	8	24									56	$ 9,960		$ 9,960	
11.9.4	Pipelines		8			48		48									104	$ 18,200		$ 18,200	
11.9.5	Administrative Building and Operations Center																0	$ -		$ -	
11.9.6	BPS & Delivery Points																0	$ -		$ -	
11.9.7	Elevated Storage Tanks																0	$ -		$ -	
11.9.8	Program Survey																0	$ -		$ -	
	Task 12 - Quality Assurance																	$ 21,960	$ -	$ 21,960	
12.1	Review the QA/QC Plans prepared by the Consultants based on PMP		8			16		16									40	$ 7,320		$ 7,320	
12.2	Perform regular coordination with all Consultants on QA/QC imp.		8			16		16									40	$ 7,320		$ 7,320	
12.3	Review/Receive QA/QC documentation from Consultants		8			16		16									40	$ 7,320		$ 7,320	
	Task 13 - Electrical Power Planning																	$ -	$ -	$ -	
	Task 14 - Permit Coordination/Tracking																	$ 35,390	$ -	$ 35,390	
14.1	Perform regular coordination with Consultants					16		24				40					80	$ 11,720		$ 11,720	
14.2	Incorporate permit updates from Consultants into master tracking list					16						24					40	$ 5,880		$ 5,880	
14.3	Management of Permit Submittal																0	$ -		$ -	
14.3.1	TCEQ		8			8		8				8					32	$ 5,600		$ 5,600	
14.3.2	TxDOT – Design Consultants					6		8				12					26	$ 3,860		$ 3,860	
14.3.3	UPRR					4		8				4					16	$ 2,500		$ 2,500	
14.3.4	Counties (Hays, Caldwell, Guadalupe)					4		4				8					16	$ 2,360		$ 2,360	
14.3.5	Cities (Kyle, San Marcos, Uhland, Lockhart, Maxwell, others)					4		4				2					10	$ 1,610		$ 1,610	
14.3.6	Private utilities					4		4				4					12	$ 1,860		$ 1,860	
	Task 15 - Procurement and Construction Phase Services																	$ 14,180	$ 2,200	$ 16,380	
15.1	Procurement Services																0	$ -	$ 1,100	$ 1,100	
15.1.1	Pre-Proposal Meeting		2			8											10	$ 1,910		$ 1,910	
15.1.2	Proposal Evaluation and Recommendation		2			4											6	$ 1,190		$ 1,190	
15.1.3	Committee and Board Items (PAC, TC, and Board)		2														2	$ 470		$ 470	
15.1.4	Execution of Contract		2			8											10	$ 1,910		$ 1,910	
15.2	Construction Phase Services																0	$ -	$ 1,100	$ 1,100	
15.2.1	Administration					16											16	$ 2,880		$ 2,880	
15.2.2	Preconstruction Meetings					4											4	$ 720		$ 720	
15.2.3	Monthly Construction Meetings					12						12					24	$ 3,660		$ 3,660	
15.2.4	Construction Activities																0	$ -		$ -	
15.2.4.1	Submittals					8											8	$ 1,440		$ 1,440	
15.2.4.2	Substitutions																0	$ -		$ -	
15.2.4.3	Request for Information																0	$ -		$ -	
15.2.4.4	Pay Request																0	$ -		$ -	
15.2.4.5	Defective Work																0	$ -		$ -	
15.2.4.6	Change Orders																0	$ -		$ -	
15.2.4.7	Record Drawings																0	$ -		$ -	
15.2.4.8	Commissioning																0	$ -		$ -	
15.2.4.9	Substantial Completion																0	$ -		$ -	
15.2.4.10	Final Walkthrough																0	$ -		$ -	
15.2.4.11	Warranty Walkthrough																0	$ -		$ -	
	Task 16 - Project Administration																	$ 9,920	$ -	$ 9,920	
16.1	Invoicing		8		12									16			36	$ 5,720		$ 5,720	

CP&Y

Alliance Water
Owners Representative
2/6/2020
Detailed Overall CP&Y Cost Breakdown

Project Fee Summary	
Total Effort	$ 939,880

Basic Services

Task	Project Role	QA/QC Engineer / Senior Project Manager / Principal	Senior Tech. Advisor / Deputy Project Manager	Senior Instrumentation / Electrical Engineer	Senior Environmental Manager	Senior Engineer	Instrumentation/ Elec Eng	Civil Engineer	Senior Biologist	GIS Developer	CADD Operator / Senior Technician	Engineering-in-Training	Biologist	Administrative Staff / Technician	Archeologist	Senior Historian	Total Hours	Total Labor Effort	Total Expense Effort	Total Effort	Assumptions
	Hourly Bill Rate	$265.00	$235.00	$225.00	$200.00	$180.00	$170.00	$160.00	$165.00	$155.00	$130.00	$125.00	$120.00	$90.00	$85.00	$110.00					
16.2	Project Management		8		8									8			24	$ 4,200		$ 4,200	
	Task 17 - Other Services																	$ 153,320	$ 4,400	$ 157,720	
17.1	Water Quality Testing and Coordination		16			16		40				40					112	$ 18,040	$ 1,100	$ 19,140	
17.2	TCEQ Exception Request Submittals		8			16						24		24			72	$ 9,920		$ 9,920	
17.3	Fiber, SCADA, Security Design and Procurement																0	$ -	$ 1,100	$ 1,100	
17.3.1	Fiber Network, SCADA communication network design			24			24					40					88	$ 14,480		$ 14,480	
17.3.2	SCADA top end network, HMI systems design			24			24					40					88	$ 14,480		$ 14,480	
17.3.3	Security top end network, Video management and Access control system design			24			24					40					88	$ 14,480		$ 14,480	
17.3.4	Procurement of the Fiber Optic, SCADA, and Security																0	$ -	$ 1,100	$ 1,100	
17.3.4.1	SCADA Fiber Optic Drawings and Specifications			24			24					48					96	$ 15,480		$ 15,480	
17.3.4.2	SCADA Fiber Top End Equipment Drawings and Specifications			24			24					48					96	$ 15,480		$ 15,480	
17.3.4.3	Security Top End Equipment Drawings and Specifications			24			24					48					96	$ 15,480		$ 15,480	
17.3.5	Facility Electrical and Instrument Design coordination			32			24					24					80	$ 14,280		$ 14,280	
17.4	SCADA Programing																0	$ -	$ 1,100	$ 1,100	
17.4.1	Review and Comment on each facility IC design package			16			16										32	$ 6,320		$ 6,320	
17.4.2	Provide comments			8			8										16	$ 3,160		$ 3,160	
17.5	Commissioning Planning		8	8		8											24	$ 5,120		$ 5,120	
17.6	Other design tasks as assigned by Alliance Water		8			8		8				16					40	$ 6,600		$ 6,600	
																	Grand Total	$ 928,330	$ 11,550	$ 939,880	

GRUBB ENGINEERING

Alliance Water Owners Representative 2/6/2020 Detailed Overall Grubb Cost Breakdown	Project Fee Summary	
	Total Effort	$ 59,680

Task		Basic Services								Assumptions
	Project Role	QA/QC Engineer / Senior Project Manager / Principal	Senior Instrumentation / Electrical Engineer	Senior Engineer	Administrative Staff / Technician	Total Hours	Total Labor Effort	Total Expense Effort	Total Effort	
	Hourly Bill Rate	$265.00	$220.00	$180.00	$90.00					
	Task 1 - Program Management Plan Updates						$ -	$ -	$ -	
	Task 2 - Stakeholder Coordination						$ -	$ -	$ -	
	Task 3 - Budgeting						$ -	$ -	$ -	
	Task 4 - Schedule						$ -	$ -	$ -	
	Task 5 - Reporting						$ -	$ -	$ -	
	Task 6 - Data Management						$ -	$ -	$ -	
	Task 7 - Environmental Management						$ -	$ -	$ -	
	Task 8 - Land Acquisition Management						$ -	$ -	$ -	
	Task 9 - Texas Water Development Board Management						$ -	$ -	$ -	
	Task 10 - Design Standards						$ -	$ -	$ -	
	Task 11 - Engineering Design Management						$ -	$ -	$ -	
	Task 12 - Quality Assurance						$ -	$ -	$ -	
	Task 13 - Electrical Power Planning						$ 58,240	$ -	$ 58,240	
13.1	Perform Prelim. Analyses to determine approx. demand and energy	8	8	4		20	$ 4,600		$ 4,600	
13.2	Develop a strategy for cont., gathering system quality, and reliability data	8	8	6		22	$ 4,960		$ 4,960	
13.3	Coordination with Electrical Service Providers to evaluate costs	35	16	8		59	$ 14,235		$ 14,235	
13.4	Assist Alliance Water with negotiations on the electrical supply agr.	35	16	8		59	$ 14,235		$ 14,235	
13.5	Assist Alliance Water by defining special equipment needs	8	8	8		24	$ 5,320		$ 5,320	
13.6	Alliance Water and Electrical Service Providers Coord. Meetings	30	25	8		63	$ 14,890		$ 14,890	
	Task 14 - Permit Coordination/Tracking						$ -	$ -	$ -	
	Task 15 - Procurement and Construction Phase Services						$ -	$ -	$ -	
	Task 16 - Project Administration						$ 1,440	$ -	$ 1,440	
16.1	Invoicing				16	16	$ 1,440		$ 1,440	
16.2	Project Management					0	$ -		$ -	
	Task 17 - Other Services						$ -	$ -	$ -	
						Grand Total	$ 59,680	$ -	$ 59,680	

SPITZER & ASSOCIATES

Alliance Water Owners Representative 2/6/2020 Detailed Overall Spitzer Cost Breakdown	Project Fee Summary	
	Total Effort	$ 437,210

Task		Basic Services								
	Project Role	Property Acquisition Manager	Acquisition Specialist	Document Control Specialist		Total Hours	Total Labor Effort	Total Expense Effort	Total Effort	Assumptions
	Hourly Bill Rate	$210.00	$110.00	$98.00						
	Task 1 - Program Management Plan						$ 2,898	$ -	$ 2,898	
1.1	Communication Protocol					0	$ -		$ -	
1.2	Document Control / Data Management Protocol					0	$ -		$ -	
1.3	Quality Assurance Plan					0	$ -		$ -	
1.4	Milestone Review Process Protocol					0	$ -		$ -	
1.5	Risk Management Plan					0	$ -		$ -	
1.6	Land Acquisition Protocol	11		6		17	$ 2,898		$ 2,898	
1.7	Environmental Management Protocol					0	$ -		$ -	
1.8	Texas Water Development Board (TWDB) Protocol					0	$ -		$ -	
1.9	Design Management Protocol					0	$ -		$ -	
1.10	Budget and Funding Protocol					0	$ -		$ -	
1.11	Schedule Protocol					0	$ -		$ -	
1.12	Reporting Protocol					0	$ -		$ -	
1.13	Permit Management Protocol					0	$ -		$ -	
1.14	GBRA & PAC Protocol					0	$ -		$ -	
1.15	Procurement Protocol					0	$ -		$ -	
1.16	Construction Protocol					0	$ -		$ -	
1.17	PMP Appendices					0	$ -		$ -	
	Task 2 - Stakeholder Coordination						$ 17,416	$ -	$ 17,416	
2.1	Stakeholder Identification					0	$ -		$ -	
2.2	Initial and/or Ongoing Coordination					0	$ -		$ -	
2.2.1	Executive Director					0	$ -		$ -	
2.2.2	Technical Committee and Board					0	$ -		$ -	
2.2.3	PAC					0	$ -		$ -	
2.2.4	Other Alliance Water Consulting Services					0	$ -		$ -	
2.2.5	Texas Commission on Environmental Quality					0	$ -		$ -	
2.2.6	Texas Department of Transportation					0	$ -		$ -	
2.2.7	Union Pacific Railroad					0	$ -		$ -	
2.2.8	Counties (Hays, Caldwell, Guadalupe)					0	$ -		$ -	
2.2.9	Cities (Kyle, San Marcos, Uhland, Lockhart, Maxwell, others)					0	$ -		$ -	
2.2.10	GBRA and/or its Consultants					0	$ -		$ -	
2.2.11	Other Utilities/Entities					0	$ -		$ -	
2.3	Alliance Water Executive Director coordination meetings	36				36	$ 7,560		$ 7,560	
2.4	Alliance Water Technical Committee and Board Meetings					0	$ -		$ -	
2.5	PAC Meetings					0	$ -		$ -	
2.6	Other ARWA Consulting Services - as part of Coor. Mtg. with ED.					0	$ -		$ -	
2.7	Texas Commission on Environmental Quality - Meetings					0	$ -		$ -	
2.8	Texas Department of Transportation - Meetings					0	$ -		$ -	
2.9	Union Pacific Railroad - Meetings					0	$ -		$ -	
2.10	Counties - Meetings					0	$ -		$ -	
2.11	Cities - Meetings					0	$ -		$ -	
2.12	Other Utilities/Entities - Meetings					0	$ -		$ -	
2.13	Internal Program Monthly Meetings	32		32		64	$ 9,856		$ 9,856	

SPITZER & ASSOCIATES

Alliance Water Owners Representative 2/6/2020 Detailed Overall Spitzer Cost Breakdown	Project Fee Summary	
	Total Effort	$ 437,210

Basic Services										
Task										
	Project Role	Property Acquisition Manager	Acquisition Specialist	Document Control Specialist		Total Hours	Total Labor Effort	Total Expense Effort	Total Effort	Assumptions
	Hourly Bill Rate	$210.00	$110.00	$98.00						
	Task 3 - Budgeting						$ -	$ -	$ -	
	Task 4 - Schedule						$ -	$ -	$ -	
	Task 5 - Reporting						$ -	$ -	$ -	
	Task 6 - Data Management						$ -	$ -	$ -	
	Task 7 - Environmental Management						$ -	$ -	$ -	
	Task 8 - Land Acquisition Management						$ 414,544	$ -	$ 414,544	
8.1	Perform regular coordination with Ld. Acq. Cons.	720		1,200		1,920	$ 268,800		$ 268,800	
8.2	Assist with the review of Ld. Acq. Cons. monthly invoices	24		48		72	$ 9,744		$ 9,744	
8.3	Continuous tracking of Land Acq. Scope of work & amendments	32				32	$ 6,720		$ 6,720	
8.4	Review land acquisition data for conformance to the PMP/RAMP	135				135	$ 28,350		$ 28,350	
8.5	Perform as-needed site visits with Ld. Acq. Cons.	5				5	$ 1,050		$ 1,050	
8.6	Coordinated site visits with those identified in Task 7 and 11	5				5	$ 1,050		$ 1,050	
8.7	Review and comment on TWDB land acquisition deliverables	15		6		21	$ 3,738		$ 3,738	
8.8	Coord. with landowners to facilitate access for Consultants for field work	12	600			612	$ 68,520		$ 68,520	
8.9	Other Ld. Acq. services as identified and assigned by Alliance Water					0	$ -		$ -	
8.10	Land Acquisition Team progress meetings	78		104		182	$ 26,572		$ 26,572	
	Task 9 - Texas Water Development Board Management						$ -	$ -	$ -	
	Task 10 - Design Standards						$ -	$ -	$ -	
	Task 11 - Engineering Design Management						$ -	$ -	$ -	
	Task 12 - Quality Assurance						$ -	$ -	$ -	
	Task 13 - Electrical Power Planning						$ -	$ -	$ -	
	Task 14 - Permit Coordination/Tracking						$ -	$ -	$ -	
	Task 15 - Procurement and Construction Phase Services						$ -	$ -	$ -	
	Task 16 - Project Administration						$ 2,352	$ -	$ 2,352	
16.1	Invoicing			24		24	$ 2,352		$ 2,352	
16.2	Project Management					0	$ -		$ -	
	Task 17 - Other Services						$ -	$ -	$ -	
						Grand Total	$ 437,210	$ -	$ 437,210	

RVK

Alliance Water	Project Fee Summary	
Owners Representative	Total Effort	$ 47,205
2/6/2020		
Detailed Overall RVK Cost Breakdown		

Basic Services										
Task										
	Project Role	Administrative Staff / Technician	Senior Architect	Architectural Project Manager			Total Hours	Total Labor Effort	Total Expense Effort	Total Effort	Assumptions
	Hourly Bill Rate	$90.00	$205.00	$130.00							
	Task 1 - Program Management Plan							$ -	$ -	$ -	
	Task 2 - Stakeholder Coordination							$ -	$ -	$ -	
	Task 3 - Budgeting							$ -	$ -	$ -	
	Task 4 - Schedule							$ -	$ -	$ -	
	Task 5 - Reporting							$ -	$ -	$ -	
	Task 6 - Data Management							$ -	$ -	$ -	
	Task 7 - Environmental Management							$ -	$ -	$ -	
	Task 8 - Land Acquisition Management							$ -	$ -	$ -	
	Task 9 - Texas Water Development Board Management							$ -	$ -	$ -	
	Task 10 - Design Standards							$ -	$ -	$ -	
	Task 11 - Engineering Design Management							$ 42,585	$ -	$ 42,585	
11.1	Management and Coordination of Hydrogeology/Well Drilling						0	$ -		$ -	
11.2	Management and Coordination of Well Pumps and Raw Water Inf.						0	$ -		$ -	
11.3	Management and Coordination of WTP and HSPS						0	$ -		$ -	
11.4	Management and Coordination of Transmission Pipeline (5 Contracts)						0	$ -		$ -	
11.5	Management and Coordination of Admin. Building and Ops. Center						0	$ -		$ -	
	Identify early actions required						0	$ -		$ -	
	Assist with the development and review of project scope for the DC		9				9	$ 1,845		$ 1,845	
	Assist with the review of proposed LOE developed by the DC		6				6	$ 1,230		$ 1,230	
	Review and provide comments on the PMP prepared by the DC		2	4			6	$ 930		$ 930	
	Assist with the review of Design Consultants monthly invoices	10		20			30	$ 3,500		$ 3,500	Assume 8 months (8 invoices)
	Perform regular coordination with the DC to discuss ongoing tasks		45	65			110	$ 17,675		$ 17,675	Assume 8 months
	Perform initial windshield survey to review the overall Phase 1B projects		0	0			0	$ -		$ -	
	Perform as-needed site visits with Design Consultants			4			4	$ 520		$ 520	
	Review/Comment on TWDB EFR deliverables prepared by DC		2	4			6	$ 930		$ 930	
	Review/Comment on milestone submittals prepared by DC		15	30			45	$ 6,975		$ 6,975	
	Review/Comment on OPCC's prepared by DC	2	2	8			12	$ 1,630		$ 1,630	
	Other Design-related services as assigned by Alliance Water		5	10			15	$ 2,325		$ 2,325	
11.6	Management and Coordination of BPS & Delivery Points						0	$ -		$ -	
11.7	Management and Coordination of Elevated Storage Tanks						0	$ -		$ -	
11.8	Management and Coordination of Program Survey						0	$ -		$ -	
11.9	Consultant Design Teams progress meetings		15	15			30	$ 5,025		$ 5,025	
11.9.1	Hydrogeology / Well Drilling						0	$ -		$ -	
11.9.2	Raw Water Facilities						0	$ -		$ -	
11.9.3	WTP / HSPS						0	$ -		$ -	
11.9.4	Pipelines						0	$ -		$ -	
11.9.5	Administrative Building and Operations Center						0	$ -		$ -	
11.9.6	BPS & Delivery Points						0	$ -		$ -	
11.9.7	Elevated Storage Tanks						0	$ -		$ -	
11.9.8	Program Survey						0	$ -		$ -	
	Task 12 - Quality Assurance							$ -	$ -	$ -	
	Task 13 - Electrical Power Planning							$ -	$ -	$ -	
	Task 14 - Permit Coordination/Tracking							$ -	$ -	$ -	
	Task 15 - Procurement and Construction Phase Services							$ -	$ -	$ -	

RVK

Alliance Water Owners Representative 2/6/2020 Detailed Overall RVK Cost Breakdown	Project Fee Summary	
	Total Effort	$ 47,205

Basic Services											
Task											
	Project Role	Administrative Staff / Technician	Senior Architect	Architectural Project Manager			Total Hours	Total Labor Effort	Total Expense Effort	Total Effort	Assumptions
	Hourly Bill Rate	$90.00	$205.00	$130.00							
	Task 16 - Project Administration							$ 4,620	$ -	$ 4,620	
16.1	Invoicing	24	12				36	$ 4,620		$ 4,620	
16.2	Project Management						0	$ -		$ -	
	Task 17 - Other Services							$ -	$ -	$ -	
							Grand Total	$ 47,205	$ -	$ 47,205	

V&A

Alliance Water Owners Representative 2/6/2020 Detailed Overall V&A Cost Breakdown	Project Fee Summary	
	Total Effort	$ 55,878

Task		Basic Services											
	Project Role	QA/QC Engineer / Senior Project Manager / Principal	Senior Tech. Advisor / Deputy Project Manager	Senior Engineer	Civil Engineer	CADD Operator / Senior Technician	Engineering-in-Training	Administrative Staff / Technician	Total Hours	Total Labor Effort	Total Expense Effort	Total Effort	Assumptions
	Hourly Bill Rate	$265.00	$235.00	$180.00	$160.00	$130.00	$125.00	$90.00					
	Task 1 - Program Management Plan Updates									$ -	$ -	$ -	
	Task 2 - Stakeholder Coordination									$ -	$ -	$ -	
	Task 3 - Budgeting									$ -	$ -	$ -	
	Task 4 - Schedule									$ -	$ -	$ -	
	Task 5 - Reporting									$ -	$ -	$ -	
	Task 6 - Data Management									$ -	$ -	$ -	
	Task 7 - Environmental Management									$ -	$ -	$ -	
	Task 8 - Land Acquisition Management									$ -	$ -	$ -	
	Task 9 - Texas Water Development Board Management									$ -	$ -	$ -	
	Task 10 - Design Standards									$ 50,625	$ 173	$ 50,798	
10.1	Development of Design Standards, Specifications, and Details								0	$ -		$ -	
10.1.1	Transmission Pipelines and Delivery Points Design Stds. - Finalize								0	$ -		$ -	
10.1.2	Preparation of Standard Specifications for Const. - Finalize								0	$ -		$ -	
10.1.3	Preparation of Standard Details - Finalize								0	$ -		$ -	
10.1.4	Pipeline Corrosion Protection Standards								0	$ -		$ -	
10.1.4.1	Document Review		29	34	49		4		116	$ 21,275		$ 21,275	21 submitttal review (3 per design engineer). 7 hrs for each 60%, 4 hrs for each 90%, 3 hrs for each 100%.
10.1.4.2	Corrosivity Investigation Standards		4	2			6		12	$ 2,050		$ 2,050	
10.1.4.3	Cathodic Protection Design Standards		2	2			2		6	$ 1,080		$ 1,080	
10.1.4.4	Pipeline Corrosion Standards TM	1	8	4	6		20	4	43	$ 6,685		$ 6,685	
10.1.4.5	Standard Details & Specifications	1	8	8		30	30		77	$ 11,235		$ 11,235	
10.1.4.6	Standards Review Meeting		28	4			8		40	$ 8,300	$ 173	$ 8,473	300 Miles @ $0.575/mile
10.1.5	Facility General Electrical Standards								0	$ -		$ -	
10.1.6	Telemetry, Instrumentation & Controls, SCADA, and Security Standards								0	$ -		$ -	
10.1.6.1	Fiber Optic Standards								0	$ -		$ -	
10.1.6.2	SCADA Standards								0	$ -		$ -	
10.1.6.3	I&C Standards								0	$ -		$ -	
10.1.6.4	Security Standards								0	$ -		$ -	
10.2	Master Specifications - Finalize								0	$ -		$ -	
10.3	Record Drawings (Plans & GIS)								0	$ -		$ -	
10.4	Address comments from Design Consultant Teams and Finalize								0	$ -		$ -	
10.5	Standards Review Meeting								0	$ -		$ -	
	Task 11 - Engineering Design Management									$ -	$ -	$ -	
	Task 12 - Quality Assurance									$ -	$ -	$ -	
	Task 13 - Electrical Power Planning									$ -	$ -	$ -	
	Task 14 - Permit Coordination/Tracking									$ -	$ -	$ -	
	Task 15 - Procurement and Construction Phase Services									$ -	$ -	$ -	
	Task 16 - Project Administration									$ 5,080	$ -	$ 5,080	
16.1	Invoicing							12	12	$ 1,080		$ 1,080	
16.2	Project Management	2	14	1					17	$ 4,000		$ 4,000	
	Task 17 - Other Services									$ -	$ -	$ -	
									Grand Total	$ 55,705	$ 173	$ 55,878	

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS
Wednesday, February 12th, 2020 at 3:00 P.M.
520 E. RR 150, Kyle, TX 78640

F.6 Update, discussion and possible direction to Staff regarding the Authority's submission of an Abridged Application to the Texas Water Development Board for additional SWIFT Funding. ~ *Graham Moore, P.E., Executive Director*

Background/Information
Staff submitted a new Abridged Application to the Texas Water Development Board (TWDB) for additional SWIFT Funding prior to the February 3, 2020 deadline. The request was for an additional $65 million. The request was made for low interest loans, similar to the funding that has been secured to date. Staff indicated the following schedule for issuances of the debt:

2020 Additional Funding Request		
	2020	**2021**
Original Request	$95,575,000	$0
Updated Request	$122,575,000	$38,000,000
DIFFERENCE	**$27,000,000**	**$38,000,000**

The table below breaks out the proposed funding for 2020 and 2021 for each Sponsor. Staff is working with the financial advisors to obtain new debt service schedules for the proposed issuance amounts.

Funding by Sponsor		
	2020	**2021**
San Marcos	$43,955,000	$13,625,000
CRWA	$37,865,000	$11,740,000
Kyle	$34,530,000	$10,705,000
Buda	$6,225,000	$1,930,000

The application is currently under review by the TWDB. If approved, additional information will be required from the Sponsors to support the funding request. As has been done in the past, Staff will lead this effort and will coordinate with the Sponsors to receive and submit this information.

The final decision on how much financing to receive in 2020 will need to be made by the early September 2020.

Technical Committee Decision Needed:

- Possible direction to Staff.

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS
Wednesday, February 12th, 2020 at 3:00 P.M.
520 E. RR 150, Kyle, TX 78640

F.7 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 February 11th. A verbal update of the meeting's activities will be provided to the Technical Committee. After the GMA-13 meeting, the group's involved in funding the Monitoring Wells met with the GCUWCD to discuss the results and the next steps. Greg Senglemann is gathering cost information for additional studies and will then reconvene the group to determine if and/or which of the additional efforts to move forward with.

Plum Creek Conservation District (PCCD)
The PCCD is scheduled to meet on February 18th. Staff and LAN will make a presentation to the PCCD on the pipeline routes where they impact any PCCD easements. This is a necessary step in order for the design plans to be sent to the National Resources Conservation Service (NRCS) for their review/approval.

Groundwater Management Area 13
GMA-13 held a meeting on February 7th. The consultant is continuing to refine the model inputs and has requested information from the groundwater districts as to what pumping scenarios they would like to see in the future.

Region L Planning Group
The next Region L Planning Group meeting is scheduled for Thursday, February 20th. The Group will be asked to adopt the Initially Prepared Plan at the meeting, prior to the March 2020 deadline.

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, February 12th, 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, February 26th.

- The meeting is expected to include an opportunity for Representative Zwiener to attend & address the Board along with appointments to the Technical Committee.

RFQ Update

- The RFQ for the Phase 1B Construction Management & Inspection was issued in mid-December. An addendum was issued to remove the construction materials testing from the RFQ.

- The Public Relation Services RFQ was posted on January 29th.

Consultant Invoices Paid

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

FY 19-20 CONSULTANT INVOICES PAID in JANUARY 2020

Consultant	Total Authorized	Current Invoice	Invoiced-to-Date	% of Contract Invoiced	Remaining	Notes/ Anomalies
Mark B. Taylor	$17,500.00	$0.00	$12,895.00	74%	$4,605.00	
LAN - Kyle/Buda Design	$116,280.27	$0.00	$17,565.17	15%	$98,715.10	
Patricia Ehrlinger Carls	$25,000.00	$0.00	$6,157.75	25%	$18,842.25	
RW Harden	$40,000.00	$0.00	$9,843.75	25%	$30,156.25	
Tx Solutions Group	$72,000.00	$0.00	$24,000.00	33%	$48,000.00	
BGE - Ph 1A CA	$53,938.59	$0.00	$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	$0.00	$32,668.34	73%	$12,331.66	
LNV - Ph 1A Observations	$4,006.84	$0.00	$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	$0.00	$51,635.00	27%	$138,350.00	
Total	**$458,142.37**	**$0.00**	**$111,093.88**		**$347,048.49**	

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS
Wednesday, February 12th, 2020 at 3:00 P.M.
520 E. RR 150, Kyle, TX 78640

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

PHASE 1B FY 19-20 CONSULTANT INVOICES PAID in JANUARY 2020

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	$257,299.16	$735,850.69	54%	$636,500.50	
Blanton - Environmental	$429,534.08	$55,560.42	$55,560.42	13%	$373,973.66	
LAN - Segment A Prelim	$131,884.80	$24,183.35	$59,971.90	45%	$71,912.90	
KFA - Segment B Prelim	$68,207.94	$24,205.82	$45,751.88	67%	$22,456.06	
BGE - Segment C Prelim	$172,491.20	$36,349.38	$72,683.13	42%	$99,808.07	
FNI - Segment D Prelim	$17,963.86	$0.00	$10,334.20	58%	$7,629.66	
Walker - Segment E Prelim	$230,594.60	$15,640.46	$22,984.80	10%	$207,609.80	
LAN - ROW Acquisition	$2,145,847.22	$91,927.19	$91,927.19	4%	$2,053,920.03	
DTR&G	$894,535.31	$21,251.42	$88,710.95	10%	$805,824.36	
CBRE - Appraisals	$2,291,500.00	$35,750.00	$87,750.00	4%	$2,203,750.00	
CP&Y - Survey	$1,957,932.20	$79,837.20	$127,361.45	7%	$1,830,570.75	
RW Harden - WDH	$13,920.00	$3,680.00	$8,880.00	64%	$5,040.00	
LNV - RWI	$1,063,283.45	$35,152.13	$132,911.78	13%	$930,371.67	
Walker Partners - WTP Design	$214,531.12	$57,401.19	$194,341.17	91%	$20,189.95	
FNI - BPS Prelim	$268,527.88	$66,007.88	$133,335.83	50%	$135,192.05	
Plummer - Inline Elevated Tank	$87,509.05	$11,810.00	$17,286.50	20%	$70,222.55	
Total	**$11,360,613.90**	**$816,055.60**	**$1,885,641.89**		**$9,474,972.01**	

Approved Change Orders

- See below for Change Orders approved in January 2020.

CHANGE ORDERS APPROVED IN JANUARY 2020

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	$ -	$ 3,405,780.00
Freese & Nichols: 1B Segment D (Final)	$ 1,999,464.00	$ 5,790.00	$ 5,790.00	$ 2,005,254.00

REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS
Wednesday, February 12th, 2020 at 3:00 P.M.
520 E. RR 150, Kyle, TX 78640

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, February 12th, 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

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REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS
Wednesday, February 12th, 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

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REGULAR MEETING
Alliance Regional Water Authority Technical Committee

COMMITTEE MEMBER PACKETS
Wednesday, February 12th, 2020 at 3:00 P.M.
520 E. RR 150, Kyle, TX 78640

J. ADJOURNMENT
