

**Agenda Item 6g. Planning Process: Consider Approving a Partial Scope of Work for Task 5A and Authorize the Designated Political Subdivision to Submit a Request to the TWDB for a Notice-to-Proceed with the Partial Scope of Work for Task 5A and Execute any Required Contract Amendments**

The TWDB contract with CRMWD for regional water planning includes a detailed scope of work to develop the water plan. However, Task 5A (Water Management Strategies) requires the consultant to develop a region-specific scope of work, which must be approved by the RWPG and submitted to the TWDB. Work under this task is to be performed only after TWDB approval and written notice to proceed. The consultant can proceed with working on this task after RWPG approval at its own risk that the TWDB will approve the requested scope and fee.

This agenda item considers the approval of a partial scope of work for Task 5A. The remainder of the scope and fee necessary to complete TASK 5A will be requested after the needs analyses are completed and the Technical Memorandum is prepared.

Attachments:

1. Memorandum outlining the Partial Scope of Work for Task 5A.
2. Table listing the strategies to be evaluated.

**TO:** Region F RWPG  
**CC:** File, CMD17216  
**FROM:** Simone Kiel  
**SUBJECT:** Scope of Work for Water Management Strategies, Phase 1  
**DATE:** February 28, 2018  
**PROJECT:** Region F 2021 Water Plan

The TWDB developed a scope of work for Water Management Strategies (Task 5A), which includes the development and evaluation of water management strategies and development of Chapter 5 of the 2021 Region F Water Plan (see Attachment 1). This scope of work considers all regulatory requirements and TWDB guidance. The scope items that are necessary for regulatory compliance are outlined in the executed contracts. However, specific scopes of work for the evaluations of potentially feasible water management strategies are to be developed by the regions. All funds for this task are contingent upon written notice to proceed. The scope items shown in Attachment 1 apply to the evaluations of all potentially feasible water management strategies and are not repeated in the scope descriptions below. The total budget in the executed contract for this effort is \$330,868. This memorandum presents the scope and fee for a portion of the effort to complete this task. The scope for the remainder of the effort to complete the strategies evaluations will be developed after the needs analysis is completed.

A preliminary needs analysis for Region F cannot be fully performed at this time because Region F is awaiting groundwater availability values from the TWDB. However, based on the projected demands, surface water availability, and limited groundwater availability data, Region F will continue to show water needs for recipients of surface water and known areas of limited groundwater. Two cornerstone strategies in the Region F Water Plan are *Subordination of Surface Water* and *Conservation*. Both strategies are needed to fully assess the needs of water users in the region, and then identify potentially feasible infrastructure projects to meet those needs. Therefore, Region F is requesting the authorization of funds to evaluate these strategies prior to the completion of the needs analysis. In addition, there are several strategies identified from surveys of water users that are new or will be retained. Through these surveys each of these strategies has been requested to be included in the 2021 Region F Water Plan and is being considered by the water provider. The development and/or update of these strategies is also included in this scope and fee.

## **SCOPE OF WORK FOR WATER MANAGEMENT STRATEGIES (TASK 5A) FUNDS**

### **Subordination Strategy**

The Subordination Strategy assumes that water in the upper Colorado River Basin is retained for users in Region F by modifying the priority dates for water rights in the upper basin. This applies only to major reservoirs and municipal water rights. This approach is consistent with current operations and the approach used by Region K to evaluate existing supplies for Region K. For the 2021 Region F Water Plan,

we propose to use an updated Colorado River WAM model that includes hydrology through 2016. This model was developed for LCRA and is proposed to be used by Region K. Specific tasks associated with this effort include:

Scope of Work:

- Obtain the extended hydrology model from Region K. Review the model and hydrology extension. Modify the model to include sedimentation and other operational considerations in place today. The assumptions used for the Subordination Strategy in the 2016 RWP will be retained.
- Update the reservoir firm and safe yields for each major reservoir in Region F.
- Re-affirm the assumptions used for the Pecan Bayou watershed with appropriate water rights holders.
- Working together with the water rights holders, assign the amount of supply to water user groups from the Subordination strategy. Conduct a secondary needs analysis after implementation of the Subordination strategy.
- Update the evaluation of the strategy in accordance with the Regional Water Planning Guidelines. This will include the evaluation of reliability, cost, environmental issues, impacts to agricultural and rural areas, natural resources and other issues deemed relevant by the region.
- Develop GIS map showing the reservoirs and water rights considered in the Subordination strategy.
- Develop a draft memorandum summarizing the findings of this strategy update and present it at a RWPG meeting for approval.
- Provide a copy of the updated model to the TWDB.

Entities Potentially Receiving Water from this WMS:

Colorado Municipal Water District (CRMWD) and its customers (22)

San Angelo and its customers (6)

Upper Colorado River Authority and its customers (4)

Brown County WID and its customers (10)

City of Bronte

City of Coleman

City of Junction and its customers (1)

City of Sweetwater (Brazos G)

City of Brady

Steam Electric Power WUGs

**Conservation**

Region F proposes to develop and/or update conservation strategies for irrigation, develop conservation strategies for all municipal water users in the planning area, and work together with other water use sectors to identify potential conservation measures that may be appropriate for each sector. Specific tasks associated with this effort include:

Scope of Work

- Update irrigation conservation strategies based on updated historical irrigation use, projected demands, adoption rates of irrigation technologies and changing irrigation practices, as

necessary. Develop new strategies if appropriate. Evaluate the updated water savings and estimated costs of conversion to the respective identified strategies.

- Identify a package of municipal water conservation strategies that are appropriate for suppliers in Region F. Assess the potential water savings for each municipal entity in Region F and develop estimated costs. Coordinate with municipal water user groups (WUGs) that have implemented conservation programs.
- Evaluate each major conservation in accordance with the Regional Water Planning Guidelines. This will include the evaluation of reliability, cost, environmental issues, impacts to agricultural and rural areas, natural resources and other issues deemed relevant by the region.
- Develop cost estimates for all conservation strategies.

Entities Potentially Receiving Water from Conservation WMSs:

All municipal WUGs

Irrigation WUGs

**Reuse**

Reuse is a recommended strategy in the 2016 Region F Plan for 11 municipal water user groups or wholesale water providers. It is also recommended for multiple mining WUGs. Each of the municipal users intends to retain reuse as a potentially feasible strategy, except for the City of Brownwood. Reuse continues to be a viable option to meet the increased mining demands in the region.

Scope of Work

- Review existing reuse supplies. Identify potential increases in reuse water supplies and new applications of reuse to meet future water needs. This will include both direct and indirect reuse strategies. Coordinate with representatives of the non-municipal water users and municipalities.
- Evaluate each major reuse strategy in accordance with the Regional Water Planning Guidelines. This will include the evaluation of reliability, cost, environmental issues, impacts to agricultural and rural areas, natural resources and other issues deemed relevant by the region.
- Update cost estimates for all reuse strategies.

Entities Potentially Receiving Water from Reuse WMSs:

CRMWD

San Angelo

City of Odessa and Ector County Manufacturing

City of Midland

City of Bangs

Crockett County WCID#1

City of Menard

City of Winters

City of Ballinger

Bronte Village

Mining WUGs

### **Desalination**

With limited surface water and groundwater supplies, entities in Region F are turning to brackish groundwater and/or brackish surface water with desalination for future water sources. The 2016 Region F Water Plan includes desalination strategies for CRMWD, San Angelo, Odessa, Concho Rural Water Supply, and the City of Andrews. These strategies will be retained for the 2021 Region F Water Plan and re-evaluated in light of Modeled Available Groundwater (MAG) values, alternative sources, projected need and other strategies.

Potential **retained** desalination strategies include:

1. Desalination of water from CRMWD's brackish diverted water system for potential potable use
2. Desalination of Spence Reservoir and Moss Creek reservoir, and
3. Development of brackish groundwater for different water users

Potential **new** desalination strategies include:

1. Develop new groundwater and potential desalination for the City of Fort Stockton
2. Develop new groundwater with potential desalination for Greater Gardendale

Desalination strategies may be used with Aquifer Storage and Recovery (ASR) and/or conjunctively with other water supplies. Specific tasks associated with this effort include review and update:

### Scope of Work

- Evaluate the available supplies from brackish groundwater sources, considering MAGs, other demands on the aquifer and the needs of the entity.
- Review and update, as needed, for **retained** strategies:
  - infrastructure requirements for previously developed projects.
  - the reliable supply from CRMWD's diverted water system. Assess feasibility of desalination and operation with CRMWD's other sources.
- Develop infrastructure requirements for **new** strategies.
- Evaluate each desalination strategy in accordance with the Regional Water Planning Guidelines. This will include the evaluation of reliability, cost, environmental issues, impacts to agricultural and rural areas, natural resources and other issues deemed relevant by the region.
- Develop cost estimates for all desalination strategies.
- Develop GIS maps for all strategies showing infrastructure improvements and supply sources. (Note: GIS maps are to be provided to the TWDB and any maps included in the Region F plan will be approved by the respective sponsor of the strategy.)
- Distribute supplies to customers of the sponsoring entity.

### Entities Potentially Receiving Water from these WMSs:

City of Andrews

City of Fort Stockton

City of Odessa

City of San Angelo

CRMWD and its customers

Concho Rural Water Supply Corporation

Greater Gardendale

### Data Base Entry

As required by the TWDB rules, all water management strategies that are recommended or adopted as alternate strategies must be entered into the TWDB database for the 2021 State Water Plan. Also, specific reports must be included in the 2021 Region F Water Plan. For Phase 1, this task will apply only to the strategies developed under this scope of work. Final database entry and data reports will be developed under Phase 2 Scope of Work. Specific tasks associated with the database entry include:

#### Scope of Work

- Define each water management strategy (WMS) in accordance with the specific requirements of the database.
- Assign WUGs and WWPs to a specific WMSs. Enter the amount of supply received for each decade. Enter other data required for the WMS source, user and seller, as appropriate.
- Enter capital costs and annual costs for each WUG/WWP as appropriate.
- Coordinate with shared regions as appropriate.
- Perform appropriate QC checks on data entry.
- Coordinate with TWDB database staff.

#### Entities

All WUGs and WWPs receiving water from a WMS.

### Documentation and Coordination

Each strategy will be documented in a technical memorandum that can be provided to eth strategy sponsor and the Region F RWPG. The technical memorandum will address the development of the strategy, costs and technical evaluation. These memoranda will be included as an appendix to the Region F Water Plan.

### Fee Summary

The total budget for developing the water management strategies for the 2021 Region F Water Plan (Task 5A) is \$330,868. The Phase 1 Scope of Work effort is estimated at \$160,000. Below is a breakdown of the fee by major strategy category.

<b>TASK 5A</b>	<b>BUDGET</b>
Subordination	\$45,000
Conservation strategies	\$25,000
Reuse	\$20,000
Desalination	\$40,000
Database Entry	\$15,000
RWPG Coordination/Documentation	\$15,000
<b>TOTAL</b>	<b>\$160,000</b>

**ATTACHMENT NO. 1**

**TASK 5A SCOPE OF WORK  
REGION F CURRENT CONTRACTS**

## **TASK 5A - EVALUATION AND RECOMMENDATION OF WMS AND ASSOCIATED WATER MANAGEMENT STRATEGY PROJECTS (WMSPS)**

---

The objective of this task is to evaluate and recommend WMS and their associated WMSPs, including preparing a separate chapter and subchapter (on conservation recommendations see - Task 5B) to be included in the 2021 RWP that describes the work completed, presents the potentially feasible WMSs, recommended and alternative WMSs and WMSPs, including all the technical evaluations, and presents which water user entities will rely on the recommended WMSs and WMSPs.

**Work shall be contingent upon a written notice-to-proceed and shall include but not be limited to the following:**

- a) In addition to generally meeting all applicable rules and statute requirements governing regional and state water planning under 31 TAC Chapters 357 and 358, this portion of work shall, in particular, include all work necessary to meet all the requirements of 31 TAC §357.34 and §357.35 that is not already included under Tasks 4B, 5A, or 5B.<sup>1</sup>
- b) Plans to be considered in developing WMSs include those referenced under 31 TAC §357.22.
- c) Inclusion of a list of the potentially feasible WMSs that were identified by the RWPG. Information to include what past evaluations have been performed for each potentially feasible WMS listed.
- d) Technical evaluations of all categories of potentially feasible WMSs including previously identified or recommended WMSs and newly identified WMSs including drought management and conservation WMSs; WMS and WMSP documentation shall include a strategy description, discussion of associated facilities, project map, and technical evaluation addressing all considerations and factors required under 31 TAC §357.34(d)-(h) and §357.35.
- e) Process of selecting all recommended WMSs and associated WMSPs including development of WMS evaluations matrices and other tools required to assist the RWPG in comparing and selecting recommended WMSs and WMSPs.
- f) Consideration of water conservation and drought contingency plans from each WUG, as necessary, to inform WMS evaluations and recommendations.
- g) Communication, coordination, and facilitation required within the RWPA and with other RWPGs to develop recommendations.
- h) Updates to descriptions and associated technical analyses and documentation of any WMSs and WMSPs that are carried forward from the previous RWP to address:
  - Changed conditions or project configuration
  - Changes to sponsor of WMS and WMSP(s)
  - Updated costs (based on use of required costing tool<sup>2</sup>)
  - Other changes that must be addressed to meet requirements of 31 TAC §357.34 and §357.35.
- i) Assignment of all recommended WMS water supplies to meet projected needs of specific WUGs.
- j) Documentation of the evaluation and selection of all recommended WMS and WMSPs, including an explanation for why certain types of strategies (e.g., aquifer storage and recovery, seawater desalination, brackish groundwater desalination) may not have been recommended.

---

<sup>1</sup> Requirements are further explained in the guidance document *First Amended General Guidelines for Fifth Cycle of Regional Water Plan Development*.

<sup>2</sup> See section 5.1.1 under 'Financial Costs' in *First Amended General Guidelines for Fifth Cycle of Regional Water Plan Development*.



- k) Coordination with sponsoring water user groups, wholesale water providers, and/or other resource agencies regarding any changed conditions in terms of projected needs, strategy modifications, planned facilities, market costs of water supply, endangered or threatened species, etc.
- l) If applicable, determination of the “highest practicable level” of water conservation and efficiency achievable (as existing conservation or proposed within a water management strategy) for each WUG that relies on a WMS involving and interbasin transfer to which TWC 11.085 applies. Recommended conservation WMSs associated with this analysis shall be presented by WUG.
- m) Presentation of the water supply plans in the RWP for each WUG and WWP relying on the recommended WMSs and WMSPs.
- n) Consideration of alternative WMSs and WMSPs for inclusion in the plan. Alternative water management strategies must be fully evaluated in accordance with 31 TAC §357.34(d)-(h).
- o) Incorporation of all required DB22 reports into document.
- p) Submission of data through the Regional Water Planning Application (DB22) to include the following work:
  - review of the data,
  - confirmation that data is accurate,
  - incorporation of the required DB22 reports into the draft and final regional water planning chapter document
- q) Review of the chapter document and related information by RWPG members,
- r) Modifications to the chapter document based on RWPG, public, and or agency comments.
- s) Submittal of chapter document to TWDB for review and approval; and
- t) All effort required to obtain final approval of the regional water plan chapter and associated DB22 data by TWDB.
- u) *[SCOPE OF WORK TO BE DETERMINED]*

***Scope of Work to be amended based on specific Task 5A scope of work to be developed and negotiated with TWDB. Work under this Task to be performed only after approval and incorporation of Task 5A scope of work and written notice-to-proceed. NOTE: Work effort associated with preparing and submitting a proposed Task 5A scope of work for the purpose of obtaining a written ‘notice-to-proceed’ from TWDB is not included in Task 5A and shall not be reimbursed under the Contract.***

**Deliverables:** A completed Chapter 5 shall be delivered in the 2021 RWP as a work product to include technical analyses of all evaluated WMSs and WMSPs. Data shall be submitted and finalized through DB22 in accordance with the Guidelines for Regional Water Planning Data Deliverables.

---

**SCOPING TEMPLATE FOR CURRENTLY CONTRACTED TASK 5A FUNDING**

Region	Overall TWDB Task Number	SubTask / WMS evaluation number	SubTask / WMS(s) Title	SubTask Scope of Work Write-up	Deliverable	SubTask Budget	WUG(s) &/OR WWP Entities Potentially Served by WMS(s)	Addressing a changed condition from previous cycle?	When was this WMS identified by RWPG as a potentially feasible WMS?	Was WMS evaluated in any previous Regional Water Planning Cycles?	Is evaluation a limited update to previous technical evaluation information?
F	5A	1	Subordination	See attached Scope of Work	technical memorandum and updated surface water model	\$ 45,000	See attached Scope of Work	Yes	2006	Yes	No
F	5A	2	Conservation	See attached Scope of Work	technical memoranda - municipal users, agricultural users and other non-municipal users	\$ 25,000	See attached Scope of Work	Yes	2006	Yes	No
F	5A	3	Reuse	See attached Scope of Work	technical memoranda - municipal users, non-municipal users; Updated portion of Appendix C	\$ 20,000	See attached Scope of Work	Yes	Different dates	Yes for some entities but not for all entities	No
F	5A	4	Desalination	See attached Scope of Work	technical memoranda for each WUG; updated portion of Appendix C	\$ 40,000	See attached Scope of Work	Yes	Different dates	Yes for some entities but not for all entities	No
F	5A	5	Database Entry	See attached Scope of Work	data necessary for required DB22 reports	\$ 15,000	See attached Scope of Work	Yes	NA	NA	NA
F	5A	6	RWPG Coordination/ Documentation	See attached Scope of Work	Updated portion of Chapter 5	\$ 15,000	See attached Scope of Work	Yes	NA	NA	NA
TOTAL BUDGET						\$ 160,000					

The subtask budgets include applicable scope of work items outlined in the TWDB scope of work (Attachment 1) necessary to develop and evaluate each strategy.