REGION C WATER PLANNING GROUP

TO: REGION C WATER PLANNING GROUP

FROM: DAN BUHMAN, CHAIR

SUBJECT: OCTOBER 6, 2025 PUBLIC MEETING

DATE: SEPTEMBER 29, 2024

This memorandum will serve as a notice that the Region C Water Planning Group (RCWPG) is holding a public meeting at **1:00 P.M. on Monday October 6, 2025,** at the **North Central Texas Council of Governments, 616 Six Flags Drive, Centerpoint Two Building, First Floor Transportation Council Room, Arlington, Texas, 76011**. An agenda (including information on how to participate in the public meeting) has been prepared for the meeting and is attached to this memorandum. The following is a brief overview of the agenda items to be discussed with relevant materials and handouts. Meeting materials, including draft chapters of the final *2026 Region C Water Plan*, are available on the Region C website at https:\RegionCwater.org.

OPEN MEETING

I. ROLL CALL

II. APPROVAL OF MINUTES – SEPTEMBER 5, 2025

Agenda Item II: RCWPG Minutes from September 5, 2025

III. PUBLIC COMMENTS (Limited to 2 minutes per speaker)

IV. PRIMARY ACTION ITEMS FOR CONSIDERATION

A. Consider approval of the Region C and Region D joint informational campaign statement as specified in the interregional conflict mediated agreement.

On June 26, 2025, the TWDB found that an interregional conflict existed between the 2026 Region C and Region D Initially Prepared Plans and invited the planning groups to engage in mediation to resolve the conflict. Representatives of the regions met in mediation at the end of July and came to an agreement to resolve the conflict on August 1, 2025. This action item will consider approval of the Region C and Region D joint informational campaign statement as specified in the interregional conflict mediated agreement.

Attachment IV.A: Region C and Region D Joint Info Campaign and Statement

B. Review and discuss the 2026 Region C Water Plan.

Consultants will present information on the major changes to the plan since the publication of the Initially Prepared Plan. Appendix Q – Response to Comments on the IPP was available to the RCWPG and discussed at the September 5, 2025, RCWPG meeting.

Attachment IV.B: 2026 Region C Water Plan Executive Summary (Full plan available online only)

C. Consider approval of the 2026 Region C Water Plan, authorize the Technical Consultant to make non-substantial changes prior to TWDB submittal, and authorize TRA and Technical Consultant to submit the Region C Water Plan to the TWDB by October 20, 2025.

The RCWPG will consider approval of the 2026 Region C Water Plan as reviewed in the preceding Agenda Item IV.B. The RCWPG will consider approval and adoption of the plan, allowing consultants to make minor adjustments if needed prior to October 20, 2025 submittal to TWDB.

D. Consider designating TRA to be the designated political subdivision and administrator for the Region C RWPG for the 7th cycle of Regional Water Planning.

E. Authorize the Region C Political Subdivision to prepare and disseminate a Request for Qualifications and Proposals to identify technical consultants for the 2031 Regional Water Plan.

F. Authorize the Region C Political Subdivision to submit a grant application to the TWDB and execute a contract with the TWDB on behalf of the RCWPG for initial funding of the 7th cycle of Regional Water Planning.

G. Authorize the Region C Political Subdivision to provide public notice and hold a pre-planning public meeting to obtain public input on development of the 2031 Regional Water Plan and 2032 State Water Plan.

V. OTHER ITEMS (MAY RESULT IN ACTIONS)

A. Funding for Mediated Agreement (TWDB)

B. Schedule Overview

C. Date for Next Meeting

VI. OTHER DISCUSSION

A. Updates from the Chair.

B. Report from Regional Liaisons.

C. Report from State Agencies.

D. Other Reports.

VII. ADJOURNMENT

The following items are enclosed with this memorandum:

I. RCWPG Agenda – October 6, 2025
II. Meeting Handouts
   A. Agenda Item II – RCWPG Minutes from September 5, 2025
   B. Attachment IV.A – Region C and Region D Joint Info Campaign and Statement
   C. Agenda Item IV.B – 2026 Region C Water Plan Executive Summary (Full plan available online only)

Agenda Item II – Attachment

RCWPG Minutes from September 5, 2025

REGION C WATER PLANNING GROUP

MINUTES OF AN OPEN PUBLIC MEETING
September 5, 2025

The Region C Water Planning Group (RCWPG) met in an open public meeting on Friday, September 5, 2025, at 1:00 P.M. The meeting was held at the Trinity River Authority of Texas located at 5300 S. Collins, Arlington, Texas. Notice of the meeting was legally posted.

Chairman Dan Buhman called the Region C Regional Water Planning Group meeting to order at approximately 1:05 P.M. and welcomed guests.

I. ROLL CALL

Chairman Buhman conducted a roll call. The following members were in attendance:

Jay Barksdale	Grace Darling
Ryan Bayle	Matt Penk
Chris Boyd	Haley Salazar (Alternate for Stephen Gay)
Dan Buhman	Rick Shaffer
Shela Chowdhury (Alt. for Chris Harder)	Doug Shaw
Glenn Clingenpeel	Steve Starnes
Jenna Covington	John Stevenson

Kevin Smith, TWDB, Ronna Hart, Region D, and Kathy Turner Jones, Region G, were present. The registration lists signed by guests in attendance are attached.

II. APPROVAL OF MINUTES

A. February 24, 2025
B. July 11, 2025

The minutes of the February 24, 2025, and the July 11, 2025, RCWPG meetings were approved by unanimous consensus by the Region C WPG.

III. PUBLIC COMMENTS (Limited to 3 minutes per speaker)

There were no public comments.

IV. PRIMARY ACTION ITEMS FOR CONSIDERATION

A. Overview of the Mediated Agreement between Region C and Region D and consider ratification of the Mediated Agreement.

On June 26, 2025, the TWDB found that an interregional conflict existed between the 2026 Region C and Region D Initially Prepared Plans and invited the planning groups to engage in mediation to resolve the conflict. The undersigned representatives of the regions met in mediation at the end of July and came to an agreement to resolve the conflict on August 1, 2025. This action item will discuss and consider ratification of the Mediated Agreement.

Chairman Buhman led this discussion to consider the ratification of the Mediated Agreement between Region C and Region D. Chairman Buhman advised the

Planning Group that he, Jenna Covington, Sarah Standifer and Larry Patterson met with Region D representatives several times. Their discussions are sealed because they are confidential. However, the Agreement is public. Listed below are highlights of the Mediated Agreement.

1. Region C will make Toledo Bend a Recommended Strategy (alongside Marvin Nichols Reservoir) so both can be explored.

2. Regions C and D will support an independent study to address the potential benefits and impacts of Marvin Nichols and the anticipated associated mitigation land acquisition on the economic, agricultural, and natural resources of Regions C and D.

3. Regions C and D will jointly seek state financial support for alternatives to Marvin Nichols that are more costly, to resolve this ongoing conflict.

4. Regions C and D will engage in a joint informational campaign to convey information considered in, and resulting from, this negotiated agreement, including: 1) a shared statement on the outcome of mediation and what is going into the Initially Prepared Plans as a result, and 2) mutually agreed upon facts from the Initially Prepared Plans that influenced the resolution of the interregional conflict.

There were no public comments on this action item.

Upon a motion by John Stevenson, and a second by Glenn Clingenpeel, the Region C WPG voted unanimously to ratify the Mediated Agreement.

B. Consider appointing up to five (5) representatives to serve on an interregional working group.

Part of the Mediated Agreement includes supporting an independent study to address the potential benefits and impacts of the Marvin Nichols Reservoir and the associated mitigation land acquisition on the economic, agricultural, and natural resources of Regions C and D. Region C and Region D are to identify up to five (5) members to participate in an interregional working group to coordinate on activities related to the independent study such as study scoping, progress, and conclusions. This action item will consider appointing up to five (5) representatives to serve on an interregional working group.

There were no public comments on this action item.

Upon a motion by Chris Boyd, and a second by John Stevenson, the RCWPG voted unanimously to appoint Ronna Hartt, Matt Penk, Steve Pettit, Galen Roberts and Nicole Rutigliano to serve on the interregional working group.

C. Consider authorizing the interregional working group to develop a draft technical scope of work for the specified study or studies in the Mediated Agreement and

authorize the working group to issue a Request for Statement of Qualifications to prospective technical consultants.

There were no public comments on this action item.

Upon a motion by Chairman Buhman, and a second by Doug Shaw, the RCWPG voted unanimously to authorize the interregional working group to develop a draft technical scope of work for the specified study or studies in the Mediated Agreement; and authorize the working group to take any actions necessary to select a technical consultant in compliance with all relevant rules and regulations.

V. OTHER ITEMS (MAY RESULT IN ACTIONS)

A. Update on Agency and Public Comments on the Region C Initially Prepared Plan.

Simone Kiel led this discussion on the agency and public comments received for the Region C Initially Prepared Plan. The public comment period closed on July 18, 2025. Ms. Kiel stated that 79 written comments were received, and 31 oral comments were given at the Public Hearing held on May 19, 2025. Ms. Kiel added that there will be changes to the Initially Prepared Plan as a result of comments from the WUGs and the Mediated Agreement.

B. Schedule overview and next meeting.

The next meeting of the RCWPG will be on October 6, 2025, at 1:00 PM at the North Central Texas Council of Governments. Posting for this meeting will occur two weeks prior to the meeting date.

VI. OTHER DISCUSSION

A. Report from Regional Liaisons
- Region B – None
- Region D – Ronna Hart advised Region D approved the Mediated Agreement.
- Region G – Kathy Jones stated the next Region G meeting is October 7, 2025.
- Region H – None
- Region I – None

B. Report from the Interregional Planning Council – Jenna Covington reported the IRPC has completed its cycle.

C. Report from Texas Water Development Board – Kevin Smith commented that the TWDB reassesses the planning boundaries every 5 years and that process has closed. An item on the planning boundaries will be presented at the October board meeting.

D. Other Reports – None

VII. ADJOURNMENT

There being no further business, the meeting of the Region C WPG adjourned at approximately 2:05 PM.

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DAN BUHMAN, Chairman

REGION C WATER PLANNING GROUP

OPEN MEETING
September 5, 2025

ATTENDANCE REGISTRATION SHEET

NAME	REPRESENTING	E-MAIL ADDRESS
Jason Stovall	SRA	jstovall@sratx.org
Conrad King	SRA	bcking@sratx.org
Doug Slea	UTGCD	doug@[illegible]
Susan Keil	FNI	
Christian Gilden	FNI	
Jason Afanasicz	FNI	
Pedro Paulo Costa	Fine Environmental	pedrop.bcosta@gmail.com
Décio Eloi Siebert	Fine Environment	decio.siebert@gmail.com
Amanda Roth	Fine Environment	amanda@[illegible]
Cristian Munoz	Fine Environment	CRISTIAN.MUNOZ@FINESOLUTIONSGRP.C
Steve Stamps	Counties	Steve.Stamps.Texas@[illegible]
Glenn Clingenpeel	River Authorities	clingenpeelc@trinitygra.org

Agenda Item IV.A – Attachment

Region C and Region D Joint Informational Campaign Statement

Joint Regions C&D Info Campaign and Joint Statement re: Interregional Conflict Mediated Agreement

<u>Info Campaign Strategies</u>:

- Post the ***mediation agreement documen***t to each group's website
- Develop a ***joint statement*** and:
    - Post it to each group's respective website
    - Distribute it to local/regional/statewide media
    - Distribute it to each group's regional stakeholders / interested parties email list
    - Read it aloud at each group's next public meeting

<u>Joint Statement from Region C and Region D Water Planning Groups</u>:

Representatives from each region came together in a series of mediation sessions in late July to resolve the declared interregional conflict and protect the long-term interests of our respective regional stakeholders.

Through mediation, we have mutually agreed to the following action items, among others:

(1) **Region C will make the Toledo Bend Reservoir a "recommended" strategy in its 2026 Region C Water Plan, alongside the Marvin Nichols Reservoir, so both strategies can be explored.** In Region C's Initially Prepared Plan, Toledo Bend had previously been identified as an "alternative" joint strategy for several wholesale water providers: the North Texas Municipal Water District, Tarrant Regional Water District, Dallas Water Utilities and the Upper Trinity Regional Water District.

(2) **Region C will delay the recommended implementation of Marvin Nichols to 2070 in the 2026 Region C Water Plan** – one decade later than the 2060 implementation date previously recommended in Region C's Initially Prepared Plan, which was submitted to the Texas Water Development Board (TWDB) earlier this year. Additionally, **no application for Marvin Nichols project permits will be submitted prior to 2030.**

(3) **Neither region will protest the other's 2026 Regional Water Plan, and both will avoid activities that would adversely affect the examination of the Marvin Nichols project.**

(4) **Region C will seek funding from the TWDB to facilitate and conduct an "apples-to-apples" monetary and non-monetary comparison of the Marvin Nichols and Toledo Bend projects.** Such study will be conducted by firm(s) that can provide a fresh assessment, commence by March 2026, and be completed by July 2027.

(5) **Regions C and D will jointly support an independent study to address the potential benefits and impacts of the Marvin Nichols project and the anticipated, associated mitigation land acquisition on the economic, agricultural and natural resources of both regions.** This study shall begin no later than March 2026 and be completed by July 2027,

so study results can be included in the September 2028 Technical Memoranda submitted by both regions to the TWDB as part of the next 5-year regional water planning cycle.

(6) **The two regions will form an interregional working group, consisting of up to 5 members from each region**, to cooperatively participate in activities related to the interregional study and jointly communicate about the study scoping, progress and conclusions.

Mutually agreed-upon facts that influenced the successful resolution of the interregional conflict were as follows:

1. Both regions have significant vested interests in ensuring that their stakeholders feel heard and valued in the regional water planning process, as well in any future project permitting processes that may occur.
2. Both regions acknowledge and appreciate that there are individuals, businesses, communities and rural areas that care deeply about whether the Marvin Nichols project proceeds and whether future water supply needs are met.
3. Projected future population growth and related water demand growth show that Region C will need to develop additional, future water supplies.
4. Region C has made significant investments in water conservation and reuse strategies and plans to continue and increase those efforts.
5. The uncertainties associated with the potential human, economic, agricultural and natural resource-related impacts of the Marvin Nichols project have been, and continue to be, of concern to many Region D stakeholders.
6. There is a mutual desire to continue Region C's emphasis on water conservation and reuse strategies, to the maximum extent practicable. However, regional water planning projections show that water conservation and reuse alone won't be sufficient to meet all of Region C's water needs in future decades.
7. Region C anticipates a need to develop water supplies outside of its region to meet the projected water demands.
8. Region C water providers have a fiduciary duty to their customers to develop water supplies that are economical and sustainable. Both Region C and Region D have a fiduciary as well as a legislatively mandated duty to protect the economic, agricultural and natural resources of the State and the Regions.
9. There are numerous wide-ranging impacts, both beneficial and detrimental, affecting stakeholders in both regions, that need to be clearly understood and taken into consideration with respect to any proposed water supply project of this magnitude.

The Region D Water Planning Group met on August 13, 2025, and ratified the mediation agreement. The Region C Water Planning Group met on September 5, 2025 and ratified the mediation agreement.

Both regions look forward to receiving further guidance from the TWDB about the next steps and potential state funding for the future studies identified in the mediation agreement.

Agenda Item IV.B – Attachment

2026 Region C Water Plan Executive Summary
(Full plan available online only)

EXECUTIVE SUMMARY

CHAPTER OUTLINE	
Section ES.1	Current Water Use and Supplies in Region C
Section ES.2	Projected Need for Water
Section ES.3	Identification and Selection of Water Management Strategies
RELATED APPENDICES	
Appendix A	Consistency with TWDB Rules
Appendix D	DB27 Reports
Appendix G	Water Management Strategy Evaluations
Appendix I	Water Conservation Savings
Appendix L	Socioeconomics Impacts

This report presents the *2026 Region C Water Plan* developed in the sixth round of the Senate Bill One regional water planning process. Region C covers all or part of 16 North Central Texas counties, as shown in **Figure ES.1**. The *2026 Region C Water Plan* was developed under the direction of the Region C Water Planning Group (RCWPG). The *2026 Region C Initially Prepared Plan* (IPP) was adopted by the RCWPG on February 24, 2025, and made publicly available at that time. A public hearing was held on May 19, 2025. Public comment was accepted through July 18, 2025. A final *2026 Region C Water Plan* was produced based on the IPP, comments, and other updates. The final plan was adopted by the RCWPG on October 6, 2025 and submitted to the Texas Water Development Board (TWDB) by October 20, 2025.

Key Takeaways:

- Region C is experiencing rapid growth that is outpacing current water supplies.
  - Some providers are experiencing shortages today.
- Conservation and reuse alone will not be able to meet the needs.
- The water supply shortage can be solved but Region C will need to use water from other parts of the state.
- The *2026 Region C Water Plan* has unmet municipal water needs.
  - Delays in project implementation can increase unmet needs.
- The ability to develop new water supplies and meet future growth is critical to the State's economy.

This Executive Summary focuses on current water needs and supplies in Region C, the projected need for water, the identification and selection of recommended water management strategies, the costs and impacts of the selected strategies, and county summaries for each county in the region over the 50-year planning period. Other elements of the plan are covered in the main text and the appendices.

This includes all associated data necessary in developing the plan from the TWDB. All the TWDB rules, guidance, and regulations were followed and compliance with them is documented in **Appendix A**.

All data from the *2026 Region C Water Plan* has been entered into a statewide database called DB27. In some cases, the aggregation and reporting of this data from the database differs from how the data is presented in the written Regional Water Plan. The Regional Water Plan aims to present the data in a format that is easily understandable to stakeholders and the public. Divergence between the numbers in tables in the Plan and the DB27 reports do not necessarily represent errors. However, if there is a difference between the Plan and DB27, the database takes precedence.

The plan's required database (DB27) reports can be accessed through the TWDB Database Reports application at https://www3.twdb.texas.gov/apps/SARA/reports/list and following the steps below. The reports available for access in DB27 are listed in **Table ES.1**. The DB27 reports are also available in **Appendix D**.

1. Enter '2026 Regional Water Plan' into the "Report Name" field to filter to all DB27 reports associated with the 2026 Regional Water Plans
2. Click on the report name hyperlink to load the desired report
3. Enter the planning region letter parameter, click view report

TABLE ES.1 TEXAS WATER DEVELOPMENT BOARD DATABASE REPORTS

REPORT
Report 1 – WUG Population
Report 2 – WUG Water Demand
Report 3 – Source Total Availability
Report 4 – WUG Existing Water Supply
Report 5 – WUG Needs/Surplus
Report 6 – WUG Second-Tier Identified Water Need
Report 7 – WUG Data Comparison to 2021 RWP
Report 8 – Source Data Comparison to 2021 RWP
Report 9 – WUG Unmet Needs
Report 10 – Recommended WUG Water Management Strategies
Report 11 – Recommended Projects Associated with Water Management Strategies
Report 12 – Alternative WUG Water Management Strategies
Report 13 – Alternative Projects Associated with Water Management Strategies
Report 14 – WUG Management Supply Factor
Report 15 – Recommended water Management Strategy Supply Associated with a new or amended IBT Permit
Report 16 – WUG Recommended WMS Supply Associated with a new or amended IBT Permit and Total Recommended conservation WMS Supply
Report 17 – Sponsored Recommended WMS Supplies Unallocated to WUGs
Report 18 – MWP Existing sales and Transfers
Report 19 – MWP WMS Summary

ES.1 Current Water Use and Supplies in Region C

As of July 2021, the population of Region C was over 7.7 million, which represented about 26 percent of Texas' total population. The two most populous counties in Region C, Dallas and Tarrant, have 60 percent of the region's population. Region C is heavily urbanized, with 84 percent of the population located in cities of more than 20,000 people.

ES.1.1 Physical Setting

Most of Region C is in the upper portion of the Trinity River Basin, with smaller parts in the Red, Brazos, Sulphur, and Sabine River Basins. Precipitation increases from west to east in the region. The average runoff in the region also increases from the west to the east, while evaporation is higher to the west. These patterns of rainfall, runoff, and evaporation result in more abundant water supplies in the eastern part of Region C than in the west.

There are 34 major reservoirs in Region C with conservation storages in excess of 5,000 acre-feet. Of these, 26 reservoirs are actively providing water supplies to the region. These reservoirs and others outside of Region C provide most of the region's water supply. Aquifers in the region include the Trinity, Woodbine, Carrizo-Wilcox, Nacatoch, Cross Timbers, and Queen City.

ES.1.2 Water Use

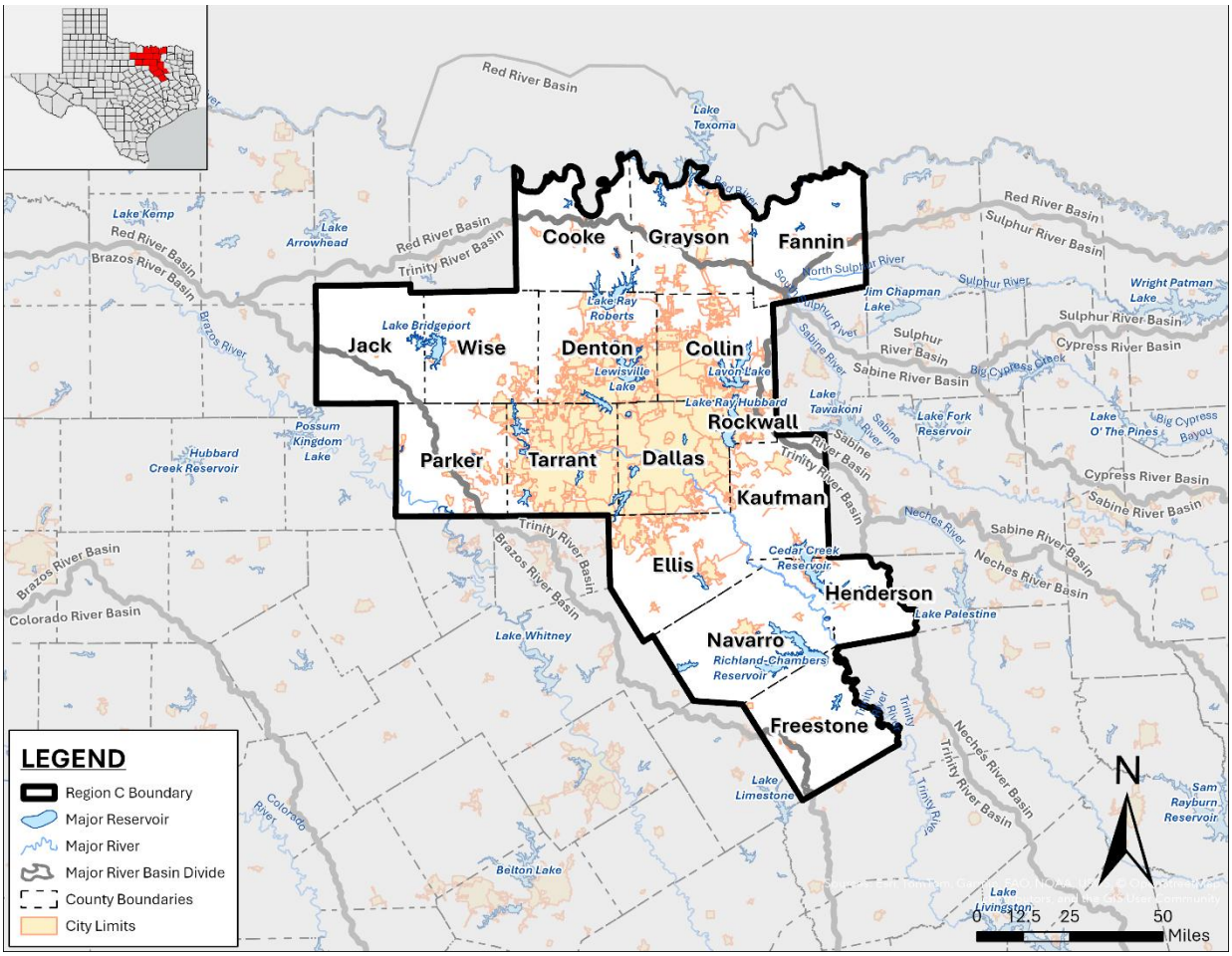
Water use in Region C has increased significantly in recent years, primarily in response to the increasing population. The regional water use in the year 2021 was approximately 1.4 million acre-feet per year. It is interesting to note that Region C, with 26 percent of Texas' population, had only 9.7 percent of the state's water use in 2021. About 90 percent of the current water use in Region C is for municipal supply.

ES.1.3 Current Sources of Water Supply

About 90 percent of the water use in Region C is supplied by surface water, but groundwater can also be important, especially in rural areas. Most of the surface water supply in Region C comes from major reservoirs in and outside of the region. The Trinity aquifer is the largest source of groundwater in Region C, with some use from the Woodbine, Carrizo-Wilcox, and other minor aquifers. The current use of groundwater is close to or greater than the long-term reliable supply available in some parts of Region C.

About half of the water used for municipal supply in Region C is discharged as treated effluent from wastewater treatment plants, making wastewater reclamation and reuse a significant source of water supply for the region. Reuse supplies are increasing rapidly in the region, with several major projects recently completed or under development. It is clear that the reuse of treated wastewater will be a significant source of future water supplies for the region.

FIGURE ES.1 REGION C LOCATION MAP WITH MAJOR WATER SOURCES



ES.1.4 Water Providers in Region C

Water providers in Region C include over 30 wholesale water providers (with six of them being designated as major water providers) and over 360 water user groups. In 2021, the three largest wholesale water providers in Region C (Dallas Water Utilities, Tarrant Regional Water District, and North Texas Municipal Water District) provided the majority of the water used in the region. Municipal WUGs provide most of the retail water service in Region C.

ES.2 Projected Need for Water

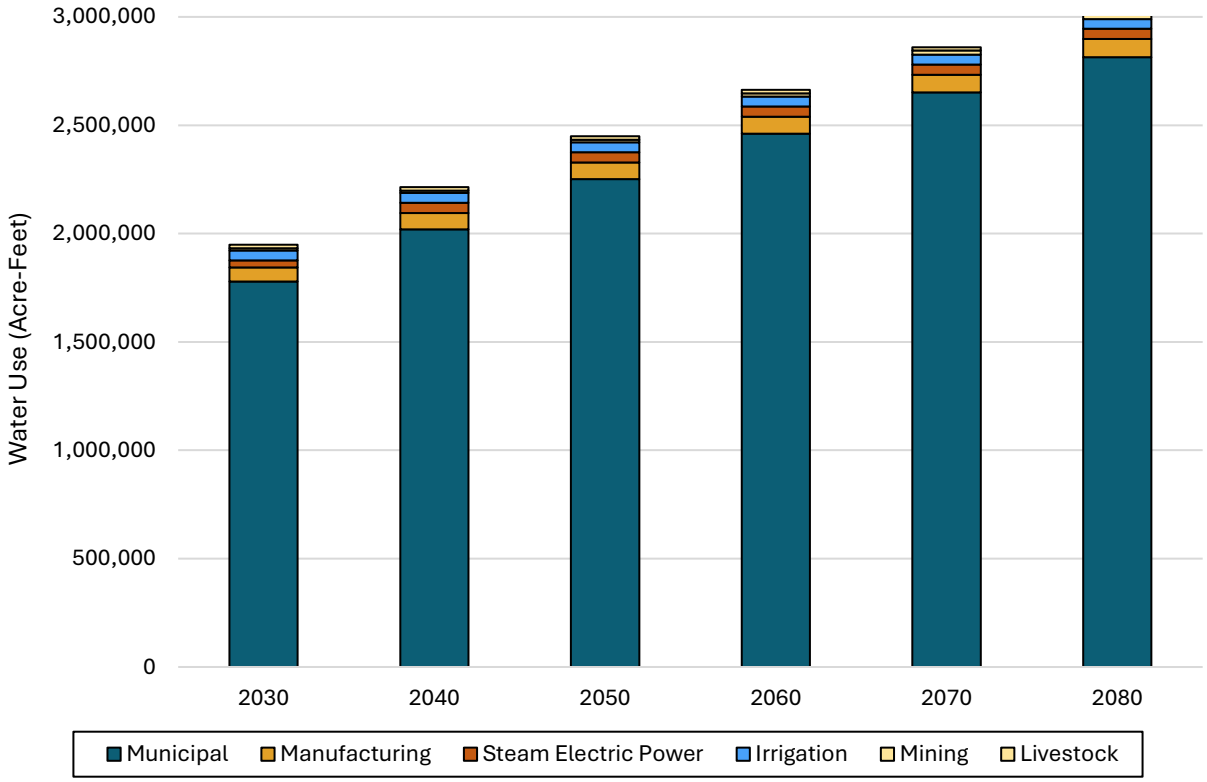
ES.2.1 Population Projections

The population of Region C is projected to grow to over 9.1 million in 2030 to over 15.1 million in 2080. These projections have been approved by the TWDB, as required by TWDB planning guidelines. This projection reflects a slowing in the rate of growth that has been experienced in Region C over the last 50 years, but the absolute number of people gained is much larger. The distribution of the projected population by county and city is discussed in **Chapter 2**.

ES.2.2 Demand Projections

Figure ES.2 shows the projected dry year demands for water in Region C, which total over 1.9 million acre-feet per year in 2030, growing to over 3.0 million acre-feet per year in 2080. As has been the case historically, municipal demands are projected to make up the majority of the water use in Region C. Dry-year demands are significantly higher than normal-year demands. Normal-year demands in Region C might be 10 to 15 percent lower than dry-year demands.

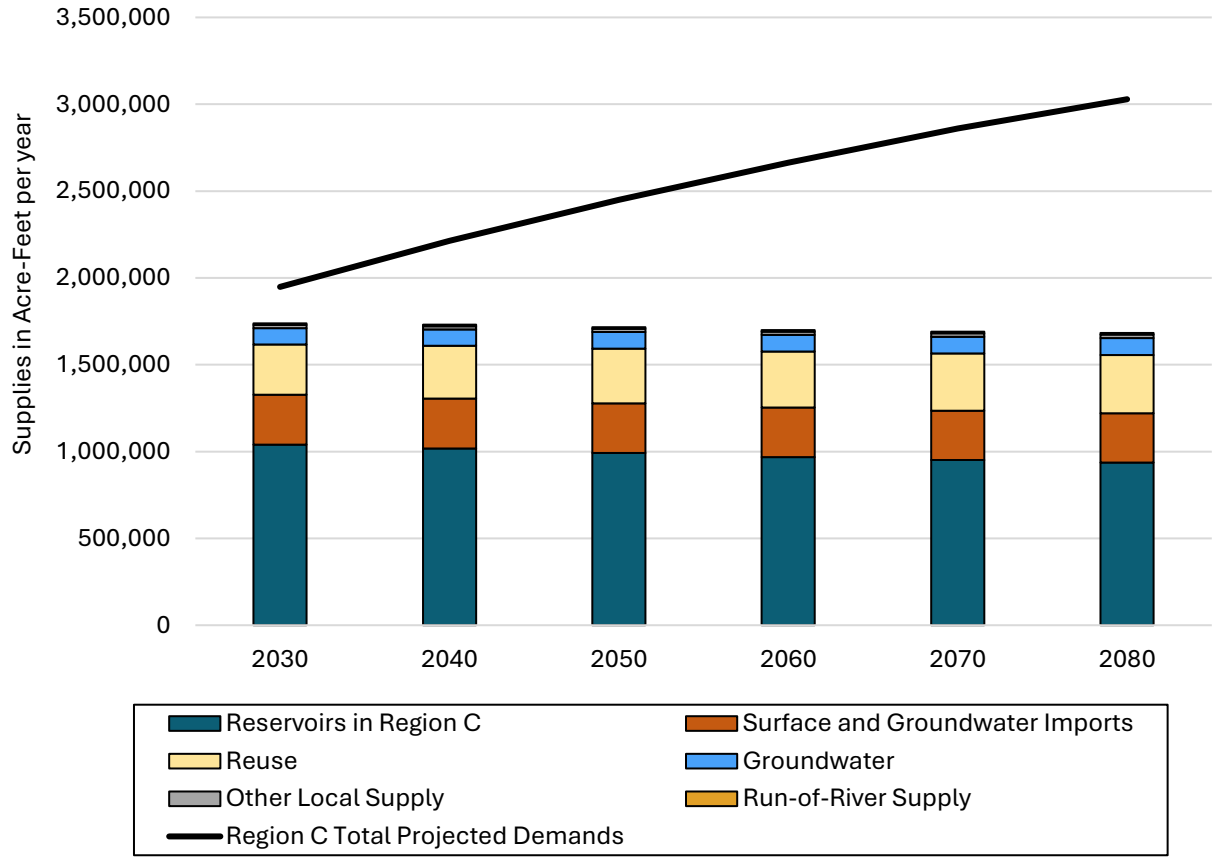
FIGURE ES.2 ADOPTED PROJECTIONS FOR DRY-YEAR USE BY CATEGORY IN REGION C



ES.2.3 Comparison of Supply and Demand

Figure ES.3 shows a comparison of supplies currently available to Region C (those that are connected) and the projected demands. Currently available supplies are almost constant over time at 1.7 million acre-feet per year, as sedimentation in reservoirs is offset by increases in reuse supplies due to increased return flows. With the projected 2080 demand of 3.0 million acre-feet per year, the region has a shortage (called water needs in regional planning) of nearly 1.4 million acre-feet per year by 2080. Meeting the projected water needs and leaving a reasonable reserve of planned supplies beyond projected demands will require the development of significant new water supplies for Region C over the next 50 years.

FIGURE ES.3 COMPARISON OF CURRENTLY AVAILABLE SYPPLIES AND PROJECTED DEMANDS



ES.2.4 Socio-Economic Impacts of Not Meeting Projected Water Needs

The TWDB conducted an analysis of the socio-economic impacts of not meeting the projected water needs in Region C. By not meeting water needs in Region C, TWDB estimates the annual combined lost income for a single year in 2080 would be $64.8 billion and that 2080 employment would be reduced by almost 404,400 jobs. More information on the socio-economic analysis is included in **Chapter 6** and **Appendix L**.

ES.3 Identification and Selection of Water Management Strategies

The RCWPG identified and evaluated a wide variety of potentially feasible water management strategies to develop this plan. Water supply availability, costs and environmental impacts were determined for conservation and reuse efforts, the connection of existing supplies, and the development of new supplies. As required by TWDB regulations, the evaluation of water management strategies was an equitable comparison of all feasible strategies and considered the following factors:

- Evaluation of quantity, reliability, and cost of water delivered and treated
- Environmental factors
- Impacts on other water resources and on threats to agricultural and natural resources
- Other factors deemed relevant by the planning group (including consistency with the plans of water providers in the region)
- Consideration of interbasin transfer requirements and third-party impacts of voluntary redistributions of water.

ES.3.1 Water Conservation and Reuse

The RCWPG considered the municipal water conservation strategies suggested as best management practices by the Water Conservation Advisory Council and recommended a water conservation program and reuse projects for Region C that accomplish the following:

- Including the 84,584 acre-feet per year of conservation built into the demand projections, a total conservation and reuse supply of over 1.3 million acre-feet per year by 2080, which represents a 45 percent reduction of the region's demand on other supplies.
- A dry-year per capita municipal use for the region (after crediting for conservation and reuse) ranging from 113 gpcd in 2030 to 94 gpcd by 2080.

Chapter 5B includes a more detailed discussion of conservation and reuse for the region.

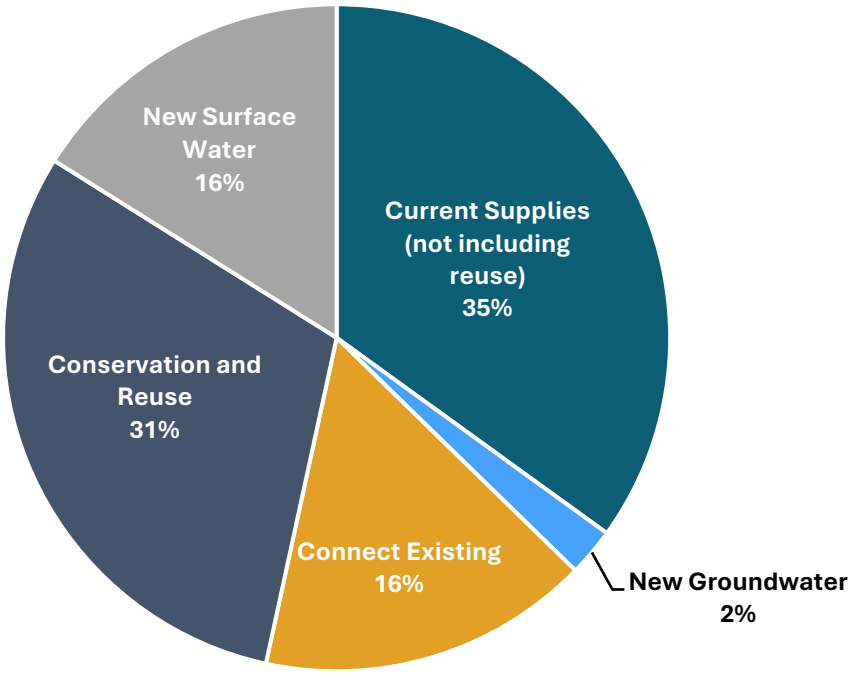
ES.3.2 Recommended Water Management Strategies

Table ES.2 lists the major recommended water management strategies for Region C. In total, the Region C plan includes water management strategies to develop nearly 2.2 million acre-feet per year of new supplies, for a total available supply of over 3.8 million acre-feet per year in 2080.

The management supply factor, calculated as total water supply divided by total demand, varies based on the timing of new supplies. It helps ensure a reasonable reserve to address challenges such as delays in project implementation, droughts worse than the drought of record, faster-than-expected growth, and needs beyond the current planning horizon. For some major water providers, this factor falls below one in 2060, indicating a deficit of water supplies. This is due to the resolution of an interregional conflict between Region C and Region D, where both regions mutually agreed to delaying the Marvin Nichols Reservoir project to 2070 and recommend the inclusion of the Toledo Bend Reservoir project. Because both projects were recommended in the plan, the supply management factor supply appears higher than it realistically will be in later decades. Only one of these projects will be selected for implementation in 2060, which would address the 2060 deficit and reduce the overstated surplus in later decades.

Figure ES.4 shows the makeup of the 3.8 million acre-feet per year of supplies proposed to be available to the region by 2080. About 35% of the supply is already available to the region from surface water and groundwater, 31% is developed from conservation and reuse efforts,16% is from the connection of existing supplies,16% is from the development of new surface water supply including reservoirs and run-of-river projects, and 2% is from the development of new groundwater supplies. The plan recommends only two new on-channel reservoirs and two off-channel reservoirs (compared to more than 25 developed to supply water for Region C over the last 60 years).

FIGURE ES.4 SOURCE OF WATER AVAILABLE TO REGION C AS OF 2080



ES.3.3 Cost of the Proposed Plan

Most of the new supplies for Region C will be developed by the major water providers in the region. **Table ES.3** shows the amount of new supply proposed for the major and regional water providers in Region C and the cost to develop that supply. The total cost of implementing all the recommended water management strategies in the plan is approximately $60.9 billion. The recommended water management strategies are discussed in greater detail in **Chapter 5** and **Appendix G** of the report.

TABLE ES.2 RECOMMENDED WATER MANAGEMENT STRATEGIES FOR REGION C

STRATEGY	SUPPLIER	SUPPLY (AC-FT/YR)	SUPPLIER CAPITAL COST	SUPPLIER UNIT COST ($/1000 GALLON)	
				WITH DEBT SERVICE	AFTER DEBT SERVICE
Conservation					
Municipal	WUGs	285,806	See Appendix H		
Non-Municipal	WUGs	13,506	See Appendix H		
New Surface Water					
Marvin Nichols Reservoir	TRWD, NTMWD, and UTRWD	320,160	$7,364,971,000	$4.62	$0.96
Neches River Run-of-the-River[a]	DWU	53,800	$719,027,000	$3.96	$0.59
Tehuacana Reservoir	TRWD	22,330	$575,134,000	$4.07	$0.27
Wright Patman Reallocation	TRWD and NTMWD	122,200	$4,760,029,000	$7.59	$1.39
Texoma Reallocation	GTUA	See GTUA Regional System – Phase 2			
Sabine River Off-Channel Reservoir	DWU	74,200	$903,296,000	$3.08	$1.03
Connection of Existing Supplies					
Toledo Bend Reservoir	NTMWD, TRWD, and UTRWD	250,000	$9,831,285,000	$8.62	$1.93
Lake O' the Pines	NTMWD	75,000	$1,345,792,000	$4.05	$1.07
GTUA Regional System	GTUA – Phase I	14,150	$816,504,000	$15.85	$6.22
	GTUA – Phase II	23,800	$863,153,000	$12.74	$6.69
Parker County Regional System	New water district	22,000	$593,307,000	$7.40	$2.90
Wise County Regional System	New water district	27,463	$680,554,000	$6.92	$2.79
Integrated Pipeline (IPL)	TRWD	N/A	$1,327,000,000	N/A	N/A
	DWU	N/A	$114,000,000	N/A	N/A
Lake Palestine (Connect to Bachman)	DWU	114,337	$586,902,000	$1.21	$0.10
Lake Texoma[b]	NTMWD – (Blending)	111,519	$1,463,046,000	$2.46 - $2.63	$0.43 - $0.48
New Groundwater					
Carrizo – Wilcox Aquifer Groundwater/ Queen City Aquifer[c]	TRWD	26,800	$356,209,000	$3.75	$1.89
	DWU	25,000	$694,882,000	$6.05	$1.05

STRATEGY	SUPPLIER	SUPPLY (AC-FT/YR)	SUPPLIER CAPITAL COST	SUPPLIER UNIT COST ($/1000 GALLON)	
				WITH DEBT SERVICE	AFTER DEBT SERVICE
Reuse Strategies					
Marty Leonard Wetland Reuse	TRWD	88,059	$673,381,000	$2.00	$0.73
Reuse from TRA Central RWS[d]	TRWD	60,000	$0	$.39	$0.39
Reuse from Mary's Creek WWTP	TRWD (indirect)	25,928	$68,938,000	$0.64	$0.20
	Fort Worth (direct)	6,278	$66,155,000	$2.57	$0.82
Indirect Reuse Implementation	DWU and NTMWD	42,599	TBD	TBD	TBD
Main Stem Balancing Reservoir	DWU	114,342	$1,767,099,000	$3.71	$0.72
Expanded Wetland Reuse	NTMWD	33,809	$686,489,000	$5.05	$0.73
Lake Ralph Hall Indirect Reuse[f]	UTRWD	20,204	$0	NA	NA

[a]The Neches River ROR unit costs do not include the cost to transport water from Palestine to DWU through the IPL.
[b]Quantities vary by decade. The quantity shown is for 2080.
[c]Groundwater supplies are limited by the MAG.
[d]Capital costs for this strategy are included with the Marty Leonard Wetlands strategy. Only pumping and water purchase costs are shown.
[e]This represents the supply for DWU. The supply for NTMWD is listed under Expanded Wetland Reuse. Note that costs for this strategy will be determined by the water providers
.[f]UTRWD will be seeking a state water right for return flows out of Lake Ralph Hall for up to 27,000 ac-ft/yr. The estimated available reuse during drought is slightly less.

TABLE ES.3 2080 SUPPLIES FOR THE MAJOR AND REGIONAL WATER PROVIDERS IN REGION C

WHOLESALE WATER PROVIDER	SUPPLIES AVAILABLE IN 2080 FROM CURRENT SOURCES[a]	SUPPLIES AVAILABLE IN 2080 FROM NEW STRATEGIES[a]	TOTAL SUPPLIES AVAILABLE IN 2080[a]	% OF TOTAL SUPPLY FROM CONSERVATION AND REUSE	COST OF STRATEGIES (MILLIONS)
Dallas Water Utilities	507,068	420,691	927,759	32.7%	$10,016
Tarrant Regional Water District	474,036	641,847	1,115,883	28.4%	$16,189
North Texas Municipal Water District	429,862	664,285	1,094,147	31.8%	$16,188
City of Fort Worth	280,654	238,871	519,525	30.8%	$2,300
Trinity River Authority	215,707	30,771	246,478	71.9%	$0
Upper Trinity Regional Water District	73,762	201,043	274,805	22.9%	$7,472
Corsicana	13,452	12,237	25,689	4.0%	$119
Greater Texoma Utility Authority	88,600	49,003	137,603	2.8%	$1,883

[a]Current sources include only those that are connected. Some supplies are used by more than one supplier. For example, TRWD supplies water to TRA and Fort Worth, DWU supplies water to UTRWD, etc.