

TO: Region C RWPG

FROM: Simone Kiel

SUBJECT: Scope of Work for Water Management Strategies, Phase 2

DATE: January 15, 2019

PROJECT: Region C 2021 Water Plan, TR116409

The TWDB developed a scope of work for Task 5A, which includes the evaluation of water management strategies (WMSs) and development of Chapter 5 of the 2021 Region C Water Plan. 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 total budget in the executed contract for this effort is \$1,095,005.

At the April 2018 Region C Planning Group meeting, the RWPG approved a partial scope of work to develop water management strategies. This request for \$412,500 was submitted to the TWDB for review and approval. On July 12, 2018 the TWDB sent a letter to TRA authorizing this request along with a contract amendment that includes the partial scope of work. The strategies that have been approved and funded include 20 previously developed strategies and six newly identified strategies for the large wholesale water providers. The currently authorized scope does not include strategies for small wholesale water providers or water user groups.

This request outlines the remaining scope of work to identify and evaluate water management strategies, coordinate with respective sponsors of the strategies, prepare Chapter 5 of the Regional Water Plan, and perform database entry associated with remaining WMSs. The remaining available funding for this task is \$682,505.

SCOPE OF WORK FOR THE REMAINDER OF TASK 5A FUNDS

To facilitate the development of the remaining scope of work, Region C has completed the needs assessment to identify entities that will require water management strategies. This assessment identified 400 water user groups with projected water needs. To meet these needs, many of the strategies in the 2016 plan will be retained for the 2021 regional water plan. A few strategies have been implemented or are no longer being considered by the sponsor. In addition, there will be several new strategies developed to meet the projected needs for new water user groups.

The types of strategies to be evaluated include:

- Infrastructure Improvements, including water treatment plant expansions
- Reuse
- New Groundwater Development
- Voluntary Redistribution, which includes increases in contracts
- New Surface Water
- Aquifer Storage and Recovery

- Regional Projects
- Dredging existing surface water sources

Infrastructure Improvements and Water Treatment

There are 32 wholesale water providers in Region C. Most of these providers are shown to have projected water needs over the planning horizon. Many of the water management strategies developed for the wholesale water providers require infrastructure improvements to move and/or treat the water for the end user. Some of these strategies are considered projects under the umbrella source strategy. Others are a separate unique water management strategy that is sponsored by the end user. There are at least 82 transmission projects and 60 water treatment projects identified to utilize water from wholesale providers. Specific tasks associated with this effort include:

Scope of Work

- Evaluate the available supplies and appropriate sizing required for the infrastructure improvements.
- Evaluate each 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 infrastructure strategies.
- Develop GIS maps for selected strategies showing linear infrastructure improvements and supply sources. (Note: GIS maps are to be provided to the TWDB and any maps included in the Region C plan will be approved by the respective sponsor of the strategy.)
- Distribute supplies to customers of the sponsoring entity.

Reuse

Wastewater reuse is an important strategy in Region C. The TWDB has authorized funding for the larger reuse projects for wholesale water providers, but several of the smaller wholesale providers, cities, and non-municipal water groups are planning to develop reuse projects. There are 15 direct and indirect reuse projects identified for the 2021 Region C Water Plan. Other water user groups may also be considering reuse to reduce demands on fresh water supplies. Specific tasks associated with this effort include:

Scope of Work

- Evaluate the available supplies and appropriate infrastructure improvements to treat and/or deliver the reuse water to the end destination.
- Evaluate each 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 reuse strategies.
- Develop GIS maps for selected strategies showing linear infrastructure improvements and supply sources. (Note: GIS maps are to be provided to the TWDB and any maps included in the Region C plan will be approved by the respective sponsor of the strategy.)
- Distribute supplies to customers of the sponsoring entity, where appropriate.

New Groundwater Development

New groundwater development has been and will continue to be a water supply strategy for rural communities in Region C. New groundwater is also a considered strategy for non-municipal water users. There are at least 21 groundwater strategies that will need to be re-evaluated in light of the projected need and available groundwater supplies. Specific tasks associated with this effort include:

Scope of Work

- Evaluate the available supplies and appropriate sizing required for the infrastructure improvements for new groundwater development. Available supply will consider MAGs, other demands on the aquifer, desalination/treatment needs (if any), and needs of the entity. As appropriate, consider potential phasing of new groundwater projects to economically meet projected needs.
- Consider potential regionalization, as appropriate.
- Coordinate with other regions for strategies that propose to use water from outside of Region C.
- Evaluate the water quality of the potential source(s) for the end use purpose.
- Evaluate each 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 new and/or expanded groundwater strategies.
- Develop GIS maps for all strategies showing linear infrastructure improvements and supply sources. (Note: GIS maps are to be provided to the TWDB and any maps included in the Region C plan will be approved by the respective sponsor of the strategy.)
- Distribute supplies to customers of the sponsoring entity, if appropriate.

Voluntary Redistribution

The Voluntary Redistribution strategy is a general strategy that includes sales of water from one entity to another, new or extended contracts, or other types of transfers of water. This strategy does not apply to entities having sufficient existing contracts with sellers that are developing additional water supplies to meet the contractual demands. In Region C most of the voluntary redistribution strategies involve new sales or increased sales of water from a provider and may include new infrastructure as needed to transport the water. New strategies will be considered for entities with needs. Also, we will consider change of use type strategies, such as using surface water permitted for steam electric use for municipal, industrial and/or mining use. There are at least 22 entities that will need additional supply through increased contracts or new contracts. Specific tasks associated with this effort include:

Scope of Work

- Coordinate with entities with expiring contracts to confirm whether the contracts will be extended and at what level of supply.
- Evaluate whether an entity has supply available for redistribution. Confirm with the water provider that it is willing to provide water to the respective WUG(s). Confirm with the receiving WUG(s), as appropriate, that it is willing to purchase water.
- Develop or update the appropriate sizing required for the infrastructure improvements for transfers of water. As appropriate, consider potential phasing of new re-distribution projects to economically meet projected needs.
- Consider potential regionalization, as appropriate.

- Evaluate the water quality of the potential source(s) for the end use purpose.
- Evaluate each 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 new and/or expanded voluntary re-distribution strategies.
- Develop GIS maps for all strategies showing linear 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.

New Surface Water

Most of the new surface water strategies were included in the first phase of Task 5A funding. However, it did not include the Red River Basin Off-Channel Reservoir (OCR), which is considered for Dallas Water Utilities. Evaluation of this strategy, along with potential modification to other surface water strategies, is included with this funding request. Updates to the OCR strategy are expected to be limited and will include confirmation of supplies and updates to costs.

Aquifer Storage and Recovery

The TWDB requires aquifer storage and recovery (ASR) to be considered for all needs. To address this requirement, Region C will develop a generic regional ASR project for the major water providers. The generic strategy will be evaluated 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. Region C will also address the reasons ASR is not selected for water user groups as appropriate.

Regional Water Projects

Several regional projects were identified and evaluated in previous special studies for Region C. These projects, referenced as County Water Supply Project, will be retained and refined for the 2021 Water Plan. There are four regional county projects: Ellis County, Fannin County, Grayson County, and Tarrant County. Each of these projects will be updated and evaluated in accordance with the Regional Water Planning Guidelines.

Dredging Existing Lakes

Dredging existing lakes has been a public suggestion during past planning cycles as a means to meet water needs in Region C. Dredging is a strategy for Lake Waxahachie. This task will reevaluate the Lake Waxahachie dredging project and develop a generic regional lake dredging strategy for the major water providers in Region C. The generic strategy will be evaluated 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.

Other Projects:

There are other projects that may be identified during the planning process. These projects will be developed and evaluated for the 2021 Region C Water Plan as more information becomes available.

Data Base Entry

As required by the TWDB rules, all water management strategies and projects that are recommended must be entered into the TWDB database for the 2021 State Water Plan. Also, specific reports must be included in the 2021 Region C Water Plan. For Phase 2, this task applies only to the strategies developed under this 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.
- Relate WMSs to projects with an associated capital cost and WUG/WWP 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.
- Prepare all necessary reporting for the 2021 Region C Water Plan.

Report Preparation and Coordination

Chapter 5 of the 2021 Region C Water Plan is one of the most important chapters in the plan. This chapter is the compilation of the future direction for water supply in the region. The 2016 Region C Water Plan has six subchapters dedicated to this section of the report along with several appendices that document the data evaluation. The basics of the strategy development and technical evaluations are included in the scopes of work for the specific strategy types. This task is for the effort to compile all the information into Chapter 5 of the 2021 Region C report. It also includes coordination with the RWPG on the draft chapter and the incorporation of comments for the final chapters in the Initially Prepared Plan and Final Plan.

Fee Summary

The total budget for developing the water management strategies for the 2021 Region C Water Plan (Task 5A) is \$1,095,005. The Phase 1 Scope of Work effort was authorized for \$412,500. Phase 2 effort represents the remaining budget of \$682,505. Below is a breakdown of the fee by major strategy category.

TASK 5A	BUDGET
Infrastructure Improvements	\$83,000
Reuse	\$65,500
New Groundwater	\$50,000
Voluntary Redistribution	\$25,500
New Surface Water	\$25,500
Aquifer Storage and Recovery	\$43,000
Regional Projects	\$70,000
Dredging Existing Lakes	\$41,500
Other Projects	\$55,500
Database Entry	\$61,500
Report Preparation and Coordination	\$161,505
TOTAL	\$682,505

TWDB SCOPE AND FEE SPREADSHEET

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Region	Overall TWDB Task Number	Subtask WMS evaluation number	Subtask WMS and/or WMSP Title	Subtask Scope of Work Write-up	Deliverable	Subtask Budget	WUG(s) &/OR WWP Entities Potentially Served by WMS(s)/WMSP(s)	Addressing a changed condition from previous cycle? If yes, describe the changed condition.	When was this WMS/WMSP identified by RWPG as potentially feasible?	Was the WMS/WMSP evaluated in any previous Regional Water Planning Cycles?	Is evaluation a limited update to previous technical evaluation information? If no, indicate specific update in subtask sow column E
C	5A		Infrastructure Improvements and Water Treatment	See scope of work. Includes multiple supply and infrastructure configurations; coordination with project sponsors, re-evaluation of supplies, costs and infrastructure requirements.	Technical memorandum	\$83,000	Wholesale water providers and WUGs with need	Yes, changes in supplies and demands	Previous plans	Yes	No
C	5A		Reuse	See scope of work. Includes coordination with project sponsors, costs and infrastructure requirements	Technical memorandum	\$65,500	Wholesale water providers, cities, and non-municipal WUGs with need	Yes, changes in supplies and demands	Previous plans	Yes	No
C	5A		New Groundwater	See scope of work. Includes multiple supply and infrastructure configurations; coordination with project sponsors, re-evaluation of supplies, costs and infrastructure requirements. New MAGs.	Technical memorandum	\$50,000	WUGs not served by Major Water Provider	Yes, new MAGs and new needs	Previous plans	Yes	No
C	5A		Voluntary Redistribution	See scope of work. Includes coordination with project sponsors, re-evaluation of supplies, costs and infrastructure requirements	Technical memorandum	\$25,500	Wholesale water providers and WUGs with need	Yes, new needs and new sellers	Previous plans	Yes	No
C	5A		New Surface Water	See scope of work. Includes coordination with project sponsors, re-evaluation of costs and impacts review.	Technical memorandum	\$25,500	DWU and customers	No	Previous plans	Yes	Yes
C	5A		Aquifer Storage and Recovery	See scope of work. Includes development of new strategies, coordination with project sponsors, assessment of supplies, costs, and infrastructure requirements, and evaluation of impacts. Also includes assessment for each WUG with a need.	Technical memorandum	\$43,000	Major Water Providers, WUGs with need	Yes. New TWDB rule	2021 Plan	No	No
C	5A		Regional Projects	See scope of work. Includes coordination with project sponsors, NETMWD, re-assessment of available supplies, costs and infrastructure requirements	Technical memorandum	\$70,000	WUGs in Ellis, Fannin, Grayson and Tarrant Counties	Yes. Supplies and participants	Previous plans	Yes	No
C	5A		Dredging Existing Lakes	See scope of work. Includes coordination with project sponsors, re-evaluation of supplies, costs and infrastructure requirements	Technical memorandum	\$41,500	Waxahachie, Major Water Providers	Yes. Updated WAM; New strategy	Previous plans	Only the Lake Waxahachie dredging project	No
C	5A		Other Projects	See scope of work. Includes coordination with project sponsors, re-evaluation of supplies, costs and infrastructure requirements	Technical memorandum	\$55,500	MWPs, WWPs and WUGs	Yes. New project	NA	No	No
C	5A		Database Entry	See scope of work. Includes coordination with project sponsors, re-evaluation of supplies, costs and infrastructure requirements	Completed DB22 entry for specified WMSs	\$61,500	MWPs, WWPs and WUGs	NA	NA	NA	NA
C	5A		Report Preparation and Coordination	See scope of work. Includes coordination with project sponsors, re-evaluation of supplies, costs and infrastructure requirements	Completed portions of draft Chapters 5B and 5C of the Region C IPP	\$161,505	MWPs, WWPs and WUGs	NA	NA	NA	NA
				TOTAL		\$ 682,505					