



SCOPE OF WORK COMMITTEE MEETING

1:30 P.M.

Friday, December 20, 2024

BRAZOS RIVER AUTHORITY

Lt. Gen. Phillip J. Ford Central Office

4600 Cobbs Dr. Waco, TX 76710



1. CALL MEETING TO ORDER

2. NOTICE OF MEETING

3. ATTENDANCE AND ANNOUNCEMENTS

4. PUBLIC INPUT (limited to 5 minutes each)



5. Discussion and possible action on recommended Water Management Strategies for use in the 2026 Brazos G Plan

Brazos G Regional Water Planning

Item 5.0

Discussion and Possible Action on Report from Technical Consultant



Tasks for Today

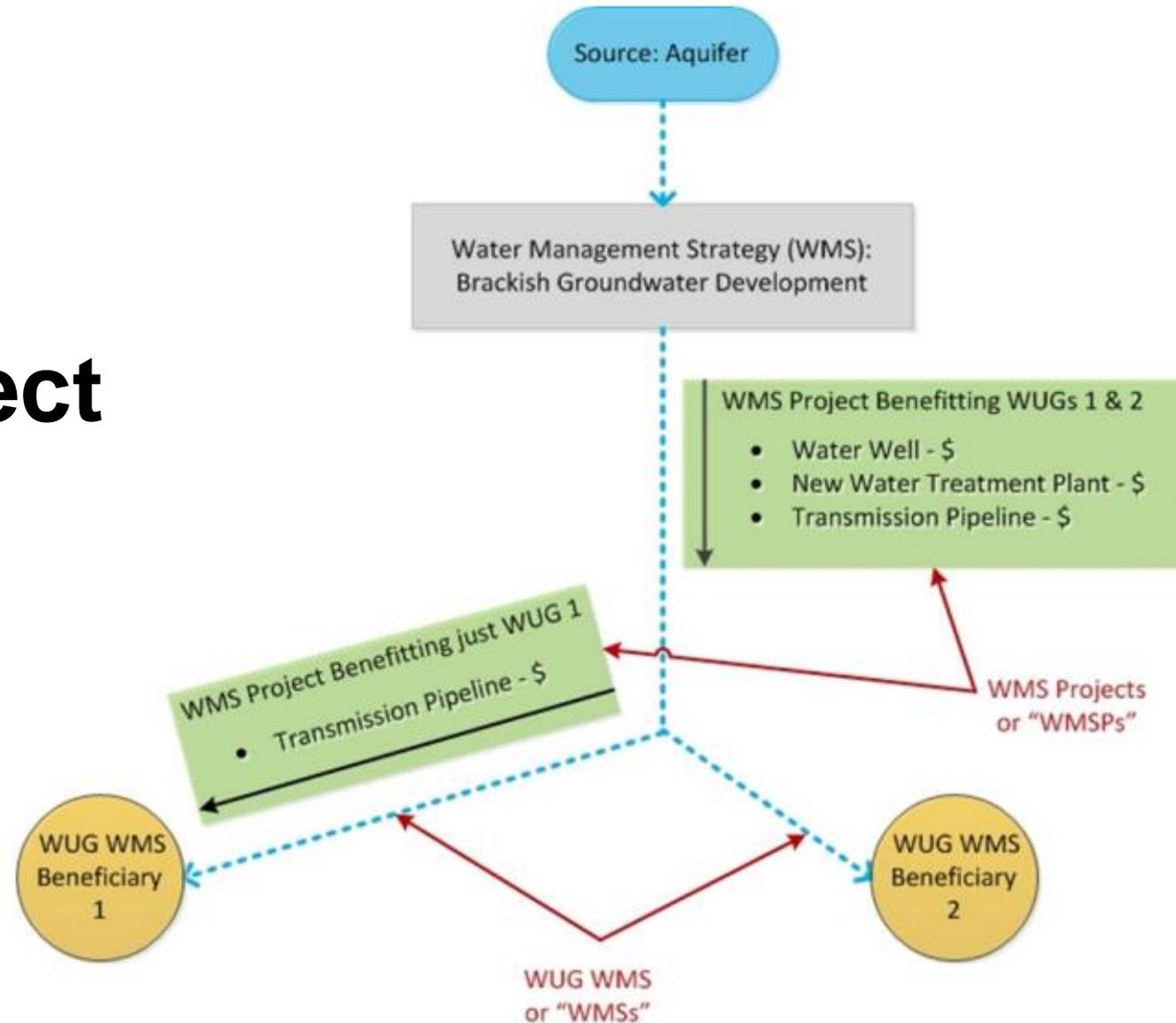
- Review RWPG's adopted process for development of recommended and alternative Water Management Strategies (WMSs) and Water Management Strategy Projects (WMSPs).
- Review RWPG's adopted Wholesale Water Providers and Major Water Providers for the purposes of the 2026 Brazos G Regional Water Plan.
- Review initial development of Potentially Feasible WMS list.
- Summarize status of Technical Consultant's WMS Evaluation based on adopted process.

1

Process

Water Management Strategy Structure

WMS & WMS Project



Adopted 2026 Plan's Process for Identifying Potentially Feasible Strategies

Adopted by Brazos G RWPG on February 13, 2024

Modified from 2021 Process

Include strategies identified in previous plans

- Include recommended and alternative strategies from 2021 Plan
- Include strategies evaluated, but not recommended in 2021 Plan
- Include strategies evaluated in previous Plans that were not moved forward
- Include statutory categories

Identify draft needs and develop additional ideas to meet those needs

Maintain ongoing communication from local interests throughout the process

Adopted 2026 Plan's Process for Identifying Potentially Feasible Strategies

Results in an initial list of potentially feasible strategies

Additional WMSs are included if:

- local interests request them and
- the planning schedule and budget allow for the addition.

Investigate for Potential Infeasibility

- If strategy contemplates permitting and/or construction
- If strategy is near-term or necessitates significant time for implementation
- If the potential sponsor(s) have taken, or have indicated they will take, affirmative steps towards the strategy's implementation. Affirmative steps may include, but not be limited to:
 - Spending money on the strategy or project
 - Voting to spend money on the strategy or project
 - Applying for a federal or state permit for the strategy or project

Identify if strategy could potentially provide flood mitigation benefits

Identify if strategy contemplates use of the Brazos Alluvium

2

Wholesale Water Providers (WWPs) and Major Water Providers (MWWPs)

Background: Wholesale Water Providers (WWP)

31 TAC §357

- WWP – Any person or entity that sells wholesale water to water user groups or other wholesale water providers, or that the RWPG expects or recommends to deliver or sell water to water user groups or other wholesale water providers during the period covered by the regional water plan.

RWPGs determine which WWPs to use in their plan development

Specific analysis and reporting requirements

Presented at Oct. 20, 2023, RWPG meeting

Preliminarily Identified Wholesale Water Providers

Wholesale Water Provider
Aquilla WSD
Bell County WCID #1
Bluebonnet WSC
Brazos River Authority
Central Texas WSC
Eastland County WSD
FHLM WSC
North Central Texas MWA
Palo Pinto County MWD No. 1
Upper Leon MWD
Salt Fork Water Quality Corporation
West Central Texas MWD

Major Water Provider (MWP)

MWPs are

- Identified and designated by RWPG to be of particular significance to the region's water supply.

Similar to 2021 Plan, MWPs have been identified as:

- Any WWP that is not also a municipal WUG, or
- Any WUG with a total municipal demand in the Brazos G Area of at least 1,000 ac-ft/yr, including contractual sales to other municipal utilities.

MWPs with 2026 additions

Major Water Provider	Major Water Provider	Major Water Provider	Major Water Provider
439 WSC	College Station	Hutto	Round Rock
Abilene	Colorado River Municipal Water District	Jarrell-Schwertner	Salado WSC
Acton MUD	Copperas Cove	Johnson County SUD	Salt Fork Water Quality Corporation (SFWQC)
Alvarado	Corix Utilities Texas Inc	Jonah Water SUD	Somervell County Water District
Anson	Coryell City Water Supply District	Keene	Sonterra MUD
Aquilla WSD	Cross Country WSC	Kempner WSC	Southwest Milam WSC
Arlington	Dog Ridge WSC	Killeen	Stamford
Bell County WCID 1	Double Diamond Utilities	Lacy Lakeview	Steamboat Mountain WSC
Bell County WCID 3	Dublin	Lampasas	Stephenville
Bellmead	Eastland County WSD	Leander	Sweetwater
Belton	Fern Bluff MUD	Liberty Hill	Tarrant Regional Water District - via other WWP
Bethesda WSC	FHLM WSC	Lower Colorado River Authority	Taylor
Bistone Municipal Water Supply District	Files Valley WSC	Mansfield	Temple
Bluebonnet WSC	Fort Cavazos*	Manville WSC	Texas A and M University
BRA	Fort Worth	Marlin	Texas State Technical College
Brandon Irene WSC	Gatesville	McGregor	Upper Leon Municipal Water District
Brenham	Georgetown	Mexia	Venus
Bruceville Eddy	Gholson WSC	Mineral Wells	Waco
Brushy Creek MUD	Giddings	Morgans Point Resort	Wellborn SUD
Bryan	Gordon	Mountain Peak SUD	West Central Texas MWD
Burleson	Graham	Navasota	Wickson Creek SUD
Cameron	Granbury	North Bosque WSC	Williamson County MUD 11
Cedar Park	Harker Heights	North Central Texas Municipal Water Authority	Williamson County WSID 3
Central Texas WSC	Hewitt	Palo Pinto County MUD No.1	Woodway
Cisco	Hilco United Services	Potosi WSC	
Cleburne	Hillsboro	Robinson	
Clifton	Huntsville	Rockdale	

* Formerly Fort Hood

3

Potentially Feasible

Identification of Potentially Feasible Strategies

- Technical Consultant reviewed strategies evaluated in all previous plans
- **Initial** list of 135 potentially feasible water management strategies
- Dollars (estimated strategy costs) from 2021 Brazos G Plan (2018 \$)
- Additional considerations from the 2021 Plan reviewed, allowing for flexibility in application
 - Some WMS for specific WUGs/WWPs
 - Some WMS initially identified w/out specific user(s)
 - Engagement with WUGs/WWPs throughout process (RWPG, Consultant)
 - Official public comment period after IPP

Potentially Feasible Strategies (excerpt)

Number	Strategy	2001	2006	2011	2016	2021	Required by Rule	Supply Developed (acft/yr)	Project Cost (2018 \$) ¹	Cost of Water (\$/1,000 gals) ¹
Conservation										
1	Municipal Conservation		X	X	R	R	1	VARIES	VARIES	VARIES
2	Industrial Conservation		X	X	R	R	1	VARIES	VARIES	VARIES
3	Irrigation Conservation		X	X	R	R	1	VARIES	VARIES	VARIES
4	Advanced Municipal Conservation (gpcd<140)				R	R	1	VARIES	VARIES	VARIES
5	Advanced Industrial Conservation				R	R	1	VARIES	VARIES	VARIES
6	Leave Needs Unmet				R	R	NA	NA	NA	NA
Drought Management										
7	Drought Management		X	X	X	R	2	NA	NA	NA
Reuse										
8	Reuse Supply - various reuse projects throughout Brazos G		X	X	R	R	3	VARIES	VARIES	VARIES
9	College Station DPR				A	R	3	8,232	\$84,177,000	\$1.86
10	College Station Non-Potable Reuse				R	X	3	103	\$3,553,000	\$8.97
11	City of Bryan Lake Bryan Reuse, Option 1				R	R	3	605	\$11,092,000	\$7.52
12	City of Bryan Lake Bryan Reuse, Option 2					A	3	2,419	\$41,105,000	\$7.48
13	City of Bryan Miramont Reuse				R	X	3	600	\$3,894,000	\$1.61
14	City of Cleburne Reuse, Phases 1 and 2				R	R	3	7,617	\$38,926,000	\$2.90/\$0.76
15	Waco WMARSS Reuse Projects		X	X	R	R	3	14,568	\$89,538,000	\$23.50
16	Bell County WCID No. 1 Reuse (North and South)			X	R	R	3	2,673	\$26,764,000	\$3.01
17	TRA Reuse - Joe Pool		X	X			3	20,000	\$79,257,000	\$1.84
18	Cedar Park Reuse					R	3	1,120	\$7,184,000	\$1.67
19	Georgetown Reuse					R	3	1,456	\$6,270,000	\$1.07
Management of Existing Water Supplies										
20	Misc. Pipelines, Pump Stations, and GW Options - various entities	X	X	X	R	R	4	VARIES	VARIES	VARIES
21	Water Treatment Plant Expansions - various entities	X	X	X	R	R	4	VARIES	VARIES	VARIES
22	Rehabilitate Existing Wells			X	R		4	VARIES	VARIES	VARIES

4

WMS Evaluation Status

Subtask WMS	Description	Subtask Budget
1	Conservation	\$ 12,880
2	Drought Management	\$ 1,840
3	Reuse	\$ 77,280
4	Management of Existing Water Supplies	\$ 36,800
5	Conjunctive Use	\$ 11,040
6	Acquisition of Available Existing Water Supplies	\$ 51,520
7	Development of New Water Supplies	\$ 9,660
8	Developing Regional Water Supply Facilities or Providing Regional Management Of Water Supply Facilities	\$ 47,840
9	Developing Large-Scale Desalination Facilities for Seawater Or Brackish Groundwater That Serve Local or Regional Brackish Groundwater Production Zones Identified And Designated Under TWC §16.060(b)(5)	\$ 1,840
10	Developing Large-Scale Desalination Facilities for Marine Seawater that Serve Local or Regional Entities	\$ 1,840
11	Voluntary Transfer of Water Within the Region Using, But Not Limited To, Contracts, Water Marketing, Regional Water Banks, Sales, Leases, Options, Subordination Agreements, and Financing Agreements	\$ 11,040
12	Emergency transfer of water under TWC §11.139	\$ 1,840
13	Interbasin transfers of surface water	\$ 5,520
14	System Operation	\$ 23,000

Subtask WMS	Description	Subtask Budget
15	Reallocation of Reservoir Storage to New Uses	\$ 51,520
16	Enhancement of Yields	\$ 1,840
17	Improvements to Water Quality	\$ 80,960
18	New Surface Water Supply	\$ 92,000
19	New Groundwater Supply	\$ 110,400
20	Brush Control	\$ 2,760
21	Precipitation Enhancement	\$ 1,840
22	Aquifer Storage and Recovery	\$ 46,000
23	Cancellation of Water Rights	\$ 1,840
24	Rainwater harvesting	\$ 1,840
25	Additional Strategies	\$ 25,760
26	Plan Development	\$ 36,800
27	Database Entry	\$ 36,800
28	Chapter 5 Preparation	\$ 40,480
	Task 5B Total	\$ 824,780

Evaluation of Water Management Strategies

Focus today is on magnitudes

Solicit input on policies for application of methodology

Next meeting will summarize information on:

- *Plan Development Criteria*
- *Engineering*
- *Cost Estimates*
- *Quantitative Factors used for Environmental and Agricultural Impacts*
- *Funding and Permitting by State Agencies of Projects Not in the Regional Water Plan*

Organization

- ~~Conservation Sub-Section~~
 - ~~Presented in 11/7/24 SOW Committee meeting~~
 - ~~By use category~~
- Groundwater Supplies and Projects
- Reuse
- New Reservoirs
- Conjunctive Use
- ASR
- Regional Water Supply Projects
- Augmentation of Existing Reservoir Supplies
- Control of Naturally Occurring Salinity
- Brush Control
- Miscellaneous WMSs
 - Pipelines, Pump Stations, WTP (new/expansions), Contractual

Presently organized by:

WUG

WWP/MWP

Coordination/Collaboration Tool

- RWPG approved SOW Committee capability of organizing information in format for review/approval and sharing with full RWPG.
- WMS Tool developed by Technical Consultant at direction of SOW Committee

LEGEND
WUG Header Line, Initial WUG Need/Surplus
Data Cell
WMS Removed/Replaced Not counted in calculation of supplies after WMS
Alternative WMS not included in calculation of supplies after WMS
Units: Ac-ft/yr
Negative Values represent Need or Shortage and in RED

WMS Tool

- Conveys application of process
 - Identifies 1st and 2nd Tier Needs
 - Implements methodological/policy decisions
 - Identifies magnitudes and timing of WMSs
 - Identifies where needs remain
- Tool is integrated with DB27 outputs
 - Technical Consultant inputs to DB27 for official data and reporting
- Allows for continued detailing post-DB27 access

Focus Area

Units: Ac-Ft/yr
Negative values represent need or shortage and in **RED**

Water Needs and Potential Water Management Strategies

Decade Online	Strategy Supply (Ac-Ft/yr)						WMS Level Unit Cost						Maximum need	Decade of Occurrence for Max Need
	2035	2040	2050	2060	2070	2080	2035	2040	2050	2060	2070	2080		
Need/Surplus:	304	41	-209	-421	-580	-672							-279	2080
Advanced Conservation	113	285	324	356	381	393								
Tier-2 Needs	417	327	115	-65	-199	-279								
	2030	246	253	261	268	277	277	\$77	\$77	\$77	\$77	\$77	\$77	
	2030	413	386	324	256	181	102	\$000	\$000	\$000	\$000	\$000	\$000	
	2030	248	247	245	243	242	240	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	\$1,000	
	2080	0	0	0	0	0	626	\$0	\$0	\$0	\$0	\$0	\$100	
	2030	32	185	185	0	20	20	\$1,364	\$274	\$274	\$0	\$274	\$274	
<i>Need after Recommended WMS</i>	522	1,012	895	447	340	282								

- Need/Surplus
- Cons./WL



- Need or Surplus
- Conservation / Water Loss WMS
- Tier 2 Need: Need remaining after conservation / water loss WMS
- Water Management Strategies with
 - Online Decade
 - Decadal firm supply amounts
 - Unit Costs (under development)
 - Maximum Need
- *Need Remaining after WMS (i.e., Unmet Need)*

5

WMS Summary Snapshot

Summary Count of Water Management Strategies

	Municipal	Irrigation	Livestock	Manufacturing	Mining	Steam-Electric	Total
Recommended	258	18	0	13	14	5	308
Alternative	8	0	0	0	0	0	8
Advanced Conservation	159	18	0	16	14	0	207
Water Loss Reduction	44	0	0	0	0	0	44

Evaluated WMSs by Category

■ Reuse

- Bell County WCID No. 1
- Bryan – Lake Bryan
- Bryan – Miramont
- Cedar Park
- Cleburne
- College Station Non-Potable
- College Station DPR
- Georgetown
- Waco WMARSS Projects

■ New Reservoirs

- Brazos Main-Stem OCR
- Brushy Creek Reservoir
- Cedar Ridge Reservoir
- Coryell County OCR
- Groesbeck OCR
- Hamilton County OCR
- NCTMWA Lake Creek Reservoir
- Red River OCR
- South Bend Reservoir
- New Throckmorton Reservoir
- Turkey Peak Dam – Lake PP Enlargement

Evaluated WMSs by Category

- Groundwater
 - Bryan
 - College Station
 - Williamson County
- Conjunctive Use
 - Lake Granger Augmentation
 - Oak Creek Reservoir
- ASR
 - Bryan
 - College Station
 - Lake Georgetown ASR
 - Lake Granger ASR
 - Johnson County SUD and Acton MUD
 - Trinity ASR (McLennan Co.)
- Regionalization
 - Bosque County Regional Project
 - Milam County Groundwater
 - BCRUA System
 - East Williamson County Water Supply Project
 - Lake Whitney Water Supply Project
 - Somervell County Water Supply Project
 - Trinity Basin Supplies to Middle Brazos
 - West Texas Water Partnership

Evaluated WMSs by Category

- Reservoir Augmentation
 - Lake Aquilla Reallocation
 - Lake Granger Reallocation
 - Lake Whitney Reallocation
 - Lake Whitney Over-Drafting with OCR
 - Millers Creek Augmentation
- Salinity Control
- Brush Control
- Miscellaneous
 - Pipelines
 - Pump Stations
 - Groundwater WMSs
 - WTP (New / Upgrade)
 - Contractual

WMS's Types of Uses of Sources

- **Availability Increase:** Future supply made available by WMS
- **Demand Reduction:** Conservation and Water loss mitigation
- **Existing Availability:** Utilizing available, unallocated source
- **Supply Reduction by WUG:** Reallocation of WUG Supply to Another WUG
- **Existing Surplus:** Utilizing available, unallocated supply

Recommended WMS Types of Uses of Sources

Source Subtype	WMS Source Use Type	# of WMSs
Aquifer Storage and Recovery	Availability Increase	6
Demand Reduction	Demand Reduction	218
Direct Non-Potable Reuse	Availability Increase	12
Direct Potable Reuse	Availability Increase	1
Groundwater	Existing Availability	104
	Availability Increase	2
	Supply Reduction by WUG	8
	Existing Surplus	1
	Existing Surplus	1
Indirect Non-Potable Reuse	Existing Surplus	1
Other Local Supply	Availability Increase	1
Reservoir	Availability Increase	20
	Supply Reduction by WUG	7
	Existing Surplus	1
Reservoir System	Existing Surplus	15
	Supply Reduction by WUG	18
	Availability Increase	4
Run-of-River	Supply Reduction by WUG	10
	Existing Surplus	1

Preliminary Summary of Recommended WMS Supplies by Category

	2030	2080
Municipal	161,371	476,974
Irrigation	16,210	26,832
Livestock	0	0
Manufacturing	3,925	4,581
Mining	18,782	19,870
Steam-Electric	1,876	10,876

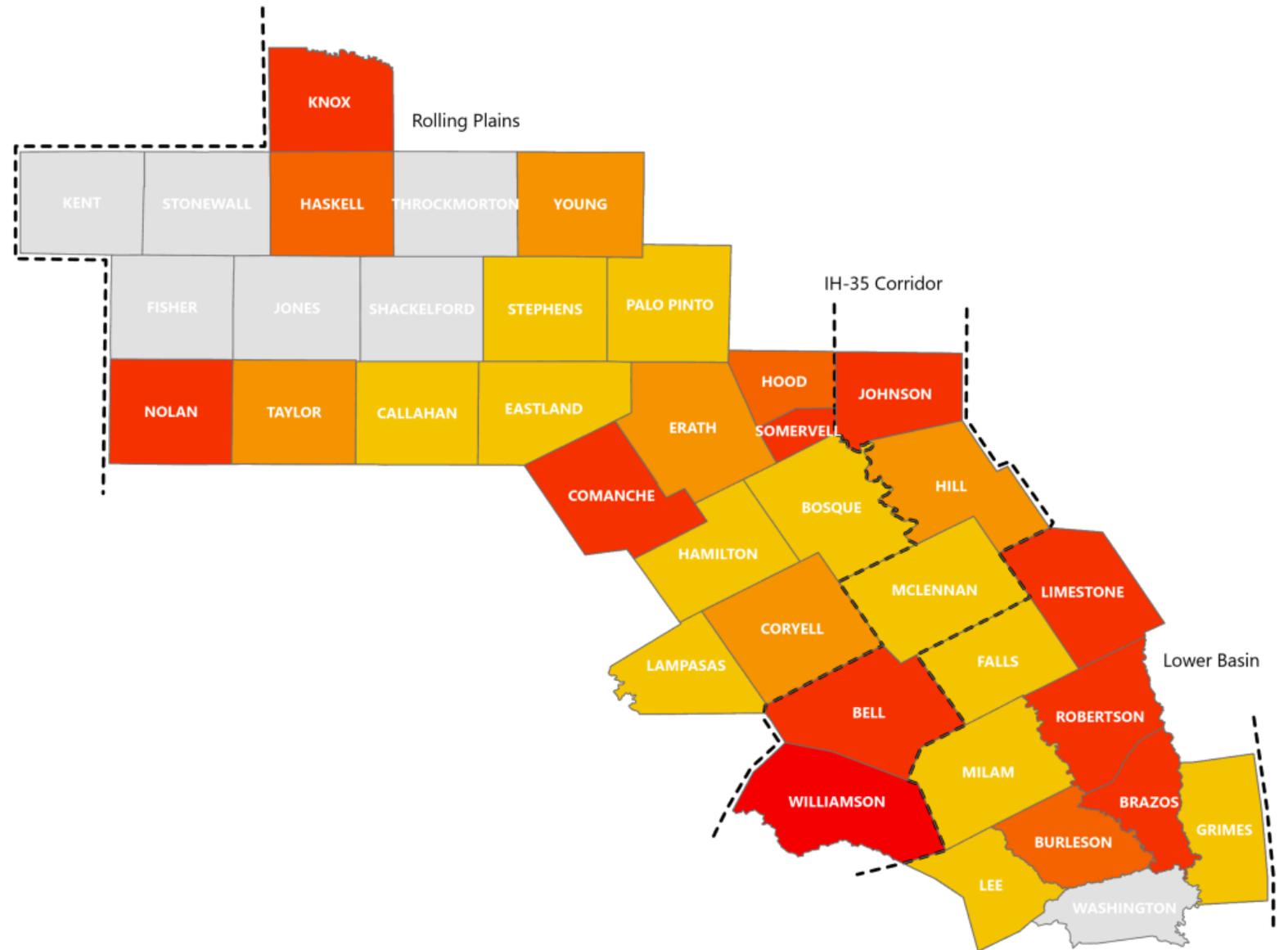
Count of WUGs with Unmet Needs Remaining

Total	Municipal	Irrigation	Livestock	Manufacturing	Mining	Steam-Electric
84	53	11	3	7	6	4

Preliminary Summary of Remaining Unmet Needs by Category

	2030	2080
Municipal	26,281	175,249
Irrigation	44,627	34,996
Livestock	805	949
Manufacturing	1,169	2,339
Mining	7,734	6,791
Steam-Electric	15,163	18,642

Unmet Needs Remaining after WMSs (2030 and 2080)



Unmet Need (ac-ft/yr)

	0 – 1
	1 – 700
	700 – 1,600
	1,600 – 4,300
	4,300 – 15,400
	15,400 – 149,800

Top 10 Remaining Unmet Needs (2030 vs. 2080)

2030

WUG Name	WUG Split County	WUG Type	Water Supply Unmet Need Only 2030
Irrigation, Robertson	Robertson	Irrigation	11,219
Steam-Electric Power, Somervell	Somervell	Steam Electric Power	8,664
Irrigation, Comanche	Comanche	Irrigation	7,129
Irrigation, Knox	Knox	Irrigation	6,901
Irrigation, Haskell	Haskell	Irrigation	6,562
Irrigation, Nolan	Nolan	Irrigation	5,544
Steam-Electric Power, Robertson	Robertson	Steam Electric Power	4,900
County-Other, Williamson	Williamson	Municipal	4,786
Irrigation, Nolan	Nolan	Irrigation	3,743
Texas A&M University	Brazos	Municipal	3,392

2080

WUG Name	WUG Split County	WUG Type	Water Supply Unmet Need Only 2080
Georgetown	Williamson	Municipal	74,976
County-Other, Williamson	Williamson	Municipal	19,491
Steam-Electric Power, Somervell	Somervell	Steam Electric Power	14,137
Jonah Water SUD	Williamson	Municipal	14,062
Sonterra MUD	Williamson	Municipal	9,638
Irrigation, Robertson	Robertson	Irrigation	8,757
Hutto	Williamson	Municipal	8,314
Taylor	Williamson	Municipal	7,444
Irrigation, Comanche	Comanche	Irrigation	5,872
Irrigation, Knox	Knox	Irrigation	5,598

6

Discussion

Selected Topics for Committee's Consideration / Discussion

Limestone County

Allocations of Limited Source Availabilities

- Planning assumptions vs. Reality
- "Paper" needs and avoiding "make-up" water
- Robertson County Groundwater
- Applicability of proportional reductions across use types

Contracts vs. Projections

- Voluntary Redistribution Contractual Strategies

Hill County

- Aquilla Reallocation

Liberty Hill DPR

Showing unmet needs vs. planning ahead

- Graham/Throckmorton example

Ongoing engagement.

- Awaiting entity input
- Continuing outreach throughout IPP process

Recall MAG Availabilities - Limestone County

Significant 92% decrease

- Not appropriate for a MAG Peak Factor
- MAG must be fixed by GMA 12

Assign MAG to existing supplies as best as possible

- *Supplies will not be realistic given how much the MAG decreased*

Within 2026 Plan

- Brazos G may have unmet municipal needs relating to this source
- Utilize alternative WMSs
- Add descriptive narrative to Chapter 3 discussion on groundwater availabilities, and citations of Chapter 3 to each alternative WMS for which this applies.

Summary of Groundwater Committee Recs – 1/17/2024

Changes in MAG Availabilities and Recommendations	<p>For the aquifers shown here and discussed today with the information as presented that the committee recommends that the technical consultant recommendations be adopted and carried forward for the planning group's consideration.</p> <p>Motion by Patrick Wagner, second by Dale Adams, passed unanimously</p>
Changes to Non-MAG Availabilities and Recommendations	<p>For the aquifers shown here and discussed today with the information as presented that the committee recommends that the technical consultant recommendations, in coordination with the Texas Water Development Board (TWDB), be adopted and carried forward for the planning group's consideration.</p> <p>Motion by Kathy Turner Jones, second by Patrick Wagner, passed unanimously</p>
Recommendations for allocations of limited groundwater supplies	<p>Recommend the proportional reductions for all WUGs consistent with methodology used for 2021 plan.</p> <p>Motion by Kathy Turner Jones, second by Jennifer Nations, passed unanimously</p>
Recommendations for allocations of unallocated groundwater supplies	<p>First action Item: Recommend approving adjusting supplies based on updated availabilities and previous supply allocation methodology. Municipal -Utilities = half of sum of well capacity, County-Other = 125% of 2020 use, Irrigation = projected demand in each decade, Livestock = projected demand in each decade, Power = 125% of 2020 use, Manufacturing = 125% of 2020 use.</p> <p>Motion by Patrick Wagner, second by Dale Adams, passed unanimously</p> <p>Second Action Item: Encourage RWPG to look at including in the appropriate chapter and through our policy committee to raise the concerns expressed in this and prior discussions to the TWDB and ask that they revisit their rules on how they review the MAG and its use in SWIFT funding.</p> <p>Motion by Kathy Turner Jones, second by Patrick Wagner, passed unanimously</p>
Review of requests for use of MAG Peak Factor	<p>Recommendation is to not use any MAG Peak Factors at this time.</p> <p>Motion by Kathy Turner Jones, second by Jennifer Nations, passed unanimously</p>

Allocations of limited source availabilities

- Surface water source availabilities are often similarly limited.
 - Differences between real-world operations and RWP assumptions.
 - Drought of Record Conditions
 - Permitting (legal) assumptions
 - Day to day vs. monthly characterizations
 - Reflected in Hydrologic Variance Request
 - Revised language to Chapter 3
- Options for allocating supplies in county/basin areas where supplies exceed availability:
 - **Adopted** - proportional reductions for all WUGs (consistent with methodology used for 2021 plan); or
 - Prioritize municipal utilities and then proportionally reduce other WUGs

Selected Topics for Committee's Consideration / Discussion

Limestone County

Allocations of Limited Source Availabilities

- Planning assumptions vs. Reality
- "Paper" needs and avoiding "make-up" water
- Robertson County Groundwater
- Applicability of proportional reductions across use types

Contracts vs. Projections

- Voluntary Redistribution Contractual Strategies

Hill County

- Aquilla Reallocation

Liberty Hill DPR

Showing unmet needs vs. planning ahead

- Graham/Throckmorton example

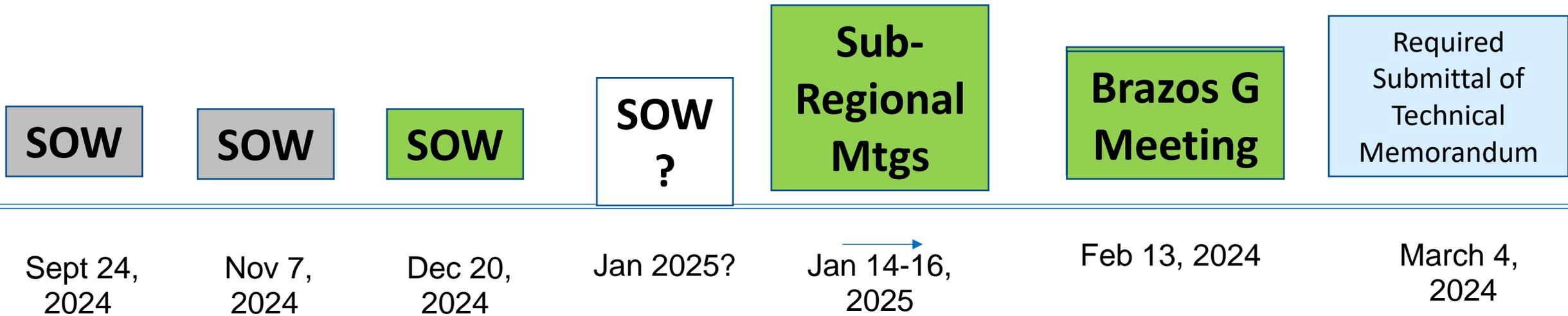
Ongoing engagement.

- Awaiting entity input
- Continuing outreach throughout IPP process

7

Path Forward

Timeline



Next Steps and Schedule

Interregional Coordination

- Ongoing meetings with RWPGs' technical consultants

Continued WUG engagement.

Present –

- Summary of Costing/Mapping of WMSs.
- Application of Plan Development Criteria
- Impact Summary

Documentation ongoing (all Vol. 1 chapters, Appendices, and Vol. 2 material)

Development of next committee meeting content.

Development of Sub-Regional Content

Tony L. Smith, P.E.
TLSmith@carollo.com





**6. Consider Agenda Items and Date for the next Scope of
Work Committee Meeting**



7. ADJOURN