

AGENDA
Lower Colorado Regional Water Planning Group
Water Modeling Committee Meeting

**Freese and Nichols, 10431 Morado Circle, Building 5, Suite 300,
Conference Room "Capital of Texas", Austin, Texas 78759**

January 22, 2024, 2:30 pm

Water Modeling Committee Members need to attend meeting in person. The following link is being provided for virtual attendance by non-committee members. Virtual attendees will be able to provide public comment under Agenda Items #3 and #10.

MS Teams Virtual Link: https://teams.microsoft.com/l/meetup-join/19%3ameeting_ZTJIYmE3MmYtNDlwZC00Yzc1LTlhZDYtMjg5MWRIYjU4ZTdm%40thread.v2/0?context=%7b%22id%22%3a%22191657ea-bcff-4385-9d04-659ef9cee515%22%2c%22oid%22%3a%2249111dd8-74af-4196-906b-20a2cf201a39%22%7d

Committee Meeting:

1. Call to order – Chair Teresa Lutes
2. Welcome and introductions – Chair Lutes
3. Receive public comments on specific issues related to agenda items 4 through 9 – limited to 3 minutes per person
4. Review and approve minutes from previous meetings
5. Update on surface water availability modeling
 - Consultant presentation
 - Discussion
6. Take action on surface water availability modeling results to recommend to the full planning group at the next Region K meeting (scheduled for February 13, 2024)
7. Discuss Texas Water Development Board (TWDB) response to Surface Water Hydrologic Variance Request, if available
8. Next meeting date – to be determined
9. Future agenda items – to be determined
10. General public comments – limited to 3 minutes per person
11. Adjourn

**Agenda Item 4 - Review and Approve
Minutes from Previous Meetings**

DRAFT MINUTES

**Lower Colorado Regional Water Planning Group
Water Modeling Committee Meeting
July 12, 2023**

LCRA Dalchau Service Center, Room A226
3505 Montopolis Drive, Austin, TX

9:00 A.M.

Meeting Minutes:

1. Call to Order, Introductions and Roll Call – Teresa Lutes, Committee Chair

Chair Lutes called the meeting to order at 9:01 A.M.

Attendance:

Committee Members:

Teresa Lutes, Municipalities
Monica Masters, River Authorities
Mitchell Sodek, GMA-8
Jim Brasher, GMA-15
David Lindsay, Recreation
Mike Reagor, Small Municipalities

Other attendees:

Barbara Johnson, Industry
Christianne Castleberry, Water Utilities
Jason Homan, alternate for Environmental
Earl Foster, alternate for Small Municipalities
Sue Thornton, alternate for Recreation
Lann Bookout, TWDB
Richard Hoffpauir, Hoffpauir Consulting
Leonard Oliver, LCRA
Sara Eatman, Austin Water
Helen Gerlach, Austin Water
Marisa Flores Gonzalez, Austin Water
Nick Zackoff, Lake Buchanan Conservation
Jordan Furnans, LRE
Shannon Hamilton, CTWC
Robert Adams, Plummer
Adam Conner, FNI

Augusto Villalon, FNI
Jon Albright, FNI
Justin Durant, FNI
Neil Deeds, INTERA

2. Welcome and Introductions – Chair Lutes

Attendees identified themselves and their affiliation (captured above).

3. Receive public comments on specific issues related to agenda items 4 through 10 - limited to 3 minutes per person

None.

4. Overview and discussion of Water Availability Modeling in Regional Water Planning

Jon Albright and Chair Lutes went over the meeting materials and led a discussion of the following topics.

(a) Purpose and role of committee

(b) TWDB guidelines for surface water availability modeling

(c) Region K Cutoff Model and assumptions used for the previous planning cycle

The committee discussed the basis for the cutoff model, and how the model reflects in Region F water rights going first in sequence prior to Region K water rights going in sequence. This is due to how the system generally is operated with Region K not make priority calls on Region F. Other discussion occurred on whether sufficient water was available under low flow conditions to meet senior calls, and the likelihood of a “futile call”.

Some additional discussion occurred on the concept of firm yield and how LCRA’s water management plan related to this and the concept of interruptible water.

(d) Potentially needed updates to assumptions for Region K Cutoff Model

[minutes combined in next section]

(e) Hydrologic variance request to Texas Water Development Board (TWDB)

Chair Lutes led the discussion of hydrologic variance request and the current modeling assumptions shown in Table A. She noted that some updates need to be made, for example on item 6, change from 2015 to 2020. She also said that in the next meeting we will go through this table in detail, and note what changes are needing to made. Ms. Lutes also suggested that the table headers be synced to match the earlier slide that described the three models.

The committee discussed whether the latest permit amendments were included in the model, and the consulting team noted that we would consider recent permits approved by TCEQ, but would have to set a cutoff soon.

The TWDB representative noted that the TWDB had developed a new checklist that will be required to be submitted as part of any HVR.

The committee discussed the process of submitting the HVR, and the need to get the HVR approved prior to significant modeling occurring. The consultants noted that the bulk of the modeling needed to occur in the next three months or so.

One committee member expressed concerns that the current drought would not be captured in the modeling because the underlying hydrology was based on a period of record that did not include recent years.

(f) Surface water availability modeling in the RWP

No additional discussion.

5. Next Meeting Date

Chair Lutes suggested that one or two meetings occur in the next two months. The consultant team indicated they would send out a schedule poll to help schedule those meetings.

The committee discussed the potential for a hybrid meeting. Some members favored that option while others suggested it should be a “listen only” option due to the difficulty in attributing comments to hybrid participants and technology reliability issues. There was general agreement that this would be the approach, and the consultant team indicated they would attempt to implement this approach of a “listen only” hybrid meeting.

6. New/Other Business (Time Permitting)

None.

7. Public Comments

Jordan Furnans suggested that public comment/questions not be allowed during the main part of the meeting to improve meeting effectiveness.

8. Adjourn

Chair Lutes adjourned the meeting at 10:01 am.

DRAFT MINUTES

**Lower Colorado Regional Water Planning Group
Water Modeling Committee Meeting
August 21, 2023**

Freese and Nichols, 10431 Morado Circle, Building 5, Suite 300,
Conference Room "Capital of Texas", Austin, Texas 78759
10:00 A.M.

Meeting Minutes:

1. Call to Order, Introductions and Roll Call – Teresa Lutes, Committee Chair

Chair Lutes called the meeting to order at 10:01 A.M.

Attendance:

Committee Members – in person:

Teresa Lutes, Municipalities
Monica Masters, River Authorities
Jim Brasher, GMA-15
David Lindsay, Recreation
Mike Reagor, Small Municipalities
Barbara Johnson, Industry
Christianne Castleberry, Water Utilities

Other attendees – in person:

Jason Homan, alternate for Environmental
Earl Foster, alternate for Small Municipalities
Sue Thornton, alternate for Recreation
Richard Hoffpauir, Hoffpauir Consulting
Leonard Oliver, LCRA
Sara Eatman, Austin Water
Helen Gerlach, Austin Water
Marisa Flores Gonzalez, Austin Water
Jordan Furnans, LRE
Robert Adams, Plummer
Adam Conner, FNI
Philip Taucer, FNI
Neil Deeds, INTERA

Virtual attendees (not verified):

Annette Keaveny
Augusto Villalon
Cindy Smiley
Jason Afinowicz
Jo Karr Tedder
Kevin Perez
Shannon Hamilton
Tom Harrison

2. Welcome and Introductions – Chair Lutes

Attendees identified themselves and their affiliation.

3. Receive public comments on specific issues related to agenda items 4 through 10 - limited to 3 minutes per person

Sue Thornton showed a picture of the Colorado River with low flow, stressing that inflows are very low at this time of significant drought. Ms. Thornton also made comments on behalf of Cindy Smiley. Ms. Thornton read Ms. Smiley's written comments, again stressing the importance of conservation and highlighting the current drought and stresses on water supplies in the region. She recommended that we take advantage of the TWDB Variance options to reflect the real-time observations and trends, with specific recommendations included in a handout.

No virtual comments received.

4. Discuss Region K Cutoff Model and assumptions for hydrologic variance request to Texas Water Development Board (TWDB)

Philip Taucer of FNI went over the basics of Region K Cutoff Model and the Hydrologic Variance Request (HVR).

The committee discussed the period of record in the water availability model (WAM), currently 1940 – 2016. Some expressed concerns that the hydrology needs to be updated to include current drought conditions. There was a suggestion that the hydrology should be updated in this cycle, but others noted that the plan development process scope and timeline does not allow for this to occur.

Review Assumptions in the Cutoff Model

Chair Lutes led the discussion on HVR assumptions table. In the following, notes are recorded as attributed to the assumptions as numbered in the table.

1. The committee discussed whether new water rights were still being allocated.
2. Committee noted that this is the "cutoff" assumption.

3. Repeated discussion of interest in updating the naturalized flows/hydrology to reflect current drought conditions.

Chair Lutes noted that Column 2 should say “yes” for this table row, consultants indicated they would correct the table.

4. General discussion of water rights versus “reality” or operational based approach on modeling alternatives.

5. Discussion of potential for sedimentation reducing firm yield in reservoirs over time.

6. Discussion of environmental flows and LCRA’s approach to considering environmental flows. One member noted a concern that environmental flows were being underestimated in the modeling, and that the planning process schedule was too tight for meaningful changes to occur in underlying assumptions.

7. No discussion.

8. Barbara Johnson suggested that the acronym “STP” be clarified, consultants said they would do this.

9. No comments.

10. Consultant team noted that they need to update date.

11. Chair Lutes asked that “LCRA” be inserted between “2020” and “WMP”. David Lindsay shared a handout regarding modeling assumptions, and discussed firm yield and recent low inflow trends, noting a cumulative deficit of nearly 1 million acre-feet in the current drought versus the recent drought of record period. . The committee discussed the concepts of firm yield, interruptible water, and their context in the various model alternatives.

12. Chair Lutes asked that “LCRA” be added similar to #11. One committee member proposed including environmental flow requirements in the firm yield modeling, similar to proposal to include interruptible water in the firm yield modeling in item #11 discussion.

13. No comment.

14. No comment.

15. Short discussion on which demands were included.

16. No comment.

17. No comment.

18. No comment.

19. No comment.

Chair Lutes led a discussion of the hydrologic variance request (HVR) checklist requirements. Ms. Lutes asked members to review these requirements prior to the next meeting.

The consulting team asked that comments on draft HRV checklist be sent prior to the next meeting, and that the team would get comment responses completed prior to the next meeting, anticipating an action item on recommending the HVR packet to the full planning group for action at the October planning group meeting.

5. Take action as appropriate on Region K Cutoff Model and assumption recommendations for current planning cycle for hydrologic variance request to TWDB

Chair Lutes suggested this item was tabled for the next meeting, none were opposed.

6. Review and discuss TWDB guidelines related to uncertainty and Drought(s) Worse Than the Drought of Record (DWDOR)

Chair Lutes led this discussion. One committee member suggested that a more quantitative analysis be performed, but others indicated that the scope, budget, and schedule was not sufficient to accommodate this, since the draft modeling should be complete by the December timeframe.

Chair Lutes asked that the committee review new TWDB guidelines in Task/Chapter 7, regarding planning for uncertainty and droughts worse than the drought of record.

The committee discussed adding a recommendation that TWDB/Legislature provide funding for modeling the DWDOR, and generally agreed this would be valuable.

7. Discuss how groundwater modeling and Modeled Available Groundwater (MAG) data feed into groundwater availability/supply estimates (time permitting)

Chair Lutes asked that this item was tabled for the next meeting, none opposed. Sue Thornton asked for an eventual discussion on aquifer storage and recovery.

8. Next meeting date

Noted as September 18, 1:00 p.m.

9. Future Agenda Items

- a) Input on draft HVR
- b) Discussion of recommendation regarding uncertainty and DWDOR that would go back to the full planning group.

10. Public comment

None.

11. Adjournment

Barbara Johnson moved to adjourn the meeting, Christianne Castleberry seconded.

Chair Lutes adjourned the meeting at 12:06 p.m.

DRAFT

DRAFT MINUTES

**Lower Colorado Regional Water Planning Group
Water Modeling Committee Meeting
September 18, 2023**

Freese and Nichols, 10431 Morado Circle, Building 5, Suite 300,
Conference Room "Capital of Texas", Austin, Texas 78759
1:00 P.M.

Meeting Minutes:

1. Call to Order, Introductions and Roll Call – Teresa Lutes, Committee Chair

Meeting was called to order at 1:00 P.M. by Chair Lutes.

Attendance:

Committee Members – in person:

Teresa Lutes, Municipalities
Monica Masters, River Authorities
Jim Brasher, GMA-15
David Lindsay, Recreation
Mike Reagor, Small Municipalities
Barbara Johnson, Industry
Christianne Castleberry, Water Utilities
Earl Foster, alternate for Small Municipalities (Committee Member Lauri Gillam)
Carol Olewin, Public Interest
Mitchell Sodek, GMA-8

Other attendees – in person:

Jason Homan, alternate for Environmental
Lann Bookout, TWDB
Sue Thornton, alternate for Recreation
Richard Hoffpauir, Hoffpauir Consulting
Leonard Oliver, LCRA
Sara Eatman, Austin Water
Helen Gerlach, Austin Water
Marisa Flores Gonzalez, Austin Water
Jordan Furnans, LRE
Robert Adams, Plummer
Adam Conner, FNI
Neil Deeds, INTERA

Jon Albright, FNI
Cindy Smiley, CTWC
Andrew Weir, SAWDF

Virtual attendees:

Annette Keaveny, LCRA
Kay Wischkaemp, HCUWCD
Kevin Perez, FNI
Shannon Hamilton, CTWC

2. Welcome and Introductions – Chair Lutes

Attendees identified themselves and their affiliations.

3. Receive public comments on specific issues related to agenda items 4 through 10 - limited to 3 minutes per person

Andy Weir, Simsboro Aquifer Defense Fund, spoke regarding managed available groundwater (MAGs) and surface/groundwater interactions. He noted that the Carrizo-Wilcox aquifer currently contributes approximately 21,000 AFY of water into the Colorado River in Bastrop County.

Jordan Furnans, representing CTWC, spoke about MAG and some concerns regarding their development. Mr. Furnans also expressed his thoughts about “Slide 5” of the presentation, regarding Lake Buchanan and Travis firm supplies.

Sue Thorton, Alternate for Recreation, spoke about concerns of feeling constrained by lack of time to adequately review meeting materials in advance of the meeting.

6. Review and discuss TWDB guidelines related to uncertainty and Drought(s) Worse Than the Drought of Record (DWDOR)

Chair Lutes asked that item 6 be moved up to this position in the agenda, there was no opposition. Chair Lutes led the discussion of planning for uncertainty and Drought Worse than Drought of Record.

General discussion focused on new TWDB guidance on incorporation of planning for uncertainty and droughts worse than the drought of record into the regional water planning process (Task 7 – Drought). Some members expressed general support for use of the new guidance in Task 7 (some largely qualitative in nature) along with conducting a mid-cycle study to explore tools and methods to further advance planning for uncertainty and DWDR in preparation for quantitative analysis in the next planning round.

4. Discuss Region K Cutoff Model and assumptions for hydrologic variance request (HVR) to Texas Water Development Board (TWDB)

4a. Presentation to address comment from previous committee meeting.

Leonard Oliver, LCRA, presented follow-up information to help clarify the assumptions made in calculating firm yield and how that process has different elements than the in the LCRA Water Management Plan (WMP). It was noted that the WMP is a short-term operational plan that includes stored water uses for both firm and interruptible customers, as well as environmental flows.

Some additional discussion on how environmental flows are incorporated followed. A concern was raised about the need to consider reflecting higher environmental flows that are more aligned with actual releases required by the current LCRA WMP versus continuing to use the LCRA commitment of 33k acre-feet per year.

4b. Answer questions on comments we received on draft HVR checklist and responses.

Chair Lutes led a discussion on comments received on the draft hydrologic variance request (HVR) and initial checklist responses.

The committee discussed the responses. Some time was spent discussing whether firm or safe yield should form the basis for the modeling, with the understanding that firm yield is the basis that has been used in prior planning rounds. There was more discussion of needing to explore planning for uncertainty and DWDOR in preparation for next planning round including defining and quantifying safe yield, for example. One member expressed frustration that more could not be done to incorporate current drought hydrologic conditions into the modeling this planning cycle, noting the potential of reaching a new drought of record condition during this planning cycle.

4c. Review draft HVR checklist

Request by Cindy Smiley for public comment prior to this discussion. Ms. Smiley asked that the planning group use safe yield rather than firm yield in determining water availability.

Chair Lutes led a discussion of HVR checklist. One member suggested creating more consistency between the checklist and the assumption table. The consultants proposed a potential change that could improve this consistency.

4d. Review updated assumption table

Chair Lutes led a discussion of the assumption table. This discussion included additional comments regarding the use of safe yield versus firm yield.

5. Take Action, as Needed

Monica Masters moved that the committee recommend to the full planning group submittal of the HVR and associated materials, as presented, to TWDB. Christianne Castleberry seconded the motion. The motion passed with one opposing vote by David Lindsay.

Chair Lutes led a discussion of the accompanying cover letter and recommended that the letter contain information about the current drought, and the plan for additional mid-cycle study regarding planning for uncertainty and DWDOR. Ms. Lutes suggested that the cover letter be drafted prior to the October planning group meeting for inclusion in the full planning group meeting materials packet for consideration at the meeting.

Some additional discussion occurred regarding the timeline for updating the naturalized flows (hydrology) included the water availability model (WAM) (which currently extend through 2016).

6. Review and discuss TWDB guidelines related to uncertainty and Drought(s) Worse Than the Drought of Record (DWDOR)

This agenda item was handled previously in the meeting (between items 3 and 4).

7. Groundwater Discussion

Chair Lutes suggested that the groundwater discussion be tabled for next meeting, and none opposed.

8. Next meeting date

No next meeting date was set, but the consultants indicated they would follow up with a poll.

9. Future Agenda Items

1. Groundwater and managed available groundwater (MAGs) will likely be discussed in the next meeting.

10. Public comment

Jordan Furnans commented regarding whether environmental flows should be considered interruptible, and that Central Texas Water Coalition (CTWC) had an alternative model that was more up to date on hydrology than the current WAM, as this new alternative model uses actual inflows versus naturalized flows.

11. Adjournment

Motion to adjourn by Barbara Johnson, seconded by Jason Homan. None opposed.

Chair Lutes adjourned the meeting at 2:49 pm.

DRAFT MINUTES

**Lower Colorado Regional Water Planning Group
Water Modeling Committee Meeting
October 23, 2023**

Freese and Nichols, 10431 Morado Circle, Building 5, Suite 300,
Conference Room "Capital of Texas", Austin, Texas 78759
9:30 A.M.

Meeting Minutes:

1. Call to Order, Introductions and Roll Call – Teresa Lutes, Committee Chair

Meeting was called to order at 9:35 A.M. by Chair Lutes.

Attendance:

Committee Members – in person:

Teresa Lutes, Municipalities
Jim Brasher, GMA-15
David Lindsay, Recreation
Mike Reagor, Small Municipalities
Barbara Johnson, Industry
Christianne Castleberry, Water Utilities
Earl Foster, alternate for Small Municipalities (Committee Member Lauri Gillam)
Carol Olewin, Public Interest
Mitchell Sodek, GMA-8
Tom Hegemier, alternate for River Authority (Committee Member Monica Masters)
Jason Homan, alternate for Environmental

Other attendees – in person:

Jennifer Walker, Environmental
Lann Bookout, TWDB
Sue Thornton, alternate for Recreation
Leonard Oliver, LCRA
Leslie Solo Sanchez, LCRA
Sara Eatman, Austin Water
Helen Gerlach, Austin Water
Emily Rafferty, Austin Water
Marisa Flores Gonzalez, Austin Water
Robert Adams, Plummer
Adam Conner, FNI

Neil Deeds, INTERA
Jon Albright, FNI
Cindy Smiley, CTWC

Virtual attendees:

Annette Keaveny, LCRA
Andy Weir, SAWDF
Kevin Perez, FNI

2. Welcome and Introductions – Chair Lutes

Attendees identified themselves and their affiliations.

3. Receive public comments on specific issues related to agenda items 4 through 10 - limited to 3 minutes per person

Andy Weir, Simsboro Aquifer Defense Fund, spoke regarding modeled available groundwater (MAGs) and specifically how GMA-12 approaches the desired future conditions (DFC) process.

4. Review and approve minutes from previous meetings

Consultant team noted need to add Mitchell Sodek to September 18 modeling meeting attendee list.

David Lindsay asked that content be added to minutes. David may suggest content to add for consideration in the next meeting.

Consultant team noted need to correct spelling of Barbara Johnson's name in the minutes.

Chair Lutes asked that any correction be brought to the consultant team via email.

5. Discuss how groundwater modeling and Modeled Available Groundwater (MAG) data feed into groundwater availability/supplies.

Neil Deeds of the consulting team led the discussion of this topic, generally outlining the groundwater planning process and how it fits with regional planning.

The group discussed several topics with respect to groundwater availability. The question of how water quality was handled in groundwater availability models was asked, with the answer being that groundwater quality is generally handled on the strategy side, e.g. if treatment is needed. The group discussed the change in groundwater availability from the previous plan to the new MAGs. Modest increases in the Carrizo-Wilcox MAG were due to an update in the underlying groundwater model.

There was discussion of how non-relevant aquifers are handled, where there is no DFC but there should be a MAG. There was a consensus that the region should reach out to groundwater conservation districts (GCDs) for those aquifers considered non-relevant.

Two other topics concerned dry wells and whether drawdown is considered in the planning process. Chair Lutes indicated that dry wells could be discussed in Chapter 7 when drought and drought management are discussed. Groundwater district representatives spoke on how drawdowns are considered in most DFCs, which then are used to calculate MAGs.

The TWDB representative asked whether a groundwater hydrologic variance request (HVR) was likely to be made for Region K. The consultant team indicated that a groundwater HVR was not likely.

6. Discuss TWDB response to Surface Water Hydrologic Variance Request, if available

No response was available at this time.

7. Next meeting date

The next meeting date was set for after the planning group meeting on December 1, starting at approximately noon. The consultant team will work with LCRA staff to determine whether a virtual option can be provided.

8. Future Agenda Items

Preliminary surface water modeling results will likely be discussed in the next meeting.

9. Public comment

Andy Weir discussed importance of surface water and groundwater interaction between the Carrizo-Wilcox and the Colorado River. He stated that modeling showed the river will eventually lose water to the outcrop as pumping increases.

10. Adjournment

Motion to adjourn by Barbara Johnson, seconded by David Lindsay. None opposed.

Chair Lutes adjourned the meeting at 10:35 am.

Agenda Item 5 - Update on Surface Water Availability Modeling

January 22, 2024

2:30 PM

Region K Water Modeling Committee Meeting



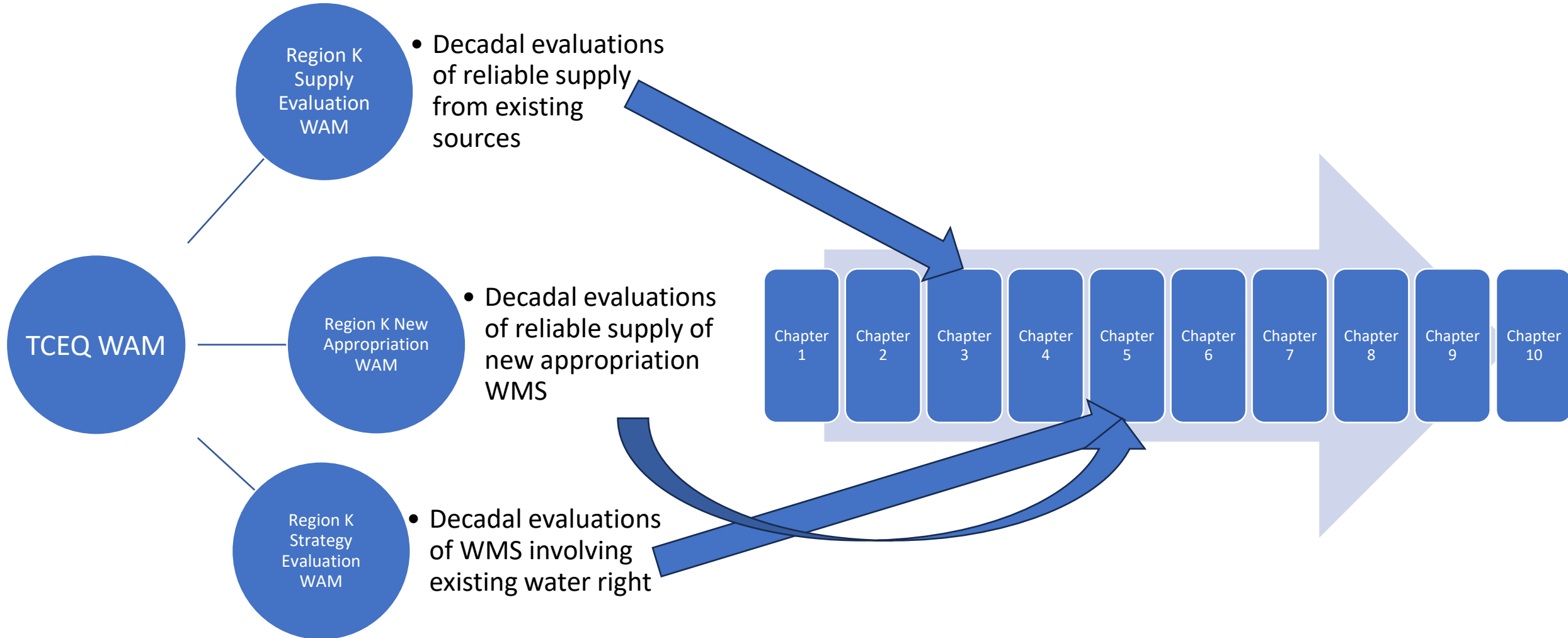
Agenda Item 5

Update on Surface Water Availability Modeling



Agenda Item 5

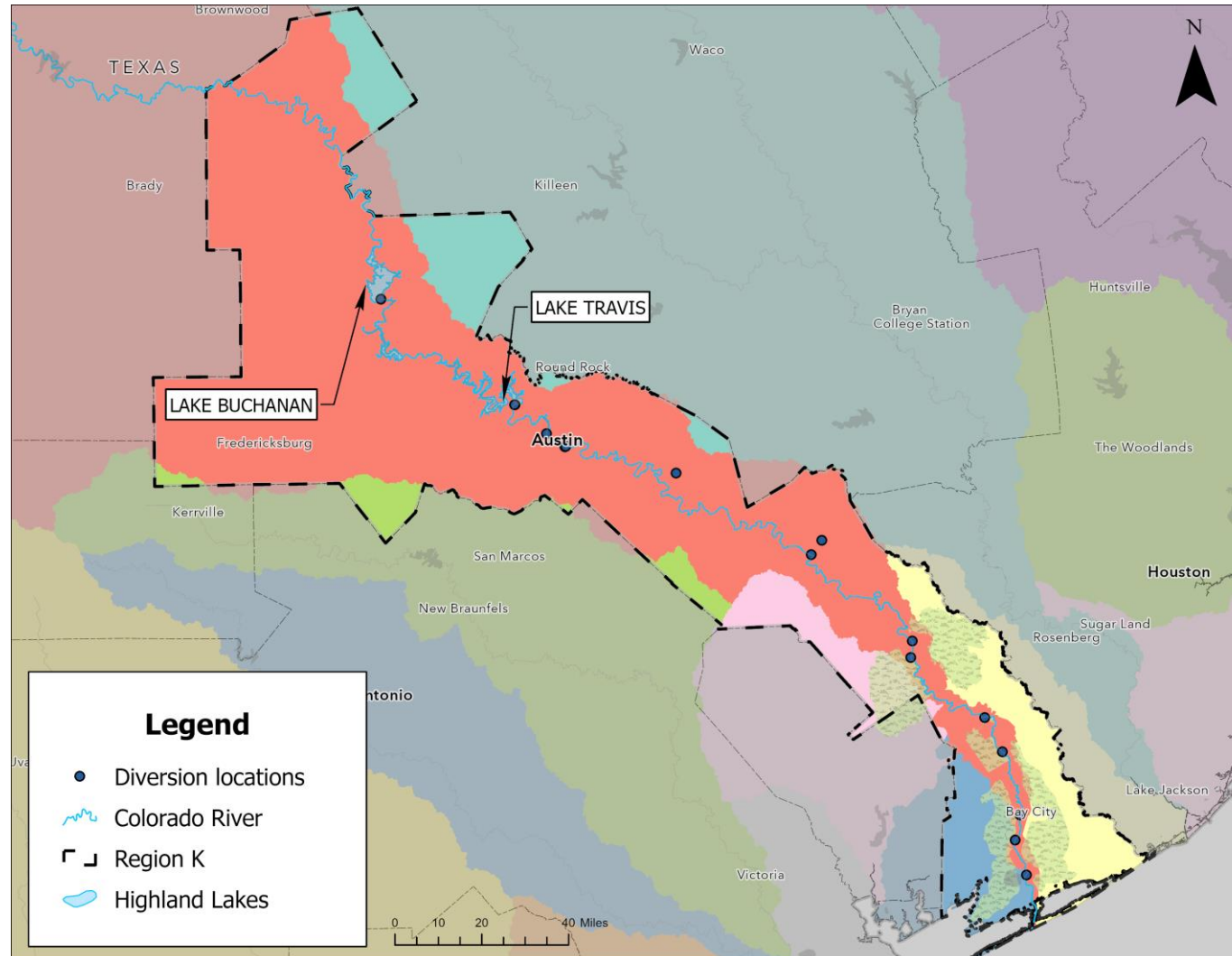
Update on Surface Water Availability Modeling Variations of TCEQ WAM for Region K's Purposes



Agenda Item 5

Update on Surface Water Availability Modeling

River Basins and Colorado Major Water Right Locations



Agenda Item 5

Update on Surface Water Availability Modeling

Assumptions for Major Reservoirs



- Using Supply Evaluation WAM
- Maximum amount of water under a repeat of DOR (firm yield)
- Firm yield of Highland Lakes (HL)
 - Annualized average over DOR for Austin Municipal & STNP releases from HL
 - DOR defined as full to minimum storage
 - Firm contracts at annual average (October 2007-April 2015)

Update on Surface Water Availability Modeling

Comparison of Highland Lake Yields



Entity	DRAFT 2026 Region K Plan Firm Yield (acre-feet/yr)			2021 Region K Plan Firm Yield (acre-feet/yr)		
	2030	2050	2080	2030	2050	2080*
Firm Contracts & Envir. Commitments	281,074	277,712	272,173	274,891	273,494	271,220
STPNOC Backup	24,544	24,544	24,544	19,562	19,553	19,538
Austin Municipal Backup	102,591	102,369	102,369	90,310	90,310	90,310
Interruptible	0	0	0	0	0	0
Total FY	408,209	404,625	399,086	384,763	383,357	381,068
Total Available for Consumptive Use**	374,769	371,185	365,646	351,323	349,917	347,628

*Linear extrapolation.

** 33,440 ac-ft/yr is subtracted for the LCRA environmental commitment

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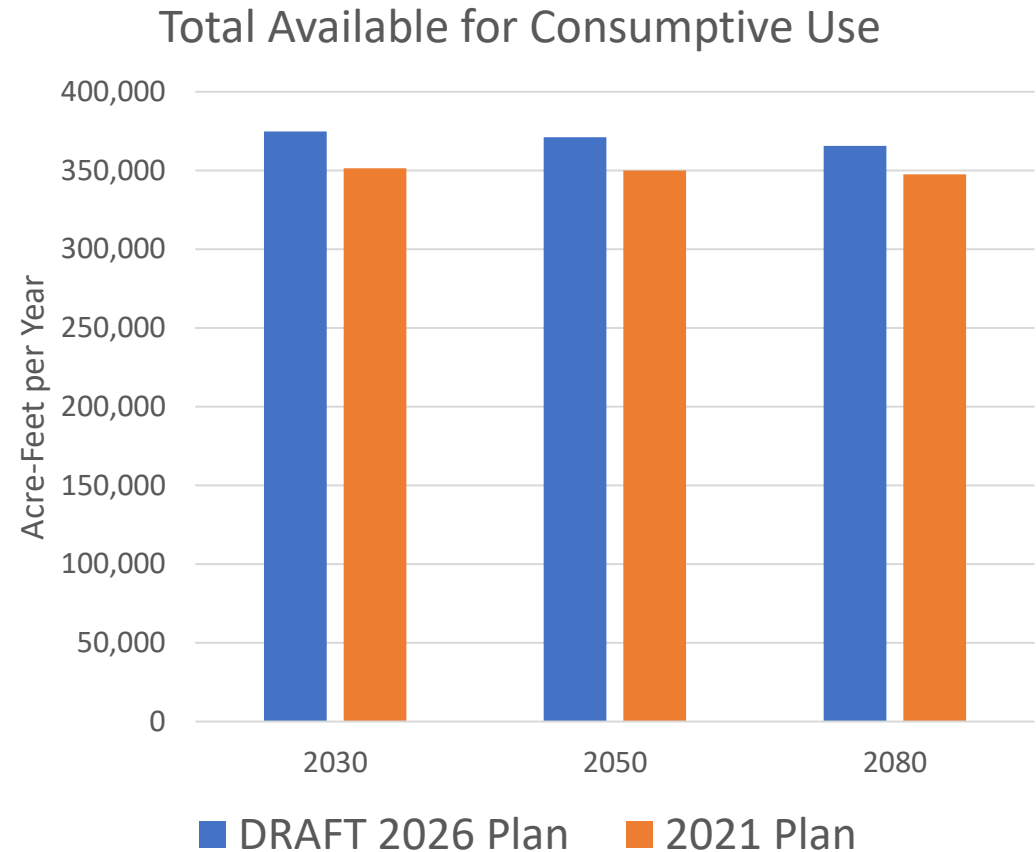
Update on Surface Water Availability Modeling

Comparison of Highland Lake Yields



Differences

- 2026 is full to empty while 2021 is full to full
- 2026 more consistent with LCRA WMP assumptions regarding large run-of-river rights



Agenda Item 5

Reservoirs 2026 Region K Supply Evaluation WAM



Source	DRAFT 2026 Region K Plan Firm Yield (acre-feet/yr)			2021 Region K Plan Firm Yield (acre-feet/yr)		
	2030	2050	2080	2030	2050	2080*
Highland Lakes***	374,769	371,185	365,646	351,323	349,917	347,628
Arbuckle Reservoir	**	**	**	**	**	**
Goldthwaite	0	0	0	0	0	0
Llano	**	**	**	**	**	**
Walter E. Long (Decker Lake)	0	0	0	0	0	0
Lake Bastrop	0	0	0	0	0	0
Lake Fayette	0	0	0	0	0	0
Lometa	0	0	0	0	0	0
STPNOC Reservoir****	35,500	35,500	35,500	66,260	66,260	66,260
TOTAL	410,269	406,685	401,146	417,583	416,177	413,888

* Linear extrapolation.

** Availability for these reservoirs was determined based on their run-of-river rights.

*** 33,440 ac-ft/yr is subtracted for the LCRA environmental commitment

**** Stand-alone yield without LCRA contract backup. Yield with contract backup is 66,260 ac-ft/yr.

Agenda Item 5

Update on Surface Water Availability Modeling

Assumptions for Major Run-of-River Rights



- Colorado Basin rights
 - Region K Supply Evaluation WAM
 - City of Austin municipal – annualized average over drought of record
 - Others – minimum annual diversion
- City of Corpus Christi
 - Minimum annual diversion
 - Unmodified TCEQ WAM (no cutoff assumptions)
- No major rights in other basins

Agenda Item 5

Update on Surface Water Availability Modeling Comparison of Major Run-of-River Rights



Number	Water Right Name	Permitted Diversion	Priority Date	DRAFT 2026 Region K Plan			2021 Region K Plan	
				2030	2050	2080	2020	2070
5434	LCRA - Garwood	133,000	11/1/1900	121,611	121,611	121,611	121,854	121,854
5475	LCRA – Lakeside #1	52,500	1/4/1901	3,340	3,340	3,340	2,780	2,780
5475	LCRA – Lakeside Jr	78,750	11/1/1987	0	0	0	0	0
5475	LCRA – Lakeside #2	55,000	9/2/1907	4,748	4,748	4,748	2,912	2,912
5476	LCRA – Gulf Coast Sr	228,750	12/1/1900	43,121	43,121	43,121	53,815	53,815
5476	LCRA – Gulf Coast Jr	33,930	11/1/1987	0	0	0	0	0
5477	Pierce Ranch	55,000	9/1/1907	1,149	1,149	1,149	2,912	2,912
5471	City of Austin (mun)*	250,000	6/1/1913	174,845	174,845	174,845	185,016	185,016
5471	City of Austin (mun) *	22,403	6/27/1914	7,125	7,125	7,125	8,583	8,583
5471	City of Austin (SE)	24,000	6/27/1914	0	0	0	4,480	4,480
5489	City of Austin (mun) *	20,300	8/20/1945	5,139	5,362	5,362	7,247	7,247
5489	City of Austin (SE)	16,156	8/20/1945	0	0	0	5,099	5,099
5434	City of Corpus Christi	35,000	11/2/1900	27,794	27,794	27,794	22,101	22,101
				388,872	389,095	389,095	416,799	416,799

Values in acre-feet per year

* Supplies in conjunction with LCRA firm water and backup contract

Agenda Item 5

Update on Surface Water Availability Modeling

Assumptions for Small Run-of-River Rights



- Colorado & Brazos-Colorado Basins
 - Region K Supply Evaluation WAM
- Brazos, Colorado Lavaca, Lavaca, and Guadalupe Basins
 - Unmodified TCEQ WAMs
- Basis
 - Small municipal – minimum annual or yield analysis
 - Others – minimum annual aggregated by type of use

Agenda Item 5

Update on Surface Water Availability Modeling

Small Municipal Rights



County	Basin	WUG	Basis	DRAFT 2026 Plan	2021 Plan
Mills	Colorado	Goldthwaite	Min annual	0	Not a source
San Saba	Colorado	San Saba	Min annual	0	0
Llano	Colorado	Llano	Yield analysis	120	271
Blanco	Colorado	Johnson City	Min annual	0	Not a source
Blanco	Guadalupe	Blanco	Min annual	545	463
Burnet	Colorado	Meadowlakes	Min annual	152	567

Values in acre-feet per year

Agenda Item 5

Update on Surface Water Availability Modeling

Aggregate Irrigation Run-of-River



County	DRAFT 2026 Plan	2021 Plan
Mills	212	2,378
San Saba	429	8,800
Llano	15	440
Gillespie	30	880
Burnet	62	276
Blanco	104	67
Hays	0	41
Travis	0	756
Bastrop	23	786
Fayette	10	534
Colorado	268	3,000
Wharton	22	7,650
Matagorda	6,949	900
	8,124	26,508

Values in ace-feet per year

**Agenda Item 7 - Discuss Texas Water
Development Board (TWDB) response to
Surface Water Hydrologic Variance
Request, if available**

January 10, 2024

David Van Dresar
Region K Chair
Lower Colorado (Region K) Regional Water Planning Group
5251 Mueller Road
La Grange, Texas 78945

Dear Chairman Van Dresar:

I have reviewed your request dated October 11, 2023, for approval of alternative water supply assumptions to be used in determining existing and future surface water availability. This letter confirms that the TWDB approves use of the Region K Cutoff Model. The following assumptions for the Cutoff Model that require a variance are approved:

1. Use the Region K Cutoff Model, which is TCEQ's Colorado Basin WAM modified to simulate all rights at and above Lake Ivie and Lake Brownwood prior to downstream rights for existing and strategy supply analysis.
2. Correct the WAM input file for errors regarding the spatial location and assignment of net evaporation data for Twin Buttes Reservoir and Lake Nasworthy for existing and strategy supplies.
3. Remove LCRA 2020 Water Management Plan interruptible water supply and environmental flow criteria for existing supply firm yield analysis. For existing supply firm yield evaluation, the environmental flow commitment will be replaced with a 34,440 acre-feet per year firm commitment from the calculated combined firm yield of Lakes Buchanan and Travis.
4. Include provisions of LCRA-South Texas Nuclear Project 2006 Settlement Agreement for existing and strategy supply analysis.
5. Add any permits and amendments not yet included in the Colorado WAM as of 2023 for existing and strategy supply analysis.
6. Modify curtailment of Highland Lakes interruptible water as necessary to satisfy future LCRA firm municipal and industrial demands for strategy supply analysis.
7. Set all Region K municipal and industrial water right demands at projected future demand amounts by decade for strategy supply analysis.
8. Set LCRA lower basin irrigation demands equal to projected future demands by decade for strategy supply analysis.
9. Include LCRA irrigation return flows to the Colorado River, return flows from Austin wastewater treatment plants, and other municipal and industrial return flows when evaluating indirect reuse of those flows as a strategy.

10. Include reuse provisions and environmental flow requirements of LCRA-Austin 2007 Settlement Agreement when evaluating reuse strategy supplies.

While the use of these modified conditions may be reasonable for planning purposes, WAM RUN3 would be utilized by the Texas Commission on Environmental Quality for analyzing permit applications. It is acceptable to use the modified conditions for WMS supply evaluations only if the yield produced is more conservative (less) for surface water appropriations than WAM RUN3.

While the TWDB authorizes these modification to evaluate existing and future water supplies for development of the 2026 Region K RWP, it is the responsibility of the RWPG to ensure that the resulting estimates of water availability are reasonable for drought planning purposes and will reflect conditions expected in the event of actual drought conditions; and in all other regards will be evaluated in accordance with the most recent version of regional water planning contract Exhibit C, *General Guidelines for Development of the 2026 Regional Water Plans*.

Please do not hesitate to contact Lann Bookout of our Regional Water Planning staff at 512-936-9439 or lann.bookout@twdb.texas.gov if you have any questions.

Sincerely,

Matt Nelson
Digitally signed by Matt Nelson
Date: 2024.01.16 09:20:30
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Matt Nelson
Deputy Executive Administrator

- c: Monica Masters, Lower Colorado River Authority
Teresa Lutes, City of Austin (Region K Water Modeling Committee Chair)
Neil Deeds, INTERA
Lann Bookout, Water Supply Planning
Sarah Lee, Water Supply Planning
Nelun Fernando, Ph.D., Surface Water
Lissa Gregg, Freese and Nichols, Inc (Region F Consultant)